

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-K

(Mark One)

**ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2019

OR

**TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**

For the transition period from _____ to _____

Commission File Number 1-6075

UNION PACIFIC CORPORATION

(Exact name of registrant as specified in its charter)

Utah

(State or other jurisdiction of
incorporation or organization)

13-2626465

(I.R.S. Employer
Identification No.)

1400 Douglas Street, Omaha, Nebraska

(Address of principal executive offices)

68179

(Zip Code)

(402) 544-5000

(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

<u>Title of each Class</u>	<u>Trading Symbol</u>	<u>Name of each exchange on which registered</u>
Common Stock (Par Value \$2.50 per share)	UNP	New York Stock Exchange

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated Filer Accelerated Filer Non-Accelerated Filer

Smaller Reporting Company Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Yes No

As of June 28, 2019, the aggregate market value of the registrant's Common Stock held by non-affiliates (using the New York Stock Exchange closing price) was \$119.0 billion.

The number of shares outstanding of the registrant's Common Stock as of January 31, 2020 was 690,261,490.

Documents Incorporated by Reference – Portions of the registrant's definitive Proxy Statement for the Annual Meeting of Shareholders to be held on May 14, 2020, are incorporated by reference into Part III of this report. The registrant's Proxy Statement will be filed with the Securities and Exchange Commission pursuant to Regulation 14A.

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Fellow Shareholders:

Union Pacific exited 2019 as a much different, much better company than we started the year. The implementation of Unified Plan 2020 is transforming how we do business – making us more efficient and reliable for our customers. Change of this magnitude is difficult, but the men and women of Union Pacific met the challenge head on - driving us to new levels of profitability in a year that included historic flooding and a declining freight environment. We are pleased to report earnings per diluted share of \$8.38, which is a 6 percent increase versus 2018, despite volume declines of 6 percent. Our operating ratio was a record 60.6 percent, 2.1 points better than last year's 62.7 percent.

The adoption of Unified Plan 2020 is a key part of Union Pacific's push to become the best freight railroad in North America. We think of this strategy as a flywheel that is driven by a **Proud and Engaged Workforce**. Our employees are at the core of everything we do and are critical to our long-term success.



The first "cog" in the flywheel is to provide the **Safest and Most Reliable Freight Rail Products and Services**. Everything we do must be done safely and reliably. Unfortunately, our 2019 safety results were not good enough. Our reportable personal injury rate was 0.90, compared to 0.82 in 2018, while our reportable derailment rate was 4.28, compared to 3.28 in 2018. We want every employee to return home safely every day and to eliminate all derailments. We must do better in 2020.

We did, however, make great strides to improve the reliability of our service product. Trip plan compliance improved 6 points, demonstrating our commitment to be there when we say we will. Local service metrics like to and from industry, also showed solid improvement. Additionally, increased asset utilization and fewer car classifications led to a 6 percent improvement in freight car velocity and a 17 percent improvement in freight car terminal dwell.

In order to be cost competitive for our customers in a quickly changing freight environment, we must have **Highly Efficient Operations**. This includes emphasizing on-time performance and turning assets more quickly, driving costs out of our network so we can better compete in both new and existing markets. I am very pleased to report that the team did an excellent job across the board in this area as we drove our operating ratio to record levels.

Combining an enhanced service product with advancing technology allows us to provide an **Industry-Leading Customer Experience**. One example is the transparency we are providing customers into their supply chain. Use of Mobile Work Order devices has allowed us to provide streamlined interfaces, better notifications and improved local inventory reporting. And we're just getting started!

Efficient operations and an excellent customer experience are the foundation that enables us to **Secure Appropriate Business**. Despite a difficult freight environment where freight volumes decreased 6 percent compared to 2018, we continue to win new business. We're excited to participate in the development of the new Butler Intermodal Terminal in Central Iowa, providing an alternative to larger Midwest rail hubs and giving shippers a cost-competitive solution to reduce long-haul trucking miles.

A safe, reliable and efficient service product positions us to generate **Best-in-Industry Cash Returns**. Total shareholder return, including price appreciation and dividends, increased 33.7 percent in 2019, compared to 31.5 percent for the S&P 500. We paid dividends in 2019 of \$2.6 billion, as we raised our quarterly dividend with two 10 percent increases during the year. In addition, we repurchased 35 million Union Pacific shares, decreasing our full-year average share count by 6 percent. Combining dividends and share repurchases, Union Pacific returned \$8.4 billion to our shareholders in 2019.

Capital investments in our business form the foundation for future improvements in safety, reliability and efficiency, making it critical that we make **Optimal Investments** annually. In 2019, we invested \$3.2 billion, including just under \$2 billion in replacement capital to harden our infrastructure, replace older assets and improve the safety and resiliency of our network. We also invested for growth and productivity through the addition of five extended sidings on our Sunset Corridor, a key competitive route for us.

As we enter the new decade, we are looking forward to leveraging the Unified Plan 2020 service gains to safely and reliably grow the business. We understand that opportunity comes with responsibility; we will continue to be a positive force in sustainability efforts, ensuring all stakeholders are heard. Our goal and our path are clear: Be the best freight railroad in North America, and use that platform to grow with our customers. Thank you for joining us on this value-creating journey.



Chairman, President and Chief Executive Officer

DIRECTORS AND SENIOR MANAGEMENT

BOARD OF DIRECTORS

Andrew H. Card, Jr.

Former White House
Chief of Staff
*Board Committees: Audit,
Compensation and Benefits*

Erroll B. Davis, Jr.

Former Chairman,
President & CEO
Alliant Energy Corporation
*Board Committees: Compensation
and Benefits (Chair), Corporate
Governance and Nominating*

William J. DeLaney

Former Chief Executive Officer,
Sysco Corporation
*Board Committees: Audit,
Compensation and Benefits*

David B. Dillon

Former Chairman
The Kroger Company
*Board Committees: Audit (Chair),
Compensation and Benefits*

Lance M. Fritz

Chairman, President and
Chief Executive Officer
Union Pacific Corporation and
Union Pacific Railroad Company

Deborah C. Hopkins

Former Chief Executive Officer
Citi Ventures
Former Chief Innovation Officer
Citi
Board Committees: Audit, Finance

Jane H. Lute

President and Chief Executive Officer
SICPA North America
*Board Committees: Audit, Corporate
Governance and Nominating*

Michael R. McCarthy

Chairman
McCarthy Group, LLC
Lead Independent Director
*Board Committees: Corporate
Governance and Nominating (Chair),
Finance*

Thomas F. McLarty III

President
McLarty Associates
*Board Committees: Finance (Chair),
Corporate Governance and
Nominating*

Bhavesh V. Patel

Chief Executive Officer and
Chairman of the Management Board
LyondellBasell Industries N.V.
*Board Committees: Finance,
Compensation and Benefits*

Jose H. Villarreal

Advisor
Akin, Gump, Strauss, Hauer &
Feld, LLP
*Board Committees: Compensation
and Benefits, Corporate Governance
and Nominating*

Christopher J. Williams

Chairman
Siebert Williams Shank & Co.
*Board Committees: Audit, Finance**

SENIOR MANAGEMENT**

Lance M. Fritz

Chairman, President and
Chief Executive Officer

Prentiss W. Bolin, Jr.

Vice President-External Relations

Bryan L. Clark

Vice President-Tax

Rhonda S. Ferguson

Executive Vice President, Chief Legal
Officer and Corporate Secretary

Gary W. Grosz

Vice President and Treasurer

Jennifer L. Hamann

Executive Vice President
and Chief Financial Officer

Thomas A. Lischer

Executive Vice President-Operations

Scott D. Moore

Senior Vice President-Corporate
Relations and
Chief Administrative Officer

Jon T. Panzer

Senior Vice President-Technology
and Strategic Planning

Clark J. Ponthier

Senior Vice President-Supply Chain
And Continuous Improvement

Kenny G. Rocker

Executive Vice President-Marketing
and Sales

Todd M. Rynaski

Vice President and Controller

V. James Vena

Chief Operating Officer

Elizabeth F. Whited

Executive Vice President and
Chief Human Resource Officer

*Committee appointments effective March 18, 2020.

**Senior management are elected officers of both Union Pacific Corporation and Union Pacific Railroad Company, except Messrs. Lischer, Ponthier and Rocker are elected officers for Union Pacific Railroad Company.

PART I

Item 1. Business

GENERAL

Union Pacific Railroad Company is the principal operating company of Union Pacific Corporation. One of America's most recognized companies, Union Pacific Railroad Company links 23 states in the western two-thirds of the country by rail, providing a critical link in the global supply chain. The Railroad's diversified business mix includes Agricultural Products, Energy, Industrial and Premium. Union Pacific serves many of the fastest-growing U.S. population centers, operates from all major West Coast and Gulf Coast ports to eastern gateways, connects with Canada's rail systems and is the only railroad serving all six major Mexico gateways. Union Pacific provides value to its roughly 10,000 customers by delivering products in a safe, reliable, fuel-efficient and environmentally responsible manner.

Union Pacific Corporation was incorporated in Utah in 1969 and maintains its principal executive offices at 1400 Douglas Street, Omaha, NE 68179. The telephone number at that address is (402) 544-5000. The common stock of Union Pacific Corporation is listed on the New York Stock Exchange (NYSE) under the symbol "UNP".

For purposes of this report, unless the context otherwise requires, all references herein to "UPC", "Corporation", "Company", "we", "us", and "our" shall mean Union Pacific Corporation and its subsidiaries, including Union Pacific Railroad Company, which we separately refer to as "UPRR" or the "Railroad".

Available Information – Our Internet website is www.up.com. We make available free of charge on our website (under the "Investors" caption link) our Annual Reports on Form 10-K; our Quarterly Reports on Form 10-Q; our current reports on Form 8-K; our proxy statements; Forms 3, 4, and 5, filed on behalf of our directors and certain executive officers; and amendments to such reports filed or furnished pursuant to the Securities Exchange Act of 1934, as amended (the Exchange Act). We provide these reports and statements as soon as reasonably practicable after such material is electronically filed with, or furnished to, the Securities and Exchange Commission (SEC). We also make available on our website previously filed SEC reports and exhibits via a link to EDGAR on the SEC's Internet site at www.sec.gov. Additionally, our corporate governance materials, including By-Laws, Board Committee charters, governance guidelines and policies, and codes of conduct and ethics for directors, officers, and employees are available on our website. From time to time, the corporate governance materials on our website may be updated as necessary to comply with rules issued by the SEC and the NYSE or as desirable to promote the effective and efficient governance of our Company. Any security holder wishing to receive, without charge, a copy of any of our SEC filings or corporate governance materials should send a written request to: Secretary, Union Pacific Corporation, 1400 Douglas Street, Omaha, NE 68179.

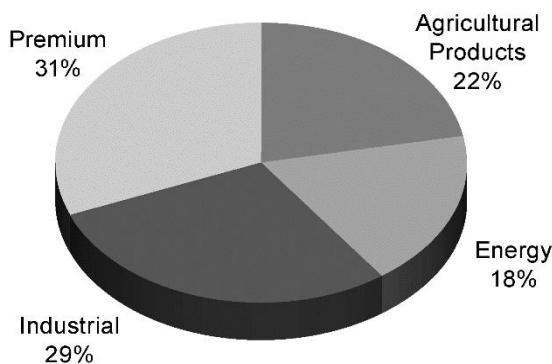
References to our website address in this report, including references in Management's Discussion and Analysis of Financial Condition and Results of Operations, Item 7, are provided as a convenience and do not constitute, and should not be deemed, an incorporation by reference of the information contained on, or available through, the website. Therefore, such information should not be considered part of this report.

OPERATIONS

The Railroad, along with its subsidiaries and rail affiliates, is our one reportable operating segment. Although we provide revenue by commodity group, we analyze the net financial results of the Railroad as one segment due to the integrated nature of our rail network. Additional information regarding our business and operations, including revenue and financial information and data and other information regarding environmental matters, is presented in Risk Factors, Item 1A; Legal Proceedings, Item 3; Selected Financial Data, Item 6; Management's Discussion and Analysis of Financial Condition and Results of Operations, Item 7; and the Financial Statements and Supplementary Data, Item 8 (which include information regarding revenues, statements of income, and total assets).

Operations – UPRR is a Class I railroad operating in the U.S. We have 32,340 route miles, linking Pacific Coast and Gulf Coast ports with the Midwest and eastern U.S. gateways and providing several corridors to key Mexican gateways. We serve the Western two-thirds of the country and maintain coordinated schedules with other rail carriers to move freight to and from the Atlantic Coast, the Pacific Coast, the Southeast, the Southwest, Canada, and Mexico. Export and import traffic moves through Gulf Coast and Pacific Coast ports and across the Mexican and Canadian borders. Our freight traffic consists of bulk, manifest, and premium business. Bulk traffic primarily consists of coal, grain, soda

2019 Freight Revenue



ash, ethanol, and rock shipped in unit trains – trains transporting a single commodity from one origin to one destination. Manifest traffic includes individual carload or less than train-load business involving commodities such as lumber, steel, paper, food and chemicals. The transportation of finished vehicles, auto parts, intermodal containers and truck trailers are included as part of our premium business. In 2019, we generated freight revenues totaling \$20.2 billion from the following four commodity groups:

Agricultural Products – Transportation of grains, commodities produced from these grains, fertilizer, and food and beverage products generated 22% of the Railroad's 2019 freight revenue. We access most major grain markets, linking the Midwest and Western U.S. producing areas to export terminals in the Pacific Northwest and Gulf Coast ports, as well as Mexico. We also serve significant domestic markets, including grain processors, animal feeders and ethanol producers in the Midwest and West. Fertilizer movements originate in the Gulf Coast region, Midwest, western U.S. and Canada (through interline access) for delivery to major agricultural users in those areas, as well as abroad.

Energy – The Company's Energy shipments are grouped into the following three categories: (i) coal, (ii) sand and (iii) petroleum, liquid petroleum gases (LPG) and renewables. In 2019, this group generated 18% of our freight revenue. The Railroad's network supports the transportation of coal shipments to independent and regulated power companies and industrial facilities throughout the U.S. Through interchange gateways and ports, UPRR's reach extends to eastern U.S. utilities, as well as to Mexico and other international destinations. Coal traffic originating in the Powder River Basin (PRB) area of Wyoming is the largest segment of the Railroad's coal business. Demand for hydraulic fracturing sand, or frac-sand, is generated by oil and gas drilling, whereas, the Company's petroleum and LPG shipments are primarily impacted by refinery utilization rates, regional crude pricing differentials, pipeline capacity, and the use of asphalt for road programs. Renewable shipments consist primarily of biomass exports and wind turbine components.

Industrial – Our extensive network facilitates the movement of numerous commodities between thousands of origin and destination points throughout North America. The Industrial group consists of several categories, including construction, industrial chemicals, plastics, forest products, specialized products (primarily waste, lime, salt and government), metals and ores, and soda ash. Transportation of these products accounted for 29% of our freight revenue in 2019. Commercial, residential and governmental infrastructure investments drive shipments of steel, aggregates, cement and wood products. Industrial and light manufacturing plants receive steel, nonferrous materials, minerals and other raw materials.

The industrial chemicals market consists of a vast number of chemical compounds that support the manufacturing of more complex chemicals. Plastics shipments support automotive, housing, and the durable and disposable consumer goods markets. Forest product shipments include lumber and paper commodities. Lumber shipments originate primarily in the Pacific Northwest or western Canada and move throughout the U.S. for use in new home construction and repairs and remodeling. Paper shipments primarily support packaging needs. Oil and gas drilling generates demand for raw steel, finished pipe, stone and drilling fluid commodities. Soda ash originates in southwestern Wyoming and California, destined for chemical and glass producing markets in North America and abroad.

Premium – In 2019, the Premium franchise generated 31% of Union Pacific's total freight revenue. Our Premium franchise includes three segments: international intermodal, domestic intermodal, and finished vehicles. International business consists of import and export traffic moving in 20 or 40-foot shipping containers, that mainly passes through West Coast ports served by UP's extensive terminal network. Domestic business includes container and trailer traffic picked up and delivered within North America for intermodal marketing companies (primarily shipper agents and logistics companies), as well as truckload carriers.

We are the largest automotive carrier west of the Mississippi River and operate or access 38 vehicle distribution centers. The Railroad's extensive franchise serves five vehicle assembly plants and connects to West Coast ports, all six major Mexico gateways, and the Port of Houston to accommodate both import and export shipments. In addition to transporting finished vehicles, UPRR provides expedited handling of automotive parts in both boxcars and intermodal containers destined for Mexico, the U.S. and Canada.

Seasonality – Some of the commodities we carry have peak shipping seasons, reflecting either or both the nature of the commodity and the demand cycle for the commodity (such as certain agricultural and food products that have specific growing and harvesting seasons). The peak shipping seasons for these commodities can vary considerably each year depending upon various factors, including the strength of domestic and international economies and currencies and the strength of harvests and market prices for agricultural products.

Working Capital – At both December 31, 2019 and December 31, 2018, we had a working capital deficit. The deficits are primarily due to upcoming debt maturities. As past years indicate, it is not unusual for us to have a working capital deficit; however, we believe it is not an indication of a lack of liquidity. We also maintain adequate resources, including our credit facility, and when necessary, access to capital markets to meet any foreseeable cash requirements.

Competition – We are subject to competition from other railroads, motor carriers, ship and barge operators, and pipelines. Our main railroad competitor is Burlington Northern Santa Fe LLC. Its primary subsidiary, BNSF Railway Company (BNSF), operates parallel routes in many of our main traffic corridors. In addition, we operate in corridors served by other railroads and motor carriers. Motor carrier competition exists for all four of our commodity groups (excluding most coal shipments). Because of the proximity of our routes to major inland and Gulf Coast waterways, barges can be particularly competitive, especially for grain and bulk commodities in certain areas where we operate. In addition to price competition, we also face competition with respect to transit times, quality and reliability of service from motor carriers and other railroads. Motor carriers in particular can have an advantage over railroads with respect to transit times and timeliness of service. However, railroads are much more fuel-efficient than trucks, which reduces the impact of transporting goods on the environment and public infrastructure, and we have been making efforts to convert certain truck traffic to rail. Additionally, we must build or acquire and maintain our rail system; trucks and barges are able to use public rights-of-way maintained by public entities. Any of the following could also affect the competitiveness of our transportation services for some or all of our commodities: (i) improvements or expenditures materially increasing the quality or reducing the costs of these alternative modes of transportation, (ii) legislation that eliminates or significantly increases the size or weight limitations applied to motor carriers, or (iii) legislation or regulatory changes that impose operating restrictions on railroads or that adversely affect the profitability of some or all railroad traffic. Finally, many movements face product or geographic competition where our customers can use different products (e.g. natural gas instead of coal, sorghum instead of corn) or commodities from different locations (e.g. grain from states or countries that we do not serve, crude oil from different regions). Sourcing different commodities or different locations allows shippers to substitute different carriers and such competition may reduce our volume or constrain prices. For more information regarding risks we face from competition, see the Risk Factors in Item 1A of this report.

Key Suppliers – We depend on two key domestic suppliers of high horsepower locomotives. Due to the capital intensive nature of the locomotive manufacturing business and sophistication of this equipment, potential new suppliers face high barriers of entry into this industry. Therefore, if one of these domestic suppliers discontinues manufacturing locomotives, supplying parts or providing maintenance for any reason, including insolvency or bankruptcy, we could experience a significant cost increase and risk reduced availability of the locomotives that are necessary to our operations. Additionally, for a high percentage of our rail purchases, we utilize two steel producers (one domestic and one international) that meet our specifications. Rail is critical for maintenance, replacement, improvement, and expansion of our network and facilities. Rail manufacturing also has high barriers of entry, and, if one of those suppliers

discontinues operations for any reason, including insolvency or bankruptcy, we could experience cost increases and difficulty obtaining rail.

Employees – Approximately 85% of our full-time employees are represented by 14 major rail unions. Pursuant to the Railway Labor Act (RLA), our collective bargaining agreements are subject to modification every five years. The RLA procedures include mediation, potential arbitration, cooling-off periods, and the possibility of Presidential Emergency Boards and Congressional intervention. The current round of negotiations began on January 1, 2020 related to years 2020-2024. Contract negotiations historically continue for an extended period of time, and work stoppages during negotiations are rare.

Railroad Security – Our security efforts consist of a wide variety of measures including employee training, engagement with our customers, training of emergency responders, and partnerships with numerous federal, state, and local government agencies. While federal law requires us to protect the confidentiality of our security plans designed to safeguard against terrorism and other security incidents, the following provides a general overview of our security initiatives.

UPRR Security Measures – We maintain a comprehensive security plan designed to both deter and respond to any potential or actual threats as they arise. The plan includes four levels of alert status, each with its own set of countermeasures. We employ our own police force, consisting of commissioned and highly-trained officers. Our employees also undergo recurrent security and preparedness training, as well as federally-mandated hazardous materials and security training. We regularly review the sufficiency of our employee training programs. We maintain the capability to move critical operations to back-up facilities in different locations.

We operate an emergency response management center 24 hours a day. The center receives reports of emergencies, dangerous or potentially dangerous conditions, and other safety and security issues from our employees, the public, law enforcement and other government officials. In cooperation with government officials, we monitor both threats and public events, and, as necessary, we may alter rail traffic flow at times of concern to minimize risk to communities and our operations. We comply with the hazardous materials routing rules and other requirements imposed by federal law. We also design our operating plan to expedite the movement of hazardous material shipments to minimize the time rail cars remain idle at yards and terminals located in or near major population centers. Additionally, in compliance with Transportation Security Agency regulations, we deployed information systems and instructed employees in tracking and documenting the handoff of Rail Security Sensitive Materials with customers and interchange partners.

We also have established a number of our own innovative safety and security-oriented initiatives ranging from various investments in technology to The Officer on Train program, which provides local law enforcement officers with the opportunity to ride with train crews to enhance their understanding of railroad operations and risks. Our staff of information security professionals continually assesses cyber security risks and implements mitigation programs that evolve with the changing technology threat environment. To date, we have not experienced any material disruption of our operations due to a cyber threat or attack directed at us.

Cooperation with Federal, State, and Local Government Agencies – We work closely on physical and cyber security initiatives with government agencies, including the U.S. Department of Transportation (DOT) and the Department of Homeland Security (DHS) as well as local police departments, fire departments, and other first responders. In conjunction with the Association of American Railroads (AAR), we sponsor Ask Rail, a mobile application which provides first responders with secure links to electronic information, including commodity and emergency response information required by emergency personnel to respond to accidents and other situations. We also participate in the National Joint Terrorism Task Force, a multi-agency effort established by the U.S. Department of Justice and the Federal Bureau of Investigation to combat and prevent terrorism.

We work with the Coast Guard, U.S. Customs and Border Protection (CBP), and the Military Transport Management Command, which monitor shipments entering the UPRR rail network at U.S. border crossings and ports. We were the first railroad in the U.S. to be named a partner in CBP's Customs-Trade Partnership Against Terrorism, a partnership designed to develop, enhance, and maintain effective security processes throughout the global supply chain.

Cooperation with Customers and Trade Associations – Through TransCAER (Transportation Community Awareness and Emergency Response) we work with the AAR, the American Chemistry Council, the American Petroleum Institute, and other chemical trade groups to provide communities with preparedness tools, including the training of emergency responders. In cooperation with the Federal Railroad Administration (FRA) and other interested groups, we are also working to develop additional improvements to tank car design that will further limit the risk of releases of hazardous materials.

GOVERNMENTAL AND ENVIRONMENTAL REGULATION

Governmental Regulation – Our operations are subject to a variety of federal, state, and local regulations, generally applicable to all businesses. (See also the discussion of certain regulatory proceedings in Legal Proceedings, Item 3.)

The operations of the Railroad are also subject to the regulatory jurisdiction of the Surface Transportation Board (STB). The STB has jurisdiction over rates charged on certain regulated rail traffic; common carrier service of regulated traffic; freight car compensation; transfer, extension, or abandonment of rail lines; and acquisition of control of rail common carriers. The STB continues its efforts to explore expanding rail regulation and is reviewing proposed rulemaking in various areas, including reciprocal switching, commodity exemptions, and expanding and easing procedures for smaller rate complaints. The STB also continues to develop a methodology for determining railroad revenue adequacy and the possible use of a revenue adequacy constraint in regulating railroad rates. The STB posts quarterly reports on rate reasonableness cases and maintains a database on service complaints, and has the authority to initiate investigations, among other things.

The operations of the Railroad also are subject to the regulations of the FRA and other federal and state agencies. In 2010, the FRA issued initial rules governing installation of Positive Train Control (PTC). PTC is a collision avoidance technology intended to override engineer controlled locomotives and stop train-to-train and overspeed accidents, misaligned switch derailments, and unauthorized entry to work zones. The Surface Transportation Extension Act of 2015 amended the Rail Safety Improvement Act to require implementation of PTC by the end of 2018, which deadline may be extended to December 31, 2020, provided certain other criteria are satisfied. On December 10, 2018, we received FRA approval for an alternative schedule to implement, test and refine our PTC during 2019-2020. As of December 31, 2019, PTC has been implemented and installed on 100 percent of our required rail lines, including required passenger train routes and interoperability efforts with other railroads will continue through 2020. Through 2019, we have invested approximately \$2.9 billion in the ongoing development of PTC. Final implementation of PTC will require us to adapt and integrate our system with other railroads whose implementation plan may be different than ours.

DOT, the Occupational Safety and Health Administration, the Pipeline and Hazardous Materials Safety Administration, and DHS, along with other federal agencies, have jurisdiction over certain aspects of safety, movement of hazardous materials and hazardous waste, emissions requirements, and equipment standards. Additionally, various state and local agencies have jurisdiction over disposal of hazardous waste and seek to regulate movement of hazardous materials in ways not preempted by federal law.

Environmental Regulation – We are subject to extensive federal and state environmental statutes and regulations pertaining to public health and the environment. The statutes and regulations are administered and monitored by the Environmental Protection Agency (EPA) and by various state environmental agencies. The primary laws affecting our operations are the Resource Conservation and Recovery Act, regulating the management and disposal of solid and hazardous wastes; the Comprehensive Environmental Response, Compensation, and Liability Act, regulating the cleanup of contaminated properties; the Clean Air Act, regulating air emissions; and the Clean Water Act, regulating waste water discharges.

Information concerning environmental claims and contingencies and estimated remediation costs is set forth in Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies – Environmental, Item 7 and Note 18 to the Consolidated Financial Statements in Item 8, Financial Statements and Supplementary Data.

Item 1A. Risk Factors

The following discussion addresses significant factors, events and uncertainties that make an investment in our securities risky and provides important information for the understanding of our “forward-looking statements,” which are discussed immediately preceding Item 7A of this Form 10-K and elsewhere. The risk factors set forth in this Item 1A should be read in conjunction with the rest of the information included in this report, including Management’s Discussion and Analysis of Financial Condition and Results of Operations, Item 7, and Financial Statements and Supplementary Data, Item 8.

We urge you to consider carefully the factors described below and the risks that they present for our operations, as well as the risks addressed in other reports and materials that we file with the SEC and the other information included or incorporated by reference in this Form 10-K. When the factors, events and contingencies described below or elsewhere in this Form 10-K materialize, our business, reputation, financial condition, results of operations, cash flows or prospects can be materially adversely affected. In such case, the trading price of our common stock could decline and you could lose part or all of your investment. Additional risks and uncertainties not currently known to us or that we currently deem immaterial may also materially adversely affect our business, reputation, financial condition, results of operations, cash flows and prospects.

We Must Manage Fluctuating Demand for Our Services and Network Capacity – If there are significant reductions in demand for rail services with respect to one or more commodities or changes in consumer preferences that affect the businesses of our customers, we may experience increased costs associated with resizing our operations, including higher unit operating costs and costs for the storage of locomotives, rail cars, and other equipment; work-force adjustments; and other related activities, which could have a material adverse effect on our results of operations, financial condition, and liquidity. If there is significant demand for our services that exceeds the designed capacity of our network, we may experience network difficulties, including congestion and reduced velocity, that could compromise the level of service we provide to our customers. This level of demand may also compound the impact of weather and weather-related events on our operations and velocity. Although we continue to improve our transportation plan, add capacity, improve operations at our yards and other facilities, and improve our ability to address surges in demand for any reason with adequate resources, we cannot be sure that these measures will fully or adequately address any service shortcomings resulting from demand exceeding our planned capacity. We may experience other operational or service difficulties related to network capacity, dramatic and unplanned fluctuations in our customers’ demand for rail service with respect to one or more commodities or operating regions, or other events that could negatively impact our operational efficiency, any of which could have a material adverse effect on our results of operations, financial condition, and liquidity.

We Transport Hazardous Materials – We transport certain hazardous materials and other materials, including crude oil, ethanol, and toxic inhalation hazard (TIH) materials, such as chlorine, that pose certain risks in the event of a release or combustion. Additionally, U.S. laws impose common carrier obligations on railroads that require us to transport certain hazardous materials regardless of risk or potential exposure to loss. A rail accident or other incident or accident on our network, at our facilities, or at the facilities of our customers involving the release or combustion of hazardous materials could involve significant costs and claims for personal injury, property damage, and environmental penalties and remediation in excess of our insurance coverage for these risks, which could have a material adverse effect on our results of operations, financial condition, and liquidity.

We Are Subject to Significant Governmental Regulation – We are subject to governmental regulation by a significant number of federal, state, and local authorities covering a variety of health, safety, labor, environmental, economic (as discussed below), and other matters. Many laws and regulations require us to obtain and maintain various licenses, permits, and other authorizations, and we cannot guarantee that we will continue to be able to do so. Our failure to comply with applicable laws and regulations could have a material adverse effect on us. Governments or regulators may change the legislative or regulatory frameworks within which we operate without providing us any recourse to address any adverse effects on our business, including, without limitation, regulatory determinations or rules regarding dispute resolution, increasing the amount of our traffic subject to common carrier regulation, business relationships with other railroads, calculation of our cost of capital or other inputs relevant to computing our revenue adequacy, the prices we charge, and costs and expenses. Significant legislative activity in Congress or regulatory activity by the STB could expand regulation of railroad operations and prices for rail services, which could reduce capital spending on our rail network, facilities and equipment and have a material adverse effect on our results of operations, financial condition, and liquidity. For example, enacted federal legislation mandated the implementation of PTC by December 31, 2020. Although we have completed implementation on all

required rail lines, final implementation of PTC will require us to adapt and integrate our system with other railroads whose implementation plan may be different than ours. This implementation could have a material adverse effect on our results of operations and financial condition. Additionally, one or more consolidations of Class I railroads could also lead to increased regulation of the rail industry.

