

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

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

For the fiscal year ended December 31, 2023
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 001-14905

BERKSHIRE HATHAWAY INC.
(Exact name of Registrant as specified in its charter)

Delaware
State or other jurisdiction of
incorporation or organization

47-0813844
(I.R.S. Employer
Identification No.)

3555 Farnam Street, Omaha, Nebraska
(Address of principal executive office)

68131
(Zip Code)

Registrant's telephone number, including area code (402) 346-1400

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

Title of each class	Trading Symbols	Name of each exchange on which registered
Class A Common Stock	BRK.A	New York Stock Exchange
Class B Common Stock	BRK.B	New York Stock Exchange
1.300% Senior Notes due 2024	BRK24	New York Stock Exchange
0.000% Senior Notes due 2025	BRK25	New York Stock Exchange
1.125% Senior Notes due 2027	BRK27	New York Stock Exchange
2.150% Senior Notes due 2028	BRK28	New York Stock Exchange
1.500% Senior Notes due 2030	BRK30	New York Stock Exchange
2.000% Senior Notes due 2034	BRK34	New York Stock Exchange
1.625% Senior Notes due 2035	BRK35	New York Stock Exchange
2.375% Senior Notes due 2039	BRK39	New York Stock Exchange
0.500% Senior Notes due 2041	BRK41	New York Stock Exchange
2.625% Senior Notes due 2059	BRK59	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: NONE

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. ☐

Indicate by check mark whether the Registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the Registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the Registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

State the aggregate market value of the voting stock held by non-affiliates of the Registrant as of June 30, 2023: \$625,500,000,000

Indicate the number of shares outstanding of each of the Registrant's classes of common stock:

February 12, 2024—Class A common stock, \$5 par value	566,618 shares
February 12, 2024—Class B common stock, \$0.0033 par value	1,310,805,008 shares

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the Registrant's Annual Meeting to be held May 4, 2024 are incorporated in Part III.

Table of Contents

	Page No.
<u>Part I</u>	
Item 1.	<u>Business Description</u> K-1
Item 1A.	<u>Risk Factors</u> K-25
Item 1B.	<u>Unresolved Staff Comments</u> K-28
Item 1C.	<u>Cybersecurity</u> K-28
Item 2.	<u>Description of Properties</u> K-29
Item 3.	<u>Legal Proceedings</u> K-32
Item 4.	<u>Mine Safety Disclosures</u> K-32
<u>Part II</u>	
Item 5.	<u>Market for Registrant’s Common Equity, Related Security Holder Matters and Issuer Purchases of Equity Securities</u> K-32
Item 6.	<u>[Reserved]</u> K-34
Item 7.	<u>Management’s Discussion and Analysis of Financial Condition and Results of Operations</u> K-35
Item 7A.	<u>Quantitative and Qualitative Disclosures About Market Risk</u> K-66
Item 8.	<u>Financial Statements and Supplementary Data</u> K-67
	<u>Consolidated Balance Sheets— December 31, 2023 and December 31, 2022</u> K-70
	<u>Consolidated Statements of Earnings—</u>
	<u>Years Ended December 31, 2023, December 31, 2022, and December 31, 2021</u> K-72
	<u>Consolidated Statements of Comprehensive Income—</u>
	<u>Years Ended December 31, 2023, December 31, 2022, and December 31, 2021</u> K-73
	<u>Consolidated Statements of Changes in Shareholders’ Equity—</u>
	<u>Years Ended December 31, 2023, December 31, 2022, and December 31, 2021</u> K-73
	<u>Consolidated Statements of Cash Flows—</u>
	<u>Years Ended December 31, 2023, December 31, 2022, and December 31, 2021</u> K-74
	<u>Notes to Consolidated Financial Statements</u> K-75
Item 9.	<u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u> K-118
Item 9A.	<u>Controls and Procedures</u> K-118
Item 9B.	<u>Other Information</u> K-118
Item 9C.	<u>Disclosure Regarding Foreign Jurisdictions that Prevent Inspection</u> K-118
<u>Part III</u>	
Item 10.	<u>Directors, Executive Officers and Corporate Governance</u> K-118
Item 11.	<u>Executive Compensation</u> K-118
Item 12.	<u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u> K-118
Item 13.	<u>Certain Relationships and Related Transactions and Director Independence</u> K-118
Item 14.	<u>Principal Accountant Fees and Services</u> K-118
<u>Part IV</u>	
Item 15.	<u>Exhibits and Financial Statement Schedules</u> K-118
	<u>Exhibit Index</u> K-122
	<u>Signatures</u> K-124

Part I

Item 1. Business Description

Berkshire Hathaway Inc. (“Berkshire,” “Company” or “Registrant”) is a holding company owning subsidiaries engaged in numerous diverse business activities. The most important of these are insurance businesses conducted on both a primary basis and a reinsurance basis, a freight rail transportation business and a group of utility and energy generation and distribution businesses. Berkshire also owns and operates numerous other businesses engaged in a variety of manufacturing, services, retailing and other activities. Berkshire is domiciled in the state of Delaware, and its corporate headquarters is in Omaha, Nebraska.

Berkshire’s operating businesses are managed on an unusually decentralized basis. There are few centralized or integrated business functions. Berkshire’s senior management team participates in and is ultimately responsible for significant capital allocation decisions, investment activities and the selection of the Chief Executive to head each of the operating businesses.

Berkshire’s senior management is also responsible for establishing and monitoring Berkshire’s corporate governance practices, including monitoring governance efforts, including those at the operating businesses, and participating in the resolution of governance-related issues as needed. Berkshire’s Board of Directors is responsible for assuring an appropriate successor to the Chief Executive Officer. The Berkshire Code of Business Conduct and Ethics emphasizes, among other things, the commitment to ethics and compliance with government laws and regulations and provides basic standards for ethical and legal behavior of its employees.

Human capital and resources are an integral and essential component of Berkshire’s businesses. Berkshire and its subsidiary business units employed approximately 396,500 people worldwide at the end of 2023, of which approximately 80% were in the United States (“U.S.”) and 20% were represented by unions. Employees engage in a wide variety of occupations. Consistent with Berkshire’s decentralized management philosophy, Berkshire’s operating businesses individually establish specific policies and practices concerning the attraction and retention of personnel within their organizations. Given the wide variations in the nature and size of business activities, specific policies and practices may vary widely among Berkshire’s operating subsidiaries. Policies and practices commonly address, among other things: maintaining a safe work environment and minimizing or eliminating workplace injuries; offering competitive compensation, which includes various health insurance and retirement benefits, as well as incentives to recognize and reward performance; wellness programs; training, learning and career advancement opportunities; and hiring practices intended to identify qualified candidates and promote diversity and inclusion in the workforce. Berkshire’s combined U.S. workforce demographics, based on U.S. Equal Employment Opportunity Commission guidelines, are available on its website (<https://www.berkshirehathaway.com>), under sustainability.

Insurance and Reinsurance Businesses

Berkshire’s insurance and reinsurance business activities are conducted through numerous domestic and foreign-based insurance subsidiaries. Berkshire’s insurance subsidiaries provide insurance and reinsurance of property and casualty risks as well as life and health risks worldwide. Berkshire’s insurance businesses employed approximately 43,000 people at the end of 2023. For purposes of this discussion, entities that provide insurance or reinsurance are referred to as insurers.

In direct or primary insurance activities, the insurer assumes the risk of loss from persons or organizations that are directly subject to the risks. Such risks may relate to property, casualty (or liability), life, accident, health, financial or other perils that arise from an insurable event. In reinsurance activities, the insurer assumes defined portions of risks that other direct insurers or reinsurers assumed in their own insuring activities.

Insurance and reinsurance are generally subject to regulatory oversight throughout the world. Except for regulatory considerations, there are virtually no barriers to entry into the insurance and reinsurance industry. Competitors may be domestic or foreign, as well as licensed or unlicensed. The number of competitors within the industry is not known. Insurers compete on the basis of reliability, financial strength and stability, financial ratings, underwriting consistency, service, business ethics, price, performance, capacity, policy terms and coverage conditions.

Insurers based in the U.S. are subject to regulation by their states of domicile and by those states in which they are licensed to write policies on an admitted basis. The primary focus of state regulation is to monitor financial solvency of insurers and otherwise protect policyholder interests. States establish minimum capital levels for insurance companies and establish guidelines for permissible business and investment activities and have the authority to suspend or revoke a company’s authority to do business. States regulate the payment of shareholder dividends by insurance companies and other transactions with affiliates.

Insurers that market, sell and service insurance policies in the states where they are licensed are referred to as admitted insurers. Admitted insurers are generally required to obtain regulatory approval of their policy forms and premium rates. Non-admitted insurance markets have developed to provide insurance that is otherwise unavailable through admitted insurers. Non-admitted insurance, often referred to as “excess and surplus” lines, is procured by either state-licensed surplus lines brokers who place risks with insurers not licensed in that state or by the insured party’s direct procurement from non-admitted insurers. Non-admitted insurance is subject to considerably less regulation with respect to policy rates and forms. Reinsurers are normally not required to obtain regulatory approval of premium rates or reinsurance contracts.

The insurance regulators of every state participate in the National Association of Insurance Commissioners (“NAIC”). The NAIC adopts forms, instructions and accounting procedures for use by U.S. insurers in preparing and filing annual statutory financial statements. However, an insurer’s state of domicile has ultimate authority over these matters. In addition, the NAIC develops or adopts statutory accounting principles, model laws, regulations and programs for use by its members. Such matters deal with regulatory oversight of solvency, risk management, compliance with financial regulation standards and risk-based capital reporting requirements.

U.S. states, through the NAIC, and international insurance regulators through the International Association of Insurance Supervisors (“IAIS”) have been developing standards and best practices focused on establishing a common set of principles (“Insurance Core Principles”) and framework (“ComFrame”) for the regulation of large multi-national insurance groups. The IAIS is developing capital standards for internationally active insurance groups (“Insurance Capital Standard”) based on a consolidated group approach and is also evaluating a potentially comparable group capital standard based on the aggregation of regulated entities and their underlying local capital requirements (“Aggregation Method”). The IAIS is also developing standards that address supervision, coordination of regulators, risk management and governance.

While the IAIS standards do not have legal effect, U.S. state insurance departments and the NAIC are implementing various group supervision regulatory tools and mandates that are responsive to certain IAIS standards. U.S. state regulators have formed supervisory colleges intended to promote communication and cooperation amongst the various domestic and international insurance regulators. The Nebraska Department of Insurance acts as the lead supervisor for Berkshire’s insurance companies and chairs the Berkshire supervisory college.

U.S. state regulators require insurance groups to file an annual report and an Own Risk Solvency Assessment or ORSA, with the group’s lead supervisor. The NAIC adopted a group capital calculation based on methodology similar to the Aggregation Method, which leverages the NAIC’s existing risk based capital calculation methods. The NAIC’s group capital calculation is a tool designed to help the lead supervisor understand the capital adequacy across an insurance group. The NAIC is also developing further tools, including various liquidity assessments, that will likely be imposed on insurance groups in the future.

Berkshire’s insurance companies maintain capital strength at exceptionally high levels, which differentiates them from their competitors. The combined statutory surplus of Berkshire’s U.S.-based insurers was approximately \$303 billion at December 31, 2023. Berkshire’s major insurance subsidiaries are rated AA+ by Standard & Poor’s and A++ (superior) by A.M. Best with respect to their financial condition and claims paying ability.

The Terrorism Risk Insurance Act of 2002 established a Terrorism Insurance Program (“Program”) within the U.S. Department of the Treasury to provide federal reinsurance of certified terrorism losses incurred by U.S. commercial property and casualty insurers. The Program currently extends to December 31, 2027 through the Terrorism Risk Insurance Program Reauthorization Act of 2019. Hereinafter these Acts are collectively referred to as TRIA. The Department of the Treasury is responsible for certifying acts of terrorism under TRIA. Federal reinsurance under TRIA may apply if the industry insured loss for certified events occurring during the calendar year exceeds \$200 million.

To be eligible for reinsurance under TRIA, insurers must make insurance coverage available for acts of terrorism by providing policyholders with clear and conspicuous notice of the amount of premium that will be charged for the coverage and the federal share of insured losses resulting from an act of terrorism. TRIA excludes certain forms of direct insurance, such as personal and commercial auto, burglary, theft, surety and certain professional liability lines. Reinsurers are not required to offer terrorism coverage and are not eligible for federal reinsurance of terrorism losses.

In the event of a certified act of terrorism, the federal government will reimburse insurers (conditioned on their satisfaction of policyholder notification requirements) for 80% of their insured losses in excess of the insurers group deductible. Under the Program, the deductible is 20% of the aggregate direct subject earned premium for relevant commercial lines of business in the immediately preceding calendar year. The aggregate deductible for Berkshire’s insurance group is expected to approximate \$2.5 billion in 2024. There is also an aggregate program limit of \$100 billion on the amount of the federal reinsurance coverage for each TRIA year.

The extent of insurance regulation varies widely among the countries where Berkshire's non-U.S. operations conduct business. Each country imposes licensing, solvency, auditing and financial reporting requirements, although the type and extent of the requirements may differ substantially by jurisdiction.

Significant variations can also be found in the size, structure and resources of the local non-U.S. regulatory departments that oversee insurance activities. Certain regulators maintain close relationships with subject insurers and others operate a risk-based approach.

Berkshire's non-U.S. insurance operations are conducted through subsidiaries and branches of subsidiaries. Berkshire insurance subsidiaries are located in several countries, including Germany, the United Kingdom ("U.K."), Ireland, Luxembourg, Australia and South Africa, and also maintain branches in several other countries. Most of these foreign jurisdictions impose local capital requirements. Other legal requirements involve discretionary licensing procedures, local retention of funds and records, and data privacy and protection programs. Berkshire's international insurance companies are also subject to multinational application of certain U.S. laws.

There are various regulatory bodies and initiatives that impact Berkshire in multiple international jurisdictions and the potential for significant effect on the Berkshire insurance group could be heightened due to industry and economic developments. In 2016, the U.K. voted in a national referendum to withdraw from the European Union ("EU") ("Brexit"), which resulted in the U.K.'s withdrawal from the EU on January 31, 2020. In anticipation of the U.K. leaving the EU, Berkshire Hathaway European Insurance DAC in Ireland was established to permit property and casualty insurance and reinsurance businesses to continue to operate in the EU. Berkshire also continues to maintain a substantial presence in London following Brexit.

Berkshire's insurance underwriting operations include the following groups: (1) GEICO, (2) Berkshire Hathaway Primary Group and (3) Berkshire Hathaway Reinsurance Group. Alleghany Corporation ("Alleghany"), based in New York, New York, was acquired by Berkshire on October 19, 2022. Alleghany's operating subsidiaries include property and casualty reinsurance and insurance, as well as a portfolio of non-insurance businesses. Alleghany's primary insurance businesses are included in the Berkshire Hathaway Primary Group and its reinsurance businesses are included in the Berkshire Hathaway Reinsurance Group. Alleghany's non-insurance businesses are included in the manufacturing and services segments.

Except for retroactive reinsurance and periodic payment annuity products, which generate significant amounts of up-front premiums along with estimated claims expected to be paid over long time periods (creating "float," see Investments section), Berkshire expects to achieve an underwriting profit over time and that its managers will reject inadequately priced risks. Underwriting profit is defined as earned premiums less incurred losses, loss adjustment expenses and policy acquisition and other underwriting expenses. Underwriting profit does not include income earned from investments. Additional information related to each of Berkshire's underwriting groups follows.

GEICO—GEICO is headquartered in Chevy Chase, Maryland. GEICO's insurance subsidiaries are led by Government Employees Insurance Company and include several other GEICO insurance entities. The GEICO insurance companies offer private passenger automobile insurance to individuals in all 50 states and the District of Columbia, and also offer insurance for motorcycles, all-terrain vehicles, recreational vehicles, boats and small commercial fleets. Marketing is primarily through direct response methods in which applications for insurance are submitted directly to the companies via the Internet or by telephone, and to a lesser extent, through captive agents. GEICO also operates as an insurance agency for other insurance carriers that offer homeowners, renters, condominium, life and identity protection insurance to individuals desiring insurance coverages other than those offered by GEICO insurance entities.

GEICO competes for private passenger automobile insurance customers in the preferred, standard and non-standard risk markets with other companies that sell directly to the customer and with companies that use agency sales forces, including State Farm, Allstate, Progressive and USAA. According to the most recently published A.M. Best data for 2022, the five largest automobile insurers had a combined market share of approximately 61.2% based on written premiums, with GEICO's market share being the third largest at approximately 13.8%.

Seasonal variations in GEICO's insurance business are not significant. However, extraordinary weather conditions or other events and factors may have a significant effect upon the frequency or severity of automobile claims.

State insurance departments stringently regulate private passenger auto insurance policies and rates. Competition for private passenger automobile insurance tends to focus on price and level of customer service provided. GEICO's cost-efficient direct response marketing methods and emphasis on customer satisfaction enable it to offer competitive rates and value to its customers. GEICO primarily uses its own claims staff to manage and settle claims. The name and reputation of GEICO are material assets and those assets and other service marks are protected through appropriate registrations.

Berkshire Hathaway Primary Group—The Berkshire Hathaway Primary Group ("BH Primary") is a collection of independently managed insurers that provide a wide variety of insurance coverages to policyholders located principally in the U.S. These various operations are discussed below.

National Indemnity Company ("NICO"), domiciled in Nebraska, and certain affiliates ("NICO Primary") underwrite commercial automobile and general liability insurance on an admitted basis and on an excess and surplus basis. Insurance coverage is offered nationwide primarily through insurance agents and brokers.

The Berkshire Hathaway Homestate Companies ("BHHC") are a group of insurers offering workers' compensation, commercial automobile and commercial property coverages to a diverse client base. BHHC has a national reach, with the ability to provide first-dollar and small to large deductible workers' compensation coverage to employers in all states, except those where coverage is available only through state-operated workers' compensation funds. NICO Primary and BHHC are each based in Omaha, Nebraska.

Berkshire Hathaway Specialty Insurance Company ("BHSI") offers commercial property and casualty, executive and professional, and various other insurance coverages through BHSI and other Berkshire insurance affiliates. BHSI writes primary and excess policies on an admitted and non-admitted basis in the U.S., and on a local or foreign non-admitted basis outside the U.S. BHSI is based in Boston, Massachusetts, with other regional offices in the U.S. BHSI also maintains international offices and branches in Australia, Canada, New Zealand and across several other countries in Asia and Europe. BHSI writes business through wholesale and retail insurance brokers, as well as managing general agents.

Alleghany's property and casualty insurance business is conducted in the U.S. on both an admitted and non-admitted basis through RSUI Group, Inc. and its subsidiaries ("RSUI") and CapSpecialty, Inc. and its subsidiaries ("CapSpecialty"). RSUI and CapSpecialty primarily write specialty insurance in the property, umbrella/excess liability, professional liability, directors' and officers' liability and general liability lines of business. Insurance is written through independent wholesale insurance brokers, retail agents and managing general agents.

MedPro Group ("MedPro") is a leading provider of healthcare liability ("HCL") insurance. MedPro provides customized HCL insurance, claims, patient safety and risk solutions to physicians, surgeons, dentists and other healthcare professionals, as well as hospitals, senior care and other healthcare facilities. Additionally, MedPro provides HCL insurance solutions to international markets through other Berkshire insurance affiliates, delivers liability insurance to other professionals, and offers specialized accident and health insurance solutions to colleges and other customers through its subsidiaries and other Berkshire insurance affiliates. MedPro is based in Fort Wayne, Indiana.

U.S. Liability Insurance Company ("USLI") includes a group of five specialty insurers that underwrite commercial, professional and personal lines of insurance on an admitted basis, as well as on an excess and surplus basis. USLI markets policies in all 50 states, the District of Columbia and Canada through wholesale and retail insurance agents. USLI companies also underwrite and market a wide variety of specialty insurance products. USLI is based in Wayne, Pennsylvania. Berkshire Hathaway GUARD Insurance Companies ("GUARD") is a group of five insurance companies that provide a full suite of commercial insurance products, as well as homeowners policies to over 450,000 small to mid-sized businesses and homeowners. These offerings are made through independent agents and retail and wholesale brokers. GUARD is based in Wilkes-Barre, Pennsylvania.

Berkshire Hathaway Direct Insurance Company and its affiliates ("BH Direct") offer commercial insurance products (including workers' compensation, property, auto, general and professional liability) to small business customers. BH Direct's products are primarily sold through two internet-based distribution platforms, biBERK.com and Threeinsurance.com. BH Direct writes policies on an admitted basis and is based in Stamford, Connecticut. MLMIC Insurance Company ("MLMIC") writes medical professional liability insurance policies in New York State through brokers and on a direct basis to medical and dental professionals, health care providers and hospitals. MLMIC is based in Albany, New York.

Berkshire Hathaway Reinsurance Group—Berkshire’s combined global reinsurance business, referred to as the Berkshire Hathaway Reinsurance Group (“BHRG”), offers a wide range of coverages on property, casualty, life and health risks to insurers and reinsurers worldwide. BHRG conducts business activities in 26 countries. Reinsurance business is written through NICO and affiliates (“NICO Group”), General Re Corporation and its subsidiaries (“General Re Group”) and Transatlantic Reinsurance Company and affiliates (“TransRe Group”). The NICO Group and General Re Group underwriting operations in the U.S. are based in Stamford, Connecticut and the TransRe Group is based in New York, New York.

Reinsurance contracts are normally classified as treaty or facultative contracts. Treaty reinsurance refers to reinsurance coverage for all or a portion of a specified group or class of risks ceded by a direct insurer or reinsurer, while facultative reinsurance involves coverage of specific individual underlying risks. Reinsurance contracts are further classified as quota-share or excess. Under quota-share (proportional or pro-rata) reinsurance, the reinsurer shares proportionally in the original premiums and losses of the direct insurer or reinsurer. Excess (or non-proportional) reinsurance provides for the indemnification of the direct insurer or reinsurer for all or a portion of the loss in excess of an agreed upon amount or “retention.” Both quota-share and excess reinsurance contracts may provide for aggregate limits of indemnification.

The type and volume of business written is dependent on market conditions, including prevailing premium rates and coverage terms. The level of underwriting activities often fluctuates significantly from year to year depending on the perceived level of price adequacy in specific insurance and reinsurance markets as well as from the timing of particularly large reinsurance transactions.

Property/casualty

The NICO Group offers traditional property/casualty reinsurance on both an excess-of-loss and a quota-share basis, catastrophe excess-of-loss treaty and facultative reinsurance, and primary insurance on an excess-of-loss basis for large or unusual risks. The type and volume of business written by the NICO Group may vary significantly from period to period resulting from changes in perceived premium rate adequacy and from unique or large transactions. For the past several years, a significant portion of NICO Group’s annual reinsurance premium derived from a 20% quota-share agreement with Insurance Australia Group Limited (“IAG”). This quota-share agreement was renewed and extended effective January 1, 2023, with an expiration of December 31, 2029. IAG is a multi-line insurer in Australia, New Zealand and other Asia-Pacific countries.

The General Re Group includes a global property and casualty reinsurance business. Reinsurance contracts are written on both a quota-share and excess basis for multiple lines of business. Contracts are primarily in the form of treaties, and to a lesser degree, on a facultative basis. The General Re Group conducts business in North America, primarily marketed on a direct basis through General Reinsurance Corporation (“GRC”), which is licensed in the District of Columbia and all states, except Hawaii, where it is an accredited reinsurer. GRC also conducts operations in North America through numerous branch offices in the U.S. and Canada.

In North America, the General Re Group includes General Star National Insurance Company, General Star Indemnity Company and Genesis Insurance Company, which offer a broad array of specialty and surplus lines and property, casualty and professional liability coverages. These companies offer solutions for the unique needs of public entity, commercial and captive customers and their business is marketed through a select group of wholesale brokers, managing general underwriters and program administrators.

The General Re Group’s international reinsurance business is primarily written on a direct basis through General Reinsurance AG, based in Cologne, Germany, and subsidiaries and branches in numerous other countries, as well as through brokers, including Faraday Underwriting Limited (“Faraday”), a subsidiary. Faraday owns the managing agent of Syndicate 435 at Lloyd’s of London and provides capacity and participates in 100% of the results of Syndicate 435.

The TransRe Group provides pro-rata and excess-of-loss reinsurance across various property and casualty lines of business. Contracts are written on both a treaty and facultative basis to insurance and other reinsurance companies in the U.S. and in foreign markets through subsidiaries and branches in numerous countries. Business is written primarily through brokers, and to a lesser extent on a direct basis.

Life/health

The General Re Group also conducts a global life and health reinsurance business. In 2023, net premiums written were primarily in the Asia-Pacific, U.S. and Western Europe regions. The General Re Group underwrites life, disability, supplemental health, critical illness and long-term care risks on a direct basis.

Berkshire Hathaway Life Insurance Company of Nebraska (“BHLN”) and its affiliates write reinsurance covering various forms of traditional life insurance exposures several years ago. BHLN and affiliates also reinsure certain guaranteed minimum death, income and similar risks on closed-blocks of variable annuity risks, which are in run-off.

Retroactive reinsurance

Retroactive reinsurance contracts indemnify ceding companies for adverse development of claims arising from loss events that have already occurred under property and casualty policies issued in prior years. Coverage under such contracts is provided on an excess basis (above a stated retention) or for losses payable after the inception of the contract with no additional ceding company retention. Contracts are normally subject to aggregate limits of indemnification, which can be exceptionally large in amount. Significant amounts of asbestos, environmental and latent injury claims may arise under these contracts.

The concept of time-value-of-money is an important element in establishing retroactive reinsurance contract prices and terms since loss payments may occur over decades. Normally, expected ultimate losses payable under these policies are expected to exceed premiums, thus producing underwriting losses through the amortization of deferred charge assets established with respect to these contracts. Nevertheless, this business is written, in part, because of the large amounts of policyholder funds generated for investment, the economic benefit of which is reflected through investment results in future periods.

Periodic payment annuity

BHLN writes periodic payment annuity insurance policies and reinsures annuity-like obligations. Under these policies, BHLN receives upfront consideration and agrees in the future to make periodic payments that often extend for decades. These policies generally relate to the settlement of underlying personal injury or workers’ compensation claims of other insurers, known as structured settlements. Consistent with retroactive reinsurance contracts, time-value-of-money is an important factor in establishing annuity premiums, and underwriting losses are expected from the periodic accretion of time-value discounted liabilities. BHLN significantly curtailed its periodic payment annuity business in 2023 in response to changing economic and market conditions.

Investments of insurance businesses—Berkshire’s insurance subsidiaries hold significant levels of invested assets. Investment portfolios are managed by Berkshire’s Chief Executive Officer and Berkshire’s other investment managers. Investments include a very large portfolio of publicly traded equity securities, which are unusually concentrated in relatively few companies, as well as fixed maturity securities and short-term investments. Generally, there are no target allocations by investment type or attempts to match investment asset and insurance liability durations. However, investment portfolios have historically included a much greater proportion of equity securities than is customary in the insurance industry.

Invested assets derive from shareholder capital as well as funds provided from policyholders through insurance and reinsurance business (“float”). Float represents the approximate net policyholder funds generated through underwriting activities that are held for investment. The major components of float are unpaid losses and loss adjustment expenses, life, annuity and health benefit liabilities (excluding the effects of discount rate changes that are recorded in accumulated other comprehensive income), unearned premiums and other policyholder liabilities less premium and reinsurance receivables, deferred policy acquisition costs and deferred charges on assumed retroactive reinsurance contracts. On a consolidated basis, float has grown from approximately \$123 billion at the end of 2018 to approximately \$169 billion at the end of 2023. The cost of float can be measured as the net pre-tax underwriting earnings (or loss) as a percentage of average float.