We Are Affected by General Economic Conditions – Prolonged severe adverse domestic and global economic conditions or disruptions of financial and credit markets may affect the producers and consumers of the commodities we carry and may have a material adverse effect on our access to liquidity and our results of operations and financial condition.

We Face Competition from Other Railroads and Other Transportation Providers – We face competition from other railroads, motor carriers, ships, barges, and pipelines. In addition to price competition, we face competition with respect to transit times and quality and reliability of service. We must build or acquire and maintain our rail system, while trucks, barges and maritime operators are able to use public rights-of-way maintained by public entities. Any future improvements or expenditures materially increasing the quality or reducing the cost of alternative modes of transportation, or legislation that eliminates or significantly increases the size or weight limitations currently applicable to motor carriers, could have a material adverse effect on our results of operations, financial condition, and liquidity. Additionally, any future consolidation of the rail industry could materially affect the competitive environment in which we operate.

We Rely on Technology and Technology Improvements in Our Business Operations – We rely on information technology in all aspects of our business, including technology systems operated by us or under control of third parties. If we do not have sufficient capital to acquire new technology or if we are unable to develop or implement new technology such as PTC or the latest version of our transportation control systems, we may suffer a competitive disadvantage within the rail industry and with companies providing other modes of transportation service, which could have a material adverse effect on our results of operations, financial condition, and liquidity.

We Are Subject to Cybersecurity Risks – We rely on information technology in all aspects of our business, including technology systems operated by us or under control of third parties. Although we devote significant resources to protect our technology systems and proprietary data, we have experienced and will continue to experience varying degrees of cyber incidents in the normal course of business. While there can be no assurance that the systems we have designed to prevent or limit the effects of cyber incidents or attacks will be sufficient to prevent or detect such incidents or attacks, or to avoid a material adverse impact on our systems after such incidents or attacks do occur, we are continually evaluating attackers' techniques and tactics and we are diligent in our monitoring, training, planning and prevention. However, breach or circumvention of our systems or the systems of third parties, including by ransomware, other cyber attacks, or human error may result in significant service interruption, safety failure, other operational difficulties, unauthorized access to (or the loss of access to) competitively sensitive, confidential or other critical data or systems; loss of customers; financial losses; regulatory fines; and misuse or corruption of critical data and proprietary information, any of which could have a material adverse impact on our results of operations, financial condition, and liquidity.

We May Be Subject to Various Claims and Lawsuits That Could Result in Significant Expenditures – As a railroad with operations in densely populated urban areas and other cities and a vast rail network, we are exposed to the potential for various claims and litigation related to labor and employment, personal injury, property damage, environmental liability, and other matters. Any material changes to litigation trends or a catastrophic rail accident or series of accidents involving any or all of property damage, personal injury, and environmental liability that exceed our insurance coverage for such risks could have a material adverse effect on our results of operations, financial condition, and liquidity.

We Are Subject to Significant Environmental Laws and Regulations – Due to the nature of the railroad business, our operations are subject to extensive federal, state, and local environmental laws and regulations concerning, among other things, emissions to the air; discharges to waters; handling, storage, transportation, disposal of waste and other materials; and hazardous material or petroleum releases. We generate and transport hazardous and non-hazardous waste in our operations, and we did so in our former operations. Environmental liability can extend to previously owned or operated properties, leased properties, and properties owned by third parties, as well as to properties we currently own. Environmental liabilities have arisen and may also arise from claims asserted by adjacent landowners or other third parties in toxic tort litigation. We have been and may be subject to allegations or findings that we have violated, or are strictly liable under, these laws or regulations. We currently have certain obligations at existing sites for investigation, remediation and monitoring, and we likely will have obligations at other sites in the future.

Liabilities for these obligations affect our estimate based on our experience and, as necessary, the advice and assistance of our consultants. However, actual costs may vary from our estimates due to any or all of several factors, including changes to environmental laws or interpretations of such laws, technological changes affecting investigations and remediation, the participation and financial viability of other parties responsible for any such liability and the corrective action or change to corrective actions required to remediate any existing or future sites. We could incur significant costs as a result of any of the foregoing, and we may be required to incur significant expenses to investigate and remediate known, unknown, or future environmental contamination, which could have a material adverse effect on our results of operations, financial condition, and liquidity.

We May Be Affected by Climate Change and Market or Regulatory Responses to Climate Change – Climate change, including the impact of global warming, could have a material adverse effect on our results of operations, financial condition, and liquidity. Restrictions, caps, taxes, or other controls on emissions of greenhouse gasses, including diesel exhaust, could significantly increase our operating costs. Restrictions on emissions could also affect our customers that (a) use commodities that we carry to produce energy, (b) use significant amounts of energy in producing or delivering the commodities we carry, or (c) manufacture or produce goods that consume significant amounts of energy or burn fossil fuels, including chemical producers, farmers and food producers, and automakers and other manufacturers. Significant cost increases, government regulation, or changes of consumer preferences for goods or services relating to alternative sources of energy or emissions reductions could materially affect the markets for the commodities we carry, which in turn could have a material adverse effect on our results of operations, financial condition, and liquidity. Government incentives encouraging the use of alternative sources of energy could also affect certain of our customers and the markets for certain of the commodities we carry in an unpredictable manner that could alter our traffic patterns, including, for example, increasing royalties charged to producers of PRB coal by the U.S. Department of Interior and the impacts of ethanol incentives on farming and ethanol producers. Finally, we could face increased costs related to defending and resolving legal claims and other litigation related to climate change and the alleged impact of our operations on climate change. Any of these factors, individually or in operation with one or more of the other factors, or other unforeseen impacts of climate change could reduce the amount of traffic we handle and have a material adverse effect on our results of operations, financial condition, and liquidity.

Severe Weather Could Result in Significant Business Interruptions and Expenditures – As a railroad with a vast network, we are exposed to severe weather conditions and other natural phenomena, including earthquakes, hurricanes, fires, floods, mudslides or landslides, extreme temperatures, and significant precipitation. Line outages and other interruptions caused by these conditions can adversely affect our entire rail network and can adversely affect revenue, costs, and liabilities, which could have a material adverse effect on our results of operations, financial condition, and liquidity despite efforts we undertake to plan for these events.

Strikes or Work Stoppages Could Adversely Affect Our Operations – The U.S. Class I railroads are party to collective bargaining agreements with various labor unions. The majority of our employees belong to labor unions and are subject to these agreements. Disputes with regard to the terms of these agreements or our potential inability to negotiate acceptable contracts with these unions could result in, among other things, strikes, work stoppages, slowdowns, or lockouts, which could cause a significant disruption of our operations and have a material adverse effect on our results of operations, financial condition, and liquidity. Additionally, future national labor agreements, or renegotiation of labor agreements or provisions of labor agreements, could compromise our service reliability or significantly increase our costs for health care, wages, and other benefits, which could have a material adverse impact on our results of operations, financial condition, and liquidity. Labor disputes, work stoppages, slowdowns or lockouts at loading/unloading facilities, ports or other transport access points could compromise our service reliability and have a material adverse impact on our results of operations, financial condition, and liquidity. Labor disputes, work stoppages, slowdowns or lockouts by employees of our customers or our suppliers could compromise our service reliability and have a material adverse impact on our results of operations, financial condition, and liquidity.

The Availability of Qualified Personnel Could Adversely Affect Our Operations – Changes in demographics, training requirements, and the availability of qualified personnel could negatively affect our ability to meet demand for rail service. Unpredictable increases in demand for rail services and a lack of network fluidity may exacerbate such risks, which could have a negative impact on our operational efficiency and otherwise have a material adverse effect on our results of operations, financial condition, and liquidity.

We Are Affected By Fluctuating Fuel Prices – Fuel costs constitute a significant portion of our transportation expenses. Diesel fuel prices can be subject to dramatic fluctuations, and significant price increases could have a material adverse effect on our operating results. Although we currently are able to recover a significant amount of our fuel expenses from our customers through revenue from fuel surcharges, we cannot be certain that we will always be able to mitigate rising or elevated fuel costs through our fuel surcharges. Additionally, future market conditions or legislative or regulatory activities could adversely affect our ability to apply fuel surcharges or adequately recover increased fuel costs through fuel surcharges. As fuel prices fluctuate, our fuel surcharge programs trail such fluctuations in fuel price by approximately two months, and may be a significant source of quarter-over-quarter and year-over-year volatility, particularly in periods of rapidly changing prices. International, political, and economic factors, events and conditions affect the volatility of fuel prices and supplies. Weather can also affect fuel supplies and limit domestic refining capacity. A severe shortage of, or disruption to, domestic fuel supplies could have a material adverse effect on our results of operations, financial condition, and liquidity. Alternatively, lower fuel prices could have a positive impact on the economy by increasing consumer discretionary spending that potentially could increase demand for various consumer products we transport. However, lower fuel prices could have a negative impact on other commodities we transport, such as coal and domestic drilling-related shipments, which could have a material adverse effect on our results of operations, financial condition, and liquidity.

We Rely on Capital Markets – Due to the significant capital expenditures required to operate and maintain a safe and efficient railroad, we rely on the capital markets to provide some of our capital requirements. We utilize long-term debt instruments, bank financing and commercial paper from time-to-time, and we pledge certain of our receivables. Significant instability or disruptions of the capital markets, including the credit markets, or deterioration of our financial condition due to internal or external factors could restrict or prohibit our access to, and significantly increase the cost of, commercial paper and other financing sources, including bank credit facilities and the issuance of long-term debt, including corporate bonds. A significant deterioration of our financial condition could result in a reduction of our credit rating to below investment grade, which could restrict, or at certain credit levels below investment grade may prohibit us, from utilizing our current receivables securitization facility. This may also limit our access to external sources of capital and significantly increase the costs of short and long-term debt financing.

A Significant Portion of Our Revenue Involves Transportation of Commodities to and from International Markets – Although revenues from our operations are attributable to transportation services provided in the U.S., a significant portion of our revenues involves the transportation of commodities to and from international markets, including Mexico and Southeast Asia, by various carriers and, at times, various modes of transportation. Significant and sustained interruptions of trade with Mexico or countries in Southeast Asia, including China, could adversely affect customers and other entities that, directly or indirectly, purchase or rely on rail transportation services in the U.S. as part of their operations, and any such interruptions could have a material adverse effect on our results of operations, financial condition and liquidity. Any one or more of the following could cause a significant and sustained interruption of trade with Mexico or countries in Southeast Asia: (a) a deterioration of security for international trade and businesses; (b) the adverse impact of new laws, rules and regulations or the interpretation of laws, rules and regulations by government entities, courts or regulatory bodies, including replacing the North American Free Trade Agreement (NAFTA) with the ratification of the United States-Mexico-Canada Agreement (USMCA) and a “Phase One” trade agreement with China; (c) actions of taxing authorities that affect our customers doing business in foreign countries; (d) any significant adverse economic developments, such as extended periods of high inflation, material disruptions in the banking sector or in the capital markets of these foreign countries, and significant changes in the valuation of the currencies of these foreign countries that could materially affect the cost or value of imports or exports; (e) shifts in patterns of international trade that adversely affect import and export markets; (f) a material reduction in foreign direct investment in these countries; and (g) public health crises, including the outbreak of pandemic or contagious disease, such as the novel coronavirus.

We Are Subject to Legislative, Regulatory, and Legal Developments Involving Taxes – Taxes are a significant part of our expenses. We are subject to U.S. federal, state, and foreign income, payroll, property, sales and use, fuel, and other types of taxes. Changes in tax rates, such as those included in the Tax Cuts and Jobs Act, enactment of new tax laws, revisions of tax regulations, and claims or litigation with taxing authorities could result in a material effect to our results of operations, financial condition, and liquidity. Higher tax rates could have a material adverse effect on our results of operations, financial condition, and liquidity.

We Are Dependent on Certain Key Suppliers of Locomotives and Rail – Due to the capital intensive nature and sophistication of locomotive equipment, parts and maintenance, potential new suppliers face high barriers to entry. Therefore, if one of the domestic suppliers of high horsepower locomotives discontinues manufacturing locomotives, supplying parts or providing maintenance for any reason, including bankruptcy or insolvency, we could experience significant cost increases and reduced availability of the locomotives that are necessary for our operations. Additionally, for a high percentage of our rail purchases, we utilize two steel producers (one domestic and one international) that meet our specifications. Rail is critical to our operations for rail replacement programs, maintenance, and for adding additional network capacity, new rail and storage yards, and expansions of existing facilities. This industry similarly has high barriers to entry, and if one of these suppliers discontinues operations for any reason, including bankruptcy or insolvency, we could experience both significant cost increases for rail purchases and difficulty obtaining sufficient rail for maintenance and other projects. Changes to trade agreements or policies that result in increased tariffs on goods imported into the United States could also result in significant cost increases for rail purchases and difficulty obtaining sufficient rail.

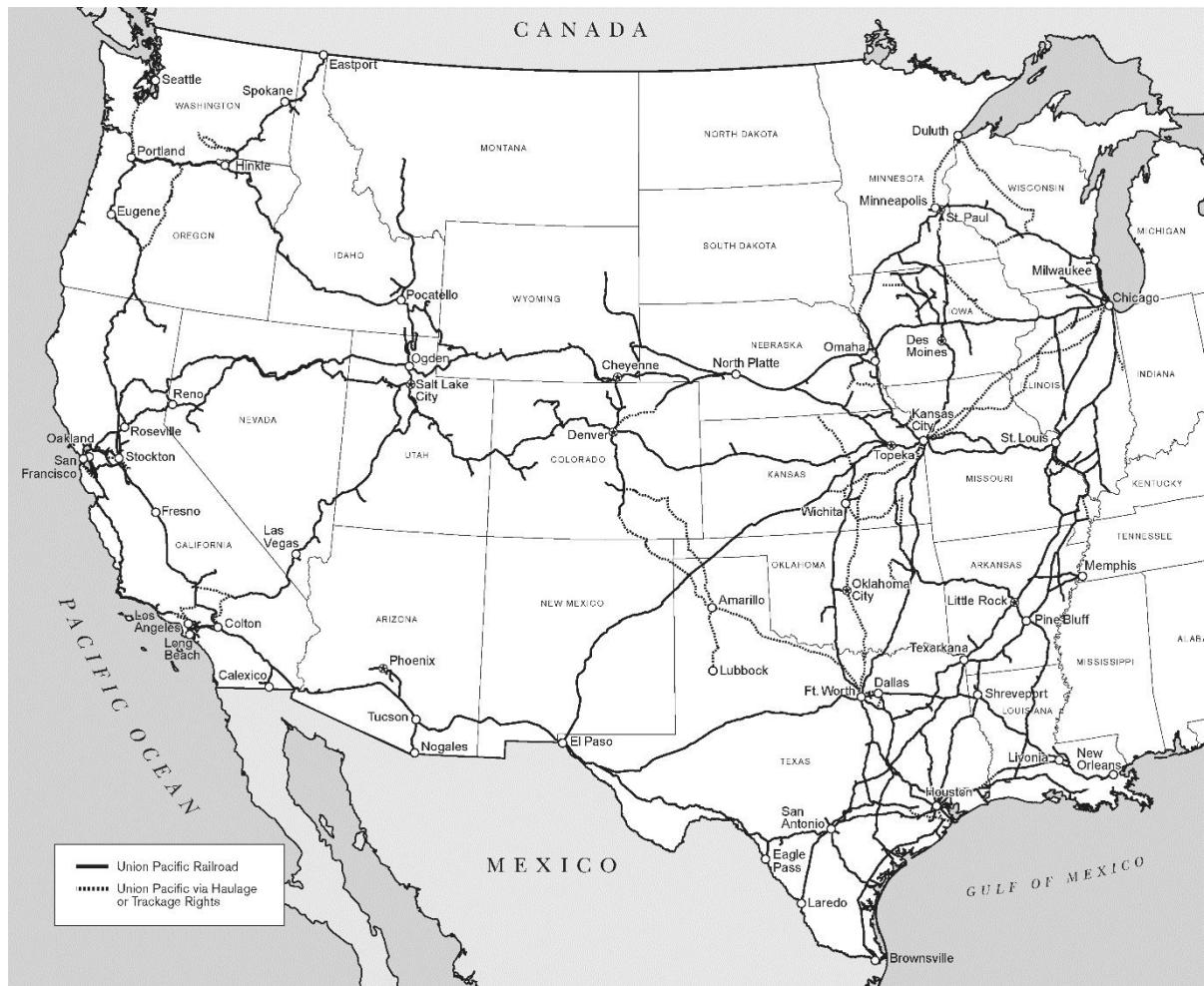
We May Be Affected by Acts of Terrorism, War, or Risk of War – Our rail lines, facilities, and equipment, including rail cars carrying hazardous materials, could be direct targets or indirect casualties of terrorist attacks. Terrorist attacks, or other similar events, any government response thereto, and war or risk of war may adversely affect our results of operations, financial condition, and liquidity. In addition, insurance premiums for some or all of our current coverages could increase dramatically, or certain coverages may not be available to us in the future.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We employ a variety of assets in the management and operation of our rail business. Our rail network covers 23 states in the western two-thirds of the U.S.



TRACK

Our rail network includes 32,340 route miles. We own 26,094 miles and operate on the remainder pursuant to trackage rights or leases. The following table describes track miles at December 31, 2019, and 2018:

	2019	2018
Route	32,340	32,236
Other main line	7,095	7,074
Passing lines and turnouts	3,301	3,274
Switching and classification yard lines	9,007	8,970
Total miles	51,743	51,554

HEADQUARTERS BUILDING

We own our headquarters building in Omaha, Nebraska. The facility has 1.2 million square feet of space that can accommodate approximately 4,000 employees.

HARRIMAN DISPATCHING CENTER

The Harriman Dispatching Center (HDC), located in Omaha, Nebraska, is our primary dispatching facility. It is linked to regional dispatching and locomotive management facilities at various locations along our network. HDC employees coordinate moves of locomotives and trains, manage traffic and train crews on our network, and coordinate interchanges with other railroads. Approximately 900 employees currently work on-site in the facility. In the event of a disruption of operations at HDC due to a cyber attack, flooding or severe weather or other event, we maintain the capability to conduct critical operations at back-up facilities in different locations.

RAIL FACILITIES

In addition to our track structure, we operate numerous facilities, including terminals for intermodal and other freight; rail yards for building trains (classification yards), switching, storage-in-transit (the temporary storage of customer goods in rail cars prior to shipment) and other activities; offices to administer and manage our operations; dispatching centers to direct traffic on our rail network; crew on duty locations for train crews along our network; and shops and other facilities for fueling, maintenance, and repair of locomotives and repair and maintenance of rail cars and other equipment. The following table includes the major yards and terminals on our system:

<i>Major Classification Yards</i>	<i>Major Intermodal Terminals</i>
North Platte, Nebraska	Joliet (Global 4), Illinois
North Little Rock, Arkansas	ICTF (Los Angeles), California
Englewood (Houston), Texas	East Los Angeles, California
Fort Worth, Texas	DIT (Dallas), Texas
Livonia, Louisiana	Marion (Memphis), Tennessee
West Colton, California	Global II (Chicago), Illinois
Proviso (Chicago), Illinois	City of Industry, California
Roseville, California	Global I (Chicago), Illinois

RAIL EQUIPMENT

Our equipment includes owned and leased locomotives and rail cars; heavy maintenance equipment and machinery; other equipment and tools in our shops, offices, and facilities; and vehicles for maintenance, transportation of crews, and other activities. As of December 31, 2019, we owned or leased the following units of equipment:

<i>Locomotives</i>	<i>Owned</i>	<i>Leased</i>	<i>Total</i>	<i>Average Age (yrs.)</i>
Multiple purpose	6,206	1,214	7,420	21.2
Switching	182	-	182	39.1
Other	28	61	89	40.2
Total locomotives	6,416	1,275	7,691	N/A

<i>Freight cars</i>	<i>Owned</i>	<i>Leased</i>	<i>Total</i>	<i>Average Age (yrs.)</i>
Covered hoppers	13,357	9,727	23,084	20.1
Open hoppers	5,781	2,330	8,111	31.4
Gondolas	5,662	2,152	7,814	28.2
Boxcars	2,430	6,639	9,069	38.1
Refrigerated cars	2,625	2,546	5,171	25.4
Flat cars	2,186	1,093	3,279	34.0
Other	3	345	348	31.4
Total freight cars	32,044	24,832	56,876	N/A

<i>Highway revenue equipment</i>	<i>Owned</i>	<i>Leased</i>	<i>Total</i>	<i>Average Age (yrs.)</i>
Containers	47,270	6,602	53,872	8.9
Chassis	30,446	17,408	47,854	11.2
Total highway revenue equipment	77,716	24,010	101,726	N/A

We continuously assess our need for equipment to run an efficient and reliable network. Many factors cause us to adjust the size of our active fleets, including changes in carload volume, weather events, seasonality, customer preferences and productivity initiatives. As some of these factors are difficult to assess or can change rapidly, we maintain a surge fleet to remain agile. Without the surge fleet, our ability to react quickly is hindered as equipment suppliers are limited and lead times to acquire equipment are long and may be in excess of a year. We believe that we have sufficient capacity to adapt to changes in freight volumes and adjust the utilization of our assets accordingly. Moreover, we believe our locomotive and freight car fleets are appropriately sized and suitable to meet our current and future business requirements. Locomotive and freight car in service utilization percentages for the year ended December 31, 2019 were 71% and 72%, respectively.

CAPITAL EXPENDITURES

Our rail network requires significant annual capital investments for replacement, improvement, and expansion. These investments enhance safety, support the transportation needs of our customers, and improve our operational efficiency. Additionally, we add new locomotives and freight cars to our fleet to replace older, less efficient equipment, to support growth and customer demand, and to reduce our impact on the environment through the acquisition of more fuel-efficient and low-emission locomotives.

2019 Capital Program – During 2019, our capital program totaled approximately \$3.2 billion. (See the cash capital investments table in Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources, Item 7.)

2020 Capital Plan – In 2020, we expect our capital plan to be approximately \$3.1 billion, down slightly compared to 2019. The plan includes expenditures for capacity and facility investments intended to improve productivity and operational efficiency. The capital plan may be revised if business conditions warrant or if new laws or regulations affect our ability to generate sufficient returns on these investments. (See further discussion of our 2020 capital plan in Management's Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources, Item 7.)

OTHER

Equipment Encumbrances – Equipment with a carrying value of approximately \$1.6 billion and \$1.8 billion at December 31, 2019, and 2018, respectively served as collateral for finance leases and other types of equipment obligations in accordance with the secured financing arrangements utilized to acquire or refinance such railroad equipment.

Environmental Matters – Certain of our properties are subject to federal, state, and local laws and regulations governing the protection of the environment. (See discussion of environmental issues in Business – Governmental and Environmental Regulation, Item 1, Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies – Environmental, Item 7, and Note 18 of the Consolidated Financial Statements.)

Item 3. Legal Proceedings

From time to time, we are involved in legal proceedings, claims, and litigation that occur in connection with our business. We routinely assess our liabilities and contingencies in connection with these matters based upon the latest available information and, when necessary, we seek input from our third-party advisors when making these assessments. Consistent with SEC rules and requirements, we describe below material pending legal proceedings (other than ordinary routine litigation incidental to our business), material proceedings known to be contemplated by governmental authorities, other proceedings arising under federal, state, or local environmental laws and regulations (including governmental proceedings involving potential fines, penalties, or other monetary sanctions in excess of \$100,000), and such other pending matters that we may determine to be appropriate.

ENVIRONMENTAL MATTERS

In October 2016, the Colorado Department of Public Health & Environment (the agency) expressed concerns over construction activities performed by UPRR inside the Moffat Tunnel. Those activities, which were deemed safety critical, had caused contaminants from inside the tunnel to be discharged into the adjacent Fraser River in violation of the tunnel's National Pollutant Discharge Elimination System (NPDES) permit. Following extensive discussions with the agency, and UPRR's commitment to install and operate best management practices (BMPs), the agency agreed to allow UPRR to resume safety-related construction activities. In February 2018, the agency issued a notice of violation (NOV) which alleged violations of State water laws and the NPDES permit. The NOV mandated a number of corrective actions to be implemented immediately and reserved for a later date the issue of penalties. In June 2019, the agency contacted UPRR to engage in discussions regarding an appropriate monetary penalty. In September 2019, the parties reached a preliminary agreement on the amount of the penalty of \$140,000. The agreement was finalized and the penalty payment was made on January 21, 2020 in the amount of \$140,000.

We receive notices from the EPA and state environmental agencies alleging that we are or may be liable under federal or state environmental laws for remediation costs at various sites throughout the U.S., including sites on the Superfund National Priorities List or state superfund lists. We cannot predict the ultimate impact of these proceedings and suits because of the number of potentially responsible parties involved, the degree of contamination by various wastes, the scarcity and quality of volumetric data related to many of the sites, and the speculative nature of remediation costs.

Information concerning environmental claims and contingencies and estimated remediation costs is set forth in Management's Discussion and Analysis of Financial Condition and Results of Operations – Critical Accounting Policies – Environmental, Item 7. See also Note 18 of the Consolidated Financial Statements.

OTHER MATTERS

Antitrust Litigation – As we reported in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2007, 20 rail shippers (many of whom are represented by the same law firms) filed virtually identical antitrust lawsuits in various federal district courts against us and four other Class I railroads in the U.S. Currently, UPRR and three other Class I railroads are the named defendants in the lawsuit. The original plaintiff filed the first of these claims in the U.S. District Court in New Jersey on May 14, 2007. These suits alleged that the named railroads engaged in price-fixing by establishing common fuel surcharges for certain rail traffic.

As previously reported in our Quarterly Report on Form 10-Q for the quarter ended September 30, 2019, an appellate hearing related to the U.S. District Court for the District of Columbia's denial of class certification for the rail shippers was held on September 28, 2018. On August 16, 2019, the U.S. Court of Appeals for the District of Columbia Circuit affirmed the decision of U.S. District Court denying class certification (the Certification Denial). Since the Certification Denial, approximately 50 lawsuits have been filed in federal court based on claims identical to those alleged in the class certification case. The Judicial Panel on Multidistrict Litigation is currently evaluating the appropriate forum and process for the administration of these cases. Union Pacific believes these claims are without merit.

As we reported in our Current Report on Form 8-K, filed on June 10, 2011, the Railroad received a complaint filed in the U.S. District Court for the District of Columbia on June 7, 2011, by Oxbow Carbon & Minerals LLC and related entities (Oxbow). The fuel surcharge antitrust claim remains and was stayed pending the decision on class certification discussed above. As a result of the Certification Denial, and the individual cases, a status conference with the Court is expected to determine how the case will proceed.

We continue to deny the allegations that our fuel surcharge programs violate the antitrust laws or any other laws. We believe that these lawsuits are without merit, and we will vigorously defend our actions. Therefore, we currently believe that these matters will not have a material adverse effect on any of our results of operations, financial condition, and liquidity.

In 2016, a lawsuit was filed in U.S. District Court for the Western District of Washington alleging violations of the Americans with Disabilities Act (ADA) and Genetic Information Nondiscrimination Act relating to Fitness for Duty requirements for safety sensitive positions.

On August 8, 2016, the U.S. District Court for the Western District of Washington granted plaintiffs' motion to transfer their claim to the U.S. District Court of Nebraska. On February 5, 2019, the U.S. District Court of Nebraska granted plaintiffs' motion to certify the ADA allegations as a class action. We were granted the right to appeal this class certification to the U.S. Court of Appeals for the Eighth Circuit on March 13, 2019. The matter was argued before the U.S. Court of Appeals for the Eighth Circuit in November 2019. The District Court proceedings have been stayed pending the decision by the Eighth Circuit. We continue to deny these allegations, believe this lawsuit is without merit and will defend our actions. We believe this lawsuit will not have a material adverse effect on any of our results of operations, financial condition, and liquidity.

Item 4. Mine Safety Disclosures

Not applicable.

Information About Our Executive Officers and Principal Executive Officers of Our Subsidiaries

The Board of Directors typically elects and designates our executive officers on an annual basis at the board meeting held in conjunction with the Annual Meeting of Shareholders, and they hold office until their successors are elected. Executive officers also may be elected and designated throughout the year, as the Board of Directors considers appropriate. There are no family relationships among the officers, nor is there any arrangement or understanding between any officer and any other person pursuant to which the officer was selected. The following table sets forth certain information current as of February 7, 2020, relating to the executive officers.

<u>Name</u>	<u>Position</u>	<u>Age</u>	Business Experience During Past Five Years
Lance M. Fritz	Chairman, President and Chief Executive Officer of UPC and the Railroad	57	[1]
Jennifer L. Hamann	Executive Vice President and Chief Financial Officer of UPC and the Railroad	52	[2]
Rhonda S. Ferguson	Executive Vice President and Chief Legal Officer and Corporate Secretary of UPC and the Railroad	50	[3]
Thomas A. Lischer	Executive Vice President - Operations of the Railroad	47	[4]
Kenny G. Rocker	Executive Vice President - Marketing and Sales of the Railroad	48	[5]
Todd M. Rynaski	Vice President and Controller of UPC and the Railroad	49	[6]
V. James Vena	Chief Operating Officer of UPC and the Railroad	61	[7]
Elizabeth F. Whited	Executive Vice President and Chief Human Resources Officer of UPC and the Railroad	54	[8]

- [1] On July 30, 2015, Mr. Fritz was named Chairman of the Board of UPC and the Railroad effective October 1, 2015. Mr. Fritz was elected President and Chief Executive Officer of UPC and the Railroad effective February 5, 2015. Previously, Mr. Fritz was President and Chief Operating Officer of the Railroad effective February 6, 2014.
- [2] Ms. Hamann was elected Executive Vice President and Chief Financial Officer of UPC and the Railroad effective January 1, 2020. She previously served as Senior Vice President-Finance (April 2019 – December 2019), Vice President-Planning & Analysis (October 2017 – March 2019), Vice President & General Manager-Autos (February 2016 – September 2017), and General Auditor (April 2011 – January 2016).
- [3] Ms. Ferguson was elected Corporate Secretary of UPC and the Railroad effective December 1, 2017, and Executive Vice President and Chief Legal Officer of UPC and the Railroad effective July 11, 2016. She previously was Vice President, Corporate Secretary and Chief Ethics Officer of FirstEnergy Corp. since 2007.
- [4] Mr. Lischer was elected Executive Vice President – Operations of the Railroad effective August 15, 2018. Previously, Mr. Lischer served as Vice President of the Harriman Dispatching Center and Network Operations for the Railroad. Prior to this election, Mr. Lischer served as Assistant Vice President of Operations for the North Region (September 2016 – April 2017) and Assistant Vice President of Locomotive Distribution and Network Operations (April 2014 – September 2016).
- [5] Mr. Rocker was elected Executive Vice President – Marketing and Sales of the Railroad effective August 15, 2018. Mr. Rocker previously served at the Railroad as Vice President – Marketing and Sales – Industrial team. Prior to this election, Mr. Rocker served as Assistant Vice President – Chemicals (April 2014 – September 2016).
- [6] Mr. Rynaski was elected Vice President and Controller of UPC and the Railroad effective September 1, 2015. He previously was Assistant Vice President – Accounting of the Railroad effective January 1, 2014.
- [7] Mr. Vena was elected Chief Operating Officer of UPC and the Railroad effective January 14, 2019. Mr. Vena previously served as Executive Vice President and Chief Operating Officer of Canadian National Railway Company (CN) from February 2013 until his retirement in June 2016.
- [8] Ms. Whited was elected Executive Vice President and Chief Human Resources Officer of UPC and the Railroad effective August 15, 2018. She previously served as Executive Vice President and Chief Marketing Officer (December 2016 – August 2018) and Vice President and General Manager – Chemicals (October 2012 – December 2016).