Railroad Business—Burlington Northern Santa Fe

Burlington Northern Santa Fe, LLC (“BNSF”) is based in Fort Worth, Texas, and through BNSF Railway Company (“BNSF Railway”) operates one of the largest railroad systems in North America. BNSF Railway had approximately 37,000 employees at the end of 2023, of whom approximately 32,000 were members of a labor union.

In serving the Midwest, Pacific Northwest, Western, Southwestern and Southeastern regions and certain parts of the U.S., BNSF Railway transports a range of products and commodities derived from manufacturing, agricultural and natural resource industries. Freight revenues are covered by contractual agreements of varying durations or common carrier published prices or company quotations. BNSF’s financial performance is influenced by, among other things, general and industry economic conditions at the international, national and regional levels.

BNSF Railway’s primary routes, including trackage rights, allow it to access major cities and certain ports in the western and southern U.S. as well as parts of Canada and Mexico. In addition to major cities and ports, BNSF Railway efficiently serves many smaller markets by working closely with approximately 200 shortline railroads. BNSF Railway has also entered into marketing agreements with other rail carriers, expanding the marketing reach for each railroad and their customers. For the year ending December 31, 2023, 34% of freight revenues were derived from consumer products, 25% from industrial products, 24% from agricultural products and 17% from coal.

Regulatory Matters

BNSF is subject to federal, state and local laws and regulations generally applicable to its businesses. Rail operations are subject to the regulatory jurisdiction of the Surface Transportation Board (“STB”), the Federal Railroad Administration of the U.S. Department of Transportation (“DOT”), the Occupational Safety and Health Administration (“OSHA”), the Environmental Protection Agency (“EPA”), as well as other federal and state regulatory agencies and Canadian regulatory agencies for operations in Canada. The STB has jurisdiction over disputes and complaints involving certain rates, routes and services, the sale or abandonment of rail lines, applications for line extensions and construction, and the merger with or acquisition of control of rail common carriers. The outcome of STB proceedings can affect the profitability of BNSF Railway’s business.

The DOT, OSHA and EPA have jurisdiction under several federal statutes over a number of safety, health, and environmental aspects of rail operations, including the transportation of hazardous materials. BNSF Railway is required to transport these materials to the extent of its common carrier obligation. State agencies regulate some health, safety, and environmental aspects of rail operations in areas not otherwise preempted by federal law.

Environmental Matters

BNSF’s rail operations, as well as those of its competitors, are also subject to extensive federal, state and local environmental regulations covering discharges to the ground or waters, air emissions, toxic substances and the generation, handling, storage, transportation and disposal of waste and hazardous materials. Such regulations effectively increase the costs and liabilities associated with rail operations. Environmental risks are also inherent in rail operations, which frequently involve transporting chemicals and other hazardous materials.

Many of BNSF’s land holdings are or have been used for industrial or transportation-related purposes or leased to commercial or industrial companies whose activities may have resulted in discharges onto the property. Under federal statutes (in particular, the Comprehensive Environmental Response, Compensation and Liability Act) and state statutes, BNSF may be held jointly and severally liable for cleanup and enforcement costs associated with a particular site without regard to fault or the legality of the original conduct. BNSF may also be subject to claims by third parties for investigation, cleanup, restoration or other environmental costs under environmental statutes or common law with respect to properties they own that have been impacted by BNSF operations.

Consumption of diesel fuel by locomotives accounted for approximately 80% of BNSF Railway’s greenhouse gas (“GHG”) emissions in its baseline year of 2018. BNSF management has committed to a broad sustainability model, applying science based approaches, that will provide a 30% reduction in BNSF Railway’s GHG-emissions by 2030 from its baseline year of 2018. BNSF Railway intends to continue improvements in fuel efficiency and increased utilization of renewable diesel fuel. Long-term solutions, such as battery-electric and hydrogen locomotives, are also being evaluated and field-tested.

Competition

The business environment in which BNSF Railway operates is highly competitive. Depending on the specific market, deregulated motor carriers and other railroads, as well as river barges, ships and pipelines, may exert pressure on price and service levels. The presence of advanced, high service truck lines with expedited delivery, subsidized infrastructure and minimal empty mileage continues to affect the market for non-bulk, time-sensitive freight. The potential expansion of longer combination vehicles could further encroach upon markets traditionally served by railroads. In order to remain competitive, BNSF Railway and other railroads seek to develop and implement operating efficiencies to improve productivity.

As railroads streamline, rationalize and otherwise enhance their franchises, competition among rail carriers intensifies. BNSF Railway’s primary rail competitor in the Western region of the U.S. is the Union Pacific Railroad Company. Other Class I railroads and numerous regional railroads and motor carriers also operate in parts of the same territories served by BNSF Railway.

Utilities and Energy Businesses

Berkshire’s energy businesses include a 92% ownership interest in Berkshire Hathaway Energy Company (“BHE”), based in Des Moines, Iowa. In 2017, Berkshire acquired a 38.6% interest in Pilot Travel Centers, LLC (“PTC”), which is headquartered in Knoxville, Tennessee. Through January 31, 2023, the investment in PTC was accounted for using the equity method. On January 31, 2023, Berkshire acquired an additional 41.4% interest and attained control of PTC for financial reporting purposes. PTC became a subsidiary in Berkshire’s Consolidated Financial Statements beginning February 1, 2023. On January 16, 2024, Berkshire acquired an additional 20% interest in PTC and as of that date PTC became an indirect wholly-owned Berkshire subsidiary. PTC’s business activities are primarily associated with fuel distribution and energy products and services.

Berkshire Hathaway Energy

BHE is a global energy company with subsidiaries and affiliates that generate, transmit, store, distribute and supply energy. BHE's domestic regulated energy interests are comprised of four regulated U.S. utility companies (collectively, "U.S. utilities") serving approximately 5.3 million retail customers and five U.S. interstate natural gas pipeline companies with approximately 21,000 miles of operated pipeline having a design capacity of approximately 21 billion cubic feet of natural gas per day. Other energy businesses include electric transmission and distribution operations in Great Britain and Canada, a diversified portfolio of mostly renewable independent power projects and investments, and a liquefied natural gas export, import and storage facility. BHE also owns a residential real estate brokerage firm in the U.S. and a large network of residential real estate brokerage franchises in the U.S. BHE employs approximately 24,000 people in connection with its various operations.

General Matters

BHE's U.S. utilities include PacifiCorp, MidAmerican Energy Company ("MEC") and NV Energy, Inc.'s ("NV Energy") two regulated utility subsidiaries, Nevada Power Company ("Nevada Power") and Sierra Pacific Power Company ("Sierra Pacific"). PacifiCorp is a regulated electric utility company headquartered in Oregon, serving electric customers in portions of Utah, Oregon, Wyoming, Washington, Idaho and California. The combined service territory's diverse regional economy ranges from rural, agricultural and mining areas to urban, manufacturing and government service centers. No single segment of the economy dominates the combined service territory, which helps mitigate PacifiCorp's exposure to economic fluctuations. In addition to retail sales, PacifiCorp buys and sells electricity on a wholesale basis.

MEC is a regulated electric and natural gas utility company headquartered in Iowa, serving electric and natural gas customers primarily in Iowa and also in portions of Illinois, South Dakota and Nebraska. MEC's diverse retail customer base operates in the electronic data storage, agricultural, manufacturing and government service centers industries. In addition to retail sales and natural gas transportation, MEC sells electricity and natural gas on a wholesale basis.

Nevada Power serves retail electric customers in southern Nevada and Sierra Pacific serves retail electric and natural gas customers in northern Nevada. The combined Nevada Power/Sierra Pacific service territory economy includes retail customers in the gaming, mining, recreation, warehousing, manufacturing and governmental service centers sectors. In addition to retail sales and natural gas transportation, these utilities buy and sell electricity and natural gas on a wholesale basis.

As vertically integrated utilities, BHE's U.S. utilities collectively own approximately 30,100 net megawatts of generation capacity in operation and under construction. The U.S. utilities' business is subject to seasonal variations principally related to the use of electricity for air conditioning and natural gas for heating. Typically, regulated electric revenues are higher in the summer months, while regulated natural gas revenues are higher in the winter months.

The natural gas pipelines consist of BHE GT&S, LLC ("BHE GT&S"), Northern Natural Gas Company ("Northern Natural") and Kern River Gas Transmission Company ("Kern River"). BHE GT&S was acquired on November 1, 2020.

BHE GT&S, based in Virginia, operates three interstate natural gas pipeline systems that consist of approximately 5,400 miles of natural gas transmission, gathering and storage pipelines and operates seventeen underground natural gas storage fields in the eastern region of the U.S. BHE GT&S's large underground natural gas storage assets and pipeline systems are part of an interconnected gas transmission network that provides transportation services to utilities and numerous other customers. BHE GT&S is also an industry leader in liquefied natural gas solutions through its investments in and ownership of several liquefied natural gas facilities located throughout the eastern region of the U.S.

Northern Natural, based in Nebraska, operates the largest interstate natural gas pipeline system in the U.S., as measured by pipeline miles, reaching from west Texas to Michigan's Upper Peninsula. Northern Natural's pipeline system consists of approximately 14,200 miles of natural gas pipelines. Northern Natural's extensive pipeline system, which is interconnected with many interstate and intrastate pipelines in the national grid system, has access to supplies from multiple major supply basins and provides transportation services to utilities and numerous other customers. Northern Natural also operates three underground natural gas storage facilities and two liquefied natural gas storage peaking units. Northern Natural's pipeline system experiences significant seasonal swings in demand and revenue, with the highest demand typically occurring during the months of November through March.

Kern River, based in Utah, operates an interstate natural gas pipeline system that consists of approximately 1,400 miles and extends from supply areas in the Rocky Mountains to consuming markets in Utah, Nevada and California. Kern River transports natural gas for electric and natural gas distribution utilities, major oil and natural gas companies or affiliates of such companies, electric generating companies, energy marketing and trading companies, and financial institutions.

Other energy businesses include Northern Powergrid (Northeast) plc and Northern Powergrid (Yorkshire) plc, which own a substantial electricity distribution network that delivers electricity to end-users in northeast England in an area covering approximately 10,000 square miles. These distribution companies primarily charge supply companies regulated tariffs for the use of their distribution systems and serve about 4.0 million electricity end-users. AltaLink L.P. (“AltaLink”) is a regulated electric transmission-only utility company headquartered in Calgary, Alberta. AltaLink’s high voltage transmission lines and related facilities transmit electricity from generating facilities to major load centers, cities and large industrial plants throughout its 87,000 square mile service territory. AltaLink serves approximately 85% of Alberta’s population. BHE and its subsidiaries, also own interests in independent power projects having approximately 5,900 net megawatts of generation capacity that are in service in California, Texas, Illinois, Nebraska, Montana, Australia, New York, Arizona, Canada, Minnesota, Kansas, Iowa and Hawaii. These independent power projects sell power generated primarily from wind, solar, geothermal and hydro sources under long-term contracts. Additionally, BHE subsidiaries and other Berkshire subsidiaries have invested approximately \$7.3 billion to-date in wind projects sponsored by third parties, commonly referred to as tax equity investments.

Regulatory Matters

The U.S. utilities are subject to comprehensive regulation by various federal, state and local agencies. The Federal Energy Regulatory Commission (“FERC”) is an independent agency with broad authority to implement provisions of the Federal Power Act, the Energy Policy Act of 2005 and other federal statutes. The FERC regulates rates for wholesale sales of electricity; transmission of electricity, including pricing and regional planning for the expansion of transmission systems; electric system reliability; utility holding companies; accounting and records retention; securities issuances; construction and operation of hydroelectric facilities; and other matters. The FERC also has the enforcement authority to assess civil penalties of up to \$1.5 million per day per violation of rules, regulations and orders issued under the Federal Power Act. MEC is also subject to regulation by the Nuclear Regulatory Commission pursuant to the Atomic Energy Act of 1954, as amended, with respect to its 25% ownership of the Quad Cities Nuclear Station.

With certain limited exceptions, the U.S. utilities have an exclusive right to serve retail customers within their service territories and, in turn, have an obligation to provide service to those customers. In some jurisdictions, certain classes of customers may choose to purchase all or a portion of their energy from alternative energy suppliers, and in some jurisdictions retail customers can generate all or a portion of their own energy. Historically, state regulatory commissions have established retail electric and natural gas rates on a cost-of-service basis, which are designed to allow a utility the opportunity to recover what each state regulatory commission deems to be the utility’s reasonable costs of providing services, including the opportunity to earn a fair and reasonable return on its investments based on its cost of debt and equity. The retail electric rates of U.S. utilities are generally based on the cost of providing traditional bundled services, including generation, transmission and distribution services; however, rates are available for transmission-only and distribution-only services.

Northern Powergrid (Northeast) plc and Northern Powergrid (Yorkshire) plc each charge fees for the use of their distribution systems that are controlled by a formula prescribed by the Gas and Electricity Markets Authority, the British electricity regulatory body. The current electricity distribution price control runs from April 1, 2023 through March 31, 2028.

AltaLink is regulated by the Alberta Utilities Commission (“AUC”), pursuant to the Electric Utilities Act (Alberta), the Public Utilities Act (Alberta), the Alberta Utilities Commission Act (Alberta) and the Hydro and Electric Energy Act (Alberta). The AUC is an independent quasi-judicial agency, which regulates and oversees Alberta’s electricity transmission sector with broad authority that may impact many of AltaLink’s activities, including its tariffs, rates, construction, operations and financing. Under the Electric Utilities Act, AltaLink prepares and files applications with the AUC for approval of tariffs to be paid by the Alberta Electric System Operator (“AESO”) for the use of its transmission facilities, and the terms and conditions governing the use of those facilities. The AESO is an independent system operator in Alberta, Canada that oversees Alberta’s integrated electrical system (“AIES”) and wholesale electricity market. The AESO is responsible for directing the safe, reliable and economic operation of the AIES, including long-term transmission system planning.

The natural gas pipelines are subject to regulation by various federal and state agencies. The natural gas pipeline and storage operations of BHE GT&S, Northern Natural and Kem River are regulated by the FERC pursuant to the Natural Gas Act and the Natural Gas Policy Act of 1978. Under this authority, the FERC regulates, among other items, (a) rates, charges, terms and conditions of service; (b) the construction and operation of interstate pipelines, storage and related facilities, including the extension, expansion or abandonment of such facilities; and (c) the construction and operation of liquefied natural gas export/import facilities. Interstate natural gas pipeline companies are also subject to regulations administered by the Office of Pipeline Safety within the Pipeline and Hazardous Materials Safety Administration, an agency of the DOT. Federal pipeline safety regulations are issued pursuant to the Natural Gas Pipeline Safety Act of 1968, as amended, which establishes safety requirements in the design, construction, operation and maintenance of interstate natural gas pipeline facilities.

Environmental Matters

BHE and its energy businesses are subject to federal, state, local and foreign laws and regulations regarding air quality, climate change, emissions performance standards, water quality, coal ash disposal and other environmental matters that have the potential to impact current and future operations. In addition to imposing continuing compliance obligations, these laws and regulations, such as the Federal Clean Air Act, provide regulators with the authority to levy substantial penalties for noncompliance, including fines, injunctive relief and other sanctions.

The Federal Clean Air Act, as well as state laws and regulations impacting air emissions, provides a framework for protecting and improving the nation's air quality and controlling sources of air emissions. These laws and regulations continue to be promulgated and implemented and will impact the operation of BHE's generating facilities and require them to reduce emissions at those facilities to comply with the requirements. In addition, the potential adoption of state or federal clean energy standards, which include low-carbon, non-carbon and renewable electricity generating resources, may also impact electricity generators and natural gas providers.

In December 2015, an international agreement was negotiated by 195 nations to create a universal framework for coordinated action on climate change in what is referred to as the Paris Agreement. The Paris Agreement reaffirms the goal of limiting global temperature increase well below 2 degrees Celsius, while urging efforts to limit the increase to 1.5 degrees Celsius and reaching a global peak of GHG emissions as soon as possible to achieve climate neutrality by mid-century; establishes commitments by all parties to make nationally determined contributions and pursue domestic measures aimed at achieving the commitments; commits all countries to submit emissions inventories and report regularly on their emissions and progress made in implementing and achieving their nationally determined commitments; and commits all countries to submit new commitments every five years, with the expectation that the commitments will be more aggressive in reducing GHG emissions. In the context of the Paris Agreement, the U.S. agreed to reduce GHG emissions by 26% to 28% from 2005 levels by 2025. The Paris Agreement formally became effective on November 4, 2016; however, the U.S. completed its withdrawal from the Paris Agreement on November 4, 2020. President Biden accepted the terms of the climate agreement on January 20, 2021, and the U.S. completed its reentry on February 19, 2021. New commitments to the Paris Agreement were announced in April 2021, with the U.S. pledging to cut its overall GHG emissions by 50% to 52% from 2005 levels by 2030 and to reach 100% carbon pollution-free electricity by 2035. Increasingly, states are adopting legislation and regulations to reduce GHG emissions, and local governments and consumers are seeking increasing amounts of clean and renewable energy.

On June 19, 2019, the EPA repealed the Clean Power Plan and issued the Affordable Clean Energy rule. In the Affordable Clean Energy rule, the EPA determined that the best system of emissions reduction for existing coal fueled power plants is heat rate improvements and identified a set of candidate technologies and measures that could improve heat rates. Measures taken to meet the standards of performance must be achieved at the source itself. On January 19, 2021, the D.C. Circuit Court of Appeals vacated the Affordable Clean Energy rule in its entirety. In October 2021, the U.S. Supreme Court agreed to hear an appeal of that decision. Arguments in the case were held in February 2022 and on June 30, 2022, the U.S. Supreme Court issued its decision regarding the scope of the EPA's authority to regulate GHG emissions under the Clean Air Act. The U.S. Supreme Court held that the "generation shifting" approach in the Clean Power Plan exceeded the powers granted to the EPA by Congress, although the court did not address whether the EPA may only adopt measures applied at the individual source as it did in the Affordable Clean Energy rule. In May 2023, the EPA proposed new rules addressing GHG emissions for the power sector. The proposed requirements would take effect January 1, 2030. The EPA subcategorized the best system of emissions reduction based on fuel type. For existing coal, the EPA determined that the best system of emissions reduction is carbon capture and sequestration. For existing natural gas-fueled steam units, the EPA determined that the best system of emissions reduction is an emissions limit between 1,300 and 1,500 pounds of carbon dioxide per gross megawatt hour. For existing natural gas combustion turbines, the EPA determined the best system of emissions reduction applies only to large, high-load turbines, which must either use carbon capture and sequestration or a co-fueling with hydrogen. Finally, for new natural gas combustion turbines, the EPA determined that the best system of emissions reduction is a co-fueling with hydrogen between 30% and 96% blend rates by 2038. The EPA intends to finalize the rule by May 2024.

In November 2021, the EPA proposed rules that would reduce methane emissions from both new and existing sources in the oil and natural gas industry. The proposals would expand and strengthen emission reduction requirements for new, modified and reconstructed oil and natural gas sources and would require states to reduce methane emissions from existing sources nationwide. The EPA issued a supplemental proposal in November 2022 to further strengthen emission requirements. The rule was finalized in December 2023. Affected sources may have up to five years from the rule's effective date to comply with requirements identified in state implementation plans.

BHE and its energy subsidiaries continue to focus on delivering reliable, affordable, safe and clean energy to its customers and on actions to mitigate its GHG emissions. BHE's primary source of GHG emissions is the generation of electricity from its power plants that are fueled by coal or natural gas. In managing its electricity generation, BHE works with its regulators to protect the energy and economic needs of customers by considering costs, reliability and sources of electric generation. Over the years, BHE has invested heavily in owned renewable generation and storage, with cumulative investments

of \$34.1 billion through 2023 and has ceased coal operations at 18 coal generation units. As a result, as of December 31, 2023, BHE reduced its annual GHG emissions by more than 34% as compared to 2005 levels. BHE plans to continue investing in renewable and other low-carbon generation and storage in the future and to cease coal operations at an additional 15 coal generation units between 2025 and 2030 in a reliable and cost-effective manner, thereby achieving a 50% reduction in GHG emissions from 2005 levels in 2030.

Non-Energy Businesses

HomeServices of America, Inc. ("HomeServices") is a residential real estate brokerage firm in the U.S. In addition to providing traditional residential real estate brokerage services, HomeServices offers other integrated real estate services, including mortgage originations and mortgage banking, title and closing services, insurance, home warranties, relocation services and other home-related services. It operates under 50 brand names with approximately 41,000 real estate agents in nearly 900 brokerage offices in 34 states and the District of Columbia.

HomeServices' franchise network currently includes approximately 300 franchisees and over 1,500 brokerage offices with nearly 48,000 real estate agents under two brand names, primarily in the U.S. In exchange for certain fees, HomeServices provides the right to use the Berkshire Hathaway HomeServices or Real Living brand names and other related service marks, as well as providing orientation programs, training and consultation services, advertising programs and other services.

HomeServices' principal sources of revenue are dependent on residential real estate transaction volumes, which are generally higher in the second and third quarters of each year. This business is highly competitive and subject to general real estate market conditions.

Pilot Travel Centers (PTC)

PTC operates more than 650 travel center and approximately 75 fuel-only retail locations across 44 U.S. states and five Canadian provinces, primarily under the names Pilot or Flying J, as well as large wholesale fuel and fuel marketing businesses in the U.S. PTC also sells diesel fuel at over 140 retail locations in the U.S. and Canada through various arrangements with third party travel centers. PTC sold over 16 billion gallons of fuel (primarily diesel and gasoline) in 2023 on a retail and wholesale basis, including 1.3 billion gallons of low carbon fuels and 325 million gallons of diesel exhaust fluid.

During 2023, PTC opened charging stations at 18 travel centers in connection with an agreement with General Motors to develop a nationwide electric vehicle fast charger network of 2,000 charging stations in 500 U.S. locations by 2026. PTC also signed a letter of intent with Volvo during 2022 to develop a nationwide public charging network to support the expansion of battery-powered electric trucks. PTC and its subsidiaries had approximately 26,700 employees at the end of 2023, of which 2,160 work at joint venture travel centers operated by PTC.

PTC's travel centers are generally located close to an interstate highway and offer petroleum products, merchandise, food, and other services and amenities to consumers, travelers and professional truck drivers. The travel center industry is concentrated among a few large operators, including Love's Travel Stops and TravelCenters of America, although there are numerous independent operators that operate one to ten travel centers. PTC's top 10 customers for diesel sales at its travel centers and dealers account for less than 15% of total diesel gallons sold, while PTC's top 10 fuel suppliers account for less than 50% of gallons purchased. PTC retail operations also sell diesel fuel through agreements with third party travel centers where PTC procures and sells diesel fuel at the locations owned by the third parties. PTC also operates a water disposal business in the oil fields sector.

PTC is subject to federal, state, and local laws and regulations relating to the environment. These laws generally provide for control of pollutants released into the environment and require responsible parties to undertake remediation of hazardous waste disposal sites. Penalties may be imposed for non-compliance. Certain assets (such as petroleum tanks, dispensers, and disposal wells) impose asset retirement obligations.

Manufacturing Businesses

Berkshire's numerous and diverse manufacturing subsidiaries are grouped into three categories: (1) industrial products, (2) building products and (3) consumer products. Berkshire's industrial products businesses manufacture components for aerospace and power generation applications, specialty chemicals, metal cutting tools, and a variety of other products primarily for industrial use. The building products group produces prefabricated and site-built residential homes, flooring products, insulation, roofing and engineered products, building and engineered components, paint and coatings and bricks and masonry products. The consumer products group manufactures and/or distributes recreational vehicles, batteries, and various apparel, footwear and other products. Information concerning the major activities of these three groups follows. Berkshire's manufacturing businesses employed approximately 184,000 people at the end of 2023.

Industrial products

Precision Castparts

Precision Castparts Corp. (“PCC”), based in Lake Oswego, Oregon, manufactures complex metal components and products, provides high-quality investment castings, forgings, fasteners/fastener systems and aerostructures for critical aerospace and power and energy applications. PCC also manufactures investment castings and forgings for general industrial, armament, medical and other applications; nickel and titanium alloys in all standard mill forms from large ingots and billets to plate, foil, sheet, strip, tubing, bar, rod, extruded shapes, rod-in-coil, wire and welding consumables, as well as cobalt alloys, for the aerospace, chemical processing, oil and gas, pollution control and other industries; fasteners for automotive and general industrial markets; specialty alloys for the investment casting and forging industries; heat treating and destructive testing services for the investment cast products and forging industries; grinder pumps and affiliated components for low-pressure sewer systems; critical auxiliary equipment and gas monitoring systems for the power generation industry; and metalworking tools for the fastener market and other applications.

Investment casting technology involves a multi-step process that uses ceramic molds in the manufacture of metal components with more complex shapes, closer tolerances and finer surface finishes than parts manufactured using other methods. PCC uses this process to manufacture products for aircraft engines, industrial gas turbine and other aeroderivative engines, airframes, medical implants, armament, unmanned aerial vehicles and other industrial applications. PCC also manufactures high temperature carbon and ceramic composite components, including ceramic matrix composites, for use in next-generation aerospace engines.

PCC uses forging processes to manufacture components for the aerospace and power generation markets. PCC manufactures high-performance, nickel-based alloys, as well as titanium alloys and products. PCC’s nickel-based alloys are used to produce forged components and investment castings for aerospace and non-aerospace applications in such markets as oil and gas, chemical processing and pollution control. PCC’s titanium products are used to manufacture components for the commercial and military aerospace, power generation, energy, medical, and industrial end markets.

PCC is also a leading developer and manufacturer of highly engineered fasteners, fastener systems, aerostructures and precision components, primarily for critical aerospace applications. These products are produced for the aerospace and power and energy markets, as well as for construction, automotive, heavy truck, farm machinery, mining and construction equipment, shipbuilding, machine tools, medical equipment, appliances and recreation markets.

PCC has several significant customers, including aerospace original equipment manufacturers (“OEMs”) (Boeing and Airbus) and aircraft engine manufacturer suppliers (General Electric, Rolls Royce and Pratt & Whitney). The majority of PCC’s sales are from customer orders or demand schedules pursuant to long-term agreements. Contractual terms may provide for termination by the customer, subject to payment for work performed. PCC typically does not experience significant order cancellations, although periodically it receives requests for delays in delivery schedules.

The global outbreak of COVID-19 which began in March 2020 drove unprecedented build rate reductions and destocking in the aerospace market through 2021. In 2022, PCC began to see recovery in the domestic markets, with international travel starting to improve in the latter part of 2022. Domestic travel has surpassed 2019 levels, while international travel remains just below 2019 levels. Long-term industry forecasts continue to show growth and strong demand for air travel and aerospace products.

PCC is subject to substantial competition in all of its markets. Components and similar products may be produced by competitors, who use either the same types of manufacturing processes as PCC or other processes. Although PCC believes its manufacturing processes, technology and experience provide its customers advantages, such as high quality, competitive prices and physical properties that often meet more stringent demands, alternative forms of manufacturing can be used to produce many of the same components and products. Nevertheless, PCC is a leading supplier in most of its principal markets. Several factors, including long-standing customer relationships, technical expertise, state-of-the-art facilities and dedicated employees, aid PCC in maintaining competitive advantages.

Several raw materials used in PCC products, including certain metals such as nickel, titanium, cobalt, tantalum, hafnium and molybdenum, are found in only a few parts of the world. These metals are required for the alloys used in manufactured products. The availability and costs of these metals may be influenced by private or governmental cartels, changes in world politics, labor relations between the metal producers and their workforces and inflation.

PCC is currently subject to various federal, state and foreign environmental laws concerning, among other things, water discharges, air emissions, waste management, toxic materials use reduction and environmental cleanup. Laws and regulations continue to evolve, and it is reasonably possible that environmental standards will become more stringent in the future, particularly under air quality and water quality laws and standards related to climate change, including reporting of GHG emissions. As a result, it is also reasonably likely that PCC will be regularly required to make additional expenditures, including capital expenditures, which could be significant, relating to environmental matters.