PART II

Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

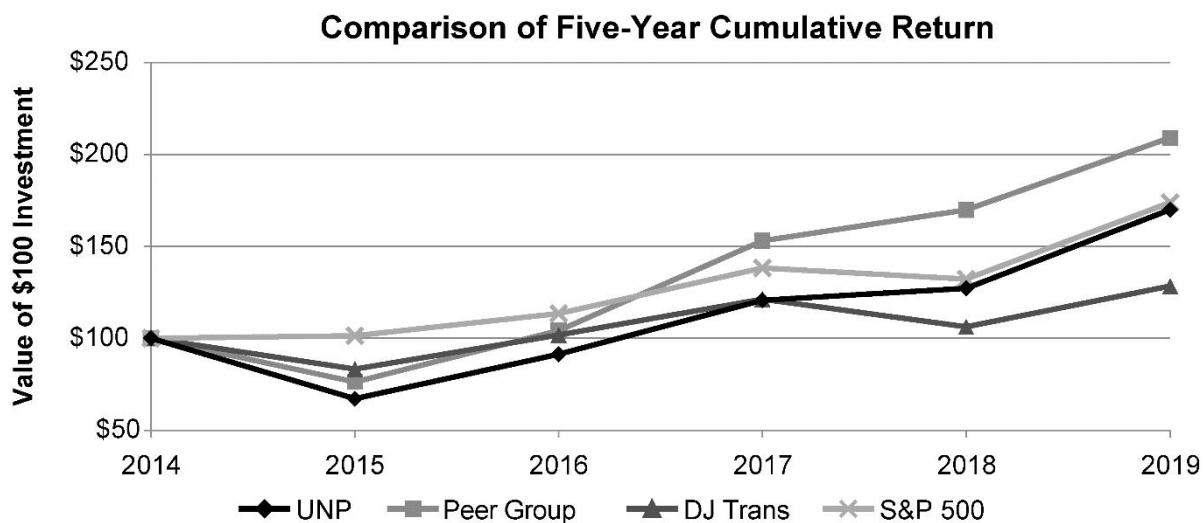
Our common stock is traded on the New York Stock Exchange (NYSE) under the symbol "UNP".

At January 31, 2020, there were 690,261,490 shares of common stock outstanding and 30,183 common shareholders of record. On that date, the closing price of the common stock on the NYSE was \$179.42. We paid dividends to our common shareholders during each of the past 120 years.

Comparison Over One- and Three-Year Periods – The following table presents the cumulative total shareholder returns, assuming reinvestment of dividends, over one- and three-year periods for the Corporation (UNP), a peer group index (comprised of CSX Corporation and Norfolk Southern Corporation), the Dow Jones Transportation Index (DJ Trans), and the Standard & Poor's 500 Stock Index (S&P 500).

Period	UNP	Peer Group	DJ Trans	S&P 500
1 Year (2019)	33.7 %	24.8 %	20.8 %	31.5 %
3 Year (2017 - 2019)	86.1	101.2	26.1	53.1

Five-Year Performance Comparison – The following graph provides an indicator of cumulative total shareholder returns for the Corporation as compared to the peer group index (described above), the DJ Trans, and the S&P 500. The graph assumes that \$100 was invested in the common stock of Union Pacific Corporation and each index on December 31, 2014 and that all dividends were reinvested. The information below is historical in nature and is not necessarily indicative of future performance.



Purchases of Equity Securities – During 2019, we repurchased 35,638,112 shares of our common stock at an average price of \$165.77. The following table presents common stock repurchases during each month for the fourth quarter of 2019:

Period	Total Number of Shares Purchased [a]	Average Price Paid Per Share	Total Number of Shares Purchased as Part of a Publicly Announced Plan or Program	Maximum Number of Shares Remaining Under the Plan or Program [b]
Oct. 1 through Oct. 31	1,896,014	\$ 159.31	1,888,893	134,848,400
Nov. 1 through Nov. 30	746,296	176.00	732,094	134,116,306
Dec. 1 through Dec. 31	965,841	176.47	961,225	133,155,081
Total	3,608,151	\$ 167.36	3,582,212	N/A

[a] Total number of shares purchased during the quarter includes approximately 25,939 shares delivered or attested to UPC by employees to pay stock option exercise prices, satisfy excess tax withholding obligations for stock option exercises or vesting of retention units, and pay withholding obligations for vesting of retention shares.

[b] Effective April 1, 2019, our Board of Directors authorized the repurchase of up to 150 million shares of our common stock by March 31, 2022, replacing our previous repurchase program. These repurchases may be made on the open market or through other transactions. Our management has sole discretion with respect to determining the timing and amount of these transactions.

Item 6. Selected Financial Data

The following table presents as of, and for the years ended, December 31, our selected financial data for each of the last five years. The selected financial data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations, Item 7, and with the Financial Statements and Supplementary Data, Item 8. The information below is historical in nature and is not necessarily indicative of future financial condition or results of operations.

Millions, Except per Share Amounts, Carloads, Employee Statistics, and Ratios	2019	2018	2017[a]	2016	2015
For the Year Ended December 31					
Operating revenues [b]	\$ 21,708	\$ 22,832	\$ 21,240	\$ 19,941	\$ 21,813
Operating income	8,554	8,517	8,106	7,243	8,082
Net income	5,919	5,966	10,712	4,233	4,772
Earnings per share - basic	8.41	7.95	13.42	5.09	5.51
Earnings per share - diluted	8.38	7.91	13.36	5.07	5.49
Dividends declared per share	3.70	3.06	2.48	2.255	2.20
Cash provided by operating activities	8,609	8,686	7,230	7,525	7,344
Cash used in investing activities	(3,435)	(3,411)	(3,086)	(3,393)	(4,476)
Cash used in financing activities	(5,646)	(5,222)	(4,146)	(4,246)	(3,063)
Cash used for share repurchase programs	(5,804)	(8,225)	(4,013)	(3,105)	(3,465)
At December 31					
Total assets	\$ 61,673	\$ 59,147	\$ 57,806	\$ 55,718	\$ 54,600
Long-term obligations [c]	39,194	34,098	29,011	32,146	30,692
Debt due after one year	23,943	20,925	16,144	14,249	13,607
Common shareholders' equity	18,128	20,423	24,856	19,932	20,702
Additional Data					
Freight revenues [b]	\$ 20,243	\$ 21,384	\$ 19,837	\$ 18,601	\$ 20,397
Revenue carloads (units) (000)	8,346	8,908	8,588	8,442	9,062
Operating ratio (%) [d]	60.6	62.7	61.8	63.7	62.9
Average employees (000)	37.5	42.0	42.0	42.9	47.5
Financial Ratios (%)					
Return on average common shareholders' equity [e]	30.7	26.4	47.8	20.8	22.8

- [a] 2017 includes a \$5.9 billion non-cash reduction to income tax expense and \$212 million non-cash reduction to operating expenses related to the Tax Cuts and Jobs Act enacted on December 22, 2017.
- [b] Includes fuel surcharge revenue of \$1.6 billion, \$1.7 billion, \$966 million, \$560 million, and \$1.3 billion for 2019, 2018, 2017, 2016, and 2015, respectively, which partially offsets increased operating expenses for fuel. (See further discussion in Management's Discussion and Analysis of Financial Condition and Results of Operations – Item 7.)
- [c] Long-term obligations is determined as follows: total liabilities less current liabilities.
- [d] Operating ratio is defined as operating expenses divided by operating revenues.
- [e] Return on average common shareholders' equity is determined as follows: Net income divided by average common shareholders' equity.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion should be read in conjunction with the Consolidated Financial Statements and applicable notes to the Financial Statements and Supplementary Data, Item 8, and other information in this report, including Risk Factors set forth in Item 1A and Critical Accounting Policies and Cautionary Information at the end of this Item 7. The following section generally discusses 2019 and 2018 items and year-to-year comparisons between 2019 and 2018. Discussions of 2017 items and year-to-year comparisons between 2018 and 2017 that are not included in this Form 10-K can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7 of the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018.

The Railroad, along with its subsidiaries and rail affiliates, is our one reportable business segment. Although revenue is analyzed by commodity, we analyze the net financial results of the Railroad as one segment due to the integrated nature of the rail network.

EXECUTIVE SUMMARY

2019 Results

Safety – While 2019 was a year of significant operational change at the Company, we remained committed to the safety of our employees, our customers and the public. As we implemented Unified Plan 2020, we remained focused on identifying and managing risk and training our employees as their work environment changed. Despite these efforts, our safety results were not good enough. Our personal injury incidents per 200,000 employee-hours increased 11% from 2018 and our reportable derailment incident rate per million train miles increased 30%. Although there was a significant increase in reportable derailments for the year, we did see sequential improvement in the fourth quarter. We want every employee to return home safely every day and to eliminate all derailments, so we must do better in 2020 by identifying and implementing best practices in this ever changing environment.

Network Operations: Unified Plan 2020 – The year began with a series of significant weather events. Heavy snowfall and harsh winter conditions in the Midwest and Pacific Northwest were followed by widespread flooding across the central and southern portions of our network. Despite the disruptions, we remained focused on the implementation of Unified Plan 2020, the Company's plan for operating a safe, reliable and efficient railroad by increasing reliability of our service product, reducing variability in network operations, and improving resource utilization costs.

Although our operational changes were impacted by weather in the early part of 2019, our key performance indicators have improved substantially year-over-year. Improvement in asset utilization and fewer car classifications led to 17% improvement in freight car terminal dwell and 6% improvement in freight car velocity. We also saw 13% improvement in locomotive productivity and 2% improvement in work force productivity. Additional detail on these metrics are discussed in Other Operating / Performance and Financial Statistics of Item 7.

A component of Unified Plan 2020 is to look for ways to reduce "car touches" on our network, which ultimately results in opportunities to reduce the number of terminals where we perform switching activities. Our terminal rationalization efforts in 2019 include no longer humping cars at our yards in Pine Bluff, AR, Proviso (Chicago), IL, Hinkle, OR and Neff yard in Kansas City, MO. In addition, we have curtailed switching and equipment maintenance operations at various locations throughout the network.

Freight Revenues – Our freight revenues decreased 5% year-over-year to \$20.2 billion driven by a volume decline of 6% and negative mix of traffic, partially offset by core pricing gains. We saw weak demand in several markets, particularly intermodal, coal, frac sand, grain, finished vehicles and lumber. These declines were partially offset by growth in petroleum products, construction materials, plastics, wheat and hazardous waste markets.

Financial Results – In 2019, we generated operating income of \$8.6 billion, flat with 2018 despite the 6% carload decline. Lower volumes, productivity initiatives and lower fuel prices drove operating expenses down 8% from 2018. These factors coupled with improved pricing offset the impact of the revenue decline and drove an all-time record 60.6% operating ratio, improving 2.1 points from 2018.

Net income of nearly \$6.0 billion translated into earnings of \$8.38 per diluted share, up 6% from last year.

Fuel Prices – Our average price of diesel fuel in 2019 was \$2.13 per gallon, a decrease of 7% from 2018. The lower price resulted in lower operating expenses of \$144 million (excluding any impact from year-over-year volume declines). Gross-ton miles decreased 9% and our fuel consumption rate, computed as gallons of fuel consumed divided by gross ton-miles, improved 2%, both of which drove lower fuel expense.

Cash Provided by Operating Activities and Free Cash Flow – Cash generated by operating activities totaled nearly \$8.6 billion, yielding free cash flow of \$2.6 billion after reductions of \$3.4 billion for cash used in investing activities and \$2.6 billion in dividends, which included two 10% increases in our quarterly dividend per share from \$0.80 in the fourth quarter of 2018 to \$0.88 in the first quarter of 2019 and \$0.97 in the third quarter of 2019. Free cash flow is defined as cash provided by operating activities less cash used in investing activities and dividends paid.

Free cash flow is not considered a financial measure under GAAP by SEC Regulation G and Item 10 of SEC Regulation S-K and may not be defined and calculated by other companies in the same manner. We believe free cash flow is important to management and investors in evaluating our financial performance and measures our ability to generate cash without additional external financings. Free cash flow should be considered in addition to, rather than as a substitute for, cash provided by operating activities. The following table reconciles cash provided by operating activities (GAAP measure) to free cash flow (non-GAAP measure):

Millions	2019	2018	2017
Cash provided by operating activities	\$ 8,609	\$ 8,686	\$ 7,230
Cash used in investing activities	(3,435)	(3,411)	(3,086)
Dividends paid	(2,598)	(2,299)	(1,982)
Free cash flow	\$ 2,576	\$ 2,976	\$ 2,162

2020 Outlook

Safety – Operating a safe railroad benefits all our constituents: our employees, customers, shareholders and the communities we serve. We will continue using a multi-faceted approach to safety, utilizing technology, risk assessment, training and employee engagement, quality control, and targeted capital investments. We will continue using and expanding the deployment of Total Safety Culture, Courage to Care and COMMIT (Coaching, Observing, Mentoring and Motivating with Integrity and Trust) throughout our operations, which allows us to identify and implement best practices for employee and operational safety. We have formed an Operating Practices Command Center to identify causes of mainline service interruptions and develop solutions. In addition, they assist employees with understanding policies, procedures and best practices for handling trains. We will continue our efforts to utilize data to identify and mitigate risk; detect rail defects; improve or close crossings; and educate the public and law enforcement agencies about crossing safety through a combination of our own programs (including risk assessment strategies), industry programs and local community activities across the network.

Network Operations – In 2020, we will continue to implement Unified Plan 2020 and G55+0 initiatives to further increase reliability of our service product, reduce variability in network operations, and improve resource utilization. Continued implementation of these initiatives will include utilizing our existing network capacity, longer train length, and fewer car touches resulting in additional terminal consolidation opportunities, improved asset utilization, and fewer car classifications. These additional changes, combined with other G55+0 initiatives, are designed to better align our management structure and decision making processes to be more agile and responsive to our customers' needs.

Market Conditions – We expect uncertainties in various markets to continue in 2020. Similar to 2019, natural gas prices and weather conditions may impact demand for coal; crude oil price spreads may drive demand for petroleum products and drilling materials; available truck capacity could impact our intermodal business; and international trade agreements such as United States-Mexico-Canada Agreement and "Phase One" with China should promote trade.

Fuel Prices – Projections for crude oil and natural gas continue to fluctuate in the current environment. We again could see volatile fuel prices during the year, as they are sensitive to global and U.S. domestic demand, refining capacity, geopolitical events, weather conditions and other factors. As prices fluctuate, there will be a timing impact on earnings, as our fuel surcharge programs trail increases or decreases in fuel price by approximately two months.

Significant changes in fuel prices could have an impact on the amount of consumer discretionary spending, impacting demand for various consumer products we transport. Alternatively, those changes could have an inverse impact on commodities such as coal and domestic drilling-related shipments.

Capital Plan – In 2020, we expect our capital plan to be approximately \$3.1 billion, down slightly compared to 2019. It is anticipated that capital spending in most asset categories will be flat or down compared to 2019 spending. In addition, this plan includes an increase in capacity and facility investments intended to improve productivity and operational efficiency. The capital plan may be revised if business conditions warrant or if new laws or regulations affect our ability to generate sufficient returns on these investments. (See further discussion in this Item 7 under Liquidity and Capital Resources – Capital Plan).

Financial Expectations – We expect volume to be slightly positive in 2020 compared to 2019. In the current environment, we expect continued margin improvement driven by pricing opportunities in excess of inflation, ongoing G55+0 productivity initiatives, including Unified Plan 2020, resulting in at least \$500 million of productivity savings, while better leveraging our resources and strengthening our franchise.

RESULTS OF OPERATIONS

Operating Revenues

Millions	2019	2018	2017	% Change		% Change 2018 v 2017
				2019 v 2018	2018 v 2017	
Freight revenues	\$ 20,243	\$ 21,384	\$ 19,837	(5)%	8 %	
Other subsidiary revenues	880	881	885	-	-	
Accessorial revenues	514	502	458	2	10	
Other	71	65	60	9	8	
Total	\$ 21,708	\$ 22,832	\$ 21,240	(5)%	7 %	

We generate freight revenues by transporting freight or other materials from our four commodity groups. Freight revenues vary with volume (carloads) and average revenue per car (ARC). Changes in price, traffic mix and fuel surcharges drive ARC. Customer incentives, which are primarily provided for shipping to/from specific locations or based on cumulative volumes, are recorded as a reduction to operating revenues. Customer incentives that include variable consideration based on cumulative volumes are estimated using the expected value method, which is based on available historical, current, and forecasted volumes, and recognized as the related performance obligation is satisfied. We recognize freight revenues over time as shipments move from origin to destination. The allocation of revenue between reporting periods is based on the relative transit time in each reporting period with expenses recognized as incurred.

Other revenues consist primarily of revenues earned by our other subsidiaries (primarily logistics and commuter rail operations) and accessorial revenues. Other subsidiary revenues are generally recognized over time as shipments move from origin to destination. The allocation of revenue between reporting periods is based on the relative transit time in each reporting period with expenses recognized as incurred. Accessorial revenues are recognized at a point in time as performance obligations are satisfied.

Freight revenues decreased 5% year-over-year to \$20.2 billion driven by a 6% volume decline and negative mix of traffic, partially offset by core pricing gains. We saw weak demand in several markets, particularly intermodal, coal, frac sand, grain, finished vehicles and lumber. These declines were partially offset by growth in petroleum products, construction materials, plastics, wheat and hazardous waste markets.

Our fuel surcharge programs generated freight revenues of \$1.6 billion and \$1.7 billion in 2019 and 2018, respectively. Fuel surcharge revenue in 2019 decreased \$183 million as a result of a 6% decline in carloadings and a 7% decrease in fuel price.

In 2019, other revenues increased from 2018 driven by higher accessorial charges focused on incentivizing customers' efficient use of Company assets partially offset by volume declines.

The following tables summarize the year-over-year changes in freight revenues, revenue carloads, and ARC by commodity type:

Freight Revenues		2019		2018		% Change		% Change
	Millions	\$	2019	\$	2018	\$	2019 v 2018	2018 v 2017
Agricultural Products		\$ 4,444	\$ 4,469	\$ 4,303	(1)%		4 %	
Energy		\$ 3,761	4,608	4,498	(18)		2	
Industrial		\$ 5,796	5,679	5,204	2		9	
Premium		\$ 6,242	6,628	5,832	(6)		14	
Total		\$ 20,243	\$ 21,384	\$ 19,837	(5)%		8 %	

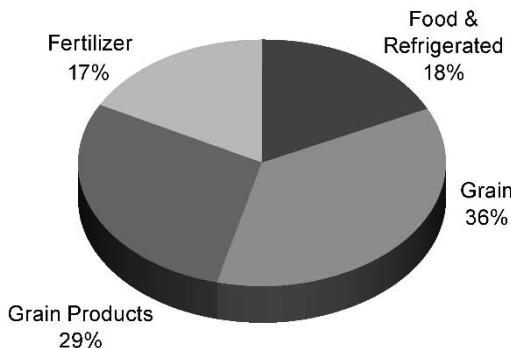
Revenue Carloads		2019		2018		% Change		% Change
	Thousands	\$	2019	\$	2018	\$	2019 v 2018	2018 v 2017
Agricultural Products		\$ 1,091	1,124	\$ 1,141	(3)%		(1)%	
Energy		\$ 1,408	1,650	1,676	(15)		(2)	
Industrial		\$ 1,787	1,752	1,655	2		6	
Premium [a]		\$ 4,060	4,382	4,116	(7)		6	
Total		\$ 8,346	8,908	8,588	(6)%		4 %	

Average Revenue per Car		2019		2018		% Change		% Change
	Thousands	\$	2019	\$	2018	\$	2019 v 2018	2018 v 2017
Agricultural Products		\$ 4,072	\$ 3,973	\$ 3,770	2 %		5 %	
Energy		\$ 2,671	2,793	2,685	(4)		4	
Industrial		\$ 3,244	3,241	3,145	-		3	
Premium		\$ 1,538	1,513	1,417	2		7	
Average		\$ 2,425	\$ 2,400	\$ 2,310	1 %		4 %	

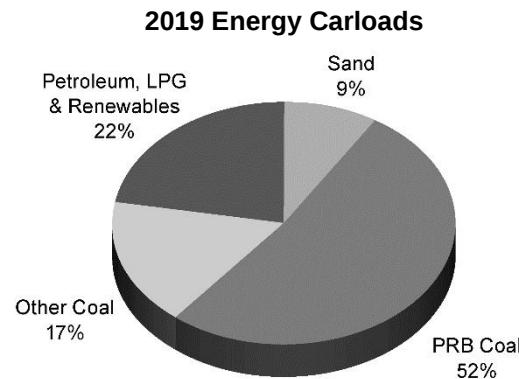
[a] For intermodal shipments, each container or trailer equals one carload.

Agricultural Products – Freight revenue from agricultural products shipments decreased in 2019 compared to 2018 due to 3% volume decline partially offset by core pricing gains. Declines in export grain and grain products were partially offset by stronger wheat shipments compared to 2018. The volume declines were also impacted by weather-related challenges experienced in the first half of 2019.

2019 Agricultural Products Carloads



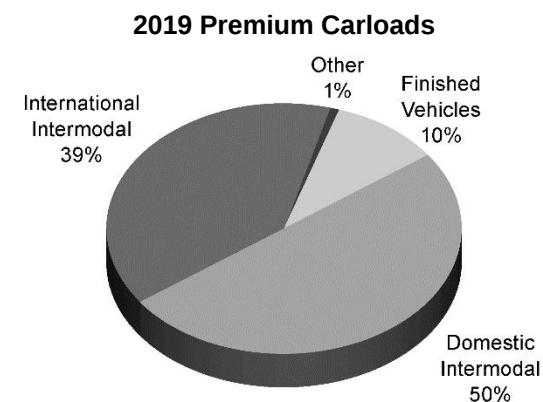
Energy – Freight revenue from energy shipments decreased in 2019 compared to 2018 due to a 15% decrease in volume and negative mix of traffic, partially offset by core pricing gains. Frac sand shipments declined 48% compared to last year as regional sand supplies displaced select shipments originating from the upper Midwest. Coal and coke shipments declined 16% primarily due to lower natural gas prices, decreased exports and losses of commercial contracts. In addition, weather related challenges experienced in the first half of 2019 also contributed to the volume declines. Growth in petroleum shipments (both crude and refined) due to strong drilling activity partially offset the sand and coal volume losses.



Industrial – Freight revenue from industrial shipments increased in 2019 versus 2018 due to core pricing gains and volume growth partially offset by negative mix of traffic. Volume increased 2% compared to 2018 driven by strong demand in construction products and plastics, while forest products shipments decreased due to softness in the lumber and paper markets. Volume levels were also impacted by weather-related challenges experienced in the first half of 2019.



Premium – Freight revenue from premium shipments decreased in 2019 compared to 2018 due to volume declines, partially offset by core pricing gains. Volume decreased 7% compared to 2018 driven by lower domestic intermodal shipments, including containerized automotive parts, due to increased truck competition. Weak market conditions reflecting trade uncertainty and escalating tariffs contributed to the volume reductions as international shipments were 6% lower. Weakness in the second half of the year more than offset the strength in the first half of the year due to the tariff-related surge in January shipments and newly secured business. Volumes were also unfavorably impacted by weather-related challenges experienced in the first half of 2019.



Mexico Business – Each of our commodity groups includes revenue from shipments to and from Mexico. Revenue from Mexico business was \$2.3 billion in 2019, down 6% compared to

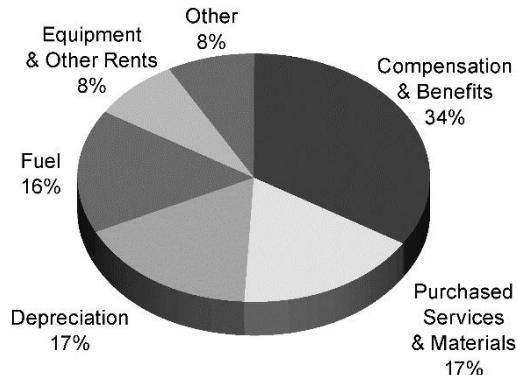
2018, driven by a 7% decline in volume partially offset by core pricing gains. The decrease in volume was driven by fewer shipments of automotive parts, grain, coal, intermodal and finished vehicles partially offset by growth in petroleum products, metallic minerals, beverages and industrial chemicals shipments.

Operating Expenses

Millions	2019	2018	2017	% Change 2019 v 2018	% Change 2018 v 2017
Compensation and benefits	\$ 4,533	\$ 5,056	\$ 4,939	(10)%	2 %
Purchased services and materials	2,254	2,443	2,363	(8)	3
Depreciation	2,216	2,191	2,105	1	4
Fuel	2,107	2,531	1,891	(17)	34
Equipment and other rents	984	1,072	888	(8)	21
Other	1,060	1,022	948	4	8
Total	\$ 13,154	\$ 14,315	\$ 13,134	(8)%	9 %

Operating expenses decreased \$1.2 billion in 2019 compared to 2018 driven by productivity improvements, cost savings from lower volume and lower fuel prices. Increased costs due to inflation, higher casualty costs and depreciation partially offset these decreases compared to 2018. In addition, expenses were impacted favorably due to the employment tax refund (Railroad Retirement Taxes paid on certain stock awards to its employees and certain bonus payments it made to labor agreement employees), and negatively due to the first half weather-related challenges (net of insurance recovery recognized in the fourth quarter).

2019 Operating Expenses



Compensation and Benefits – Compensation and benefits include wages, payroll taxes, health and welfare costs, pension costs, other postretirement benefits, and incentive costs. In 2019, expenses decreased 10% compared to 2018, due to volume-related costs, reduced workforce levels and the employment tax refund. Wage inflation, weather-related challenges and workforce reduction expenses partially offset the year-over-year improvement.

Fuel – Fuel includes locomotive fuel and gasoline for highway and non-highway vehicles and heavy equipment. Locomotive diesel fuel prices, which averaged \$2.13 per gallon (including taxes and transportation costs) in 2019, compared to \$2.29 per gallon in 2018, decreased expenses \$144 million. Gross-ton miles decreased 9% and our fuel consumption rate, computed as gallons of fuel consumed divided by gross ton-miles, improved 2%, which both drove lower fuel expense.

Purchased Services and Materials – Expense for purchased services and materials includes the costs of services purchased from outside contractors and other service providers (including equipment maintenance and contract expenses incurred by our subsidiaries for external transportation services); materials used to maintain the Railroad's lines, structures, and equipment; costs of operating facilities jointly used by UPRR and other railroads; transportation and lodging for train crew employees; trucking and contracting costs for intermodal containers; leased automobile maintenance expenses; and tools and supplies. Purchased services and materials decreased 8% in 2019 compared to 2018 primarily due to volume-related costs for intermodal and transload services, lower locomotive expense due to a smaller active fleet, and lower costs for services purchased from outside contractors. Higher costs associated with derailments and weather-related challenges partially offset these reductions.

Depreciation – The majority of depreciation relates to road property, including rail, ties, ballast, and other track material. A higher depreciable asset base increased depreciation expense in 2019 compared to 2018.

Equipment and Other Rents – Equipment and other rents expense primarily includes rental expense that the Railroad pays for freight cars owned by other railroads or private companies; freight car, intermodal, and locomotive leases; and office and other rent expenses. Equity income from certain equity method investments is also included. Equipment and other rents expense decreased 8% compared to 2018 largely driven by volume declines, improved freight car cycle times and lower locomotive, freight car and container lease expenses.

Other – Other expenses include state and local taxes, freight, equipment and property damage, utilities, insurance, personal injury, environmental, employee travel, telephone and cellular, computer software, bad debt, and other general expenses. Other expenses increased 4% in 2019 compared to 2018 as a result of higher casualty costs and state and local taxes. Lower costs associated with employee travel and an insurance reimbursement for weather-related expenses incurred earlier in the year partially offset these increases.

Non-Operating Items

Millions	2019	2018	2017	% Change		% Change 2018 v 2017
				2019 v 2018	2018 v 2017	
Other income	\$ 243	\$ 94	\$ 245	F %	(62)%	
Interest expense	(1,050)	(870)	(719)	21	21	
Income tax benefit/(expense)	(1,828)	(1,775)	3,080	3	U	

Other Income – Other income increased in 2019 compared to 2018 due to \$85 million of expense associated with early-extinguishment of outstanding debentures and mortgage bonds in 2018, \$31 million in interest income associated with the employment tax refund in 2019 and lower costs associated with our benefit plans.

Interest Expense – Interest expense increased in 2019 compared to 2018 due to an increased weighted-average debt level of \$24.8 billion in 2019 from \$20.1 billion in 2018 partially offset by the impact of a lower effective interest rate of 4.3% in 2019 compared to 4.4 % in 2018.

Income Taxes – Income tax expense increased 3% in 2019 compared to 2018. Our effective tax rate for 2019 increased 0.7 points to 23.6% compared to 22.9% in 2018. The increase was driven by higher state and foreign taxes as compared to the prior year.

OTHER OPERATING/PERFORMANCE AND FINANCIAL STATISTICS

We report a number of key performance measures weekly to the STB. We provide this data on our website at www.up.com/investor/aar-stb_reports/index.htm.

Operating/Performance Statistics

Railroad performance measures are included in the table below:

	2019	2018	2017	% Change		% Change 2018 v 2017
				2019 v 2018	2018 v 2017	
Gross ton-miles (GTMs) (billions)	846.6	928.6	898.7	(9)%	3 %	
Revenue ton-miles (billions)	423.4	474.0	466.7	(11)	2	
Freight car velocity (daily miles per car) [a]	208	196	201	6	(2)	
Average train speed (miles per hour) [a] [b]	25.1	26.1	27.2	(4)	(4)	
Average terminal dwell time (hours) [a] [b]	24.8	29.8	30.5	(17)	(2)	
Locomotive productivity (GTMs per horsepower day)	120	106	109	13	(3)	
Workforce productivity (car miles per employee)	857	839	806	2	4	
Employees (average)	37,483	41,967	41,992	(11)	-	
Operating ratio	60.6	62.7	61.8	(2.1)pts	0.9 pts	

[a] Prior years have been recast to conform to the current year presentation which reflects minor refinements.

[b] As reported to the STB.

Gross and Revenue Ton-Miles – Gross ton-miles are calculated by multiplying the weight of loaded and empty freight cars by the number of miles hauled. Revenue ton-miles are calculated by multiplying the weight of freight by the number of tariff miles. Gross ton-miles and revenue ton-miles decreased 9% and 11%, respectively in 2019 compared to 2018, driven by a 6% decline in carloadings. Changes in commodity mix drove the variance in year-over-year decreases between gross ton-miles, revenue ton-miles and carloads.

Freight Car Velocity – Freight car velocity measures the average daily miles per car on our network. The two key drivers of this metric are the speed of the train between terminals (average train speed) and the time a rail car spends at the terminals (average terminal dwell time). Implementation of Unified Plan 2020 drove the 6% improvement from 2018. Average terminal dwell time in 2019 decreased 17% compared to 2018 largely due to improved terminal processes, transportation plan changes to eliminate switches, and a decrease in freight car inventory levels. Partially offsetting the improvements in terminal dwell, average train speed in 2019 declined 4% compared to 2018, largely due to an increase in work events and weather-related challenges in the first half of the year, however the overall movement of freight cars is faster.

Locomotive Productivity – Locomotive productivity is gross ton-miles per average daily locomotive horsepower. Locomotive productivity increased 13% in 2019 compared to 2018 driven by a 20% reduction in our average active fleet size.

Workforce Productivity – Workforce productivity is average daily car miles per employee. Workforce productivity improved 2% as average daily car miles decreased 9% while employees decreased 11% compared to 2018. Lower carload volumes drove the decline in average daily car miles. The 11% decline in employee levels was driven by a 6% decline in carload volumes, initiatives to further right-size the workforce and a smaller capital workforce. At the end of 2019, approximately 5,000 employees across all crafts were either furloughed or in alternate work status.

Operating Ratio – Operating ratio is our operating expenses reflected as a percentage of operating revenue. Our operating ratio of 60.6% was an all-time record and improved 2.1 points compared to 2018 mainly driven by productivity initiatives, core pricing gains, and lower fuel prices, which were partially offset by inflation, increased casualty costs and other cost hurdles.

Return on Average Common Shareholders' Equity

Millions, Except Percentages	2019	2018	2017
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Average equity	\$ 19,276	\$ 22,640	\$ 22,394
Return on average common shareholders' equity	30.7%	26.4%	47.8%

Return on Invested Capital as Adjusted (ROIC)

Millions, Except Percentages	2019	2018	2017
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Interest expense	1,050	870	719
Interest on average operating lease liabilities	76	82	105
Taxes on interest	(266)	(218)	(309)
Net operating profit after taxes as adjusted	\$ 6,779	\$ 6,700	\$ 11,227
Average equity	\$ 19,276	\$ 22,640	\$ 22,394
Average debt	23,796	19,668	15,976
Average operating lease liabilities	2,052	2,206	2,288
Average invested capital as adjusted	\$ 45,124	\$ 44,514	\$ 40,658
Return on Invested Capital as Adjusted	15.0%	15.1%	27.6%

ROIC is considered a non-GAAP financial measure by SEC Regulation G and Item 10 of SEC Regulation S-K, and may not be defined and calculated by other companies in the same manner. We believe this measure is important to management and investors in evaluating the efficiency and effectiveness of our long-term capital investments. In addition, we currently use ROIC as a performance criteria in determining certain elements of equity compensation for our executives. ROIC should be considered in addition to, rather than as a substitute for, other information provided in accordance with GAAP. The most comparable GAAP measure is Return on Average Common Shareholders' Equity. The tables above provide reconciliations from return on average common shareholders' equity to ROIC. At both December 31, 2019 and December 31, 2018, the incremental borrowing rate on operating leases was 3.7%. At December 31, 2017 our operating leases were discounted using our effective interest rate on debt of 4.6%.

Net Return on Invested Capital as Adjusted (Net ROIC)

The table below reconciles ROIC as previously calculated to Net ROIC for items affecting comparability.

	2019	2018	2017
Return on invested capital as adjusted	15.0%	15.1%	27.6%
Factors Affecting Comparability:			
Adjustments for Tax Cuts and Jobs Act [a]	N/A	N/A	(13.9)%
Net Return on Invested Capital as Adjusted	15.0%	15.1%	13.7%

[a] Adjustments remove the impact of \$5.9 billion and \$139 million from both 12/31/17 Net Income and 12/31/17 Shareholders' Equity.

Net ROIC is considered a non-GAAP financial measure by SEC Regulation G and Item 10 of SEC Regulation S-K, and may not be defined and calculated by other companies in the same manner. We believe this measure is important to management and investors in evaluating the efficiency and effectiveness of our long-term capital investments. We use Net ROIC to demonstrate year over year comparability for significant items. Net ROIC should be considered in addition to, rather than as a substitute for, other information provided in accordance with GAAP. The most comparable GAAP measure is Return on Average Common Shareholders' Equity.

Adjusted Debt / Adjusted EBITDA

Millions, Except Ratios	Dec. 31, 2019	Dec. 31, 2018	Dec. 31, 2017
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Add:			
Income tax expense/(benefit)	1,828	1,775	(3,080)
Depreciation	2,216	2,191	2,105
Interest expense	1,050	870	719
EBITDA	\$ 11,013	\$ 10,802	\$ 10,456
Adjustments:			
Other income	(243)	(94)	(245)
Interest on operating lease liabilities	68	84	98
Adjusted EBITDA	\$ 10,838	\$ 10,792	\$ 10,309
Debt	\$ 25,200	\$ 22,391	\$ 16,944
Operating lease liabilities	1,833	2,271	2,140
Unfunded pension and OPEB, net of taxes of \$124, \$135, and \$238	400	456	396
Adjusted debt	\$ 27,433	\$ 25,118	\$ 19,480
Adjusted debt / Adjusted EBITDA	2.5	2.3	1.9

Adjusted debt to Adjusted EBITDA (earnings before interest, taxes, depreciation, amortization and adjustments for other income and interest on present value of operating leases) is considered a non-GAAP financial measure by SEC Regulation G and Item 10 of SEC Regulation S-K and may not be defined and calculated by other companies in the same manner. We believe this measure is important to management and investors in evaluating the Company's ability to sustain given debt levels (including leases) with the cash generated from operations. In addition, a comparable measure is used by rating agencies when reviewing the Company's credit rating. Adjusted debt to Adjusted EBITDA should be considered in addition to, rather than as a substitute for, net income. The table above provides reconciliations from net income to adjusted debt to adjusted EBITDA. At both December 31, 2019 and December 31, 2018, the incremental borrowing rate on operating leases was 3.7%. At December 31, 2017, operating leases were discounted using our effective interest rate on debt of 4.6%.

LIQUIDITY AND CAPITAL RESOURCES

At both December 31, 2019 and December 31, 2018, we had a working capital deficit. The deficits are primarily due to upcoming debt maturities. As past years indicate, it is not unusual for us to have a working capital deficit; however, we believe it is not an indication of a lack of liquidity. We also maintain adequate resources, including our credit facility, and when necessary, access to capital markets to meet any foreseeable cash requirements.

As of December 31, 2019, our principal sources of liquidity included cash, cash equivalents, our receivables securitization facility, and our revolving credit facility, as well as the availability of commercial paper and other sources of financing through the capital markets. We had \$2.0 billion of committed credit available under our credit facility, with no borrowings outstanding as of December 31, 2019. We did not draw on our current facility or previous facility at any time during 2019. The value of the outstanding undivided interest held by investors under the \$800 million capacity receivables securitization facility was \$400 million as of December 31, 2019. Our access to this receivables securitization facility may be reduced or restricted if our bond ratings fall to certain levels below investment grade. If our bond rating were to deteriorate, it could have an adverse impact on our liquidity. Access to commercial paper as well as other capital market financings is dependent on market conditions. Deterioration of our operating results or financial condition due to internal or external factors could negatively impact our ability to access capital markets as a source of liquidity. Access to liquidity through the capital markets is also dependent on our financial stability. We expect that we will continue to have access to liquidity through any or all of the following sources or activities: (i) increasing the size or utilization of our receivables securitization, (ii) issuing commercial paper, (iii) entering into bank loans, outside of our revolving credit facility, or (iv) issuing bonds or other debt securities to public or private investors based on our assessment of the current condition of the credit markets. The Company's \$2.0 billion revolving credit facility is intended to support the issuance of commercial paper by UPC and also serves as an additional source of liquidity to fund short term needs. The Company currently does not intend to make any borrowings under this facility.

Cash Flows		2019	2018	2017
Millions				
Cash provided by operating activities	\$	8,609	\$ 8,686	\$ 7,230
Cash used in investing activities		(3,435)	(3,411)	(3,086)
Cash used in financing activities		(5,646)	(5,222)	(4,146)
Net change in cash, cash equivalents and restricted cash	\$	(472)	\$ 53	\$ (2)

Operating Activities

Cash provided by operating activities decreased in 2019 compared to 2018 due primarily to lower net income.

Investing Activities

Cash used in investing activities in 2019 increased compared to 2018.

The following tables detail cash capital investments and track statistics for the years ended December 31, 2019, 2018, and 2017:

Millions	2019	2018	2017
Rail and other track material	\$ 561	\$ 608	\$ 619
Ties	427	444	480
Ballast	271	216	231
Other [a]	694	576	503
Total road infrastructure replacements	1,953	1,844	1,833
Line expansion and other capacity projects	357	286	124
Commercial facilities	183	234	189
Total capacity and commercial facilities	540	520	313
Locomotives and freight cars [b]	610	716	607
Positive train control	95	158	336
Technology and other	255	199	149
Total cash capital investments	\$ 3,453	\$ 3,437	\$ 3,238

[a] Other includes bridges and tunnels, signals, other road assets, and road work equipment.

[b] Locomotives and freight cars include early lease buyouts of \$290 million in 2019, \$290 million in 2018, and \$173 million in 2017.

	2019	2018	2017
Track miles of rail replaced	534	700	731
Track miles of rail capacity expansion	55	39	11
New ties installed (thousands)	3,475	4,285	4,026
Miles of track surfaced	7,741	9,466	11,071

Capital Plan – In 2020, we expect our capital plan to be approximately \$3.1 billion, which may be revised if business conditions or the regulatory environment affect our ability to generate sufficient returns on these investments. While asset replacements will fluctuate as part of our renewal strategy, we expect to use 75% to 80% of our capital investments to renew and improve existing capital assets. We will continue to balance investment in our network infrastructure and terminal capacity as appropriate, including new capacity investments designed to improve productivity and operational efficiency. Significant investments will be made for locomotive modernization and freight car replacements.

We expect to fund our 2020 cash capital plan by using some or all of the following: cash generated from operations, proceeds from the sale or lease of various operating and non-operating properties, proceeds from the issuance of long-term debt, and cash on hand. Our annual capital plan is a critical component of our long-term strategic plan. We expect our plan will enhance the long-term value of the Company for our shareholders by providing sufficient resources to (i) replace and improve our existing track infrastructure to provide safe and fluid operations, (ii) increase network efficiency and productivity by adding or improving facilities and track, and (iii) make investments that meet customer demand and take advantage of opportunities for long-term growth.

Financing Activities

Cash used in financing activities increased in 2019 compared to 2018 driven by higher dividend payments in 2019 of \$2,598 million compared to \$2,299 million in 2018, reflecting higher dividends per share. Decreases in net debt issued of \$2,574 were mostly offset by a decrease in share repurchase programs of \$2,421 million.

See Note 15 of the Consolidated Financial Statements for a description of all our outstanding financing arrangements and significant new borrowings.

Share Repurchase Programs

Effective April 1, 2019, our Board of Directors authorized the repurchase of up to 150 million shares of our common stock by March 31, 2022, replacing our previous repurchase program. These repurchases may be made on the open market or through other transactions. Our management has sole discretion with respect to determining the timing and amount of these transactions. As of December 31, 2019, we repurchased a total of \$37.2 billion of our common stock since commencement of our repurchase programs in 2007. The table below represents shares repurchased under repurchase programs during 2018 and 2019:

	Number of Shares Purchased		Average Price Paid	
	2019	2018	2019	2018
First quarter [a]	18,149,450	9,259,004	\$ 165.79	\$ 132.84
Second quarter [b]	3,732,974	33,229,992	171.24	142.74
Third quarter [c]	9,529,733	2,239,405	163.30	151.94
Fourth quarter [d]	3,582,212	12,490,632	167.32	153.04
Total	34,994,369	57,219,033	\$ 165.85	\$ 143.75
Remaining number of shares that may be repurchased under current authority				133,155,081

[a] Includes 11,795,930 shares repurchased in February 2019 under accelerated share repurchase programs.

[b] Includes 19,870,292 shares repurchased in June 2018 under accelerated share repurchase programs.

[c] Includes 3,172,900 shares repurchased in August 2019 under accelerated share repurchase programs.

[d] Includes 4,457,356 shares repurchased in October 2018 under accelerated share repurchase programs.

Management's assessments of market conditions and other pertinent factors guide the timing and volume of all repurchases. We expect to fund any share repurchases under this program through cash generated from operations, the sale or lease of various operating and non-operating properties, debt issuances, and cash on hand. Open market repurchases are recorded in treasury stock at cost, which includes any applicable commissions and fees.

From January 1, 2020, through February 6, 2020, we repurchased 2.7 million shares at an aggregate cost of approximately \$493 million.

Accelerated Share Repurchase Programs – The Company has established accelerated share repurchase programs (ASRs) with financial institutions to repurchase shares of our common stock. These ASRs have been structured so that at the time of commencement, we pay a specified amount to the financial institutions and receive an initial delivery of shares. Additional shares may be received at the time of settlement. The final number of shares to be received is based on the volume weighted average price of the Company's common stock during the ASR term, less a discount and subject to potential adjustments pursuant to the terms of such ASR.

On February 26, 2019, the Company received 11,795,930 shares of its common stock repurchased under ASRs for an aggregate of \$2.5 billion. Upon settlement of these ASRs in the third quarter of 2019, we received 3,172,900 additional shares.

On June 15, 2018, the Company received 19,870,292 shares of its common stock repurchased under ASRs for an aggregate of \$3.6 billion. Upon settlement of these ASRs in the fourth quarter of 2018, we received 4,457,356 additional shares.

ASRs are accounted for as equity transactions, and at the time of receipt, shares are included in treasury stock at fair market value as of the corresponding initiation or settlement date. The Company reflects shares received as a repurchase of common stock in the weighted average common shares outstanding calculation for basic and diluted earnings per share.

Contractual Obligations and Commercial Commitments

As described in the notes to the Consolidated Financial Statements and as referenced in the tables below, we have contractual obligations and commercial commitments that may affect our financial condition. Based on our assessment of the underlying provisions and circumstances of our contractual obligations and commercial commitments, including material sources of off-balance sheet and structured finance arrangements, other than the risks that we and other similarly situated companies face with respect to the condition of the capital markets (as described in Item 1A of Part II of this report), there is no known trend, demand, commitment, event, or uncertainty that is reasonably likely to occur that would have a material adverse effect on our consolidated results of operations, financial condition, or liquidity. In addition, our commercial obligations, financings, and commitments are customary transactions that are similar to those of other comparable corporations, particularly within the transportation industry.

The following tables identify material obligations and commitments as of December 31, 2019:

Contractual Obligations Millions	Payments Due by December 31,								After 2024 Other	
	Total		2020		2021		2022			
	Debt [a]	\$ 43,867	\$ 2,089	\$ 2,059	\$ 2,581	\$ 2,146	\$ 2,166	\$ 32,826		
Operating leases [b]	2,117	366	293	258	217	208	775	-		
Finance lease obligations [c]	707	143	147	130	88	75	124	-		
Purchase obligations [d]	3,019	1,441	460	240	166	142	535	35		
Other post retirement benefits [e]	418	49	48	44	44	39	194	-		
Income tax contingencies [f]	64	1	-	-	-	-	-	63		
Total contractual obligations	\$ 50,192	\$ 4,089	\$ 3,007	\$ 3,253	\$ 2,661	\$ 2,630	\$ 34,454	\$ 98		

- [a] Excludes finance lease obligations of \$605 million, as well as unamortized discount and deferred issuance costs of (\$1,194) million. Includes an interest component of \$18,078 million.
- [b] Includes leases for locomotives, freight cars, other equipment, and real estate.
- [c] Represents total obligations, including interest component of \$102 million.
- [d] Purchase obligations include locomotive maintenance contracts; purchase commitments for fuel purchases, ties, ballast, and rail; and agreements to purchase other goods and services. For amounts where we cannot reasonably estimate the year of settlement, they are reflected in the Other column.
- [e] Includes estimated other post retirement, medical, and life insurance payments, payments made under the unfunded pension plan for the next ten years.
- [f] Future cash flows for income tax contingencies reflect the recorded liabilities and assets for unrecognized tax benefits, including interest and penalties, as of December 31, 2019. For amounts where the year of settlement is uncertain, they are reflected in the Other column.

Other Commercial Commitments Millions	Amount of Commitment Expiration per Period								After 2024	
	Total		2020		2021		2022			
	Debt [a]	\$ 2,000	\$ -	\$ -	\$ -	\$ -	\$ 2,000	\$ -		
Receivables securitization facility [b]	800	-	-	-	800	-	-	-		
Guarantees [c]	15	5	5	5	-	-	-	-		
Standby letters of credit [d]	18	9	9	-	-	-	-	-		
Total commercial commitments	\$ 2,833	\$ 14	\$ 14	\$ 805	\$ 2,000	\$ -	\$ -	\$ -		

- [a] None of the credit facility was used as of December 31, 2019.
- [b] \$400 million of the receivables securitization facility was utilized as of December 31, 2019, which is accounted for as debt. The full program matures in July 2022.
- [c] Includes guaranteed obligations related to our affiliated operations.
- [d] None of the letters of credit were drawn upon as of December 31, 2019.

Off-Balance Sheet Arrangements

Guarantees – At December 31, 2019, and 2018, we were contingently liable for \$15 million and \$22 million in guarantees. The fair value of these obligations as of both December 31, 2019, and 2018, was \$0. We entered into these contingent guarantees in the normal course of business, and they include guaranteed obligations related to our affiliated operations. The final guarantee expires in 2022. We are not aware of any existing event of default that would require us to satisfy these guarantees. We do not expect that these

guarantees will have a material adverse effect on our consolidated financial condition, results of operations, or liquidity.

OTHER MATTERS

Labor Agreements – Approximately 85% of our full-time employees are represented by 14 major rail unions. Pursuant to the Railway Labor Act (RLA), our collective bargaining agreements are subject to modification every five years. Existing agreements remain in effect until new agreements are ratified or until the RLA procedures are exhausted. The RLA procedures include mediation, potential arbitration, cooling-off periods, and the possibility of Presidential Emergency Boards and Congressional intervention. The current round of negotiations began on January 1, 2020 related to years 2020-2024. Contract negotiations historically continue for an extended period of time, and work stoppages during negotiations are rare.

Inflation – Long periods of inflation significantly increase asset replacement costs for capital-intensive companies. As a result, assuming that we replace all operating assets at current price levels, depreciation charges (on an inflation-adjusted basis) would be substantially greater than historically reported amounts.

Sensitivity Analyses – The sensitivity analyses that follow illustrate the economic effect that hypothetical changes in interest rates could have on our results of operations and financial condition. These hypothetical changes do not consider other factors that could impact actual results.

At December 31, 2019, we had variable-rate debt representing approximately 3.4% of our total debt. If variable interest rates average one percentage point higher in 2020 than our December 31, 2019 variable rate, which was approximately 2.5%, our interest expense would increase by approximately \$8.5 million. This amount was determined by considering the impact of the hypothetical interest rate on the balances of our variable-rate debt at December 31, 2019.

Market risk for fixed-rate debt is estimated as the potential increase in fair value resulting from a hypothetical one percentage point decrease in interest rates as of December 31, 2019, and amounts to an increase of approximately \$3.4 billion to the fair value of our debt at December 31, 2019. We estimated the fair values of our fixed-rate debt by considering the impact of the hypothetical interest rates on quoted market prices and current borrowing rates.

Accounting Pronouncements – See Note 3 to the Consolidated Financial Statements.

Asserted and Unasserted Claims – Various claims and lawsuits are pending against us and certain of our subsidiaries. We cannot fully determine the effect of all asserted and unasserted claims on our consolidated results of operations, financial condition, or liquidity. To the extent possible, we have recorded a liability where asserted and unasserted claims are considered probable and where such claims can be reasonably estimated. We do not expect that any known lawsuits, claims, environmental costs, commitments, contingent liabilities, or guarantees will have a material adverse effect on our consolidated results of operations, financial condition, or liquidity after taking into account liabilities and insurance recoveries previously recorded for these matters.

Indemnities – Our maximum potential exposure under indemnification arrangements, including certain tax indemnifications, can range from a specified dollar amount to an unlimited amount, depending on the nature of the transactions and the agreements. Due to uncertainty as to whether claims will be made or how they will be resolved, we cannot reasonably determine the probability of an adverse claim or reasonably estimate any adverse liability or the total maximum exposure under these indemnification arrangements. We do not have any reason to believe that we will be required to make any material payments under these indemnity provisions.

Climate Change – Although climate change could have an adverse impact on our operations and financial performance in the future (see Risk Factors under Item 1A of this report), we are currently unable to predict the manner or severity of such impact. However, we continue to take steps and explore opportunities to reduce the impact of our operations on the environment, including investments in new technologies, using training programs and technology to reduce fuel consumption, and changing our operations to increase fuel efficiency.

CRITICAL ACCOUNTING POLICIES

Our Consolidated Financial Statements have been prepared in accordance with GAAP. The preparation of these financial statements requires estimation and judgment that affect the reported amounts of revenues, expenses, assets, and liabilities. We base our estimates on historical experience and on various other assumptions that we believe are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. The following critical accounting policies are a subset of our significant accounting policies described in Note 2 to the Financial Statements and Supplementary Data, Item 8. These critical accounting policies affect significant areas of our financial statements and involve judgment and estimates. If these estimates differ significantly from actual results, the impact on our Consolidated Financial Statements may be material.

Personal Injury – The cost of personal injuries to employees and others related to our activities is charged to expense based on estimates of the ultimate cost and number of incidents each year. We use an actuarial analysis to measure the expense and liability, including unasserted claims. The Federal Employers' Liability Act (FELA) governs compensation for work-related accidents. Under FELA, damages are assessed based on a finding of fault through litigation or out-of-court settlements. We offer a comprehensive variety of services and rehabilitation programs for employees who are injured at work.

Our personal injury liability is not discounted to present value due to the uncertainty surrounding the timing of future payments. Approximately 94% of the recorded liability is related to asserted claims and approximately 6% is related to unasserted claims at December 31, 2019. Because of the uncertainty surrounding the ultimate outcome of personal injury claims, it is reasonably possible that future costs to settle these claims may range from approximately \$265 million to \$289 million. We record an accrual at the low end of the range as no amount of loss within the range is more probable than any other. Estimates can vary over time due to evolving trends in litigation.

Our personal injury liability activity was as follows:

Millions	2019	2018	2017
Beginning balance	\$ 271	\$ 285	\$ 290
Current year accruals	78	74	77
Changes in estimates for prior years	(11)	(16)	(7)
Payments	(73)	(72)	(75)
Ending balance at December 31	\$ 265	\$ 271	\$ 285
Current portion, ending balance at December 31	\$ 63	\$ 72	\$ 66

Our personal injury claims activity was as follows:

	2019	2018	2017
Open claims, beginning balance	2,025	2,090	2,157
New claims	3,025	3,188	3,024
Settled or dismissed claims	(3,065)	(3,253)	(3,091)
Open claims, ending balance at December 31	1,985	2,025	2,090

We reassess our estimated insurance recoveries annually and have recognized an asset for estimated insurance recoveries at December 31, 2019, and 2018. Any changes to recorded insurance recoveries are included in the above table in the Changes in estimates for prior years category.

Environmental Costs – We are subject to federal, state, and local environmental laws and regulations. We have identified 360 sites at which we are or may be liable for remediation costs associated with alleged contamination or for violations of environmental requirements. This includes 31 sites that are the subject of actions taken by the U.S. government, 20 of which are currently on the Superfund National Priorities List. Certain federal legislation imposes joint and several liability for the remediation of identified sites; consequently, our ultimate environmental liability may include costs relating to activities of other parties, in addition to costs relating to our own activities at each site.

When we identify an environmental issue with respect to property owned, leased, or otherwise used in our business, we perform, with assistance of our consultants, environmental assessments on the property. We expense the cost of the assessments as incurred. We accrue the cost of remediation where our obligation is probable and such costs can be reasonably estimated. Our environmental liability is not discounted to present value due to the uncertainty surrounding the timing of future payments.

Our environmental liability activity was as follows:

Millions	2019	2018	2017
Beginning balance	\$ 223	\$ 196	\$ 212
Accruals	67	84	45
Payments	(63)	(57)	(61)
Ending balance at December 31	\$ 227	\$ 223	\$ 196
Current portion, ending balance at December 31	\$ 62	\$ 59	\$ 57

Our environmental site activity was as follows:

	2019	2018	2017
Open sites, beginning balance	334	315	292
New sites	114	91	77
Closed sites	(88)	(72)	(54)
Open sites, ending balance at December 31	360	334	315

The environmental liability includes future costs for remediation and restoration of sites, as well as ongoing monitoring costs, but excludes any anticipated recoveries from third parties. Cost estimates are based on information available for each site, financial viability of other potentially responsible parties, and existing technology, laws, and regulations. The ultimate liability for remediation is difficult to determine because of the number of potentially responsible parties, site-specific cost sharing arrangements with other potentially responsible parties, the degree of contamination by various wastes, the scarcity and quality of volumetric data related to many of the sites, and the speculative nature of remediation costs. Estimates of liability may vary over time due to changes in federal, state, and local laws governing environmental remediation. Current obligations are not expected to have a material adverse effect on our consolidated results of operations, financial condition, or liquidity.

Property and Depreciation – Our railroad operations are highly capital intensive, and our large base of homogeneous, network-type assets turns over on a continuous basis. Each year we develop a capital program for the replacement of assets and for the acquisition or construction of assets that enables us to enhance our operations or provide new service offerings to customers. Assets purchased or constructed throughout the year are capitalized if they meet applicable minimum units of property criteria. Properties and equipment are carried at cost and are depreciated on a straight-line basis over their estimated service lives, which are measured in years, except for rail in high-density traffic corridors (i.e., all rail lines except for those subject to abandonment, and yard and switching tracks) for which lives are measured in millions of gross tons per mile of track. We use the group method of depreciation in which all items with similar characteristics, use, and expected lives are grouped together in asset classes, and are depreciated using composite depreciation rates. The group method of depreciation treats each asset class as a pool of resources, not as singular items. We currently have more than 60 depreciable asset classes, and we may increase or decrease the number of asset classes due to changes in technology, asset strategies, or other factors.

We determine the estimated service lives of depreciable railroad property by means of depreciation studies. We perform depreciation studies at least every three years for equipment and every six years for track assets (i.e., rail and other track material, ties, and ballast) and other road property. Our depreciation studies take into account the following factors:

- Statistical analysis of historical patterns of use and retirements of each of our asset classes;
- Evaluation of any expected changes in current operations and the outlook for continued use of the assets;
- Evaluation of technological advances and changes to maintenance practices; and
- Expected salvage to be received upon retirement.

For rail in high-density traffic corridors, we measure estimated service lives in millions of gross tons per mile of track. It has been our experience that the lives of rail in high-density traffic corridors are closely correlated to usage (i.e., the amount of weight carried over the rail). The service lives also vary based on rail weight, rail condition (e.g., new or secondhand), and rail type (e.g., straight or curve). Our depreciation studies for rail in high-density traffic corridors consider each of these factors in determining the estimated service lives. For rail in high-density traffic corridors, we calculate depreciation rates annually by dividing the number of gross ton-miles carried over the rail (i.e., the weight of loaded and empty freight cars, locomotives and maintenance of way equipment transported over the rail) by the estimated service lives of the rail measured in millions of gross tons per mile. Rail in high-density traffic corridors accounts for approximately 70 percent of the historical cost of rail and other track material. Based on the number of gross ton-miles carried over our rail in high density traffic corridors during 2019, the estimated service lives of the majority of this rail ranged from approximately 21 years to approximately 45 years. For all other depreciable assets, we compute depreciation based on the estimated service lives of our assets as determined from the analysis of our depreciation studies. Changes in the estimated service lives of our assets and their related depreciation rates are implemented prospectively.

Estimated service lives of depreciable railroad property may vary over time due to changes in physical use, technology, asset strategies, and other factors that will have an impact on the retirement profiles of our assets. We are not aware of any specific factors that are reasonably likely to significantly change the estimated service lives of our assets. Actual use and retirement of our assets may vary from our current estimates, which would impact the amount of depreciation expense recognized in future periods.

Changes in estimated useful lives of our assets due to the results of our depreciation studies could significantly impact future periods' depreciation expense and have a material impact on our Consolidated Financial Statements. If the estimated useful lives of all depreciable assets were increased by one year, annual depreciation expense would decrease by approximately \$68 million. If the estimated useful lives of all depreciable assets were decreased by one year, annual depreciation expense would increase by approximately \$73 million. Our 2019 depreciation studies have resulted in lower depreciation rates for some asset classes. These lower rates will partially offset the impact of a projected higher depreciable asset base, resulting in an increase in total depreciation expense by approximately 2% in 2020 versus 2019.