Lubrizol

The Lubrizol Corporation (“Lubrizol”), headquartered in Wickliffe, Ohio, is a specialty chemical and performance materials company that manufactures products and supplies technologies for the global transportation, industrial and consumer markets. Lubrizol currently operates two business segments: Lubrizol Additives, which produces engine lubricant additives, driveline lubricant additives and industrial specialties products; and Lubrizol Advanced Materials, which includes engineered materials (engineered polymers and performance coatings) and life sciences (beauty and personal care, and health and home care solutions).

Lubrizol Additives’ products are used in a broad range of applications including engine oils, transmission fluids, gear oils, specialty driveline lubricants, fuels, metalworking fluids and compressor lubricants for transportation and industrial applications. Lubrizol Advanced Materials’ products are used in many different types of applications including beauty, personal care, home care, over-the-counter pharmaceuticals, medical devices, performance coatings, sporting goods, plumbing and fire sprinkler systems. Lubrizol is an industry leader in many of the markets in which it competes, and its principal lubricant additives competitors are Infineum International Ltd., Chevron Oronite Company and Afton Chemical Corporation. Lubrizol Advanced Materials’ businesses compete in many markets with a variety of competitors in each product line.

With its considerable patent portfolio, Lubrizol uses its technological leadership position and applies its scientific capabilities, formulation know-how and market expertise in product development to improve the demand, quality and value of its solutions. Lubrizol also leverages its scientific and applications knowledge to meet and exceed customer performance and sustainability requirements. While Lubrizol typically has patents that expire each year, it invests resources to protect its intellectual property and to develop or acquire innovative products for the markets it serves. Lubrizol uses many specialty and commodity chemical raw materials in its manufacturing processes. Raw materials are primarily feedstocks derived from petroleum and petrochemicals and, generally, are obtainable from several sources. The materials that Lubrizol chooses to purchase from a single source typically are subject to long-term supply contracts to ensure supply reliability.

Lubrizol operates its business on a global basis through more than 100 offices, laboratories, production facilities and warehouses on six continents, the most significant of which are North America, Europe, Asia and South America. Lubrizol markets its products worldwide through direct sales, sales agents and distributors. Lubrizol’s customers principally consist of major global and regional oil companies and industrial and consumer products companies. Some of Lubrizol’s largest customers also may be suppliers. During 2023, no single customer accounted for more than 10% of Lubrizol’s consolidated revenues. In recent years, the COVID-19 pandemic, supply chain disruptions, severe weather and fires at certain Lubrizol facilities affected the availability of raw materials and fulfillment of customer orders and otherwise disrupted Lubrizol’s operations.

Lubrizol expends significant capital to ensure the safety of its employees and the communities where it operates, as well as delivering on its commitments to operational excellence and cybersecurity. Lubrizol also makes significant capital investments to ensure reliable supply and compliance with regulations governing its operations, while reducing their environmental footprint.

Lubrizol is subject to foreign, federal, state and local laws to protect the environment, limit manufacturing waste and emissions, ensure product and employee safety and regulate trade. While the company believes that its policies, practices and procedures are designed to limit the associated risks and consequent financial liability, the operation of chemical manufacturing plants entails inherent environmental, safety and other risks, and significant capital expenditures, costs or liabilities could be incurred in the future.

IMC International Metalworking Companies

IMC International Metalworking Companies (“IMC”) is one of the three largest multinational manufacturers of consumable precision carbide metal cutting tools for applications in a broad range of industrial end markets. IMC’s primary brand names include ISCAR®, TaeguTec®, Ingersoll®, Tungaloy®, and NTK®. Other IMC brand names include, among others, Unitac®, UOP®, It.te.di®, Qutittec®, Tool—Flo®, PCT®, IMCO®, BSW RKS® and Supermill®. IMC’s primary manufacturing facilities are located in Israel, the U.S., South Korea, Japan, Germany, Italy, Switzerland, India and China.

IMC has six primary product lines: milling tools, parting & grooving tools, turning/thread tools, hole making tools, round tools and tooling. The main products are split within the main product lines between consumable cemented tungsten carbide inserts and steel tool holders. Inserts comprise a major portion of IMC's sales and earnings. Metal cutting inserts are used by industrial manufacturers to cut metals and are consumed during their use in cutting applications. IMC manufactures hundreds of types of highly engineered inserts within each product line that are tailored to maximize productivity and meet the technical requirements of customers. IMC's staff of scientists and engineers continuously develop and innovate products that address end user needs and requirements.

IMC's global sales and marketing network operates in nearly every major manufacturing center around the world, staffed with highly skilled engineers and technical personnel. IMC's customer base is very diverse, with its primary customers being large, multinational businesses in the automotive, aerospace, engineering and machinery industries. IMC operates a regional central warehouse system with locations in Israel, the U.S., Belgium, South Korea, Japan and China. Additional small quantities of products are maintained at local IMC sales offices to provide on-time customer support and inventory management.

IMC competes in the metal cutting tools segment of the global metalworking tools market. The segment includes hundreds of participants who range from small, private manufacturers of specialized products for niche applications and markets to larger, global multinational businesses (such as Sandvik and Kennametal, Inc.) with a wide assortment of products and extensive distribution networks. Other manufacturing companies such as Kyocera, Mitsubishi, Sumitomo, Ceratizit and Korloy also play a significant role in the cutting tool market.

Cemented tungsten carbide powder is the main raw material used in manufacturing cutting tools. Most of IMC's insert products are made from tungsten. While supplies are currently adequate, a significant disruption or constraints in production processing facilities could cause reduced availability and increased prices.

IMC is committed to following and complying with all government and environmental rules, regulations and requirements and applicable laws. IMC considers environmental preservation and pollution prevention as important factors in all operations and activities. IMC production facilities are built with the highest standards and follow all applicable regulations.

Marmon

Marmon Holdings, Inc. ("Marmon"), headquartered in Chicago, Illinois, is a global industrial organization comprising eleven diverse business groups and more than 100 autonomous manufacturing and service businesses. Marmon's manufacturing and service operations are conducted at approximately 400 manufacturing, distribution and service facilities located primarily in the U.S., as well as 16 other countries worldwide. Marmon's business groups are as follows.

Foodservice Technologies manufactures beverage dispensing and cooling equipment, hot and cold food preparation and holding equipment and related products for restaurants, global brand owners and other foodservice providers. Operations are based in the U.S. with manufacturing facilities in the U.S., Mexico, China, Czech Republic and Italy. Products are sold primarily throughout the U.S., Europe and Asia.

Water Technologies manufactures water treatment equipment for residential, commercial and industrial applications worldwide. Operations are based primarily in the U.S., Canada, China, Singapore, India and Poland with business centers located in Belgium, France, Germany, the U.K. and Italy.

Transportation Products serves the automotive and heavy-duty highway transportation industries with precision-molded plastic components; fastener thread solutions; aluminum tubing and extrusions; automotive aftermarket transmission, emissions and chassis products; dry van, platform, lowbed specialty trailers; and truck and trailer components. Operations and business are conducted primarily in the U.S., Mexico, Canada, Europe and Asia.

Retail Solutions provides retail environment design services; in-store digital merchandising, dispensing and display fixtures; shopping, material handling and security carts. Operations and business are conducted in the U.S., the U.K. and Czech Republic.

Metal Services provides specialty metal pipe, tubing and related value-added services to customers across a broad range of industries including aerospace, construction and agricultural. Operations are based in the U.S., India, Poland, Singapore, the U.K., Netherlands, Canada and Mexico and business is conducted primarily in those countries.

Electrical produces electrical wire for use in residential and commercial buildings, and specialty wire and cable for use in energy, transit, aerospace, defense, communication and other industrial applications. Operations are based in the U.S., Canada, India and England. Business is conducted globally and primarily in the U.S., Canada, India, the U.K., U.A.E. and China.

Plumbing & Refrigeration supplies copper tubing and copper, brass, aluminum and stainless-steel fittings and components for the plumbing, heating, ventilation and air conditioning (HVAC) and refrigeration markets; custom coils, ducting, air handling units and heat pipe for the HVAC market; HVAC systems and structures for military, nuclear and medical markets and aluminum and brass forgings for many commercial and industrial applications. Key raw materials, including aluminum and copper are widely available. Business and operations are conducted primarily in the U.S., Canada and the U.K.

Industrial Products supplies construction fasteners; masonry and stone anchoring systems used in commercial construction; two component polymer products for anchoring, bonding and repair applications, gloves and other protective wear; gear drives, gearboxes, fan and pump drives for various markets; wind machines for agricultural use; wheels, axles and gears for rail, mining and other applications; lighting products for industrial and mining; and equipment for the manufacture and assembly of lead acid batteries; and the manufacturing and installation of after life service products. Operations are primarily based in the U.S., the U.K., Canada and China and business is conducted in those countries.

Rail & Leasing manufactures, leases and maintains railcars; leases intermodal tank containers; manufactures mobile railcar movers; provides in-plant rail switching and loading services; performs track construction and maintenance; and manufactures steel tank heads and cylinders.

Union Tank Car Company (“UTLX”) is the largest component of the Rail & Leasing group and is a leading designer, builder and full-service lessor of railroad tank cars and other specialized railcars. Together with its Canadian affiliate Procor, UTLX owns a fleet of approximately 119,000 railcars for lease to customers in chemical, petrochemical, energy and agricultural/food industries. UTLX manufactures tank cars in the U.S. and performs railcar maintenance services at more than 100 locations across North America.

UTLX has a diversified customer base, both geographically and across industries. UTLX, while subject to cyclicality and significant competition in most of its markets, competes by offering a broad range of high-quality products and services targeted at its niche markets. Railcars are typically leased for multiple-year terms and most of the leases are renewed upon expiration. Due to selective ongoing capital investment, utilization rates (the number of railcars on lease as a percentage of the total fleet) of the railcar fleet are generally high.

Intermodal tank containers are leased through EXSIF Worldwide. EXSIF is a leading international lessor of intermodal tank containers with a fleet of approximately 75,000 units, primarily serving chemical producers and logistics operators. In May 2022, EXSIF exited its Russia business, which resulted in the sale of approximately 7,300 intermodal tank containers.

Crane Services is a provider of mobile cranes and operators in North America and Australia with a combined fleet of approximately 1,100 cranes, primarily serving the energy, mining, petrochemical and infrastructure markets. Cranes are leased on either a fully operated and maintained service basis or on an equipment-only basis. The Crane Services group is subject to customer seasonality, with typical concentration of volume in the warmer months.

Medical develops, manufactures and distributes a wide range of innovative medical devices in the extremities fixation, craniomaxillofacial surgery, neurosurgery, biologics, aesthetics and powered instruments markets. The group’s leading-edge medical technology and products are used globally to help improve patient care and outcomes. Operations are based in the U.S., Europe and China and business is conducted primarily in North and South America, Europe, Asia and Australia.

Beginning in 2024, Marmon includes the Scott Fetzer companies, which were previously included in other industrial products businesses. The Scott Fetzer companies manufacture, distribute, service and finance a wide variety of products for residential, industrial and institutional use. Certain Marmon businesses, including the Rail and Medical groups, are subject to government regulation and oversight. Marmon has numerous known environmental matters which are subject to on-going monitoring and/or remediation efforts. Marmon follows all federal, state and local environmental regulations.

Other industrial products

CTB International Corp. (“CTB”), headquartered in Milford, Indiana, is a leading global designer, manufacturer and marketer of a wide range of agricultural systems and solutions for preserving grain, producing poultry, pigs and eggs, and for processing poultry, fish, vegetables and other foods. CTB operates from facilities located around the globe and supports customers through a worldwide network of independent distributors and dealers.

CTB competes with a variety of manufacturers and suppliers, including many that offer only a limited number of the products offered by CTB, as well as a few that offer products across several of CTB’s product lines. Competition is based on the price, value, reputation, quality and design of the products offered and the customer service provided by distributors, dealers and manufacturers of the products. CTB’s leading brand names, distribution network, diversified product line, product support and high-quality products enable it to compete effectively. CTB manufactures its products primarily from galvanized steel, steel wire, stainless steel and polymer materials. The availability of these materials in recent years has been adequate.

LiquidPower Specialty Products Inc. (“LSPI”), headquartered in Houston, Texas, is a global leader in the science of drag reduction application (“DRA”) technology by maximizing the flow potential of pipelines, increasing operational flexibility and throughput capacity, and efficiencies for customers. LSPI develops innovative flow improver solutions with customers in over 20 countries on five continents, treating over 50 million barrels of hydrocarbon liquids per day. LSPI’s DRA offering is part of a comprehensive, full-service solution that encompasses industry-leading technology, quality manufacturing, technical support and consulting, a reliable supply chain, injection equipment and field service. LSPI is subject to foreign, federal, state and local laws to protect the environment and limit manufacturing waste and emissions.

The industrial products group also includes W&W/AFCO Steel (“W&W/AFCO”), a leading structural steel fabricator and steel construction business in North America. W&W/AFCO operates 19 steel fabrication plants located across the U.S. W&W/AFCO’s projects include semiconductor plants, stadiums, high-rise buildings, bridges, mining facilities, aircraft hangars, military projects, automotive assembly plants, as well as international projects. W&W/AFCO currently has a substantial multiyear backlog of projects. W&W/AFCO was acquired in connection with the Alleghany acquisition in October 2022, and its headquarters are in Oklahoma City, Oklahoma.

Building Products

Clayton

Clayton Homes, Inc. (“Clayton”), headquartered near Knoxville, Tennessee, is a vertically integrated housing company offering traditional site-built homes and off-site (factory) built housing, including modular, manufactured, CrossMod™ and tiny homes. In 2023, Clayton delivered approximately 43,000 off-site built and approximately 10,000 site-built homes. Clayton also offers home financing and other financial services and competes on price, service, location and delivery capabilities.