Under group depreciation, the historical cost (net of salvage) of depreciable property that is retired or replaced in the ordinary course of business is charged to accumulated depreciation and no gain or loss is recognized. The historical cost of certain track assets is estimated by multiplying the current replacement cost of track assets by a historical index factor derived from (i) inflation indices published by the Bureau of Labor Statistics and (ii) the estimated useful lives of the assets as determined by our depreciation studies. The indices were selected because they closely correlate with the major costs of the properties comprising the applicable track asset classes. Because of the number of estimates inherent in the depreciation and retirement processes and because it is impossible to precisely estimate each of these variables until a group of property is completely retired, we continually monitor the estimated service lives of our assets and the accumulated depreciation associated with each asset class to ensure our depreciation rates are appropriate. In addition, we determine if the recorded amount of accumulated depreciation is deficient (or in excess) of the amount indicated by our depreciation studies. Any deficiency (or excess) is amortized as a component of depreciation expense over the remaining service lives of the applicable classes of assets.

For retirements of depreciable railroad properties that do not occur in the normal course of business, a gain or loss may be recognized if the retirement meets each of the following three conditions: (i) it is unusual, (ii) it is material in amount, and (iii) it varies significantly from the retirement profile identified through our depreciation studies. During the last three fiscal years, no gains or losses were recognized due to the retirement of depreciable railroad properties. A gain or loss is recognized in other income when we sell land or dispose of assets that are not part of our railroad operations.

Income Taxes – We account for income taxes by recording taxes payable or refundable for the current year and deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in our financial statements or tax returns. These expected future tax consequences are measured based on current tax law; the effects of future tax legislation are not anticipated. Future tax legislation, such as a change in the corporate tax rate, could have a material impact on our financial condition, results of operations, or liquidity. For example, a permanent 1% increase in future income tax rates would increase our deferred tax liability by approximately \$507 million. Similarly, a permanent 1% decrease in future income tax rates would decrease our deferred tax liability by approximately \$507 million.

When appropriate, we record a valuation allowance against deferred tax assets to reflect that these tax assets may not be realized. In determining whether a valuation allowance is appropriate, we consider whether it is more likely than not that all or some portion of our deferred tax assets will not be realized, based on management's judgments using available evidence for purposes of estimating whether future taxable income will be sufficient to realize a deferred tax asset. In 2019 and 2018, there were no valuation allowances.

We recognize tax benefits that are more likely than not to be sustained upon examination by tax authorities. The amount recognized is measured as the largest amount of benefit that is greater than 50 percent likely to be realized upon settlement. A liability for "unrecognized tax benefits" is recorded for any tax benefits claimed in our tax returns that do not meet these recognition and measurement standards.

Pension and Other Postretirement Benefits – We use an actuarial analysis to measure the liabilities and expenses associated with providing pension and medical and life insurance benefits (OPEB) to eligible employees. In order to use actuarial methods to value the liabilities and expenses, we must make several assumptions. The critical assumptions used to measure pension obligations and expenses are the discount rates and expected rate of return on pension assets. For OPEB, the critical assumptions are the discount rates and health care cost trend rate.

We evaluate our critical assumptions at least annually, and selected assumptions are based on the following factors:

We measure the service cost and interest cost components of our net periodic benefit cost by using individual spot rates matched with separate cash flows for each future year. Discount rates are based on a Mercer yield curve of high quality corporate bonds (rated AA by a recognized rating agency).

Expected return on plan assets is based on our asset allocation mix and our historical return, taking into consideration current and expected market conditions.

Health care cost trend rate is based on our historical rates of inflation and expected market conditions.

The following tables present the key assumptions used to measure net periodic pension and OPEB cost/(benefit) for 2020 and the estimated impact on 2020 net periodic pension and OPEB cost/(benefit) relative to a change in those assumptions:

Assumptions	Pension	OPEB
Discount rate for benefit obligations	3.26%	3.13%
Discount rate for interest on benefit obligations	2.89%	2.68%
Discount rate for service cost	3.42%	3.24%
Discount rate for interest on service cost	3.36%	3.17%
Expected return on plan assets	7.00%	N/A
Compensation increase	4.10%	N/A
Health care cost trend rate:		
Pre-65 current	N/A	5.64%
Pre-65 level in 2038	N/A	4.50%

Sensitivities	Increase in Expense		
	Pension	OPEB	
Millions			
0.25% decrease in discount rates	\$ 16	\$ -	
0.25% increase in compensation scale	\$ 8	N/A	
0.25% decrease in expected return on plan assets	\$ 10	N/A	
1% increase in health care cost trend rate	N/A	\$ 3	

The following table presents the net periodic pension and OPEB cost for the years ended December 31:

Millions	Est.				
	2020	2019	2018	2017	
Net periodic pension cost	\$ 58	\$ 34	\$ 71	\$ 115	
Net periodic OPEB cost	1	10	23	22	

CAUTIONARY INFORMATION

Certain statements in this report, and statements in other reports or information filed or to be filed with the SEC (as well as information included in oral statements or other written statements made or to be made by us), are, or will be, forward-looking statements as defined by the Securities Act of 1933 and the Securities Exchange Act of 1934. These forward-looking statements and information include, without limitation, statements in the Chairman's letter preceding Part I; statements regarding planned capital expenditures under the caption "2020 Capital Plan" in Item 2 of Part I; and statements and information set forth under the captions "2020 Outlook"; "Liquidity and Capital Resources" in Item 7 of Part II regarding our capital plan, "Share Repurchase Programs", "Off-Balance Sheet Arrangements, Contractual Obligations, and Commercial Commitments", "Pension and Other Postretirement Benefits", and "Other Matters" in this Item 7 of Part II. Forward-looking statements and information also include any other statements or information in this report (including information incorporated herein by reference) regarding: expectations as to cost savings, revenue growth and earnings; the time by which goals, targets, or objectives will be achieved; projections, predictions, expectations, estimates, or forecasts as to our business, financial and operational results, future economic performance, and general economic conditions; expectations as to operational or service performance or improvements; expectations as to the effectiveness of steps taken or to be taken to improve operations and/or service, including capital expenditures for infrastructure improvements and equipment acquisitions, any strategic business acquisitions, and modifications to our transportation plans, including implementation of PTC; expectations as to existing or proposed new products and services; expectations as to the impact of any new regulatory activities or legislation on our operations or financial results; estimates of costs relating to environmental remediation and restoration; estimates and expectations regarding tax matters; expectations that claims, litigation, environmental costs, commitments, contingent liabilities, labor negotiations or agreements, or other matters will not have a material adverse effect on our consolidated results of operations, financial condition, or liquidity and any other similar expressions concerning matters that are not historical facts. Forward-looking statements may be identified by their use of forward-looking terminology, such as "believes," "expects," "may," "should," "would," "will," "intends," "plans," "estimates," "anticipates," "projects" and similar words, phrases or expressions.

Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times that, or by which, such performance or results will be achieved. Forward-looking statements and information are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the statements and information. Forward-looking statements and information reflect the good faith consideration by management of currently available information, and may be based on underlying assumptions believed to be reasonable under the circumstances. However, such information and assumptions (and, therefore, such forward-looking statements and information) are or may be subject to variables or unknown or unforeseeable events or circumstances over which management has little or no influence or control. The Risk Factors in Item 1A of this report could affect our future results and could cause those results or other outcomes to differ materially from those expressed or implied in any forward-looking statements or information. To the extent circumstances require or we deem it otherwise necessary, we will update or amend these risk factors in a Form 10-Q, Form 8-K or subsequent Form 10-K. All forward-looking statements are qualified by, and should be read in conjunction with, these Risk Factors.

Forward-looking statements speak only as of the date the statement was made. We assume no obligation to update forward-looking information to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information. If we do update one or more forward-looking statements, no inference should be drawn that we will make additional updates with respect thereto or with respect to other forward-looking statements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Information concerning market risk sensitive instruments is set forth under Management's Discussion and Analysis of Financial Condition and Results of Operations – Other Matters, Item 7.

Item 8. Financial Statements and Supplementary Data

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Union Pacific Corporation
Omaha, Nebraska

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Union Pacific Corporation and Subsidiary Companies (the "Corporation") as of December 31, 2019 and 2018, the related consolidated statements of income, comprehensive income, changes in common shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the schedule listed in the Table of Contents at Part IV, Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Corporation as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Corporation's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 7, 2020, expressed an unqualified opinion on the Corporation's internal control over financial reporting.

Change in Accounting Principle

As discussed in Note 3 to the financial statements, effective January 1, 2019, the Corporation adopted Financial Accounting Standards Board Accounting Standards Update No. 2016-02, *Leases (Topic 842)*.

Basis for Opinion

These financial statements are the responsibility of the Corporation's management. Our responsibility is to express an opinion on the Corporation's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Capitalization of Properties — Refer to Notes 2 and 12 to the financial statements

Critical Audit Matter Description

The Corporation's operations are highly capital intensive and their large network of assets turns over on a continuous basis. Each year, the Corporation develops a capital program for both the replacement of assets and for the acquisition or construction of new assets. In determining whether costs should be capitalized, the Corporation exercises significant judgment in determining whether expenditures meet the applicable minimum units of property criteria and extend the useful life, improve the safety of operations, or improve the operating efficiency of existing assets. The Corporation capitalizes all costs of capital projects necessary to make assets ready for their intended use and because a portion of the Corporation's assets are self-constructed, management also exercises significant judgment in determining the amount of material, labor, work equipment, and indirect costs that qualify for capitalization. Net properties were \$53,916 million as of December 31, 2019 and, during 2019, the Corporation's capital investments were \$3.5 billion.

We identified the capitalization of property as a critical audit matter because of the significant judgment exercised by management in determining whether costs meet the criteria for capitalization. This, in turn, required a high degree of auditor judgment when performing audit procedures to evaluate whether the criteria to capitalize costs were met and to evaluate sufficiency of audit evidence to support management's conclusions.

How the Critical Audit Matter Was Addressed in the Audit

Our procedures related to capitalization of property included the following, among others:

We tested the effectiveness of controls over the Corporation's determination of whether costs related to the Corporation's capital program should be capitalized or expensed.

We evaluated the Corporation's capitalization policy in accordance with accounting principles generally accepted in the United States of America.

For a selection of capital projects, we performed the following:

- Obtained the Corporation's evaluation of each project and determined whether the amount of costs to be capitalized met the criteria for capitalization as outlined within the Corporation's policy by unit of property.
- Obtained supporting documentation that the project met the applicable minimum units of property criteria and was approved, and evaluated whether the project extended the useful life of an existing asset, improved the safety of operations, or improved the operating efficiency of existing assets.

For a selection of capitalized costs during the year, we performed the following:

- Evaluated whether the individual cost selected met the criteria for capitalization.
- Evaluated whether the selection was accurately recorded at the appropriate amount based on the evidence obtained.

/s/ Deloitte & Touche LLP

Omaha, Nebraska
February 7, 2020

We have served as the Corporation's auditor since 1967.

CONSOLIDATED STATEMENTS OF INCOME
Union Pacific Corporation and Subsidiary Companies

<i>Millions, Except Per Share Amounts, for the Years Ended December 31,</i>	2019	2018	2017
Operating revenues:			
Freight revenues	\$ 20,243	\$ 21,384	\$ 19,837
Other revenues	1,465	1,448	1,403
Total operating revenues	21,708	22,832	21,240
Operating expenses:			
Compensation and benefits	4,533	5,056	4,939
Purchased services and materials	2,254	2,443	2,363
Depreciation	2,216	2,191	2,105
Fuel	2,107	2,531	1,891
Equipment and other rents	984	1,072	888
Other	1,060	1,022	948
Total operating expenses	13,154	14,315	13,134
Operating income	8,554	8,517	8,106
Other income (Note 7)	243	94	245
Interest expense	(1,050)	(870)	(719)
Income before income taxes	7,747	7,741	7,632
Income tax benefit/(expense) (Note 8)	(1,828)	(1,775)	3,080
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Share and Per Share (Note 9):			
Earnings per share - basic	\$ 8.41	\$ 7.95	\$ 13.42
Earnings per share - diluted	\$ 8.38	\$ 7.91	\$ 13.36
Weighted average number of shares - basic	703.5	750.9	798.4
Weighted average number of shares - diluted	706.1	754.3	801.7

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Union Pacific Corporation and Subsidiary Companies

<i>Millions, for the Years Ended December 31,</i>	2019	2018	2017
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Other comprehensive income/(loss):			
Defined benefit plans	42	62	103
Foreign currency translation	17	(36)	28
Total other comprehensive income/(loss) [a]	59	26	131
Comprehensive income	\$ 5,978	\$ 5,992	\$ 10,843

[a] Net of deferred taxes of (\$15) million, (\$22) million, and (\$61) million during 2019, 2018, and 2017, respectively.
The accompanying notes are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

Union Pacific Corporation and Subsidiary Companies

*Millions, Except Share and Per Share Amounts
as of December 31,*

	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 831	\$ 1,273
Short-term investments (Note 14)	60	60
Accounts receivable, net (Note 11)	1,595	1,755
Materials and supplies	751	742
Other current assets	222	333
Total current assets	3,459	4,163
Investments	2,050	1,912
Net properties (Note 12)	53,916	52,679
Operating lease assets (Note 17)	1,812	-
Other assets	436	393
Total assets	\$ 61,673	\$ 59,147
Liabilities and Common Shareholders' Equity		
Current liabilities:		
Accounts payable and other current liabilities (Note 13)	\$ 3,094	\$ 3,160
Debt due within one year (Note 15)	1,257	1,466
Total current liabilities	4,351	4,626
Debt due after one year (Note 15)	23,943	20,925
Operating lease liabilities (Note 17)	1,471	-
Deferred income taxes (Note 8)	11,992	11,302
Other long-term liabilities	1,788	1,871
Commitments and contingencies (Note 18)		
Total liabilities	43,545	38,724
Common shareholders' equity:		
Common shares, \$2.50 par value, 1,400,000,000 authorized;		
1,112,014,480 and 1,111,739,781 issued; 692,100,651 and 725,056,690		
outstanding, respectively	2,780	2,779
Paid-in-surplus	4,523	4,449
Retained earnings	48,605	45,284
Treasury stock	(36,424)	(30,674)
Accumulated other comprehensive loss (Note 10)	(1,356)	(1,415)
Total common shareholders' equity	18,128	20,423
Total liabilities and common shareholders' equity	\$ 61,673	\$ 59,147

The accompanying notes are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS
Union Pacific Corporation and Subsidiary Companies

Millions, for the Years Ended December 31,	2019	2018	2017
Operating Activities			
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Adjustments to reconcile net income to cash provided by operating activities:			
Depreciation	2,216	2,191	2,105
Deferred and other income taxes	566	338	(5,067)
Net gain on non-operating asset dispositions	(20)	(30)	(111)
Other operating activities, net	98	347	(282)
Changes in current assets and liabilities:			
Accounts receivable, net	160	(262)	(235)
Materials and supplies	(9)	7	(32)
Other current assets	87	(24)	9
Accounts payable and other current liabilities	(179)	(125)	182
Income and other taxes	(229)	278	(51)
Cash provided by operating activities	8,609	8,686	7,230
Investing Activities			
Capital investments	(3,453)	(3,437)	(3,238)
Maturities of short-term investments (Note 14)	130	90	90
Purchases of short-term investments (Note 14)	(115)	(90)	(120)
Proceeds from asset sales	74	63	168
Other investing activities, net	(71)	(37)	14
Cash used in investing activities	(3,435)	(3,411)	(3,086)
Financing Activities			
Share repurchase programs (Note 19)	(5,804)	(8,225)	(4,013)
Debt issued (Note 15)	3,986	6,892	2,735
Dividends paid	(2,598)	(2,299)	(1,982)
Debt repaid	(817)	(1,736)	(840)
Debt exchange	(387)	-	-
Net issuance of commercial paper (Note 15)	(6)	194	-
Other financing activities, net	(20)	(48)	(46)
Cash used in financing activities	(5,646)	(5,222)	(4,146)
Net change in cash, cash equivalents and restricted cash	(472)	53	(2)
Cash, cash equivalents, and restricted cash at beginning of year	1,328	1,275	1,277
Cash, cash equivalents, and restricted cash at end of year	\$ 856	\$ 1,328	\$ 1,275
Supplemental Cash Flow Information			
Non-cash investing and financing activities:			
Term loan renewals	\$ 250	\$ 250	\$ -
Capital investments accrued but not yet paid	224	205	366
Locomotives sold for material credits	18	-	-
Finance lease financings	-	12	19
Cash paid during the year for:			
Income taxes, net of refunds	\$ (1,382)	\$ (1,205)	\$ (2,112)
Interest, net of amounts capitalized	(1,033)	(728)	(666)

The accompanying notes are an integral part of these Consolidated Financial Statements.

CONSOLIDATED STATEMENTS OF CHANGES IN COMMON SHAREHOLDERS' EQUITY
Union Pacific Corporation and Subsidiary Companies

<i>Millions</i>	<i>Common Shares</i>	<i>Treasury Shares</i>	<i>Common Shares</i>	<i>Paid-in-Surplus</i>	<i>Retained Earnings</i>	<i>Treasury Stock</i>	<i>AOCI [a]</i>	<i>Total</i>
Balance at January 1, 2017	1,111.0	(295.2)	\$ 2,777	\$ 4,421	\$ 32,587	\$ (18,581)	\$ (1,272)	\$ 19,932
Net income			-	-	10,712	-	-	10,712
Other comprehensive income			-	-	-	-	131	131
Conversion, stock option exercises, forfeitures, and other	0.4	1.1	1	55	-	20	-	76
Share repurchase programs (Note 19)	-	(36.4)	-	-	-	(4,013)	-	(4,013)
Cash dividends declared (\$2.48 per share)	-	-	-	-	(1,982)	-	-	(1,982)
Balance at December 31, 2017	1,111.4	(330.5)	\$ 2,778	\$ 4,476	\$ 41,317	\$ (22,574)	\$ (1,141)	\$ 24,856
Net income			-	-	5,966	-	-	5,966
Other comprehensive income			-	-	-	-	26	26
Conversion, stock option exercises, forfeitures, and other	0.3	1.1	1	65	-	33	-	99
Share repurchase programs (Note 19)	-	(57.2)	-	(92)	-	(8,133)	-	(8,225)
Cash dividends declared (\$3.06 per share)	-	-	-	-	(2,299)	-	-	(2,299)
Reclassification due to ASU 2018-02 adoption			-	-	300	-	(300)	-
Balance at December 31, 2018	1,111.7	(386.6)	\$ 2,779	\$ 4,449	\$ 45,284	\$ (30,674)	\$ (1,415)	\$ 20,423
Net income			-	-	5,919	-	-	5,919
Other comprehensive income			-	-	-	-	59	59
Conversion, stock option exercises, forfeitures, and other	0.3	1.7	1	46	-	82	-	129
Share repurchase programs (Note 19)	-	(35.0)	-	28	-	(5,832)	-	(5,804)
Cash dividends declared (\$3.70 per share)	-	-	-	-	(2,598)	-	-	(2,598)
Balance at December 31, 2019	1,112.0	(419.9)	\$ 2,780	\$ 4,523	\$ 48,605	\$ (36,424)	\$ (1,356)	\$ 18,128

[a] AOCI = Accumulated Other Comprehensive Income/(Loss) (Note 10)
The accompanying notes are an integral part of these Consolidated Financial Statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Union Pacific Corporation and Subsidiary Companies

For purposes of this report, unless the context otherwise requires, all references herein to the "Corporation", "Company", "UPC", "we", "us", and "our" mean Union Pacific Corporation and its subsidiaries, including Union Pacific Railroad Company, which will be separately referred to herein as "UPRR" or the "Railroad".

1. Nature of Operations

Operations and Segmentation – We are a Class I railroad operating in the U.S. Our network includes 32,340 route miles, linking Pacific Coast and Gulf Coast ports with the Midwest and Eastern U.S. gateways and providing several corridors to key Mexican gateways. We own 26,094 miles and operate on the remainder pursuant to trackage rights or leases. We serve the western two-thirds of the country and maintain coordinated schedules with other rail carriers for the handling of freight to and from the Atlantic Coast, the Pacific Coast, the Southeast, the Southwest, Canada, and Mexico. Export and import traffic is moved through Gulf Coast and Pacific Coast ports and across the Mexican and Canadian borders.

The Railroad, along with its subsidiaries and rail affiliates, is our one reportable operating segment. Although we provide and analyze revenue by commodity group, we treat the financial results of the Railroad as one segment due to the integrated nature of our rail network. Our operating revenues are primarily derived from contracts with customers for the transportation of freight from origin to destination. The following table represents a disaggregation of our freight and other revenues:

Millions	2019	2018	2017
Agricultural Products	\$ 4,444	\$ 4,469	\$ 4,303
Energy	3,761	4,608	4,498
Industrial	5,796	5,679	5,204
Premium	6,242	6,628	5,832
Total freight revenues	\$ 20,243	\$ 21,384	\$ 19,837
Other subsidiary revenues	880	881	885
Accessorial revenues	514	502	458
Other	71	65	60
Total operating revenues	\$ 21,708	\$ 22,832	\$ 21,240

Although our revenues are principally derived from customers domiciled in the U.S., the ultimate points of origination or destination for some products we transport are outside the U.S. Each of our commodity groups includes revenue from shipments to and from Mexico. Included in the above table are freight revenues from our Mexico business which amounted to \$2.3 billion in 2019, \$2.5 billion in 2018, and \$2.3 billion in 2017.

Basis of Presentation – The Consolidated Financial Statements are presented in accordance with accounting principles generally accepted in the U.S. (GAAP) as codified in the Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC).

2. Significant Accounting Policies

Principles of Consolidation – The Consolidated Financial Statements include the accounts of Union Pacific Corporation and all of its subsidiaries. Investments in affiliated companies (20% to 50% owned) are accounted for using the equity method of accounting. All intercompany transactions are eliminated. We currently have no less than majority-owned investments that require consolidation under variable interest entity requirements.

Cash, Cash Equivalents and Restricted Cash – Cash equivalents consist of investments with original maturities of three months or less. Amounts included in restricted cash represent those required to be set aside by contractual agreement.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the Consolidated Statements of Financial Position that sum to the total of the same such amounts shown on the Consolidated Statements of Cash Flows:

Millions	2019	2018	2017
Cash and cash equivalents	\$ 831	\$ 1,273	\$ 1,275
Restricted cash equivalents in other current assets	13	42	-
Restricted cash equivalents in other assets	12	13	-
Total cash, cash equivalents and restricted cash equivalents shown on the Statement of Cash Flows:	\$ 856	\$ 1,328	\$ 1,275

Accounts Receivable – Accounts receivable includes receivables reduced by an allowance for doubtful accounts. The allowance is based upon historical losses, credit worthiness of customers, and current economic conditions. Receivables not expected to be collected in one year and the associated allowances are classified as other assets in our Consolidated Statements of Financial Position.

Investments – Investments represent our investments in affiliated companies (20% to 50% owned) that are accounted for under the equity method of accounting and investments in companies (less than 20% owned) accounted for under the cost method of accounting. Our portion of income/(loss) on equity method investments that are integral to our operations are recorded in operating expenses.

Materials and Supplies – Materials and supplies are carried at the lower of average cost or net realizable value.

Property and Depreciation – Properties and equipment are carried at cost and are depreciated on a straight-line basis over their estimated service lives, which are measured in years, except for rail in high-density traffic corridors (i.e., all rail lines except for those subject to abandonment, and yard and switching tracks), for which lives are measured in millions of gross tons per mile of track. We use the group method of depreciation in which all items with similar characteristics, use, and expected lives are grouped together in asset classes, and are depreciated using composite depreciation rates. The group method of depreciation treats each asset class as a pool of resources, not as singular items. We determine the estimated service lives of depreciable railroad assets by means of depreciation studies. Under the group method of depreciation, no gain or loss is recognized when depreciable property is retired or replaced in the ordinary course of business.

Impairment of Long-lived Assets – We review long-lived assets, including identifiable intangibles, for impairment when events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. If impairment indicators are present and the estimated future undiscounted cash flows are less than the carrying value of the long-lived assets, the carrying value is reduced to the estimated fair value as measured by the discounted cash flows.

Revenue Recognition – Freight revenues are derived from contracts with customers. We account for a contract when it has approval and commitment from both parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance, and collectability of consideration is probable. Our contracts include private agreements, private rate/letter quotes, public circulars/tariffs, and interline/foreign agreements. The performance obligation in our contracts is typically delivering a specific commodity from a place of origin to a place of destination and our commitment begins with the tendering and acceptance of a freight bill of lading and is satisfied upon delivery at destination. We consider each freight shipment to be a distinct performance obligation.

We recognize freight revenues over time as freight moves from origin to destination. The allocation of revenue between reporting periods is based on the relative transit time in each reporting period with expenses recognized as incurred. Outstanding performance obligations related to freight moves in transit totaled \$127 million at December 31, 2019 and \$123 million at December 31, 2018 and are expected to be recognized in the following quarter as we satisfy our remaining performance obligations and deliver freight to destination. The transaction price is generally specified in a contract and may be dependent on the commodity, origin/destination, and route. Customer incentives, which are primarily provided for shipping to/from specific locations or based on cumulative volumes, are recorded as a reduction to operating revenues. Customer incentives that include variable consideration based on cumulative volumes are estimated using the expected value method, which is based on available historical, current, and forecasted volumes, and recognized as the related performance obligation is satisfied.

Under typical payment terms, our customers pay us after each performance obligation is satisfied and there are no material contract assets or liabilities associated with our freight revenues. Outstanding freight receivables are presented in our Consolidated Statement of Financial Position as Accounts Receivables, net.

Freight revenue related to interline transportation services that involve other railroads are reported on a net basis. The portion of the gross amount billed to customers that is remitted by the Company to another party is not reflected as freight revenue.

Other revenues consist primarily of revenues earned by our other subsidiaries (primarily logistics and commuter rail operations) and accessorial revenues. Other subsidiary revenues are generally recognized over time as shipments move from origin to destination. The allocation of revenue between reporting periods is based on the relative transit time in each reporting period with expenses recognized as incurred. Accessorial revenues are recognized at a point in time as performance obligations are satisfied.

Translation of Foreign Currency – Our portion of the assets and liabilities related to foreign investments are translated into U.S. dollars at the exchange rates in effect at the balance sheet date. Revenue and expenses are translated at the average rates of exchange prevailing during the year. Unrealized gains or losses are reflected within common shareholders' equity as accumulated other comprehensive income or loss.

Fair Value Measurements – We use a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. The level in the fair value hierarchy within which the fair value measurement in its entirety falls is determined based on the lowest level input that is significant to the fair value measurement in its entirety. These levels include:

Level 1: Quoted market prices in active markets for identical assets or liabilities.

Level 2: Observable market-based inputs or unobservable inputs that are corroborated by market data.

Level 3: Unobservable inputs that are not corroborated by market data.

We have applied fair value measurements to our short term investments, pension plan assets and short- and long-term debt.

Stock-Based Compensation – We have several stock-based compensation plans under which employees and non-employee directors receive stock options, nonvested retention shares, and nonvested stock units. We refer to the nonvested shares and stock units collectively as "retention awards". We have elected to issue treasury shares to cover option exercises and stock unit vestings, while new shares are issued when retention shares are granted.

We measure and recognize compensation expense for all stock-based awards made to employees and directors, including stock options. Compensation expense is based on the fair value of the awards as measured at the grant date and is expensed ratably over the service period of the awards (generally the vesting period). The fair value of retention awards is the closing stock price on the date of grant, while the fair value of stock options is determined by using the Black-Scholes option pricing model.

Earnings Per Share – Basic earnings per share are calculated on the weighted-average number of common shares outstanding during each period. Diluted earnings per share include shares issuable upon exercise of outstanding stock options and stock-based awards where the conversion of such instruments would be dilutive.

Income Taxes – We account for income taxes by recording taxes payable or refundable for the current year and deferred tax assets and liabilities for the expected future tax consequences of events that have been recognized in our financial statements or tax returns. These expected future tax consequences are measured based on current tax law; the effects of future tax legislation are not anticipated. Future tax legislation, such as a change in the corporate tax rate, could have a material impact on our financial condition, results of operations, or liquidity.

When appropriate, we record a valuation allowance against deferred tax assets to reflect that these tax assets may not be realized. In determining whether a valuation allowance is appropriate, we consider whether it is more likely than not that all or some portion of our deferred tax assets will not be realized, based on management's judgments using available evidence for purposes of estimating whether future taxable income will be sufficient to realize a deferred tax asset.

We recognize tax benefits that are more likely than not to be sustained upon examination by tax authorities. The amount recognized is measured as the largest amount of benefit that is greater than 50 percent likely to be realized upon settlement. A liability for “unrecognized tax benefits” is recorded for any tax benefits claimed in our tax returns that do not meet these recognition and measurement standards.

Leases – We lease certain locomotives, freight cars, and other property for use in our rail operations. We determine if an arrangement is or contains a lease at inception. Operating lease assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments, discounted using our collateralized incremental borrowing rate, over the lease term at commencement date. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that the option will be exercised. Operating leases are included in operating lease assets, accounts payable and other current liabilities, and operating lease liabilities on our Consolidated Statements of Financial Position. Finance leases are included in net properties, debt due within one year, and debt due after one year on our Consolidated Statements of Financial Position. Operating lease expense is recognized on a straight-line basis over the lease term and reported in equipment and other rents and financing lease expense is recorded as depreciation and interest expense in our Consolidated Statements of Income.

We have lease agreements with lease and non-lease components and we have elected to not separate lease and non-lease components for all classes of underlying assets. Leases with an initial term of 12 months or less are not recorded on our Consolidated Statements of Financial Position; Leases with initial terms in excess of 12 months are recorded as operating or financing leases in our Consolidated Statement of Financial Position.

Pension and Postretirement Benefits – We incur certain employment-related expenses associated with pensions and postretirement health benefits. In order to measure the expense associated with these benefits, we must make various assumptions including discount rates used to value certain liabilities, expected return on plan assets used to fund these expenses, compensation increases, employee turnover rates, anticipated mortality rates, and expected future health care costs. The assumptions used by us are based on our historical experience as well as current facts and circumstances. We use an actuarial analysis to measure the expense and liability associated with these benefits.

Personal Injury – The cost of injuries to employees and others on our property is charged to expense based on estimates of the ultimate cost and number of incidents each year. We use an actuarial analysis to measure the expense and liability. Our personal injury liability is not discounted to present value. Legal fees and incidental costs are expensed as incurred.

Environmental – When environmental issues have been identified with respect to property currently or formerly owned, leased, or otherwise used in the conduct of our business, we perform, with the assistance of our consultants, environmental assessments on such property. We expense the cost of the assessments as incurred. We accrue the cost of remediation where our obligation is probable and such costs can be reasonably estimated. We do not discount our environmental liabilities when the timing of the anticipated cash payments is not fixed or readily determinable. Legal fees and incidental costs are expensed as incurred.

Use of Estimates – The preparation of our Consolidated Financial Statements in conformity with GAAP requires management to make estimates and assumptions that affect certain reported assets and liabilities, and the disclosure of certain contingent assets and liabilities as of the date of the consolidated financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Actual future results may differ from such estimates.

3. Accounting Pronouncements

In February 2016, the FASB issued Accounting Standards Update No. 2016-02 (ASU 2016-02), *Leases* (Topic 842). ASU 2016-02 requires companies to recognize lease assets and lease liabilities on the balance sheet and disclose key information about leasing arrangements. We implemented an enterprise-wide lease management system to support the new reporting requirements, and effective January 1, 2019, we adopted ASU No. 2016-02, *Leases* (Topic 842). We elected an initial application date of January 1, 2019 and will not recast comparative periods in transition to the new standard. In addition, at the date of adoption, we elected certain practical expedients which permit us to not reassess whether existing contracts are or contain leases, to not reassess the lease classification of any existing leases, to not reassess initial direct costs for any existing leases, and to not separate lease and nonlease components for all classes of underlying assets. Also, at the date of adoption, we elected to keep leases with an initial term of 12 months

or less off of the balance sheet for all classes of underlying assets. Adoption of the new standard resulted in an increase in the Company's assets and liabilities of approximately \$2 billion. The ASU did not have an impact on our consolidated results of operations or cash flows.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13 (ASU 2016-13), *Measurement of Credit Losses on Financial Instruments*, which replaces the existing incurred credit loss model for an expected credit loss model. Effective January 1, 2020, the Company adopted ASU 2016-13 and it did not have a material impact on our consolidated financial position, results of operations, or cash flows.

In August 2018, the FASB issued Accounting Standards Update No. 2018-14 (ASU 2018-14), *Changes to the Disclosure Requirements for Defined Benefit Plans*, which modifies the disclosure requirements for employers that sponsor defined benefit pension and other postretirement plans. The ASU is effective for the Company beginning January 1, 2021, and early adoption is permitted. Adoption of the standard is not expected to have a material impact on the Company's consolidated financial statement disclosure requirements.

4. Workforce Reduction Plans

Throughout 2019, we continued to implement initiatives to better align our management structure and decision making process in conjunction with the Company's operating model. As such, we reduced our management workforce by approximately 540 employees in 2019.

On October 23, 2018, we announced the elimination of one operating region and five service units as part of a broader effort to more closely align operating resources with the Company's long term strategic initiatives. This resulted in the reduction of approximately 330 management employees in the fourth quarter of 2018. In addition, approximately 140 agreement positions were reduced as part of ongoing initiatives.

On August 16, 2017, the Company approved and commenced a management and administrative personnel reorganization plan (the "Plan") furthering its on-going efforts to increase efficiency and more effectively align Company resources. The Plan implemented productivity initiatives identified during a Company-wide organizational review that included the reduction of approximately 460 management positions and 250 agreement positions during the third and fourth quarters of 2017.

These workforce reductions resulted in pretax charges recognized within compensation and benefits expense and other income in our Consolidated Statements of Income. The charges consisted of management employee termination benefits, including pension expenses, severance costs, and acceleration of equity compensation expense as shown in the following table:

Millions for the Years Ended December 31,	2019	2018	2017
Compensation and benefits expense			
Severance	\$ 22	\$ 23	\$ 12
Equity compensation	2	2	5
Other income			
Pension	-	-	69
Total expense	\$ 24	\$ 25	\$ 86

The 2017 workforce reduction plan included an enhanced pension benefit which resulted in a curtailment loss of \$20 million and a special termination benefit of \$49 million as a result of a remeasurement as of September 30, 2017. In accordance with ASU 2017-07, both of these charges were recorded within other income.

We continue to analyze the Company's cost structure and evaluate other restructuring and cost reduction opportunities that will further align with the Company's long-term strategic priorities.

5. Stock Options and Other Stock Plans

In April 2000, the shareholders approved the Union Pacific Corporation 2000 Directors Plan (Directors Plan) whereby 2,200,000 shares of our common stock were reserved for issuance to our non-employee directors. Under the Directors Plan, each non-employee director, upon his or her initial election to the Board of

Directors, received a grant of 4,000 retention shares or retention stock units. In July 2018, the Board of Directors eliminated the retention grant for directors newly elected in 2018 and all future years. As of December 31, 2019, 36,000 restricted shares were outstanding under the Directors Plan.

The Union Pacific Corporation 2004 Stock Incentive Plan (2004 Plan) was approved by shareholders in April 2004. The 2004 Plan reserved 84,000,000 shares of our common stock for issuance, plus any shares subject to awards made under previous plans that were outstanding on April 16, 2004, and became available for regrant pursuant to the terms of the 2004 Plan. Under the 2004 Plan, non-qualified options, stock appreciation rights, retention shares, stock units, and incentive bonus awards may be granted to eligible employees of the Corporation and its subsidiaries. Non-employee directors are not eligible for awards under the 2004 Plan. As of December 31, 2019, 231,807 options were outstanding under the 2004 Plan. We no longer grant any stock options or other stock or unit awards under this plan.

The Union Pacific Corporation 2013 Stock Incentive Plan (2013 Plan) was approved by shareholders in May 2013. The 2013 Plan reserved 78,000,000 shares of our common stock for issuance, plus any shares subject to awards made under previous plans as of February 28, 2013, that are subsequently cancelled, expired, forfeited or otherwise not issued under previous plans. Under the 2013 Plan, non-qualified options, incentive stock options, retention shares, stock units, and incentive bonus awards may be granted to eligible employees of the Corporation and its subsidiaries. Non-employee directors are not eligible for awards under the 2013 Plan. As of December 31, 2019, 3,269,780 options and 2,671,584 retention shares and stock units were outstanding under the 2013 Plan.

Pursuant to the above plans 70,318,887; 70,730,692; and 72,151,415; shares of our common stock were authorized and available for grant at December 31, 2019, 2018, and 2017, respectively.

Stock-Based Compensation – We have several stock-based compensation plans under which employees and non-employee directors receive stock options, nonvested retention shares, and nonvested stock units. We refer to the nonvested shares and stock units collectively as “retention awards”. We have elected to issue treasury shares to cover option exercises and stock unit vestings, while new shares are issued when retention shares are granted.

Information regarding stock-based compensation appears in the table below:

Millions	2019	2018	2017
Stock-based compensation, before tax:			
Stock options	\$ 16	\$ 17	\$ 19
Retention awards	77	79	84
Total stock-based compensation, before tax	\$ 93	\$ 96	\$ 103
Excess tax benefits from equity compensation plans	\$ 52	\$ 28	\$ 44

Stock Options – We estimate the fair value of our stock option awards using the Black-Scholes option pricing model. The table below shows the annual weighted-average assumptions used for valuation purposes:

Weighted-Average Assumptions	2019	2018	2017
Risk-free interest rate	2.5%	2.6%	2.0%
Dividend yield	2.2%	2.3%	2.3%
Expected life (years)	5.2	5.3	5.3
Volatility	22.7%	21.1%	21.7%
Weighted-average grant-date fair value of options granted	\$ 30.37	\$ 21.70	\$ 18.19

The risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant; the expected dividend yield is calculated as the ratio of dividends paid per share of common stock to the stock price on the date of grant; the expected life is based on historical and expected exercise behavior; and expected volatility is based on the historical volatility of our stock price over the expected life of the option.

A summary of stock option activity during 2019 is presented below:

	Options (thous.)	Weighted-Average Exercise Price	Remaining Contractual Term	Weighted-Average Remaining Contractual Term	Aggregate Intrinsic Value (millions)
Outstanding at January 1, 2019	5,170	\$ 92.06	5.4 yrs.	\$ 239	
Granted	573	160.84	N/A		N/A
Exercised	(2,118)	73.63	N/A		N/A
Forfeited or expired	(123)	122.73	N/A		N/A
Outstanding at December 31, 2019	3,502	\$ 113.38	6.1 yrs.	\$ 236	
Vested or expected to vest at December 31, 2019	3,464	\$ 113.10	6.1 yrs.	\$ 234	
Options exercisable at December 31, 2019	2,257	\$ 100.42	5.0 yrs.	\$ 181	

Stock options are granted at the closing price on the date of grant, have 10 year contractual terms, and vest no later than 3 years from the date of grant. None of the stock options outstanding at December 31, 2019, are subject to performance or market-based vesting conditions.

At December 31, 2019, there was \$16 million of unrecognized compensation expense related to nonvested stock options, which is expected to be recognized over a weighted-average period of 0.9 years. Additional information regarding stock option exercises appears in the following table:

Millions	2019	2018	2017
Intrinsic value of stock options exercised	\$ 193	\$ 83	\$ 88
Cash received from option exercises	130	76	59
Treasury shares repurchased for employee payroll taxes	(37)	(20)	(18)
Tax benefit realized from option exercises	48	21	34
Aggregate grant-date fair value of stock options vested	15	19	20

Retention Awards – The fair value of retention awards is based on the closing price of the stock on the grant date. Dividends and dividend equivalents are paid to participants during the vesting periods.

Changes in our retention awards during 2019 were as follows:

	Shares (thous.)	Weighted-Average Grant-Date Fair Value
Nonvested at January 1, 2019	2,070	\$ 104.55
Granted	384	161.79
Vested	(451)	119.66
Forfeited	(105)	112.09
Nonvested at December 31, 2019	1,898	\$ 112.12

Retention awards are granted at no cost to the employee or non-employee director and vest over periods lasting up to 4 years. At December 31, 2019, there was \$90 million of total unrecognized compensation expense related to nonvested retention awards, which is expected to be recognized over a weighted-average period of 1.4 years.

Performance Retention Awards – In February 2019, our Board of Directors approved performance stock unit grants. The basic terms of these performance stock units are identical to those granted in February 2018, except for different annual return on invested capital (ROIC) performance targets. The plan also includes relative operating income growth (OIG) as a modifier compared to the companies included in the S&P 500 Industrials Index. We define ROIC as net operating profit adjusted for interest expense (including interest on average operating lease liabilities) and taxes on interest divided by average invested capital adjusted for average operating lease liabilities. The modifier can be up to +/- 25% of the award earned based on the ROIC achieved.

Stock units awarded to selected employees under these grants are subject to continued employment for 37 months and the attainment of certain levels of ROIC, modified for the relative OIG. We expense the fair value of the units that are probable of being earned based on our forecasted ROIC over the 3-year performance period, and with respect to the third year of the plan, the relative OIG modifier. We measure the fair value of these performance stock units based upon the closing price of the underlying common stock as of the date of grant, reduced by the present value of estimated future dividends. Dividend equivalents are paid to participants only after the units are earned.

The assumptions used to calculate the present value of estimated future dividends related to the February 2019 grant were as follows:

	2019
Dividend per share per quarter	\$ 0.88
Risk-free interest rate at date of grant	2.5%

Changes in our performance retention awards during 2019 were as follows:

	Shares (thous.)	Weighted-Average Grant-Date Fair Value
Nonvested at January 1, 2019	1,092	\$ 95.12
Granted	324	151.24
Vested	(269)	70.87
Unearned	(127)	70.09
Forfeited	(91)	113.67
Nonvested at December 31, 2019	929	\$ 123.32

At December 31, 2019, there was \$24 million of total unrecognized compensation expense related to nonvested performance retention awards, which is expected to be recognized over a weighted-average period of 0.8 years. This expense is subject to achievement of the performance measures established for the performance stock unit grants.

6. Retirement Plans

Pension and Other Postretirement Benefits

Pension Plans – We provide defined benefit retirement income to eligible non-union employees through qualified and non-qualified (supplemental) pension plans. Qualified and non-qualified pension benefits are based on years of service and the highest compensation during the latest years of employment, with specific reductions made for early retirements. Non-union employees hired on or after January 1, 2018 are no longer eligible for pension benefits, but are eligible for an enhanced 401(k) benefit as described below in other retirement programs.

Other Postretirement Benefits (OPEB) – We provide medical and life insurance benefits for eligible retirees hired before January 1, 2004. These benefits are funded as medical claims and life insurance premiums are paid.

Funded Status

We are required by GAAP to separately recognize the overfunded or underfunded status of our pension and OPEB plans as an asset or liability. The funded status represents the difference between the projected benefit obligation (PBO) and the fair value of the plan assets. Our non-qualified (supplemental) pension plan is unfunded by design. The PBO of the pension plans is the present value of benefits earned to date by plan participants, including the effect of assumed future compensation increases. The PBO of the OPEB plan is equal to the accumulated benefit obligation, as the present value of the OPEB liabilities is not affected by compensation increases. Plan assets are measured at fair value. We use a December 31 measurement date for plan assets and obligations for all our retirement plans.

Changes in our PBO and plan assets were as follows for the years ended December 31:

Funded Status Millions	Pension			OPEB		
	2019	2018	2019	2018	2018	2018
Projected Benefit Obligation						
Projected benefit obligation at beginning of year	\$ 4,181	\$ 4,529	\$ 298	\$ 330		
Service cost	80	105	1	2		
Interest cost	160	145	9	10		
Plan amendment	-	-	(92)	-		
Actuarial (gain)/loss	656	(371)	11	(20)		
Gross benefits paid	(230)	(227)	(22)	(24)		
Projected benefit obligation at end of year	\$ 4,847	\$ 4,181	\$ 205	\$ 298		
Plan Assets						
Fair value of plan assets at beginning of year	\$ 3,887	\$ 4,224	\$ -	\$ -		
Actual (loss)/return on plan assets	841	(139)	-	-		
Non-qualified plan benefit contributions	30	29	22	24		
Gross benefits paid	(230)	(227)	(22)	(24)		
Fair value of plan assets at end of year	\$ 4,528	\$ 3,887	\$ -	\$ -		
Funded status at end of year	\$ (319)	\$ (294)	\$ (205)	\$ (298)		

Amounts recognized in the statement of financial position as of December 31, 2019, and 2018 consist of:

Millions	Pension			OPEB		
	2019	2018	2019	2018	2018	2018
Noncurrent assets	\$ 203	\$ 172	\$ -	\$ -		
Current liabilities	(29)	(28)	(20)	(22)		
Noncurrent liabilities	(493)	(438)	(185)	(276)		
Net amounts recognized at end of year	\$ (319)	\$ (294)	\$ (205)	\$ (298)		

Pre-tax amounts recognized in accumulated other comprehensive income/(loss) as of December 31, 2019, and 2018 consist of:

Millions	2019			2018		
	Pension	OPEB	Total	Pension	OPEB	Total
Prior service cost	\$ -	\$ 95	\$ 95	\$ -	\$ -	\$ -
Net actuarial loss	(1,501)	(104)	(1,605)	(1,480)	(90)	(1,570)
Total	\$ (1,501)	\$ (9)	\$ (1,510)	\$ (1,480)	\$ (90)	\$ (1,570)

Pre-tax changes recognized in other comprehensive income/(loss) during 2019, 2018, and 2017 were as follows:

Millions	Pension			OPEB		
	2019	2018	2017	2019	2018	2017
Prior service credit	\$ -	\$ -	\$ -	\$ 92	\$ -	\$ -
Net actuarial (loss)/gain	(88)	(40)	67	(11)	20	(6)
Amortization of:						
Prior service cost/(credit)	-	-	-	(7)	1	1
Actuarial loss	67	93	81	7	10	9
Total	\$ (21)	\$ 53	\$ 148	\$ 81	\$ 31	\$ 4

Amounts included in accumulated other comprehensive income/(loss) expected to be amortized into net periodic cost during 2020:

Millions	Pension	OPEB	Total
Prior service credit	\$ -	\$ 14	\$ 14
Net actuarial loss	(99)	(9)	(108)
Total	\$ (99)	\$ 5	\$ (94)

Underfunded Accumulated Benefit Obligation – The accumulated benefit obligation (ABO) is the present value of benefits earned to date, assuming no future compensation growth. The underfunded accumulated benefit obligation represents the difference between the ABO and the fair value of plan assets.

The following table discloses only the PBO, ABO and fair value of plan assets for pension plans where the accumulated benefit obligation is in excess of the fair value of the plan assets as of December 31:

<i>Underfunded Accumulated Benefit Obligation</i>		2019	2018
Millions		\$	\$
Projected benefit obligation		522	465
Accumulated benefit obligation		498	446
Fair value of plan assets		-	-
Underfunded accumulated benefit obligation		(498)	(446)

The ABO for all defined benefit pension plans was \$4.5 billion and \$3.9 billion at December 31, 2019, and 2018, respectively.

Assumptions – The weighted-average actuarial assumptions used to determine benefit obligations at December 31:

Percentages	Pension		OPEB	
	2019	2018	2019	2018
Discount rate	3.26%	4.23%	3.13%	4.17%
Compensation increase	4.10%	4.19%	N/A	N/A
Health care cost trend rate (employees under 65)	N/A	N/A	5.64%	5.87%
Ultimate health care cost trend rate	N/A	N/A	4.50%	4.50%
Year ultimate trend rate reached	N/A	N/A	2038	2038

Expense

Both pension and OPEB expense are determined based upon the annual service cost of benefits (the actuarial cost of benefits earned during a period) and the interest cost on those liabilities, less the expected return on plan assets. The expected long-term rate of return on plan assets is applied to a calculated value of plan assets that recognizes changes in fair value over a 5 year period. This practice is intended to reduce year-to-year volatility in pension expense, but it can have the effect of delaying the recognition of differences between actual returns on assets and expected returns based on long-term rate of return assumptions. Differences in actual experience in relation to assumptions are not recognized in net income immediately, but are deferred in accumulated other comprehensive income and, if necessary, amortized as pension or OPEB expense.

On June 30, 2019, the OPEB plan was remeasured to reflect an announced plan amendment effective January 1, 2020 that reduced and eliminated certain medical benefits for Medicare-eligible retirees. This negative plan amendment resulted in a reduction in the accumulated postretirement benefit obligation of approximately \$92 million with a corresponding adjustment of \$69 million in other comprehensive income, net of \$23 million in deferred taxes. This amount is being amortized as a reduction of future net periodic OPEB cost over approximately 8 years, which represents the future remaining service period of eligible employees.

The workforce reduction plan initiated in the third quarter of 2017 included a curtailment loss of \$20 million and a special termination benefit of \$49 million as a result of a remeasurement as of September 30, 2017, due to the eliminated future service for approximately 460 management employees.

The components of our net periodic pension and OPEB cost were as follows for the years ended December 31:

Millions	Pension			OPEB		
	2019	2018	2017	2019	2018	2017
Net Periodic Benefit Cost:						
Service cost	\$ 80	\$ 105	\$ 90	\$ 1	\$ 2	\$ 2
Interest cost	160	145	142	9	10	10
Expected return on plan assets	(273)	(272)	(267)	-	-	-
Plan curtailment cost	-	-	20	-	-	-
Special termination cost	-	-	49	-	-	-
Amortization of:						
Prior service cost/(credit)	-	-	-	(7)	1	1
Actuarial loss	67	93	81	7	10	9
Net periodic benefit cost	\$ 34	\$ 71	\$ 115	\$ 10	\$ 23	\$ 22

Assumptions – The weighted-average actuarial assumptions used to determine expense were as follows:

Percentages	Pension			OPEB		
	2019	2018	2017	2019	2018	2017
Discount rate for benefit obligations	4.23%	3.62%	4.09%	3.79%	3.54%	3.89%
Discount rate for interest on benefit obligations	3.94%	3.27%	3.47%	3.40%	3.14%	3.25%
Discount rate for service cost	4.33%	3.77%	4.41%	3.92%	3.71%	4.25%
Discount rate for interest on service cost	4.30%	3.72%	4.27%	3.85%	3.64%	4.11%
Expected return on plan assets	7.00%	7.00%	7.00%	N/A	N/A	N/A
Compensation increase	4.10%	4.19%	4.13%	N/A	N/A	N/A
Health care cost trend rate (employees under 65)	N/A	N/A	N/A	5.87%	6.09%	6.31%
Ultimate health care cost trend rate	N/A	N/A	N/A	4.50%	4.50%	4.50%
Year ultimate trend reached	N/A	N/A	N/A	2038	2038	2038

We measure the service cost and interest cost components of our net periodic benefit cost by using individual spot discount rates matched with separate cash flows for each future year. The discount rates were based on a yield curve of high quality corporate bonds. The expected return on plan assets is based on our asset allocation mix and our historical return, taking into account current and expected market conditions. The actual return/(loss) on pension plan assets, net of fees, was approximately 20% in 2019, (2)% in 2018, and 19% in 2017.

Assumed health care cost trend rates have an effect on the expense and liabilities reported for health care plans. The assumed health care cost trend rate is based on historical rates and expected market conditions. The 2020 assumed health care cost trend rate for employees under 65 is 5.64%. It is assumed the rate will decrease gradually to an ultimate rate of 4.5% in 2038 and will remain at that level.

Cash Contributions

The following table details cash contributions, if any, for the qualified pension plans and the benefit payments for the non-qualified (supplemental) pension and OPEB plans:

Millions	Pension			OPEB
	Qualified	Non-qualified	OPEB	
2019	\$ -	\$ 30	\$ 22	
2018	-	29	24	

Our policy with respect to funding the qualified plans is to fund at least the minimum required by law and not more than the maximum amount deductible for tax purposes.

The non-qualified pension and OPEB plans are not funded and are not subject to any minimum regulatory funding requirements. Benefit payments for each year represent supplemental pension payments and claims paid for medical and life insurance. We anticipate our 2020 supplemental pension and OPEB payments will be made from cash generated from operations.

Benefit Payments

The following table details expected benefit payments for the years 2020 through 2029:

Millions	Pension	OPEB
2020	\$ 224	\$ 20
2021	221	19
2022	220	15
2023	219	15
2024	220	10
Years 2025 - 2029	1,119	45

Asset Allocation Strategy

Our pension plan asset allocation at December 31, 2019, and 2018, and target allocation for 2020, are as follows:

	Target Allocation 2020	<i>Percentage of Plan Assets December 31,</i>	
		2019	2018
Equity securities	60% to 70%	63%	56%
Debt securities	25% to 35%	31	36
Real estate	2% to 8%	6	6
Commodities	N/A	-	2
Total		100%	100%

The investment strategy for pension plan assets is to maintain a broadly diversified portfolio designed to achieve our target average long-term rate of return of 7.0%. While we believe we can achieve a long-term average rate of return of 7.0%, we cannot be certain that the portfolio will perform to our expectations. Assets are strategically allocated among equity, debt, and other investments in order to achieve a diversification level that reduces fluctuations in investment returns. Asset allocation target ranges for equity, debt, and other portfolios are evaluated at least every three years with the assistance of an independent consulting firm. Actual asset allocations are monitored monthly, and rebalancing actions are executed at least quarterly, as needed.

The pension plan investments are held in a Master Trust. The majority of pension plan assets are invested in equity securities because equity portfolios have historically provided higher returns than debt and other asset classes over extended time horizons and are expected to do so in the future. Correspondingly, equity investments also entail greater risks than other investments. Equity risks are balanced by investing a significant portion of the plans' assets in high quality debt securities. The average credit rating of the debt portfolio exceeded A at both December 31, 2019 and December 31, 2018. The debt portfolio is also broadly diversified and invested primarily in U.S. Treasury, mortgage, and corporate securities. The weighted-average maturity of the debt portfolio was 14 years and 13 years, respectively at December 31, 2019, and 2018.

The investment of pension plan assets in securities issued by UPC is explicitly prohibited by the plan for both the equity and debt portfolios, other than through index fund holdings.

Fair Value Measurements

The pension plan assets are valued at fair value. The following is a description of the valuation methodologies used for the investments measured at fair value, including the general classification of such instruments pursuant to the valuation hierarchy.

Temporary Cash Investments – These investments consist of U.S. dollars, foreign currencies, and commercial paper held in master trust accounts at The Northern Trust Company (the Trustee). Foreign currencies held are reported in terms of U.S. dollars based on currency exchange rates readily available in active markets. U.S. dollars and foreign currencies are classified as Level 1 investments. Commercial paper assets are valued using a bid evaluation process with bid data provided by independent pricing sources. Commercial paper is classified as Level 2 investments.

Registered Investment Companies – Registered Investment Companies are entities primarily engaged in the business of investing in securities and are registered with the Securities and Exchange Commission. The Plan's holdings of Registered Investment Companies include both public and private fund vehicles. The public vehicles are exchange-traded funds (stocks), which are classified as Level 1 investments. The private vehicles (bonds) do not have published pricing and are valued using Net Asset Value (NAV).

Federal Government Securities – Federal Government Securities consist of bills, notes, bonds, and other fixed income securities issued directly by the U.S. Treasury or by government-sponsored enterprises. These assets are valued using a bid evaluation process with bid data provided by independent pricing sources. Federal Government Securities are classified as Level 2 investments.

Bonds and Debentures – Bonds and debentures consist of debt securities issued by U.S. and non-U.S. corporations as well as state and local governments. These assets are valued using a bid evaluation process with bid data provided by independent pricing sources. Corporate, state, and municipal bonds and debentures are classified as Level 2 investments.

Corporate Stock – This investment category consists of common and preferred stock issued by U.S. and non-U.S. corporations. Most common shares are traded actively on exchanges and price quotes for these shares are readily available. Common stock is classified as a Level 1 investment. Preferred shares included in this category are valued using a bid evaluation process with bid data provided by independent pricing sources. Preferred stock is classified as a Level 2 investment.

Venture Capital and Buyout Partnerships – This investment category is comprised of interests in limited partnerships that invest primarily in privately-held companies. Due to the private nature of the partnership investments, pricing inputs are not readily observable. Asset valuations are developed by the general partners that manage the partnerships. These valuations are based on the application of public market multiples to private company cash flows, market transactions that provide valuation information for comparable companies, and other methods. The fair value recorded by the Plan is calculated using each partnership's NAV.

Real Estate Funds – Most of the Plan's real estate investments are primarily interests in private real estate investment trusts, partnerships, limited liability companies, and similar structures. Valuations for the holdings in this category are not based on readily observable inputs and are primarily derived from property appraisals. The fair value recorded by the Plan is calculated using the NAV for each investment.

Collective Trust and Other Funds – Collective trust and other funds are comprised of shares or units in commingled funds and limited liability companies that are not publicly traded. The underlying assets in these entities (U.S. stock funds, non-U.S. stock funds, commodity funds, hedge funds, and short term investment funds) are publicly traded on exchanges and price quotes for the assets held by these funds are readily available. The fair value recorded by the Plan is calculated using NAV for each investment.

As of December 31, 2019, the pension plan assets measured at fair value on a recurring basis were as follows:

Millions	<i>Quoted Prices in Active Markets for Identical Inputs (Level 1)</i>	<i>Significant Other Observable Inputs (Level 2)</i>	<i>Significant Unobservable Inputs (Level 3)</i>	<i>Total</i>
Plan assets at fair value:				
Temporary cash investments	\$ 6	\$ 1	\$ -	\$ 7
Registered investment companies [a]	9	-	-	9
Federal government securities	-	202	-	202
Bonds and debentures	-	575	-	575
Corporate stock	1,932	7	-	1,939
Total plan assets at fair value	\$ 1,947	\$ 785	\$ -	\$ 2,732
Plan assets at NAV:				
Registered investment companies [b]				285
Venture capital and buyout partnerships				531
Real estate funds				261
Collective trust and other funds				707
Total plan assets at NAV				\$ 1,784
Other assets/(liabilities) [c]				12
Total plan assets				\$ 4,528

As of December 31, 2018, the pension plan assets measured at fair value on a recurring basis were as follows:

Millions	<i>Quoted Prices in Active Markets for Identical Inputs (Level 1)</i>	<i>Significant Other Observable Inputs (Level 2)</i>	<i>Significant Unobservable Inputs (Level 3)</i>	<i>Total</i>
Plan assets at fair value:				
Temporary cash investments	\$ 21	\$ -	\$ -	\$ 21
Registered investment companies [a]	1	-	-	1
Federal government securities	-	191	-	191
Bonds and debentures	-	538	-	538
Corporate stock	1,355	12	-	1,367
Total plan assets at fair value	\$ 1,377	\$ 741	\$ -	\$ 2,118
Plan assets at NAV:				
Registered investment companies [b]				378
Venture capital and buyout partnerships				443
Real estate funds				222
Collective trust and other funds				745
Total plan assets at NAV				\$ 1,788
Other assets/(liabilities) [c]				(19)
Total plan assets				\$ 3,887

[a] Registered investment companies measured at fair value are stock investments.

[b] Registered investment companies measured at NAV include bond investments.

[c] Other assets include accrued receivables, net payables, and pending broker settlements.

For the years ended December 31, 2019 and 2018, significant transfers in or out of Levels 1, 2, or 3 totaled \$0.

The Master Trust's investments in limited partnerships and similar structures (used to invest in private equity and real estate) are valued at fair value based on their proportionate share of the partnerships' fair value as recorded in the limited partnerships' audited financial statements. The limited partnerships allocate gains, losses and expenses to the partners based on the ownership percentage as described in the partnership agreements. At December 31, 2019 and 2018, the Master Trust had future commitments for additional contributions to private equity partnerships totaling \$189 million and \$248 million, respectively, and to real estate partnerships and funds totaling \$8 million and \$54 million, respectively.

Other Retirement Programs

401(k)/Thrift Plan – For non-union employees hired prior to January 1, 2018, and eligible union employees for whom we make matching contributions, we provide a defined contribution plan (401(k)/thrift plan). We match 50% for each dollar contributed by employees up to the first 6% of compensation contributed. For non-union employees hired on or after January 1, 2018, we match 100% for each dollar, up to the first 6% of compensation contributed, in addition to contributing an annual amount of 3% of the employee's annual base salary. Our plan contributions were \$20 million in 2019, \$18 million in 2018, and \$19 million in 2017.

Railroad Retirement System – All Railroad employees are covered by the Railroad Retirement System (the System). Contributions made to the System are expensed as incurred and amounted to approximately \$654 million in 2019, \$710 million in 2018, and \$672 million in 2017.

Collective Bargaining Agreements – Under collective bargaining agreements, we participate in multi-employer benefit plans that provide certain postretirement health care and life insurance benefits for eligible union employees. Premiums paid under these plans are expensed as incurred and amounted to \$42 million in 2019, \$50 million in 2018, and \$60 million in 2017.