All Clayton Built® off-site built homes are designed, engineered and assembled in the U.S. As of December 2023, off-site backlog was \$799 million, up over 200% from the prior year end. Clayton sells off-site built homes through independent and company-owned home centers, realtors and subdivision channels. Clayton considers its ability to offer financing to retail purchasers a factor affecting the marketplace acceptance of its off-site built homes. Clayton’s financing programs utilize proprietary loan underwriting guidelines to evaluate loan applicants.

Since 2015, Clayton’s site-built division, Clayton Properties Group, has expanded through the acquisition of nine builders across 18 states with over 290 subdivisions, supplementing the portfolio of housing products offered to customers. Clayton’s site-builders currently own and control approximately 67,000 homesites, with a home order backlog of approximately \$1.6 billion as of December 2023.

Historically, access to key housing inputs such as lumber, steel and resin products has been adequate. During 2021 and the first half of 2022, the availability and pricing of these and other inputs was volatile. Input shortages coupled with reduced labor and subcontractor availability increased the time needed to construct a home, increasing the levels of work-in-process inventory. These constraints began to lessen in the latter half of 2022 due to improved availability and pricing of key inputs, increased order cancellations and lower overall demand for new home construction.

Clayton’s building products business benefited in recent years from the low interest rate environment and the strong residential construction market. However, the effects of significant increases in home mortgage interest rates in the U.S. over the past year has slowed demand for new home construction, partially mitigated by low supplies of pre-existing homes for sale.

Clayton’s home building business regularly makes capital and non-capital expenditures with respect to compliance with federal, state and local environmental regulations, primarily related to erosion control, permitting and stormwater protection for site-built home subdivisions. The financing business originates and services loans which are federally regulated by the Consumer Financial Protection Bureau, various state regulatory agencies and reviewed by the U.S. Department of Housing and Urban Development, the Government National Mortgage Association and government-sponsored enterprises.

Shaw

Shaw Industries Group, Inc. (“Shaw”), headquartered in Dalton, Georgia, is a leading manufacturer and distributor of carpet, carpet tile, and hard surface flooring products. Shaw designs and manufactures over 4,400 styles of tufted carpet, wood and resilient flooring for residential and commercial use under numerous brand and trade names and under certain private labels. Soft and hard surface products are available in a broad range of patterns, colors and textures. Shaw’s carpet manufacturing operations are fully integrated from the processing of raw materials used to make fiber through to the finishing. Shaw’s flooring businesses are primarily in the U.S., and it also manufactures in China and the U.K. and distributes carpet tile throughout Europe and Southeast Asia. Shaw manufactures or distributes a variety of hardwood, wood plastic composite (WPC), stone plastic composite (SPC), vinyl and laminate floor products (“hard surfaces”). Shaw’s Integrated Solutions business also provides project management and installation services.

Shaw also operates Shaw Sports Turf, Shawgrass and Southwest Greens International, LLC, which provide synthetic sports turf, golf greens and landscape turf products. Since 2021, Shaw's businesses include Watershed Geosynthetics, LLC ("Watershed Geo"), which sells innovative and patented environmental solutions for utility, waste management, erosion control and mining industries. In 2023, Shaw acquired a controlling interest in Watershed Solar LLC ("Watershed Solar"), which was merged into Watershed Geo. Watershed Solar provides patented renewable energy solutions. The technology, branded PowerCap®, supplies low profile, high output solar arrays on top of landfills, coal ash closures and roof tops, and otherwise underutilized spaces, producing renewable energy.

Shaw products are sold wholesale to over 43,000 retailers, distributors and commercial users throughout the world. Shaw's wholesale products are marketed domestically by over 1,900 salaried and commissioned sales personnel directly to retailers and distributors and to large national accounts. Shaw's distribution facilities, including seven carpet, nine hard surfaces, one sample full-service and three sample satellite facilities and 30 redistribution centers, enable it to provide prompt and efficient delivery of its products to both its retail customers and wholesale distributors.

Substantially all carpet manufactured by Shaw is tufted carpet made from nylon, polypropylene and polyester, as well as recycled materials. During 2023, Shaw processed approximately 93% of its requirements for carpet yarn in its own yarn processing facilities. The availability of raw materials is adequate, but costs are impacted by petro-chemical and natural gas price changes. A significant portion of Shaw's soft-flooring raw materials derive from recycled sources. Raw material cost changes are periodically factored into selling prices to customers.

The soft floor covering industry is highly competitive with only a handful of major competitors domestically. There are numerous manufacturers, domestically and internationally, that are engaged in the hard surfaces flooring sector. According to industry estimates, carpet accounts for approximately 39% of the total U.S. consumption of all flooring types. The principal competitive measures within the floor covering industry are quality, style, price and service.

Johns Manville

Johns Manville Corporation ("JM"), headquartered in Denver, Colorado, is a leading manufacturer and marketer of premium-quality products for building insulation, mechanical and industrial insulation, commercial roofing and roof insulation, as well as reinforcement fiberglass and technical nonwovens. JM serves markets that include residential and nonresidential buildings, automotive and transportation, air handling, appliance, HVAC, pipe and equipment, air and liquid filtration, waterproofing, flooring, interiors, aerospace and wind energy. Fiberglass is the basic material in many of JM's products, although JM also manufactures a significant portion of its products with other materials to satisfy the broader needs of its customers.

JM regards its patents and licenses as valuable; however, it does not consider any of its businesses to be materially dependent on any single patent or license. JM operates over 40 manufacturing facilities in North America and Europe and conducts research and development at its technical center in Littleton, Colorado and at other facilities in the U.S. and Europe.

Fiberglass is made from earthen raw materials and recycled glass. JM's products also contain materials other than fiberglass, including chemical agents to bind many of its glass fibers and various chemical-based and petrochemical-based materials used in roofing and other specialized products. JM uses recycled material when available and suitable to satisfy the broader needs of its customers. The raw materials used in these various products are generally readily available in sufficient quantities from various sources to maintain and expand its current production levels.

JM's operations are subject to a variety of federal, state and local environmental laws and regulations, which regulate or impose liability for the discharge of materials into the air, land and water and govern the use and disposal of hazardous substances and use of chemical substances. The most relevant of the federal laws are the Federal Clean Air Act, the Clean Water Act, the Toxic Substances Control Act, the Resource Conservation and Recovery Act and the Comprehensive Environmental Response, Compensation and Liability Act, which are administered by the EPA. Canadian and European regulatory authorities have also adopted their own environmental laws and regulations. JM continually monitors new and pending regulations and assesses their potential impact on the business. JM's capital projects regularly address environmental compliance, although capital expenditures for environmental compliance are generally in conjunction with other capital project expenditures.

JM sells its products through a wide variety of channels including contractors, distributors, retailers, manufacturers and fabricators. JM operates in highly competitive markets, with competitors comprising primarily of large global and national manufacturers and smaller regional manufacturers. JM holds leadership positions in the key markets that it serves. JM's products compete primarily on value, differentiation and customization, breadth of product line, quality and service. Sales of JM's products are moderately seasonal due to increases in construction activity that typically occur in the second and third quarters of the calendar year.

MiTek

MiTek Industries, Inc. ("MiTek"), based in Chesterfield, Missouri, operates in two separate building markets: residential and commercial. MiTek operates worldwide with sales in over 60 countries and with manufacturing facilities and/or sales/engineering offices located in 20 countries.

In the residential building market, MiTek is a leading supplier of engineered connector products, construction hardware, engineering software and services, and computer-driven manufacturing machinery to the truss component market of the building components industry. MiTek's primary customers are component manufacturers who manufacture prefabricated roof and floor trusses and wall panels for the residential building market. MiTek also sells construction hardware to commercial distributors and retail stores for do-it-yourself customers.

A significant raw material used by MiTek is hot dipped galvanized sheet steel. While supplies are presently adequate, variations in supply have historically occurred, producing significant variations in cost and availability.

Benjamin Moore

Benjamin Moore & Co. ("Benjamin Moore"), headquartered in Montvale, New Jersey, is one of North America's leading manufacturers of premium quality residential, commercial and industrial maintenance coatings. Benjamin Moore is committed to innovation and sustainable manufacturing practices. The Benjamin Moore premium portfolio includes Aura®, Regal® Select, ben®, ADVANCE®, Element Guard®, Woodluxe®, Ultra Spec® and others. The Benjamin Moore diversified brands include specialty and architectural paints from Coronado® and Ins1-x®.

Benjamin Moore coatings are currently available through more than 8,000 independently owned and operated paint, decorating and hardware retailers, including approximately 4,000 Ace Hardware ("Ace") stores, throughout the U.S. and Canada as well as 72 countries globally. Benjamin Moore became the preferred paint supplier for Ace stores in 2019 through an agreement which permits Ace stores to carry specified Benjamin Moore products. The relationship with Ace has expanded considerably since 2019. Additionally, Benjamin Moore assumed responsibility for manufacturing Clark+Kensington® and Royal®, as well as the balance of Ace's private label paint brands.

Benjamin Moore also allows customers to directly order coatings or color samples online or, for national accounts via its customer information center, for delivery to the customer or a retailer near the customer.

Benjamin Moore competes with numerous manufacturers, distributors and paint, coatings and related products retailers. Product quality, product innovation, breadth of product line, technical expertise, service and price determine the competitive advantage. Competitors include other premium paint and decorating stores, mass merchandisers, home centers, independent hardware stores, hardware chains and manufacturer-operated direct outlets, such as Sherwin-Williams Company, PPG Industries, Inc., The Home Depot, Inc. and Lowe's Companies, Inc.

The most significant raw materials in Benjamin Moore products are titanium dioxide, monomers, polymers and pigments. Historically, the purchased raw materials have been generally available, with pricing and availability subject to fluctuation. Raw material supply constraints, stemming from the COVID-19 pandemic began to ease in the second half of 2022, and have been alleviated in 2023. As a result, Benjamin Moore has returned to normal production levels to align with demand.

Benjamin Moore complies with applicable regulations relating to protection of the environment and workers' safety and Benjamin Moore products are compliant with environmental standards. Benjamin Moore has certain known past environmental matters, which are subject to on-going monitoring and/or remediation efforts.

Acme

Acme Brick Company (“Acme”), headquartered in Fort Worth, Texas, manufactures and distributes clay bricks (Acme Brick®) and concrete block (Featherlite). In addition, Acme distributes numerous other building products of other manufacturers, including cladding, floor and wall tile, wood flooring and other masonry products. Products are sold primarily in the South Central and Southeastern U.S. through company-operated sales offices. Acme distributes products primarily to homebuilders and masonry and general contractors.

Acme currently operates 12 clay brick manufacturing sites located in four states and three concrete block facilities in Texas. The demand for Acme’s products is seasonal, with higher sales in the warmer weather months, and is subject to the level of construction activity, which is cyclical. Acme also owns and leases properties and mineral rights that supply raw materials used in many of its manufactured products. Acme’s raw materials supply is believed to be adequate.

The brick industry is subject to the EPA Maximum Achievable Control Technology Standards (“MACT”). As required under the 1990 Clean Air Act, the EPA developed a list of source categories that require the development of National Emission Standards for Hazardous Air Pollutants, which are also referred to as MACT Standards (“Rule”). Key elements of the MACT Rule include emission limits established for certain hazardous air pollutants and acidic gases. Acme’s brick plants comply with the current Rule.

Consumer Products

Recreational vehicles

Forest River, Inc. (“Forest River”), headquartered in Elkhart, Indiana, is a manufacturer of recreational vehicles (“RV”), utility cargo trailers, buses and pontoon boats with products sold in the U.S. and Canada through an independent dealer network. Forest River has numerous manufacturing facilities located in six states and is a leading manufacturer of RVs with numerous brand names, including Forest River, Coachmen RV and Prime Time. Utility cargo trailers are sold under a variety of brand names. Buses are sold under several brand names, including Starcraft Bus. Pontoon boats are sold under the Berkshire, South Bay and Trifecta brand names.

The RV industry is highly competitive. Competition is based primarily on price, design, quality and service. The industry has consolidated over the past several years and is currently concentrated in a few companies, the largest of which had a market share of approximately 42% based on industry data as of September 2023. Forest River held a market share of approximately 33% at that time. Forest River is subject to regulations of the National Traffic and Motor Vehicle Safety Act, the safety standards for recreational vehicles established by the U.S. Department of Transportation and similar laws and regulations issued by the Canadian government. Forest River is a member of the Recreational Vehicle Industry Association, a voluntary association of RV manufacturers which promotes safety standards for RVs. Forest River believes its products comply in all material respects with the standards that govern its products.

Apparel and footwear

Fruit of the Loom, Inc. (“FOL”), headquartered in Bowling Green, Kentucky, is primarily a manufacturer and distributor of basic apparel, underwear, casualwear, athletic apparel and sports equipment. Products under the Fruit of the Loom® and JERZEES® labels are primarily sold in the mass merchandise, mid-tier chains and wholesale markets. In the Vanity Fair Brands product line, Vassarette®, Curvation® and Radiant by Vanity Fair® are sold in the mass merchandise market, while Vanity Fair® and Lily of France® products are sold to mid-tier chains and department stores. FOL also markets and sells athletic apparel and sports equipment to team dealers and to sporting goods retailers under the Russell Athletic® and Spalding® brands.

FOL generally performs its own knitting, cloth finishing, cutting, sewing and packaging for apparel. For the North American market, which is FOL’s predominant sales region, cloth manufacturing is primarily performed in Honduras. Labor-intensive cutting, sewing and packaging operations are in Central America, the Caribbean and Asia. For the European market, products are either sourced from third-party contractors in Europe or Asia or sewn in Morocco from textiles internally produced in Morocco. Bras, athletic equipment, sporting goods and other athletic apparel lines are generally sourced from third-party contractors located primarily in Asia.

U.S.-grown cotton fiber and U.S.-manufactured polyester fiber are the main raw materials used in manufacturing FOL’s products. Historically, fibers were purchased from a limited number of third parties, including one key supplier that provided much of FOL’s yarn spinning/raw material conversion services. Supply chain disruptions in 2021 and 2022 caused FOL to utilize alternative sources for these raw materials/services. FOL has since engaged an additional supplier for a portion of FOL’s yarn spinning/raw material conversion services. FOL’s markets are highly competitive, consisting of many domestic and foreign manufacturers and distributors. Competition is generally based upon product features, quality, customer service and price.