7. Other Income

Other income included the following for the years ended December 31:

Millions	2019	2018	2017
Rental income [a]	\$ 124	\$ 122	\$ 178
Net periodic pension and OPEB costs	37	13	(45)
Interest income	32	30	16
Interest income on employment tax refund	31	-	-
Net gain on non-operating asset dispositions [b]	20	30	111
Early extinguishment of debt [c]	(2)	(85)	-
Non-operating environmental costs and other	1	(16)	(15)
Total	\$ 243	\$ 94	\$ 245

[a] 2017 includes \$65 million related to a favorable litigation settlement in the third quarter.

[b] 2017 includes \$26 million and \$57 million related to a real estate sale in the first quarter and in the third quarter, respectively.

[c] 2019 includes a debt extinguishment charge for the early redemption of certain notes in the fourth quarter. 2018 includes a debt extinguishment charge for the early redemption of certain bonds and debentures in the first quarter (Note 15).

8. Income Taxes

Components of income tax expense were as follows for the years ended December 31:

Millions	2019	2018	2017
Current tax expense:			
Federal	\$ 1,000	\$ 1,144	\$ 1,750
State	254	287	235
Foreign	8	5	2
Total current tax expense	1,262	1,436	1,987
Deferred and other tax expense:			
Federal	417	344	(5,260)
State	128	5	183
Foreign	21	(10)	10
Total deferred and other tax expense/(benefit) [a]	566	339	(5,067)
Total income tax expense/(benefit)	\$ 1,828	\$ 1,775	\$ (3,080)

[a] 2017 includes a (\$5,935) million adjustment to income tax expense resulting from the Tax Cuts and Jobs Act. Of this amount, (\$5,965) million is a federal income tax benefit and \$30 million is state income tax expense.

For the years ended December 31, reconciliations between statutory and effective tax rates are as follows:

Tax Rate Percentages	2019	2018	2017
Federal statutory tax rate	21.0 %	21.0 %	35.0 %
State statutory rates, net of federal benefits	3.7	3.9	3.1
Adjustment for Tax Cuts and Jobs Act	-	-	(77.8)
Excess tax benefits from equity compensation plans	(0.7)	(0.4)	(0.6)
Other deferred tax adjustments	(0.1)	(0.6)	0.4
Other	(0.3)	(1.0)	(0.5)
Effective tax rate	23.6 %	22.9 %	(40.4)%

Deferred tax assets and liabilities are recorded for the expected future tax consequences of events that are reported in different periods for financial reporting and income tax purposes. The majority of our deferred tax assets relate to deductions that already have been claimed for financial reporting purposes but not for tax purposes. The majority of our deferred tax liabilities relate to differences between the tax bases and financial reporting amounts of our land and depreciable property, due to accelerated tax depreciation (including bonus depreciation), revaluation of assets in purchase accounting transactions, and differences in capitalization methods.

On December 22, 2017, The Tax Cuts and Jobs Act (the Tax Act) was enacted. The Tax Act made significant changes to federal tax law, including a reduction in the federal income tax rate from 35% to 21% effective January 1, 2018, 100% bonus depreciation for certain capital expenditures, stricter limits on deductions for interest and certain executive compensation, and a one-time transition tax on previously deferred earnings of certain foreign subsidiaries. As a result of our initial analysis of the Tax Act and existing implementation guidance, we remeasured our deferred tax assets and liabilities and computed our transition tax liability net of offsetting foreign tax credits. This resulted in a \$5.9 billion reduction in our income tax expense in the fourth quarter of 2017. We also recorded a \$212 million reduction to our operating expense related to income tax adjustments at equity-method affiliates in the fourth quarter of 2017.

In the second quarter of 2019, Arkansas enacted legislation to reduce their corporate income tax rate for future years resulting in a \$21 million reduction of our deferred tax expense.

In the second quarter of 2018, Iowa and Missouri enacted legislation to reduce their corporate tax rates for future years resulting in a \$31 million reduction of our deferred tax expense.

In the third quarter of 2017, Illinois enacted legislation to increase their corporate tax rate for future years resulting in a \$33 million increase of our deferred tax expense.

Deferred income tax (liabilities)/assets were comprised of the following at December 31:

Millions	2019	2018
Deferred income tax liabilities:		
Property	\$ (12,184)	\$ (11,590)
Other	(341)	(213)
Total deferred income tax liabilities	(12,525)	(11,803)
Deferred income tax assets:		
Accrued wages	45	46
Accrued casualty costs	146	148
Stock compensation	37	44
Retiree benefits	171	138
Other	134	125
Total deferred income tax assets	533	501
Net deferred income tax liability	\$ (11,992)	\$ (11,302)

When appropriate, we record a valuation allowance against deferred tax assets to reflect that these tax assets may not be realized. In determining whether a valuation allowance is appropriate, we consider whether it is more likely than not that all or some portion of our deferred tax assets will not be realized based on management's judgments using available evidence for purposes of estimating whether future taxable income will be sufficient to realize a deferred tax asset. In 2019 and 2018, there were no valuation allowances.

Tax benefits are recognized only for tax positions that are more likely than not to be sustained upon examination by tax authorities. The amount recognized is measured as the largest amount of benefit that is greater than 50 percent likely to be realized upon settlement. Unrecognized tax benefits are tax benefits claimed in our tax returns that do not meet these recognition and measurement standards.

A reconciliation of changes in unrecognized tax benefits liabilities/(assets) from the beginning to the end of the reporting period is as follows:

Millions	2019	2018	2017
Unrecognized tax benefits at January 1	\$ 174	\$ 179	\$ 125
Increases for positions taken in current year	20	30	38
Increases for positions taken in prior years	44	9	51
Decreases for positions taken in prior years	(96)	(30)	(56)
Refunds from/(payments to) and settlements with taxing authorities	(11)	21	64
Increases/(decreases) for interest and penalties	(5)	4	-
Lapse of statutes of limitations	(62)	(39)	(43)
Unrecognized tax benefits at December 31	\$ 64	\$ 174	\$ 179

We recognize interest and penalties as part of income tax expense. Total accrued liabilities for interest and penalties were \$3 million and \$8 million at December 31, 2019, and 2018, respectively. Total interest and penalties recognized as part of income tax expense (benefit) were (\$4) million for 2019, (\$1) million for 2018, and (\$3) million for 2017.

In the second quarter of 2019, UPC signed final Revenue Agent Reports (RARs) from the Internal Revenue Service (IRS) for the limited scope audits of UPC's 2016 and 2017 tax returns. As a result of the signed RARs, UPC paid the IRS \$11 million in the third quarter, consisting of \$10 million of tax and \$1 million of interest. The statute of limitations has run for all years prior to 2016.

In 2017, UPC amended its 2013 income tax return, primarily to claim deductions resulting from the resolution of prior year IRS examinations. The IRS and Joint Committee on Taxation have completed their review of the 2013 return, and in the second quarter of 2018 we received a refund of \$19 million.

In 2016, UPC amended its 2011 and 2012 income tax returns to claim deductions resulting from the resolution of IRS examinations for years prior to 2011. The IRS and Joint Committee on Taxation reviewed

these amended returns. In the third quarter of 2017, we received a refund of \$62 million, consisting of \$60 million of tax and \$2 million of interest.

Several state tax authorities are examining our state income tax returns for years 2015 through 2017.

We do not expect our unrecognized tax benefits to change significantly in the next 12 months.

The portion of our unrecognized tax benefits that relates to permanent changes in tax and interest would reduce our effective tax rate, if recognized. The remaining unrecognized tax benefits relate to tax positions for which only the timing of the benefit is uncertain. Recognition of the tax benefits with uncertain timing would reduce our effective tax rate only through a reduction of accrued interest and penalties. The unrecognized tax benefits that would reduce our effective tax rate are as follows:

Millions	2019	2018	2017
Unrecognized tax benefits that would reduce the effective tax rate	\$ 39	\$ 63	\$ 83
Unrecognized tax benefits that would not reduce the effective tax rate	25	111	96
Total unrecognized tax benefits	\$ 64	\$ 174	\$ 179

9. Earnings Per Share

The following table provides a reconciliation between basic and diluted earnings per share for the years ended December 31:

Millions, Except Per Share Amounts	2019	2018	2017
Net income	\$ 5,919	\$ 5,966	\$ 10,712
Weighted-average number of shares outstanding:			
Basic	703.5	750.9	798.4
Dilutive effect of stock options	1.2	1.9	1.8
Dilutive effect of retention shares and units	1.4	1.5	1.5
Diluted	706.1	754.3	801.7
Earnings per share – basic	\$ 8.41	\$ 7.95	\$ 13.42
Earnings per share – diluted	\$ 8.38	\$ 7.91	\$ 13.36

Common stock options totaling 0.5 million, 0.3 million, and 1.6 million for 2019, 2018, and 2017, respectively, were excluded from the computation of diluted earnings per share because the exercise prices of these options exceeded the average market price of our common stock for the respective periods, and the effect of their inclusion would be anti-dilutive.

10. Accumulated Other Comprehensive Income/(Loss)

Reclassifications out of accumulated other comprehensive income/(loss) were as follows (net of tax):

Millions	Defined benefit plans	Foreign currency translation	Total
Balance at January 1, 2019	\$ (1,192)	\$ (223)	\$ (1,415)
Other comprehensive income/(loss) before reclassifications	(86)	17	(69)
Amounts reclassified from accumulated other comprehensive income/(loss) [a]	36	-	36
OPEB Plan amendment (Note 6)	92	-	92
Net year-to-date other comprehensive income/(loss), net of taxes of (\$15) million	42	17	59
Balance at December 31, 2019	\$ (1,150)	\$ (206)	\$ (1,356)
Balance at January 1, 2018	\$ (1,029)	\$ (112)	\$ (1,141)
Other comprehensive income/(loss) before reclassifications	(1)	(36)	(37)
Amounts reclassified from accumulated other comprehensive income/(loss) [a]	63	-	63
Net year-to-date other comprehensive income/(loss), net of taxes of (\$22) million	62	(36)	26
Reclassification due to ASU 2018-02 adoption [b]	(225)	(75)	(300)
Balance at December 31, 2018	\$ (1,192)	\$ (223)	\$ (1,415)

[a] The accumulated other comprehensive income/(loss) reclassification components are 1) prior service cost/(credit) and 2) net actuarial loss which are both included in the computation of net periodic pension cost. See Note 6 Retirement Plans for additional details.

[b] ASU 2018-02 is the Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which allows entities the option to reclassify from accumulated other comprehensive income to retained earnings the income tax effects that remain stranded in AOCI resulting from the application of the Tax Cuts and Jobs Act.

11. Accounts Receivable

Accounts receivable includes freight and other receivables reduced by an allowance for doubtful accounts. The allowance is based upon historical losses, creditworthiness of customers, and current economic conditions. At December 31, 2019, and December 31, 2018, our accounts receivable were reduced by \$4 million and \$3 million, respectively. Receivables not expected to be collected in one year and the associated allowances are classified as other assets in our Consolidated Statements of Financial Position. At December 31, 2019, and December 31, 2018, receivables classified as other assets were reduced by allowances of \$35 million and \$27 million, respectively.

Receivables Securitization Facility – On July 29, 2019 the Railroad completed the renewal of the receivables securitization facility (the Receivables Facility). The new \$800 million, 3-year facility replaces the prior \$650 million facility and will mature in July 2022. Under the Receivables Facility, the Railroad sells most of its eligible third-party receivables to Union Pacific Receivables, Inc. (UPRI), a consolidated, wholly-owned, bankruptcy-remote subsidiary that may subsequently transfer, without recourse, an undivided interest in accounts receivable to investors. The investors have no recourse to the Railroad's other assets except for customary warranty and indemnity claims. Creditors of the Railroad do not have recourse to the assets of UPRI.

The amount recorded under the Receivables Facility was \$400 million at both December 31, 2019, and December 31, 2018. The Receivables Facility was supported by \$1.3 billion and \$1.4 billion of accounts receivable as collateral at December 31, 2019, and December 31, 2018, respectively, which, as a retained interest, is included in accounts receivable, net in our Consolidated Statements of Financial Position.

The outstanding amount the Railroad is allowed to maintain under the Receivables Facility, with a maximum of \$800 million, may fluctuate based on the availability of eligible receivables and is directly affected by business volumes and credit risks, including receivables payment quality measures such as default and dilution ratios. If default or dilution ratios increase one percent, the allowable outstanding amount under the Receivables Facility would not materially change.

The costs of the Receivables Facility include interest, which will vary based on prevailing benchmark and commercial paper rates, program fees paid to participating banks, commercial paper issuance costs, and fees of participating banks for unused commitment availability. The costs of the Receivables Facility are included in interest expense and were \$14 million, \$15 million, and \$6 million for 2019, 2018, and 2017, respectively.

12. Properties

The following tables list the major categories of property and equipment, as well as the weighted-average estimated useful life for each category (in years):

<i>Millions, Except Estimated Useful Life</i> <i>As of December 31, 2019</i>	<i>Cost</i>	<i>Accumulated Depreciation</i>	<i>Net Book Value</i>	<i>Estimated Useful Life</i>
Land	\$ 5,276	\$ N/A	\$ 5,276	N/A
Road:				
Rail and other track material	17,178	6,381	10,797	42
Ties	10,693	3,186	7,507	34
Ballast	5,752	1,669	4,083	34
Other roadway [a]	20,331	4,056	16,275	48
Total road	53,954	15,292	38,662	N/A
Equipment:				
Locomotives	9,467	3,434	6,033	18
Freight cars	2,083	779	1,304	25
Work equipment and other	1,081	322	759	18
Total equipment	12,631	4,535	8,096	N/A
Technology and other	1,136	503	633	12
Construction in progress	1,249	-	1,249	N/A
Total	\$ 74,246	\$ 20,330	\$ 53,916	N/A

<i>Millions, Except Estimated Useful Life</i> <i>As of December 31, 2018</i>	<i>Cost</i>	<i>Accumulated Depreciation</i>	<i>Net Book Value</i>	<i>Estimated Useful Life</i>
Land	\$ 5,264	\$ N/A	\$ 5,264	N/A
Road:				
Rail and other track material	16,785	6,156	10,629	43
Ties	10,409	3,025	7,384	34
Ballast	5,561	1,595	3,966	34
Other roadway [a]	19,584	3,766	15,818	48
Total road	52,339	14,542	37,797	N/A
Equipment:				
Locomotives	9,792	3,861	5,931	19
Freight cars	2,229	929	1,300	24
Work equipment and other	1,040	301	739	19
Total equipment	13,061	5,091	7,970	N/A
Technology and other	1,117	493	624	12
Construction in progress	1,024	-	1,024	N/A
Total	\$ 72,805	\$ 20,126	\$ 52,679	N/A

[a] Other roadway includes grading, bridges and tunnels, signals, buildings, and other road assets.

Property and Depreciation – Our railroad operations are highly capital intensive, and our large base of homogeneous, network-type assets turns over on a continuous basis. Each year we develop a capital program for the replacement of assets and for the acquisition or construction of assets that enable us to enhance our operations or provide new service offerings to customers. Assets purchased or constructed throughout the year are capitalized if they meet applicable minimum units of property criteria. Properties and equipment are carried at cost and are depreciated on a straight-line basis over their estimated service lives, which are measured in years, except for rail in high-density traffic corridors (i.e., all rail lines except for those subject to abandonment, and yard and switching tracks) for which lives are measured in millions of gross tons per mile of track. We use the group method of depreciation in which all items with similar characteristics, use, and expected lives are grouped together in asset classes, and are depreciated using composite depreciation rates. The group method of depreciation treats each asset class as a pool of resources, not as singular items. We currently have more than 60 depreciable asset classes, and we may increase or decrease the number of asset classes due to changes in technology, asset strategies, or other factors.

We determine the estimated service lives of depreciable railroad assets by means of depreciation studies. We perform depreciation studies at least every 3 years for equipment and every 6 years for track assets (i.e., rail and other track material, ties, and ballast) and other road property. Our depreciation studies take into account the following factors:

- Statistical analysis of historical patterns of use and retirements of each of our asset classes;
- Evaluation of any expected changes in current operations and the outlook for continued use of the assets;
- Evaluation of technological advances and changes to maintenance practices; and
- Expected salvage to be received upon retirement.

For rail in high-density traffic corridors, we measure estimated service lives in millions of gross tons per mile of track. It has been our experience that the lives of rail in high-density traffic corridors are closely correlated to usage (i.e., the amount of weight carried over the rail). The service lives also vary based on rail weight, rail condition (e.g., new or secondhand), and rail type (e.g., straight or curve). Our depreciation studies for rail in high-density traffic corridors consider each of these factors in determining the estimated service lives. For rail in high-density traffic corridors, we calculate depreciation rates annually by dividing the number of gross ton-miles carried over the rail (i.e., the weight of loaded and empty freight cars, locomotives and maintenance of way equipment transported over the rail) by the estimated service lives of the rail measured in millions of gross tons per mile. For all other depreciable assets, we compute depreciation based on the estimated service lives of our assets as determined from the analysis of our depreciation studies. Changes in the estimated service lives of our assets and their related depreciation rates are implemented prospectively.

Under group depreciation, the historical cost (net of salvage) of depreciable property that is retired or replaced in the ordinary course of business is charged to accumulated depreciation and no gain or loss is recognized. The historical cost of certain track assets is estimated by multiplying the current replacement cost of track assets by a historical index factor derived from (i) inflation indices published by the Bureau of Labor Statistics and (ii) the estimated useful lives of the assets as determined by our depreciation studies. The indices were selected because they closely correlate with the major costs of the properties comprising the applicable track asset classes. Because of the number of estimates inherent in the depreciation and retirement processes and because it is impossible to precisely estimate each of these variables until a group of property is completely retired, we continually monitor the estimated service lives of our assets and the accumulated depreciation associated with each asset class to ensure our depreciation rates are appropriate. In addition, we determine if the recorded amount of accumulated depreciation is deficient (or in excess) of the amount indicated by our depreciation studies. Any deficiency (or excess) is amortized as a component of depreciation expense over the remaining service lives of the applicable classes of assets.

For retirements of depreciable railroad properties that do not occur in the normal course of business, a gain or loss may be recognized if the retirement meets each of the following three conditions: (i) is unusual, (ii) is material in amount, and (iii) varies significantly from the retirement profile identified through our depreciation studies. A gain or loss is recognized in other income when we sell land or dispose of assets that are not part of our railroad operations.

When we purchase an asset, we capitalize all costs necessary to make the asset ready for its intended use. However, many of our assets are self-constructed. A large portion of our capital expenditures is for

replacement of existing track assets and other road properties, which is typically performed by our employees, and for track line expansion and other capacity projects. Costs that are directly attributable to capital projects (including overhead costs) are capitalized. Direct costs that are capitalized as part of self-constructed assets include material, labor, and work equipment. Indirect costs are capitalized if they clearly relate to the construction of the asset.

Costs incurred that extend the useful life of an asset, improve the safety of our operations or improve operating efficiency are capitalized, while normal repairs and maintenance are expensed as incurred. These costs are allocated using appropriate statistical bases. Total expense for repairs and maintenance incurred was \$2.3 billion for 2019, \$2.5 billion for 2018, and \$2.5 billion for 2017.

Assets held under finance leases are recorded at the lower of the net present value of the minimum lease payments or the fair value of the leased asset at the inception of the lease. Amortization expense is computed using the straight-line method over the shorter of the estimated useful lives of the assets or the period of the related lease.

13. Accounts Payable and Other Current Liabilities

<i>Millions</i>	<i>Dec. 31, 2019</i>	<i>Dec. 31, 2018</i>
Accounts payable	\$ 749	\$ 872
Income and other taxes payable	496	694
Accrued wages and vacation	370	384
Current operating lease liabilities (Note 17)	362	-
Interest payable	289	317
Accrued casualty costs	190	211
Equipment rents payable	100	107
Other	538	575
Total accounts payable and other current liabilities	\$ 3,094	\$ 3,160

14. Financial Instruments

Short-Term Investments – All of the Company's short-term investments consist of time deposits and government agency securities. These investments are considered Level 2 investments and are valued at amortized cost, which approximates fair value. As of December 31, 2019, the Company had \$75 million of short-term investments, of which \$15 million are in a trust for the purpose of providing collateral for payment of certain other long-term liabilities, and as such are reclassified as other assets. All short-term investments have a maturity of less than one year and are classified as held-to-maturity. There were no transfers out of Level 2 during the year ended December 31, 2019.

Fair Value of Financial Instruments – The fair value of our short- and long-term debt was estimated using a market value price model, which utilizes applicable U.S. Treasury rates along with current market quotes on comparable debt securities. All of the inputs used to determine the fair market value of the Corporation's long-term debt are Level 2 inputs and obtained from an independent source. At December 31, 2019, the fair value of total debt was \$27.2 billion, approximately \$2.0 billion more than the carrying value. At December 31, 2018, the fair value of total debt was \$21.9 billion, approximately \$0.5 billion less than the carrying value. The fair value of the Corporation's debt is a measure of its current value under present market conditions. It does not impact the financial statements under current accounting rules. The fair value of our cash equivalents approximates their carrying value due to the short-term maturities of these instruments.

15. Debt

Total debt as of December 31, 2019, and 2018, is summarized below:

Millions	2019	2018
Notes and debentures, 1.8% to 7.1% due through September 15, 2067	\$ 24,008	\$ 20,627
Equipment obligations, 2.6% to 6.2% due through January 2, 2031	923	969
Finance leases, 3.1% to 8.0% due through December 10, 2028	605	754
Receivables securitization (Note 11)	400	400
Term loans - floating rate, due through October 29, 2020	250	250
Commercial paper, 1.8% to 2.0% due through January 9, 2020	200	200
Medium-term notes, 9.3% to 10.0% due through April 15, 2020	8	8
Unamortized discount and deferred issuance costs	(1,194)	(817)
Total debt	25,200	22,391
Less: current portion	(1,257)	(1,466)
Total long-term debt	\$ 23,943	\$ 20,925

Debt Maturities – The following table presents aggregate debt maturities as of December 31, 2019, excluding market value adjustments:

Millions		
2020	\$ 1,259	
2021	1,256	
2022	1,802	
2023	1,391	
2024	1,445	
Thereafter	19,241	
Total principal	26,394	
Unamortized discount and deferred issuance costs	(1,194)	
Total debt	\$ 25,200	

Equipment Encumbrances – Equipment with a carrying value of approximately \$1.6 billion and \$1.8 billion at December 31, 2019, and 2018, respectively, served as collateral for finance leases and other types of equipment obligations in accordance with the secured financing arrangements utilized to acquire or refinance such railroad equipment.

Debt Redemptions – Effective as of March 15, 2018, we redeemed, in entirety, the Missouri Pacific 5% Income Debentures due January 1, 2045, the Chicago and Eastern Illinois 5% Income Debentures due January 1, 2054, and the Missouri Pacific 4.75% General Mortgage Income Bonds Series A due January 1, 2020 and Series B due January 1, 2030. The debentures had principal outstanding of \$96 million and \$2 million, respectively, and the bonds had principal outstanding of \$30 million and \$27 million, respectively. The bonds and debentures were assumed by the Railroad in the 1982 acquisition of the Missouri Pacific Railroad Company, with a weighted average interest rate of 4.9%. The carrying value of all four bonds and debentures at the time of redemption was \$70 million, due to fair value purchase accounting adjustments related to the acquisition. The redemption resulted in an early extinguishment charge of \$85 million in the first quarter of 2018.

Effective October 15, 2019, we redeemed all \$163 million of our outstanding 6.125% notes due February 15, 2020. The redemption resulted in an early extinguishment charge of \$2 million in the fourth quarter of 2019.

Debt Exchange - On November 20, 2019, we exchanged \$1,839 million of various outstanding notes and debentures due between June 1, 2033 and September 10, 2058 (the Existing Notes) for \$1,842 million of 3.839% notes (the New Notes) due March 20, 2060, plus cash consideration of approximately \$373 million in addition to \$19 million for accrued and unpaid interest on the Existing Notes. In accordance with ASC 470-50-40, *Debt-Modifications and Extinguishments-Derecognition*, this transaction was accounted for as a debt exchange, as the exchanged debt instruments are not considered to be substantially different. The

cash consideration was recorded as an adjustment to the carrying value of debt, and the balance of the unamortized discount and issue costs from the Existing Notes is being amortized as an adjustment of interest expense over the terms of the New Notes. No gain or loss was recognized as a result of the exchange. Costs related to the debt exchange that were payable to parties other than the debt holders totaled approximately \$15 million and were included in interest expense in the fourth quarter of 2019.

Credit Facilities – At December 31, 2019, we had \$2.0 billion of credit available under our revolving credit facility, which is designated for general corporate purposes and supports the issuance of commercial paper. Credit facility withdrawals totaled \$0 during 2019. Commitment fees and interest rates payable under the Facility are similar to fees and rates available to comparably rated, investment-grade borrowers. The Facility allows for borrowings at floating rates based on London Interbank Offered Rates, plus a spread, depending upon credit ratings for our senior unsecured debt. The 5 year facility requires UPC to maintain a debt-to-EBITDA (earnings before interest, taxes, depreciation, and amortization) coverage ratio.

The definition of debt used for purposes of calculating the debt-to-EBITDA coverage ratio includes, among other things, certain credit arrangements, finance leases, guarantees, unfunded and vested pension benefits under Title IV of ERISA, and unamortized debt discount and deferred debt issuance costs. At December 31, 2019, the Company was in compliance with the debt-to-EBITDA coverage ratio, which allows us to carry up to \$38.5 billion of debt (as defined in the Facility), and we had \$26.4 billion of debt (as defined in the Facility) outstanding at that date. The Facility does not include any other financial restrictions, credit rating triggers (other than rating-dependent pricing), or any other provision that could require us to post collateral. The Facility also includes a \$150 million cross-default provision and a change-of-control provision.

During 2019, we issued \$9.3 billion and repaid \$9.3 billion of commercial paper with maturities ranging from 1 to 32 days. As of both December 31, 2019, and 2018, we had \$200 million of commercial paper outstanding. Our revolving credit facility supports our outstanding commercial paper balances, and, unless we change the terms of our commercial paper program, our aggregate issuance of commercial paper will not exceed the amount of borrowings available under the Facility.

In May 2018, we entered into a short-term bilateral line of credit agreement with \$1.0 billion of credit available. During the three months ended June 30, 2018, we drew and repaid \$750 million. The line of credit matured on August 20, 2018. We used the proceeds for general corporate purposes, including the repurchase of common stock pursuant to our share repurchase programs.

Shelf Registration Statement and Significant New Borrowings – In 2018, the Board of Directors reauthorized the issuance of up to \$6.0 billion of debt securities. Under our shelf registration, we may issue, from time to time, any combination of debt securities, preferred stock, common stock, or warrants for debt securities or preferred stock in one or more offerings.

During 2019, we issued the following unsecured, fixed-rate debt securities under our shelf registration:

Date	Description of Securities
February 19, 2019	\$500 million of 2.950% Notes due March 1, 2022 \$500 million of 3.150% Notes due March 1, 2024
	\$1.0 billion of 3.700% Notes due March 1, 2029
August 5, 2019	\$1.0 billion of 4.300% Notes due March 1, 2049 \$500 million of 3.550% Notes due August 15, 2039 \$500 million of 3.950% Notes due August 15, 2059

We used the net proceeds from the offerings for general corporate purposes, including the repurchase of common stock pursuant to our share repurchase programs. These debt securities include change-of-control provisions.

On November 14, 2019, the Board of Directors renewed its authorization for the Company to issue up to \$6.0 billion of debt securities under the Shelf. This authorization replaced the prior Board authorization which had \$2.0 billion of remaining authority. At December 31, 2019, we had remaining authority to issue up to \$6.0 billion of debt securities under our shelf registration.

Receivables Securitization Facility – As of both December 31, 2019, and 2018, we recorded \$400 million of borrowings under our Receivables Facility, as secured debt. (See further discussion of our receivables securitization facility in Note 11).

Subsequent Event – On January 31, 2020, we issued the following in unsecured, fixed rate debt securities under our current shelf registration:

Date	Description of Securities
January 31, 2020	\$500 million of 2.150% Notes due February 5, 2027
	\$750 million of 2.400% Notes due February 5, 2030
	\$1.0 billion of 3.250% Notes due February 5, 2050
	\$750 million of 3.750% Notes due February 5, 2070

These debt securities include change-of-control provisions. After this issuance, we had remaining authority to issue up to \$3.0 billion of debt securities under our shelf registration.

16. Variable Interest Entities

We have entered into various lease transactions in which the structure of the leases contain variable interest entities (VIEs). These VIEs were created solely for the purpose of doing lease transactions (principally involving railroad equipment and facilities) and have no other activities, assets or liabilities outside of the lease transactions. Within these lease arrangements, we have the right to purchase some or all of the assets at fixed prices. Depending on market conditions, fixed-price purchase options available in the leases could potentially provide benefits to us; however, these benefits are not expected to be significant.

We maintain and operate the assets based on contractual obligations within the lease arrangements, which set specific guidelines consistent within the railroad industry. As such, we have no control over activities that could materially impact the fair value of the leased assets. We do not hold the power to direct the activities of the VIEs and, therefore, do not control the ongoing activities that have a significant impact on the economic performance of the VIEs. Additionally, we do not have the obligation to absorb losses of the VIEs or the right to receive benefits of the VIEs that could potentially be significant to the VIEs.

We are not considered to be the primary beneficiary and do not consolidate these VIEs because our actions and decisions do not have the most significant effect on the VIE's performance and our fixed-price purchase options are not considered to be potentially significant to the VIEs. The future minimum lease payments associated with the VIE leases totaled \$1.5 billion as of December 31, 2019 and are recorded as operating lease liabilities at present value in our Consolidated Statements of Financial Position.

17. Leases

We lease certain locomotives, freight cars, and other property for use in our rail operations. We determine if an arrangement is or contains a lease at inception. We have lease agreements with lease and non-lease components and we have elected to not separate lease and non-lease components for all classes of underlying assets. Leases with an initial term of 12 months or less are not recorded on our Consolidated Statements of Financial Position; we recognize lease expense for these leases on a straight-line basis over the lease term. Leases with initial terms in excess of 12 months are recorded as operating or financing leases in our Consolidated Statement of Financial Position. Operating leases are included in operating lease assets, accounts payable and other current liabilities, and operating lease liabilities on our Consolidated Statements of Financial Position. Finance leases are included in net properties, debt due within one year, and debt due after one year on our Consolidated Statements of Financial Position.

Operating lease assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of our leases do not provide an implicit rate, we use a collateralized incremental borrowing rate for all operating leases based on the information available at commencement date, including lease term, in determining the present value of future payments. The operating lease asset also includes any lease payments made and excludes lease incentives and initial direct costs incurred. Our lease terms may include options to extend or terminate the lease when it is reasonably certain that the option will be exercised. Operating lease expense is recognized on a straight-line basis over the lease term and reported in equipment and other rents and financing lease expense is recorded as depreciation and interest expense in our Consolidated Statements of Income.

The following are additional details related to our lease portfolio:

Millions	Classification	Dec. 31, 2019
Assets		
Operating leases	Operating lease assets	\$ 1,812
Finance leases	Net properties [a]	468
Total leased assets		\$ 2,280
Liabilities		
Current		
Operating	Accounts payable and other current liabilities	\$ 362
Finance	Debt due within one year	114
Noncurrent		
Operating	Operating lease liabilities	1,471
Finance	Debt due after one year	491
Total lease liabilities		\$ 2,438

[a] Finance lease assets are recorded net of accumulated amortization of \$797 million as of December 31, 2019.

The lease cost components are classified as follows:

Millions	Classification	Dec. 31, 2019
Operating lease cost [a]	Equipment and other rents	\$ 328
Finance lease cost		
Amortization of leased assets	Depreciation	72
Interest on lease liabilities	Interest expense	34
Net lease cost		\$ 434

[a] Includes short-term lease costs of \$1 million and variable lease costs of \$8 million.

The following table presents aggregate lease maturities as of December 31, 2019:

Millions	Operating Leases	Finance Leases	Total
2020	\$ 366	\$ 143	\$ 509
2021	293	147	440
2022	258	130	388
2023	217	88	305
2024	208	75	283
After 2024	775	124	899
Total lease payments	\$ 2,117	\$ 707	\$ 2,824
Less: Interest	284	102	386
Present value of lease liabilities	\$ 1,833	\$ 605	\$ 2,438

The following table presents the weighted average remaining lease term and discount rate:

	Dec. 31, 2019
Weighted-average remaining lease term (years)	
Operating leases	8.7
Finance leases	5.9
Weighted-average discount rate (%)	
Operating leases	3.7
Finance leases	5.3

The following table presents other information related to our operating and finance leases for the year ended December 31:

Millions	2019
Cash paid for amounts included in the measurement of lease liabilities	
Operating cash flows from operating leases	\$ 350
Operating cash flows from finance leases	35
Financing cash flows from finance leases	112
Leased assets obtained in exchange for finance lease liabilities	-
Leased assets obtained in exchange for operating lease liabilities	64

18. Commitments and Contingencies

Asserted and Unasserted Claims – Various claims and lawsuits are pending against us and certain of our subsidiaries. We cannot fully determine the effect of all asserted and unasserted claims on our consolidated results of operations, financial condition, or liquidity. To the extent possible, we have recorded a liability where asserted and unasserted claims are considered probable and where such claims can be reasonably estimated. We do not expect that any known lawsuits, claims, environmental costs, commitments, contingent liabilities, or guarantees will have a material adverse effect on our consolidated results of operations, financial condition, or liquidity after taking into account liabilities and insurance recoveries previously recorded for these matters.

Personal Injury – The cost of personal injuries to employees and others related to our activities is charged to expense based on estimates of the ultimate cost and number of incidents each year. We use an actuarial analysis to measure the expense and liability, including unasserted claims. The Federal Employers' Liability Act (FELA) governs compensation for work-related accidents. Under FELA, damages are assessed based on a finding of fault through litigation or out-of-court settlements. We offer a comprehensive variety of services and rehabilitation programs for employees who are injured at work.

Our personal injury liability is not discounted to present value due to the uncertainty surrounding the timing of future payments. Approximately 94% of the recorded liability is related to asserted claims and approximately 6% is related to unasserted claims at December 31, 2019. Because of the uncertainty surrounding the ultimate outcome of personal injury claims, it is reasonably possible that future costs to settle these claims may range from approximately \$265 million to \$289 million. We record an accrual at the low end of the range as no amount of loss within the range is more probable than any other. Estimates can vary over time due to evolving trends in litigation.

Our personal injury liability activity was as follows:

Millions	2019	2018	2017
Beginning balance	\$ 271	\$ 285	\$ 290
Current year accruals	78	74	77
Changes in estimates for prior years	(11)	(16)	(7)
Payments	(73)	(72)	(75)
Ending balance at December 31	\$ 265	\$ 271	\$ 285
Current portion, ending balance at December 31	\$ 63	\$ 72	\$ 66

We reassess our estimated insurance recoveries annually and have recognized an asset for estimated insurance recoveries at December 31, 2019, and 2018. Any changes to recorded insurance recoveries are included in the above table in the Changes in estimates for prior years category.

Environmental Costs – We are subject to federal, state, and local environmental laws and regulations. We have identified 360 sites at which we are or may be liable for remediation costs associated with alleged contamination or for violations of environmental requirements. This includes 31 sites that are the subject of actions taken by the U.S. government, 20 of which are currently on the Superfund National Priorities List. Certain federal legislation imposes joint and several liability for the remediation of identified sites; consequently, our ultimate environmental liability may include costs relating to activities of other parties, in addition to costs relating to our own activities at each site.

When we identify an environmental issue with respect to property owned, leased, or otherwise used in our business, we perform, with assistance of our consultants, environmental assessments on the property. We expense the cost of the assessments as incurred. We accrue the cost of remediation where our obligation is probable and such costs can be reasonably estimated. Our environmental liability is not discounted to present value due to the uncertainty surrounding the timing of future payments.

Our environmental liability activity was as follows:

Millions	2019	2018	2017
Beginning balance	\$ 223	\$ 196	\$ 212
Accruals	67	84	45
Payments	(63)	(57)	(61)
Ending balance at December 31	\$ 227	\$ 223	\$ 196
Current portion, ending balance at December 31	\$ 62	\$ 59	\$ 57

The environmental liability includes future costs for remediation and restoration of sites, as well as ongoing monitoring costs, but excludes any anticipated recoveries from third parties. Cost estimates are based on information available for each site, financial viability of other potentially responsible parties, and existing technology, laws, and regulations. The ultimate liability for remediation is difficult to determine because of the number of potentially responsible parties, site-specific cost sharing arrangements with other potentially responsible parties, the degree of contamination by various wastes, the scarcity and quality of volumetric data related to many of the sites, and the speculative nature of remediation costs. Estimates of liability may vary over time due to changes in federal, state, and local laws governing environmental remediation. Current obligations are not expected to have a material adverse effect on our consolidated results of operations, financial condition, or liquidity.

Insurance – The Company has a consolidated, wholly-owned captive insurance subsidiary (the captive), that provides insurance coverage for certain risks including FELA claims and property coverage which are subject to reinsurance. The captive entered into annual reinsurance treaty agreements that insure workers compensation, general liability, auto liability and FELA risk. The captive cedes a portion of its FELA exposure through the treaty and assumes a proportionate share of the entire risk. The captive receives direct premiums, which are netted against the Company's premium costs in other expenses in the Consolidated Statements of Income. The treaty agreements provide for certain protections against the risk of treaty participants' non-performance, and we do not believe our exposure to treaty participants' non-performance is material at this time. We record both liabilities and reinsurance receivables using an actuarial analysis based on historical experience in our Consolidated Statements of Financial Position. Effective January 2019, the captive insurance subsidiary no longer participates in the reinsurance treaty agreement. The Company established a trust in the fourth quarter of 2018 for the purpose of providing collateral as required under the reinsurance treaty agreement for prior years' participation.

Guarantees – At December 31, 2019, and 2018, we were contingently liable for \$15 million and \$22 million, respectively, in guarantees. The fair value of these obligations as of both December 31, 2019, and 2018 was \$0. We entered into these contingent guarantees in the normal course of business, and they include guaranteed obligations related to our affiliated operations. The final guarantee expires in 2022. We are not aware of any existing event of default that would require us to satisfy these guarantees. We do not expect that these guarantees will have a material adverse effect on our consolidated financial condition, results of operations, or liquidity.

Indemnities – We are contingently obligated under a variety of indemnification arrangements, although in some cases the extent of our potential liability is limited, depending on the nature of the transactions and the agreements. Due to uncertainty as to whether claims will be made or how they will be resolved, we cannot reasonably determine the probability of an adverse claim or reasonably estimate any adverse liability or the total maximum exposure under these indemnification arrangements. We do not have any reason to believe that we will be required to make any material payments under these indemnity provisions.

19. Share Repurchase Programs

Effective April 1, 2019, our Board of Directors authorized the repurchase of up to 150 million shares of our common stock by March 31, 2022, replacing our previous repurchase program. These repurchases may be made on the open market or through other transactions. Our management has sole discretion with respect to determining the timing and amount of these transactions. As of December 31, 2019, we repurchased a total of \$37.2 billion of our common stock since commencement of our repurchase programs in 2007. The table below represents shares repurchased under repurchase programs during 2018 and 2019:

	Number of Shares Purchased		Average Price Paid	
	2019	2018	2019	2018
First quarter [a]	18,149,450	9,259,004	\$ 165.79	\$ 132.84
Second quarter [b]	3,732,974	33,229,992	171.24	142.74
Third quarter [c]	9,529,733	2,239,405	163.30	151.94
Fourth quarter [d]	3,582,212	12,490,632	167.32	153.04
Total	34,994,369	57,219,033	\$ 165.85	\$ 143.75
Remaining number of shares that may be repurchased under current authority				133,155,081

[a] Includes 11,795,930 shares repurchased in February 2019 under accelerated share repurchase programs.

[b] Includes 19,870,292 shares repurchased in June 2018 under accelerated share repurchase programs.

[c] Includes 3,172,900 shares repurchased in August 2019 under accelerated share repurchase programs.

[d] Includes 4,457,356 shares repurchased in October 2018 under accelerated share repurchase programs.

Management's assessments of market conditions and other pertinent factors guide the timing and volume of all repurchases. We expect to fund any share repurchases under this program through cash generated from operations, the sale or lease of various operating and non-operating properties, debt issuances, and cash on hand. Open market repurchases are recorded in treasury stock at cost, which includes any applicable commissions and fees.

From January 1, 2020, through February 6, 2020, we repurchased 2.7 million shares at an aggregate cost of approximately \$493 million.

Accelerated Share Repurchase Programs – The Company has established accelerated share repurchase programs (ASRs) with financial institutions to repurchase shares of our common stock. These ASRs have been structured so that at the time of commencement, we pay a specified amount to the financial institutions and receive an initial delivery of shares. Additional shares may be received at the time of settlement. The final number of shares to be received is based on the volume weighted average price of the Company's common stock during the ASR term, less a discount and subject to potential adjustments pursuant to the terms of such ASR.

On February 26, 2019, the Company received 11,795,930 shares of its common stock repurchased under ASRs for an aggregate of \$2.5 billion. Upon settlement of these ASRs in the third quarter of 2019, we received 3,172,900 additional shares.

On June 15, 2018, the Company received 19,870,292 shares of its common stock repurchased under ASRs for an aggregate of \$3.6 billion. Upon settlement of these ASRs in the fourth quarter of 2018, we received 4,457,356 additional shares.

ASRs are accounted for as equity transactions, and at the time of receipt, shares are included in treasury stock at fair market value as of the corresponding initiation or settlement date. The Company reflects shares received as a repurchase of common stock in the weighted average common shares outstanding calculation for basic and diluted earnings per share.

20. Related Parties

UPRR and other North American railroad companies jointly own TTX Company (TTX). UPRR has a 36.79% economic and voting interest in TTX while the other North American railroads own the remaining interest. In accordance with ASC 323 *Investments - Equity Method and Joint Venture*, UPRR applies the equity method of accounting to our investment in TTX.

TTX is a railcar pooling company that owns railcars and intermodal wells to serve North America's railroads. TTX assists railroads in meeting the needs of their customers by providing railcars in an efficient, pooled environment. All railroads have the ability to utilize TTX railcars through car hire by renting railcars at stated rates.

UPRR had \$1.4 billion and \$1.3 billion recognized as investments related to TTX in our Consolidated Statements of Financial Position as of December 31, 2019, and 2018, respectively. TTX car hire expenses of \$407 million in 2019, \$429 million in 2018, and \$388 million in 2017 are included in equipment and other rents in our Consolidated Statements of Income. In addition, UPRR had accounts payable to TTX of \$62 million and \$66 million at December 31, 2019, and 2018, respectively.

21. Selected Quarterly Data (Unaudited)

<i>Millions, Except Per Share Amounts</i>					
2019	Mar. 31	Jun. 30	Sep. 30	Dec. 31	
Operating revenues	\$ 5,384	\$ 5,596	\$ 5,516	\$ 5,212	
Operating income	1,960	2,260	2,234	2,100	
Net income	1,391	1,570	1,555	1,403	
Net income per share:					
Basic	1.94	2.23	2.22	2.03	
Diluted	1.93	2.22	2.22	2.02	

<i>Millions, Except Per Share Amounts</i>					
2018	Mar. 31	Jun. 30	Sep. 30	Dec. 31	
Operating revenues	\$ 5,475	\$ 5,672	\$ 5,928	\$ 5,757	
Operating income	1,939	2,099	2,269	2,210	
Net income	1,310	1,509	1,593	1,554	
Net income per share:					
Basic	1.69	1.98	2.16	2.13	
Diluted	1.68	1.98	2.15	2.12	

Per share net income for the four quarters combined may not equal the per share net income for the year due to rounding.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

As of the end of the period covered by this report, the Corporation carried out an evaluation, under the supervision and with the participation of the Corporation's management, including the Corporation's Chief Executive Officer (CEO) and Executive Vice President and Chief Financial Officer (CFO), of the effectiveness of the design and operation of the Corporation's disclosure controls and procedures pursuant to Exchange Act Rules 13a-15 and 15d-15. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. Based upon that evaluation, the CEO and the CFO concluded that, as of the end of the period covered by this report, the Corporation's disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified by the SEC, and that such information is accumulated and communicated to management, including the CEO and CFO, as appropriate, to allow timely decisions regarding required disclosure.

Additionally, the CEO and CFO determined that there were no changes to the Corporation's internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) during the last fiscal quarter that materially affected, or are reasonably likely to materially affect, the Corporation's internal control over financial reporting.

MANAGEMENT'S ANNUAL REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Union Pacific Corporation and Subsidiary Companies (the Corporation) is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)). The Corporation's internal control system was designed to provide reasonable assurance to the Corporation's management and Board of Directors regarding the preparation and fair presentation of published financial statements.

All internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective can provide only reasonable assurance with respect to financial statement preparation and presentation.

The Corporation's management assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2019. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control – Integrated Framework* (2013). Based on our assessment, management believes that, as of December 31, 2019, the Corporation's internal control over financial reporting is effective based on those criteria.

The Corporation's independent registered public accounting firm has issued an attestation report on the effectiveness of the Corporation's internal control over financial reporting. This report appears on the next page.

February 6, 2020

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of Union Pacific Corporation
Omaha, Nebraska

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Union Pacific Corporation and Subsidiary Companies (the "Corporation") as of December 31, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019 and our report dated February 7, 2020 expressed an unqualified opinion on those financial statements and included an explanatory paragraph regarding the Corporation's adoption of Financial Accounting Standards Board Accounting Standards Update No. 2016-02, *Leases* (*Topic 842*).

The Corporation's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Corporation's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Corporation in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche LLP

Omaha, Nebraska
February 7, 2020

Item 9B. Other Information

None.

PART III**Item 10. Directors, Executive Officers, and Corporate Governance**

(a) Directors of Registrant.

Information as to the names, ages, positions and offices with UPC, terms of office, periods of service, business experience during the past five years and certain other directorships held by each director or person nominated to become a director of UPC is set forth in the Election of Directors segment of the Proxy Statement and is incorporated herein by reference.

Information concerning our Audit Committee and the independence of its members, along with information about the audit committee financial expert(s) serving on the Audit Committee, is set forth in the Audit Committee segment of the Proxy Statement and is incorporated herein by reference.

(b) Executive Officers of Registrant.

Information concerning the executive officers of UPC and its subsidiaries is presented in Part I of this report under Information About Our Executive Officers and Principal Executive Officers of Our Subsidiaries.

(c) Delinquent Section 16(a) Reports.

Information concerning compliance with Section 16(a) of the Securities Exchange Act of 1934 is set forth in the Section 16(a) Beneficial Ownership Reporting Compliance segment of the Proxy Statement and is incorporated herein by reference.

(d) Code of Ethics for Chief Executive Officer and Senior Financial Officers of Registrant.

The Board of Directors of UPC has adopted the UPC Code of Ethics for the Chief Executive Officer and Senior Financial Officers (the Code). A copy of the Code may be found on the Internet at our website www.up.com/investor/governance. We intend to disclose any amendments to the Code or any waiver from a provision of the Code on our website.

Item 11. Executive Compensation

Information concerning compensation received by our directors and our named executive officers is presented in the Compensation Discussion and Analysis, Summary Compensation Table, Grants of Plan-Based Awards in Fiscal Year 2019, Outstanding Equity Awards at 2019 Fiscal Year-End, Option Exercises and Stock Vested in Fiscal Year 2019, Pension Benefits at 2019 Fiscal Year-End, Nonqualified Deferred Compensation at 2019 Fiscal Year-End, Potential Payments Upon Termination or Change in Control and Director Compensation in Fiscal Year 2019 segments of the Proxy Statement and is incorporated herein by reference. Additional information regarding compensation of directors, including Board committee members, is set forth in the By-Laws of UPC and the Stock Unit Grant and Deferred Compensation Plan for the Board of Directors, both of which are included as exhibits to this report. Information regarding the Compensation and Benefits Committee is set forth in the Compensation Committee Interlocks and Insider Participation and Compensation Committee Report segments of the Proxy Statement and is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information as to the number of shares of our equity securities beneficially owned by each of our directors and nominees for director, our named executive officers, our directors and executive officers as a group, and certain beneficial owners is set forth in the Security Ownership of Certain Beneficial Owners and Management segment of the Proxy Statement and is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions and Director Independence

Information on related transactions is set forth in the Certain Relationships and Related Transactions and Compensation Committee Interlocks and Insider Participation segments of the Proxy Statement and is incorporated herein by reference. We do not have any relationship with any outside third party that would enable such a party to negotiate terms of a material transaction that may not be available to, or available from, other parties on an arm's-length basis.

Information regarding the independence of our directors is set forth in the Director Independence segment of the Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

Information concerning the fees billed by our independent registered public accounting firm and the nature of services comprising the fees for each of the two most recent fiscal years in each of the following categories: (i) audit fees, (ii) audit-related fees, (iii) tax fees, and (iv) all other fees, is set forth in the Independent Registered Public Accounting Firm's Fees and Services segment of the Proxy Statement and is incorporated herein by reference.

Information concerning our Audit Committee's policies and procedures pertaining to pre-approval of audit and non-audit services rendered by our independent registered public accounting firm is set forth in the Audit Committee segment of the Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules

(a) Financial Statements, Financial Statement Schedules, and Exhibits:

(1) Financial Statements

The financial statements filed as part of this filing are listed on the index to the Financial Statements and Supplementary Data, Item 8, on page 44.

(2) Financial Statement Schedules

Schedule II - Valuation and Qualifying Accounts

Schedules not listed above have been omitted because they are not applicable or not required or the information required to be set forth therein is included in the Financial Statements and Supplementary Data, Item 8, or notes thereto.

(3) Exhibits

Exhibits are listed in the exhibit index beginning on page 88. The exhibits include management contracts, compensatory plans and arrangements required to be filed as exhibits to the Form 10-K by Item 601 (10) (iii) of Regulation S-K.

SCHEDULE II – VALUATION AND QUALIFYING ACCOUNTS
Union Pacific Corporation and Subsidiary Companies

<i>Millions, for the Years Ended December 31,</i>	2019	2018	2017
Accrued casualty costs:			
Balance, beginning of period	\$ 709	\$ 684	\$ 716
Charges to expense	215	202	167
Cash payments and other reductions	(267)	(177)	(199)
Balance, end of period	\$ 657	\$ 709	\$ 684
Accrued casualty costs are presented in the Consolidated Statements of Financial Position as follows:			
Current	\$ 190	\$ 211	\$ 194
Long-term	467	498	490
Balance, end of period	\$ 657	\$ 709	\$ 684

UNION PACIFIC CORPORATION
Exhibit Index

<u>Exhibit No.</u>	<u>Description</u>
<u>Filed with this Statement</u>	
4(a)	Description of securities registered under Section 12 of the Exchange Act.
10(a) [†]	Form of Performance Stock Unit Agreement dated February 6, 2020.
10(b) [†]	Form of Non-Qualified Stock Option Agreement for Executives dated February 6, 2020.
10(c) [†]	Union Pacific Corporation Policy for Recoupment of Incentive Compensation, effective January 1, 2020.
10(d) [†]	Union Pacific Corporation 2013 Stock Incentive Plan, effective May 16, 2013, as amended effective as of January 1, 2020.
10(e) [†]	Union Pacific Corporation Executive Incentive Plan, effective May 5, 2005, amended and restated effective January 1, 2020.
21	List of the Corporation's significant subsidiaries and their respective states of incorporation.
23	Independent Registered Public Accounting Firm's Consent.
24	Powers of attorney executed by the directors of UPC.
31(a)	Certifications Pursuant to Rule 13a-14(a), of the Exchange Act, as Adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 - Lance M. Fritz.
31(b)	Certifications Pursuant to Rule 13a-14(a), of the Exchange Act, as Adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 - Jennifer L. Hamann.
32	Certifications Pursuant to 18 U.S.C. Section 1350, as Adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 - Lance M. Fritz and Jennifer L. Hamann.
101	The following financial and related information from Union Pacific Corporation's Annual Report on Form 10-K for the year ended December 31, 2019 (filed with the SEC on February 7, 2020), formatted in Inline Extensible Business Reporting Language (iXBRL) includes (i) Consolidated Statements of Income for the years ended December 31, 2019, 2018 and 2017, (ii) Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018, and 2017, (iii) Consolidated Statements of Financial Position at December 31, 2019 and December 31, 2018, (iv) Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017, (v) Consolidated Statements of Changes in Common Shareholders' Equity for the years ended December 31, 2019, 2018 and 2017, and (vi) the Notes to the Consolidated Financial Statements.
104	Cover Page Interactive Data File, formatted in Inline XBRL (contained in Exhibit 101).

Incorporated by Reference

3(a)	Restated Articles of Incorporation of UPC, as amended and restated through June 27, 2011, and as further amended May 15, 2014, are incorporated herein by reference to Exhibit 3(a) to the Corporation's Quarterly Report on Form 10-Q for the quarter ended June 30, 2014.
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- 3(b) By-Laws of UPC, as amended, effective November 19, 2015, are incorporated herein by reference to Exhibit 3.2 to the Corporation's Current Report on Form 8-K dated November 19, 2015.
- 4(b) Indenture, dated as of December 20, 1996, between UPC and Wells Fargo Bank, National Association, as successor to Citibank, N.A., as Trustee, is incorporated herein by reference to Exhibit 4.1 to UPC's Registration Statement on Form S-3 (No. 333-18345).
- 4(c) Indenture, dated as of April 1, 1999, between UPC and The Bank of New York, as successor to JP Morgan Chase Bank, formerly The Chase Manhattan Bank, as Trustee, is incorporated herein by reference to Exhibit 4.2 to UPC's Registration Statement on Form S-3 (No. 333-75989).
- 4(d) Form of 2.950% Note due 2022 is incorporated by reference to Exhibit 4.1 to the Corporation's Current Report on Form 8-K dated February 19, 2019.
- 4(e) Form of 3.150% Note due 2024 is incorporated by reference to Exhibit 4.2 to the Corporation's Current Report on Form 8-K dated February 19, 2019.
- 4(f) Form of 3.700% Note due 2029 is incorporated by reference to Exhibit 4.3 to the Corporation's Current Report on Form 8-K dated February 19, 2019.
- 4(g) Form of 4.300% Note due 2049 is incorporated by reference to Exhibit 4.4 to the Corporation's Current Report on Form 8-K dated February 19, 2019.
- 4(h) Form of 3.550% Note due 2039 is incorporated by reference to Exhibit 4.1 to the Corporation's Current Report on Form 8-K dated August 5, 2019.
- 4(i) Form of 3.950% Note due 2059 is incorporated by reference to Exhibit 4.2 to the Corporation's Current Report on Form 8-K dated August 5, 2019.
- Certain instruments evidencing long-term indebtedness of UPC are not filed as exhibits because the total amount of securities authorized under any single such instrument does not exceed 10% of the Corporation's total consolidated assets. UPC agrees to furnish the Commission with a copy of any such instrument upon request by the Commission.
- 10(g)[†] Supplemental Thrift Plan (409A Grandfathered Component) of Union Pacific Corporation, as amended March 1, 2013, is incorporated herein by reference to Exhibit 10(d) to the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013.
- 10(h)[†] Supplemental Pension Plan for Officers and Managers (409A Grandfathered Component) of Union Pacific Corporation and Affiliates, as amended February 1, 2013, and March 1, 2013 is incorporated herein by reference to Exhibit 10(f) to the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013.
- 10(i)[†] Union Pacific Corporation Key Employee Continuity Plan, as amended February 6, 2014, is incorporated herein by reference to Exhibit 10(d) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013.
- 10(j)[†] Deferred Compensation Plan (409A Grandfathered Component) of Union Pacific Corporation, as amended March 1, 2013, is incorporated herein by reference to Exhibit 10(b) to the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013.
- 10(k)[†] Deferred Compensation Plan (409A Non-Grandfathered Component) of Union Pacific Corporation, as amended December 17, 2013, is incorporated herein by reference to Exhibit 10(e) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013.

10(l) [†]	<u>Union Pacific Corporation 2000 Directors Plan, effective as of April 21, 2000, as amended November 16, 2006, January 30, 2007 and January 1, 2009 is incorporated herein by reference to Exhibit 10(j) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2008.</u>
10(m) [†]	<u>Union Pacific Corporation Stock Unit Grant and Deferred Compensation Plan for the Board of Directors (409A Non-Grandfathered Component), effective as of January 1, 2009 is incorporated herein by reference to Exhibit 10(k) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2008.</u>
10(n) [†]	<u>Union Pacific Corporation Stock Unit Grant and Deferred Compensation Plan for the Board of Directors (409A Grandfathered Component), as amended and restated in its entirety, effective as of January 1, 2009 is incorporated herein by reference to Exhibit 10(l) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2008.</u>
10(o) [†]	<u>UPC 2004 Stock Incentive Plan amended March 1, 2013, is incorporated herein by reference to Exhibit 10(g) to the Corporation's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013.</u>
10(p)	<u>Amended and Restated Registration Rights Agreement, dated as of July 12, 1996, among UPC, UP Holding Company, Inc., Union Pacific Merger Co. and Southern Pacific Rail Corporation (SP) is incorporated herein by reference to Annex J to the Joint Proxy Statement/Prospectus included in Post-Effective Amendment No. 2 to UPC's Registration Statement on Form S-4 (No. 33-64707).</u>
10(q)	<u>Agreement, dated September 25, 1995, among UPC, UPRR, Missouri Pacific Railroad Company (MPRR), SP, Southern Pacific Transportation Company (SPT), The Denver & Rio Grande Western Railroad Company (D&RGW), St. Louis Southwestern Railway Company (SLSRC) and SPCSL Corp. (SPCSL), on the one hand, and Burlington Northern Railroad Company (BN) and The Atchison, Topeka and Santa Fe Railway Company (Santa Fe), on the other hand, is incorporated by reference to Exhibit 10.11 to UPC's Registration Statement on Form S-4 (No. 33-64707).</u>
10(r)	<u>Supplemental Agreement, dated November 18, 1995, between UPC, UPRR, MPRR, SP, SPT, D&RGW, SLSRC and SPCSL, on the one hand, and BN and Santa Fe, on the other hand, is incorporated herein by reference to Exhibit 10.12 to UPC's Registration Statement on Form S-4 (No. 33-64707).</u>
10(s) [†]	<u>Form of Non-Qualified Stock Option Agreement for Executives is incorporated herein by reference to Exhibit 10(c) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2012.</u>
10(t) [†]	<u>Form of Stock Unit Agreement for Executives is incorporated herein by reference to Exhibit 10(b) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2012.</u>
10(u) [†]	<u>Form of Non-Qualified Stock Option Agreement for Executives is incorporated herein by reference to Exhibit 10(c) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013.</u>
10(v) [†]	<u>Form of Stock Unit Agreement for Executives is incorporated herein by reference to Exhibit 10(b) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2013.</u>
10(w) [†]	<u>Form of 2017 Long Term Plan Stock Unit Agreement is incorporated herein by reference to Exhibit 10(a) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2016.</u>

- 10(x)[†] [Form of 2018 Long Term Plan Stock Unit Agreement is incorporated herein by reference to Exhibit 10\(a\) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2017.](#)
- 10(y)[†] [Form of 2019 Long Term Plan Stock Unit Agreement is incorporated herein by reference to Exhibit 10\(a\) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2018.](#)
- 10(z)[†] [Executive Incentive Plan \(2005\) – Deferred Compensation Program, dated December 21, 2005 is incorporated herein by reference to Exhibit 10\(g\) to the Corporation's Annual Report on Form 10-K for the year ended December 31, 2005.](#)

† Indicates a management contract or compensatory plan or arrangement.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on this 7th day of February, 2020.

UNION PACIFIC CORPORATION

By /s/ Lance M. Fritz
Lance M. Fritz,
Chairman, President and
Chief Executive Officer
Union Pacific Corporation

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below, on this 7th day of February, 2020, by the following persons on behalf of the registrant and in the capacities indicated.

PRINCIPAL EXECUTIVE OFFICER AND DIRECTOR:

By /s/ Lance M. Fritz
Lance M. Fritz,
Chairman, President and
Chief Executive Officer
Union Pacific Corporation

PRINCIPAL FINANCIAL OFFICER:

By /s/ Jennifer L. Hamann
Jennifer L. Hamann
Executive Vice President and
Chief Financial Officer

PRINCIPAL ACCOUNTING OFFICER:

By /s/ Todd M. Rynaski
Todd M. Rynaski,
Vice President and Controller

DIRECTORS:

Andrew H. Card, Jr.*
Erroll B. Davis, Jr.*
William J. DeLaney*
David B. Dillon*
Deborah C. Hopkins*
Jane H. Lute*

Michael R. McCarthy*
Thomas F. McLarty III*
Bhavesh V. Patel*
Jose H. Villarreal*
Christopher J. Williams*

* By Rhonda S. Ferguson
Rhonda S. Ferguson, Attorney-in-fact