Garan Incorporated (“Garan”), headquartered in New York, New York, designs, manufactures, imports and sells apparel primarily for children, including boys, girls, toddlers and infants. Products are sold under its own trademarks Garanimals® and 365 Kids from Garanimals® and easy-peasy®, as well as customer private label brands. Garan conducts its business through operating subsidiaries located in the U.S., Central America and Asia. Garan’s products are sold through its distribution centers in the U.S. Fechheimer Brothers Company (“Fechheimers”) manufactures and distributes uniforms, principally for the public service and safety markets, including police, fire, postal and military markets. Fechheimers is based in Cincinnati, Ohio.

The BH Shoe Holdings Group, headquartered in Greenwich, Connecticut, manufactures and distributes work, rugged outdoor and casual shoes and western-style footwear under several brand names, including Justin®, BÖRN®, Carolina®, Söfft® and Double-H Boots®, as well as under several other brand names. Brooks Sports, Inc., headquartered in Seattle, Washington, markets and sells performance running footwear and apparel to specialty and national retailers and directly to consumers under the Brooks® brand. A significant volume of the shoes sold by Berkshire’s shoe businesses are manufactured or purchased from sources located outside the U.S. Products are sold worldwide through a variety of channels including department stores, footwear chains, specialty stores, catalogs and the Internet, as well as through company-owned retail stores.

Other consumer products

The Duracell Company (“Duracell”), headquartered in Chicago, Illinois, is a leading manufacturer of high-performance alkaline and lithium coin batteries. Duracell manufactures batteries in the U.S., Europe and China and provides a network of worldwide sales and distribution centers. Duracell sells its products to a diverse group of retailers and distributors across the globe. There are several competitors in the battery manufacturing market with Duracell holding a 31% market share of the global alkaline battery market. Management believes there are currently sufficient sources of raw materials available, which are primarily steel, zinc, manganese and nickel-based chemistries.

The consumer products group also includes Jazwares, LLC, (“Jazwares”), acquired in October 2022 in connection with Alleghany. Jazwares, headquartered in Sunrise, Florida, is a leading global toy and consumer products manufacturer with a robust portfolio of owned and licensed brands, such as Squishmallows™, Pokémon™, Hello Kitty™, Star Wars™, Disney™, BumBumz™ and Adopt Me™. In addition to toys, offerings also include virtual games, costumes and products for pets. Jazwares sells its products in more than 100 countries.

Richline Group, Inc., headquartered in New York, New York, operates five strategic business units: Richline Jewelry, Richline Digital, LeachGamer, Rio Grande and Inverness. Each business unit is a manufacturer and/or distributor of precious metal, non-precious metal, diamond and gem products to specific target markets, including large jewelry chains, department stores, shopping networks, mass merchandisers, e-commerce retailers and artisans as well as certain global manufacturers and wholesalers in the medical, electronics and aerospace industries. Albecca Inc. (“Albecca”), headquartered in Suwanee, Georgia, operates in the U.S., Canada and 11 other countries, with products primarily under the Larson-Juhl® name. Albecca designs, manufactures and distributes a complete line of high quality, branded custom framing products, including wood and metal moulding, matboard, foamboard, glass and framing supplies. Complementary to its framing products, Albecca offers art printing and fulfillment services.

Service and Retailing Businesses

Berkshire’s service businesses provide grocery and foodservice distribution, professional aviation training programs, shared aircraft ownership programs and distribution of electronic components. Other service businesses include franchising and servicing of quick service restaurants, media businesses (television and information distribution), as well as logistics businesses. Berkshire’s service businesses employed approximately 55,000 people at the end of 2023. Information concerning these activities follows.

McLane

McLane Company, Inc. (“McLane”) provides wholesale distribution services in all 50 states to customers that include convenience stores, discount retailers, wholesale clubs, drug stores, military bases, quick service restaurants and casual dining restaurants. McLane’s major customers during 2023 included Walmart (approximately 17.0% of revenues); 7-Eleven (approximately 14.0% of revenues); and Yum! Brands, (approximately 12.3% of revenues). McLane’s business model is based on a high volume of sales, rapid inventory turnover and stringent expense controls. Operations are currently divided into three business units: grocery distribution, foodservice distribution and beverage distribution.

McLane’s grocery distribution unit, based in Temple, Texas, maintains a dominant market share within the convenience store industry and serves most of the national convenience store chains and major oil company retail outlets. Grocery operations provide products to approximately 47,500 retail locations nationwide. McLane’s grocery distribution unit operates 26 distribution facilities in 20 states.

McLane's foodservice distribution unit, based in Carrollton, Texas, focuses on serving the quick service and casual dining restaurant industry with high quality, timely-delivered products. Operations are conducted through 47 facilities in 22 states. The foodservice distribution unit services approximately 32,700 restaurants nationwide.

Through its subsidiaries, McLane also operates wholesale distributors of distilled spirits, wine and beer. The beverage unit operates as Empire Distributors, with operations conducted through 14 distribution centers in Georgia, North Carolina, Tennessee and Colorado. Empire Distributors services approximately 29,200 retail locations in the southeastern U.S. and Colorado.

FlightSafety

FlightSafety International Inc. ("FlightSafety") is an industry leading provider of professional aviation training services and flight simulation products. FlightSafety and FlightSafety Textron Aviation Training, a joint venture with Textron, provide high technology training to pilots, aircraft maintenance technicians, flight attendants and dispatchers who operate and support a wide variety of business, commercial and military aircraft. The training is provided using a large fleet of advanced full flight simulators at learning centers and training locations in the U.S., Australia, Brazil, Canada, France, Japan, Singapore, Norway, South Africa and the U.K. Compliance with applicable environmental regulations is an inherent requirement to operate the facilities. The vast majority of the instructors, training programs and flight simulators are qualified by the United States Federal Aviation Administration ("FAA") and other aviation regulatory agencies around the world.

FlightSafety is also a leader in the design and manufacture of full flight simulators, visual systems, displays and other advanced technology training devices. This equipment is used to support FlightSafety training programs and is offered for sale to airlines, government and military organizations around the world. Manufacturing facilities are located in Oklahoma and Illinois. FlightSafety strives to maintain and manufacture simulators and develop courseware using state-of-the-art technology, incorporating critical safety standards and procedures. FlightSafety invests in research and development, further advancing the delivery of new equipment and training programs.

NetJets

NetJets Inc. ("NetJets") is the leader in private aviation services and operates a large, diverse private aircraft fleet and offers a full range of personalized private aviation solutions to meet and exceed the high standards of its customers. NetJets' global headquarters are located in Columbus, Ohio and its European operations are based in Lisbon, Portugal. The shared ownership concept is designed to meet the travel needs of customers who require the scale, flexibility and access of a large fleet of aircraft as opposed to reliance on whole aircraft ownership. In addition, shared ownership programs are available for corporate flight departments seeking to outsource their general aviation needs or add capacity for peak periods and for others that previously chartered aircraft.

NetJets' programs are focused on safety and service and are designed to offer customers guaranteed availability of aircraft, predictable operating costs and increased liquidity. NetJets' shared aircraft ownership programs permit customers to acquire a specific percentage of a certain aircraft type and allow customers to utilize the aircraft for a specified number of flight hours annually. In addition, NetJets offers prepaid flight cards and other aviation solutions and services for aircraft management, customized aircraft sales and acquisition, ground support and flight operation services under several programs, including NetJets Shares™, NetJets Leases™ and the NetJets Card Program™.

NetJets is subject to the rules and regulations of the FAA, the Portuguese Civil Aviation Authority and the European Union Aviation Safety Agency. Regulations address aircraft registration, maintenance requirements, pilot qualifications and airport operations, including flight planning and scheduling, as well as security issues and other matters. NetJets maintains comprehensive training and development programs in compliance with regulatory requirements for pilots, flight attendants, maintenance mechanics, and other flight operations specialists, many of whom are represented by unions.

TTI

TTI, Inc. ("TTI"), headquartered in Fort Worth, Texas, is a global specialty distributor of passive, interconnect, electromechanical, discrete, and semiconductor components used by customers in the manufacturing and assembling of electronic products. TTI's customer base includes OEMs, electronic manufacturing services, original design manufacturers and military and commercial customers, as well as design and system engineers. TTI's distribution agreements with the industry's leading suppliers allow it to uniquely leverage its product cost and to expand its business by providing new lines and products to its customers. TTI operates sales offices and distribution centers from more than 100 locations throughout North America, South America, Europe and Asia.

TTI services a variety of industries including telecommunications, medical devices, computers and office equipment, military/aerospace, automotive and industrial electronics. TTI's core businesses serve customers in the design through production stages in the electronic component supply chain, which supports high-volume customers. Its Mouser subsidiary supports a broader base of customers with lower volume purchases through internet-based marketing.

Other services

XTRA Corporation ("XTRA"), headquartered in St. Louis, Missouri, is a leading transportation equipment lessor operating under the XTRA Lease® brand name. XTRA manages a diverse fleet of approximately 90,000 units located at 47 facilities throughout the U.S. The fleet includes over-the-road and storage trailers, chassis, temperature-controlled vans and flatbed trailers. XTRA is one of the largest lessors (in terms of units available) of over-the-road trailers in North America. Transportation equipment customers lease equipment to cover cyclical, seasonal and geographic needs and as a substitute for purchasing equipment. By maintaining a large fleet, XTRA provides customers with a broad selection of equipment and quick response times.

International Dairy Queen Inc. develops and services a worldwide system of approximately 7,500 franchised restaurants operating primarily under the names DQ Grill and Chill®, Dairy Queen®, DQ® and Orange Julius® that offer various dairy desserts, beverages, prepared foods and blended fruit drinks. Business Wire Inc. ("Business Wire") transmits full-text news releases, regulatory filings, photos and other multimedia content to journalists, financial professionals, investor services, regulatory authorities and the general public. Releases are distributed globally via Business Wire's patented NX network. CORT Business Services Corporation ("CORT") is a leading national provider of rental furniture and related services in the "rent-to-rent" segment of the furniture rental industry. CORT's primary revenue streams include furniture rental to individuals, businesses, government agencies, the trade show and events industry and retail sales of new and used furniture. WPLG, Inc. is an ABC affiliate television broadcast station serving the Miami/Ft. Lauderdale market. WPLG, Inc. operates WPLG-TV, local10.com, MeTV South Florida and Heroes & Icons Network in South Florida. Charter Brokerage Holdings Corp. is a leading non-asset based third party logistics provider to the petroleum and chemical industries.

The services group also includes IPS-Integrated Project Services, LLC ("IPS"), which was acquired in connection with the Alleghany acquisition in 2022. IPS operates globally and provides a range of professional design, validation, construction, project controls and consulting services for manufacturing and support facilities within the pharmaceutical, biotech and life sciences, science and technology, industrial, commercial and retail industries. IPS's services are required to be compliant with each jurisdiction's regulations applicable to the engineering and architectural service providers.

Retailing Businesses

Berkshire's retailing businesses include automotive, home furnishings and several other operations that sell various consumer products and services. Berkshire's retailing businesses employed approximately 26,000 people at the end of 2023. Information regarding each of these operations follows.

Berkshire Hathaway Automotive

Berkshire Hathaway Automotive, Inc. ("BHA") is one of the largest automotive retailers in the U.S., currently operating 108 new vehicle franchises through 83 dealerships located primarily in major metropolitan markets in the U.S. The dealerships sell new and used vehicles, vehicle maintenance and repair services, extended service contracts, vehicle protection products and other aftermarket products. BHA also arranges financing for its customers through third-party lenders. BHA operates 31 collision centers directly connected to the dealerships' operations and owns and operates two auto auctions and an automotive fluid maintenance products distributor.

Dealership operations are highly concentrated in the Arizona and Texas markets, with approximately 75% of dealership-related revenues derived from sales in these markets. BHA currently maintains franchise agreements with 27 different vehicle manufacturers, although it derives a significant portion of its revenue from the Toyota/Lexus, General Motors, Ford/Lincoln, Nissan/Infiniti and Honda/Acura brands. These manufacturers represent approximately 90% of the revenue generated by BHA's dealerships.

The retail automotive industry is highly competitive. BHA faces competition from other large public and private dealership groups, as well as individual franchised dealerships and competition via the Internet. Given the retail price transparency available via the Internet, and the fact that franchised dealers acquire vehicles from the manufacturers on the same terms irrespective of volume, the location and quality of the dealership facility, customer service and transaction speed are key differentiators in attracting customers.

BHA's overall relationships with the automobile manufacturers are governed by framework agreements. The framework agreements contain provisions relating to the management, operation, acquisition and ownership structure of BHA's dealerships. Failure to meet the terms of these agreements could adversely impact BHA's ability to acquire additional dealerships representing those manufacturers. Additionally, these agreements contain limitations on the number of dealerships from a specific manufacturer that may be owned by BHA.

Individual dealerships operate under franchise agreements with the manufacturer, which grants the dealership entity a non-exclusive right to sell the manufacturer's brand of vehicles and offer related parts and service within a specified market area, as well as the right to use the manufacturer's trademarks. The agreements contain various requirements and restrictions related to the management and operation of the franchised dealership and provide for termination of the agreement by the manufacturer or non-renewal for a variety of causes. States generally have automotive dealership franchise laws that provide substantial protection to the franchisee, and it is difficult for a manufacturer to terminate or not renew a franchise agreement outside of bankruptcy or with "good cause" under the applicable state franchise law.

BHA also develops, underwrites and administers various vehicle protection plans as well as life and accident and health insurance plans sold to consumers through BHA's dealerships and third-party dealerships. BHA also develops proprietary training programs and materials and provides ongoing monitoring and training of the dealership's finance and insurance personnel.

Home furnishings retailing

The home furnishings businesses consist of Nebraska Furniture Mart Inc. ("NFM"), R.C. Willey Home Furnishings ("R.C. Willey"), Star Furniture Company ("Star") and Jordan's Furniture, Inc. ("Jordan's"). These businesses offer a wide selection of furniture, bedding and accessories. In addition, NFM and R.C. Willey sell a full line of major household appliances, electronics, floor coverings, and other home furnishings and offer customer financing to complement their retail operations. An important feature of each of these businesses is their ability to control costs and to produce high business volume by offering significant value to their customers.

NFM operates its business from four retail complexes with almost 4.5 million square feet of retail, warehouse and administrative facilities located in Omaha, Nebraska, Clive, Iowa, Kansas City, Kansas and The Colony, Texas. NFM also owns Homemakers Furniture located in Urbandale, Iowa, which has approximately 600,000 square feet of retail, warehouse and administrative space. NFM is the largest home furnishings retailer in each of these markets. R.C. Willey, based in Salt Lake City, Utah, currently operates ten full-line retail home furnishings stores and three distribution centers. These facilities include approximately 1.3 million square feet of retail space with four stores located in Utah, one store in Meridian, Idaho, three stores in Nevada (Las Vegas and Reno) and two stores in the Sacramento, California area.

Jordan's operates a retail furniture business from eight locations with approximately 1 million square feet of retail space in stores located in Massachusetts, New Hampshire, Rhode Island, Maine and Connecticut. The retail stores are supported by an 800,000 square foot distribution center in Taunton, Massachusetts. Jordan's is the largest furniture retailer, as measured by sales, in Massachusetts, Maine and New Hampshire and is well known in its markets for its unique store arrangements and advertising campaigns. Star has operated home furnishings retail stores in Texas for many years. Star's retail facilities currently include about 700,000 square feet of retail space in 10 locations in Texas, including seven in Houston.

Other retailing

Borsheim Jewelry Company, Inc. ("Borsheims") operates from a single store in Omaha, Nebraska. Borsheims is a high-volume retailer of fine jewelry, watches, crystal, china, stemware, flatware, gifts and collectibles. Helzberg's Diamond Shops, LLC ("Helzberg") is based in North Kansas City, Missouri, and operates a chain of 166 retail jewelry stores in 34 states, which includes approximately 400,000 square feet of retail space. Helzberg's stores are located in malls, lifestyle centers, power strip centers and outlet malls, and all stores operate under the name Helzberg Diamonds® or Helzberg Diamonds Outlet®. The Ben Bridge Corporation ("Ben Bridge Jeweler"), based in Seattle, Washington, operates 35 retail jewelry stores under three different brand names, located primarily in major shopping malls in nine western states. Thirty-three of its retail locations are upscale jewelry stores selling loose diamonds, finished jewelry and high-end timepieces. One store is a Breitling concept store, selling only Breitling timepieces, and one store is a Rolex concept store, selling only Rolex timepieces.

See's Candy Shops, Incorporated ("See's") produces boxed chocolates and other confectionery products with an emphasis on quality and distinctiveness in two large kitchens in Los Angeles and South San Francisco and a facility in Burlingame, California. See's operates approximately 250 retail and volume saving stores located mainly in California and other Western states, as well as over 115 seasonal locations. See's revenues are highly seasonal with approximately half of its annual revenues earned in the fourth quarter.

The Pampered Chef, Ltd. ("Pampered Chef") is a premier direct seller of distinctive high-quality kitchenware products with sales and operations in the U.S., Canada, Germany, Austria and France and operations in China. Pampered Chef's product portfolio consists of over 400 Pampered Chef® branded kitchenware items in categories ranging from stoneware and cutlery to grilling and entertaining. Pampered Chef's products are available through its sales force of independent cooking consultants and online.

Oriental Trading Company ("OTC") is a leading multi-channel and online retailer for fun-value-priced party supplies, seasonal products, arts and crafts, toys and novelties, school supplies and educational games. OTC, headquartered in Omaha, Nebraska, serves a broad base of nearly four million customers annually, including consumers, schools, churches, non-profit organizations, medical and dental offices and other businesses. OTC offers a unique assortment of over 80,000 fun products emphasizing proprietary designs. OTC operates both direct-to-consumer and business-to-business brands including Oriental Trading®, Fun Express®, MindWare®, SmileMakers®, Morris Costumes® and HalloweenExpress.com® and utilizes digital and print marketing along with dedicated sales teams to promote online sales.

Detlev Louis Motorrad ("Louis"), headquartered in Hamburg, Germany, is a leading retailer of motorcycle clothing and equipment in Europe. Louis carries over 50,000 different store and private label products, mainly covering the areas of clothing, technical equipment and leisure. Louis has over 80 stores in Germany, Austria, Switzerland and the Netherlands as well as an online business with online shops in various languages in Europe.

Additional information with respect to Berkshire's businesses

Revenue, earnings before taxes and identifiable assets attributable to Berkshire's reportable business segments are included in Note 26 to Berkshire's Consolidated Financial Statements contained in Item 8, Financial Statements and Supplementary Data. Additional information regarding Berkshire's investments in fixed maturity and equity securities is included in Notes 3 and 4, respectively, to Berkshire's Consolidated Financial Statements.

As of December 31, 2023, Berkshire or a subsidiary owned 26.7% of the outstanding common stock of The Kraft Heinz Company ("Kraft Heinz") and 27.8% of the outstanding Occidental Petroleum Corporation ("Occidental") common stock. Kraft Heinz manufactures and markets food and beverage products, including condiments and sauces, cheese and dairy, meals, meats, refreshment beverages, coffee and other grocery products. Occidental is an international energy company, including oil and natural gas exploration, development and production, and chemicals manufacturing businesses. Occidental's midstream businesses purchase, market, gather, process, transport and store various oil, natural gas, carbon dioxide and other products. Berkshire subsidiaries also own a 50% joint venture interest in Berkadia Commercial Mortgage LLC. Information concerning these investments is included in Note 5 to Berkshire's Consolidated Financial Statements.

Berkshire maintains a website (<http://www.berkshirehathaway.com>) where its annual reports, certain corporate governance documents, press releases, interim shareholder reports and links to its subsidiaries' websites can be found. Berkshire's periodic reports filed with the SEC, which include Form 10-K, Form 10-Q, Form 8-K and amendments thereto, may be accessed by the public free of charge from the SEC and through Berkshire. Electronic copies of these reports can be accessed at the SEC's website (<http://www.sec.gov>) and indirectly through Berkshire's website (<http://www.berkshirehathaway.com>). Copies of these reports may also be obtained, free of charge, upon written request to: Berkshire Hathaway Inc., 3555 Farnam Street, Omaha, NE 68131, Attn: Corporate Secretary.

Item 1A. Risk Factors

Berkshire and its subsidiaries (referred to herein as “we,” “us,” “our” or similar expressions) are subject to certain risks and uncertainties in its business operations which are described below. The risks and uncertainties described below are not the only risks we face. Additional risks and uncertainties that are presently unknown or are currently deemed immaterial may also impair our business operations.

General Business Risks

Terrorist acts could hurt our operating businesses.

A nuclear, biological or chemical terrorist attack or armed terrorist incursions could produce significant losses to our worldwide operations. Our business operations could be adversely affected from such acts through the loss of human life, destruction of production facilities and information systems or other property damage. We share these risks with all businesses.

Cybersecurity risks.

We rely on technology in virtually all aspects of our business. Like those of many large businesses, certain of our information systems have been subject to computer viruses, malicious codes, unauthorized access, phishing efforts, denial-of-service attacks and other cyber-attacks. We expect to be subject to similar attacks in the future as such attacks become more sophisticated and frequent. A significant disruption or failure of our technology systems could result in service interruptions, safety failures, security events, regulatory compliance failures, an inability to protect information and assets against unauthorized users and other operational difficulties. Attacks perpetrated against our systems could result in loss of assets and critical information and expose us to remediation costs and reputational damage.

Although we have taken steps intended to mitigate these risks, including business continuity planning, disaster recovery planning and business impact analysis, a significant disruption or cyber intrusion at one or more of our significant operations could adversely affect our results of operations, financial condition and/or liquidity. Additionally, if we are unable to acquire, develop, implement, adopt or protect rights around new technology, we may suffer a competitive disadvantage, which could also have an adverse effect on our results of operations, financial condition and/or liquidity.

Cyber-attacks could further adversely affect our ability to operate facilities, information technology and business systems or compromise confidential customer and employee information. Political, economic, social or financial market instability or damage to or interference with our operating assets, customers or suppliers from cyber-attacks may result in business interruptions, lost revenues, higher commodity prices, disruption in fuel supplies, lower energy consumption, unstable markets, increased security, repair or other costs, or may materially adversely affect us in ways that cannot be predicted at this time. Any of these risks could materially affect our consolidated financial results. Furthermore, instability in the financial markets resulting from terrorism, sustained or significant cyber-attacks or war could also have a material adverse effect on our ability to raise capital. We share these risks with all businesses.

Geopolitical events could cause losses to our business and losses in the values of securities we own.

We believe risks of adverse effects from geopolitical events are rising, through armed and diplomatic conflicts involving governments in various parts of the world. Government policies and actions taken, including responses of other governments to such actions, may adversely affect our operating businesses through reduced sales, increased costs, restricted supply chains, physical damage to our properties and loss of life of our employees. We share these risks with all businesses.

We are dependent on a few key people for our major investment and capital allocation decisions.

Major investment decisions and all major capital allocation decisions are made by Warren E. Buffett, Chairman of the Board of Directors and Chief Executive Officer, age 93. In 2018, Berkshire's Board of Directors appointed Mr. Gregory Abel as Vice Chairman of Berkshire's non-insurance operations and Mr. Ajit Jain as Vice Chairman of Berkshire's insurance operations. Mr. Abel and Mr. Jain each report directly to Mr. Buffett. Mr. Buffett continues to be responsible for major capital allocation and investment decisions.

If for any reason the services of our key personnel, particularly Mr. Buffett, were to become unavailable, there could be a material adverse effect on our operations. Should a replacement for Mr. Buffett be needed currently, Berkshire's Board of Directors has agreed that Mr. Abel should replace Mr. Buffett. The Board continually monitors this risk and could alter its current view regarding a replacement for Mr. Buffett in the future. We believe that the Board's succession plan, together with the outstanding managers running our numerous and highly diversified operating units, helps to mitigate this risk.

We need qualified personnel to manage and operate our various businesses.

In our decentralized business model, we need qualified and competent management to direct day-to-day business activities of our operating subsidiaries and to manage changes in future business operations due to changing business or regulatory environments. Our operating subsidiaries also need qualified and competent personnel to execute business plans and serve their customers, suppliers and other stakeholders. Our inability to recruit, train and retain qualified and competent managers and personnel could negatively affect the operating results, financial condition and/or liquidity of our subsidiaries and Berkshire as a whole.

Investments are unusually concentrated in equity securities and fair values are subject to loss in value.

We concentrate a high percentage of the equity security investments of our insurance subsidiaries in a relatively small number of issuers. A significant decline in the fair values of our larger investments in equity securities may produce a material decline in our consolidated shareholders' equity and our consolidated earnings.

Since a large percentage of our equity securities are held by our insurance subsidiaries, significant decreases in the fair values of these investments will produce significant declines in the statutory surplus of our insurance subsidiaries. Our large statutory surplus is a competitive advantage, and a long-term material decline could have an adverse effect on our claims-paying ability ratings and our ability to write new insurance business thus potentially reducing our future underwriting profits.

Competition and technology may erode our business franchises and result in lower earnings.

Each of our operating businesses face intense competition within markets in which they operate. While we manage our businesses with the objective of achieving long-term sustainable growth by developing and strengthening competitive advantages, many factors, including technological changes, may erode or prevent the strengthening of competitive advantages. Accordingly, our future operating results will depend to some degree on our operating units successfully protecting and enhancing their competitive advantages. If our operating businesses are unsuccessful in these efforts, our periodic operating results in the future may decline.

Unfavorable general economic conditions may significantly reduce our operating earnings and impair our ability to access capital markets at a reasonable cost.

Our operating businesses are subject to normal economic cycles affecting the general economy or the specific industries in which they operate. Significant deteriorations of economic conditions, including significant inflation over a prolonged period could produce a material adverse effect on one or more of our significant operations. In addition, our utilities and energy businesses and our railroad business regularly utilize debt as a component of their capital structures and depend on having access to borrowed funds through the capital markets at reasonable rates. To the extent that access to the capital markets is restricted or the cost of funding increases, these operations could be adversely affected.

Epidemics, pandemics or other similar outbreaks could hurt our operating businesses.

The outbreak of epidemics, pandemics or other similar outbreaks in the future may adversely affect our operations, including the value of our equity securities portfolio. This may be due to closures or restrictions requested or mandated by governmental authorities, disruption to supply chains and workforce, reduction of demand for our products and services, credit losses when customers and other counterparties fail to satisfy their obligations to us, and volatility in global equity securities markets, among other factors. We share most of these risks with all businesses.

Regulatory changes may adversely impact our future operating results.

Over time, in response to financial markets crises, global economic recessions, and social and environmental issues, regulatory initiatives were adopted in the United States and elsewhere. Such initiatives addressed, for example, the regulation of banks and other major financial institutions, the regulation of products and environmental and global-warming matters. These initiatives impact all of our businesses, albeit in varying ways. Increased regulatory compliance costs could have a significant negative impact on our operating businesses, as well as on the businesses in which we have significant, but not controlling, economic interests. We cannot predict whether such initiatives will have a material adverse impact on our consolidated financial position, results of operations and/or cash flows.

Data privacy regulations have recently been enacted in various jurisdictions in the U.S. and throughout the world. These regulations address numerous aspects related to the security of personal information that is stored in our information systems, networks and facilities. Failure to comply with these regulations could result in reputational damage and significant economic penalties.

Climate change and the regulation of greenhouse gas (“GHG”) emissions may impact our businesses.

The impacts of climate change and the regulation of GHG emissions could impact our businesses to varying degrees. Climate change could cause or intensify hurricanes, floods, wildfires, and other extreme weather events that may increase the physical risks to and impacts on our operations. An increase in the frequency or intensity of extreme weather events and storms could impact the physical assets of our non-insurance operations and could produce losses affecting our businesses. Similarly, extreme weather events may produce losses affecting our insurance operations as their primary business is to monitor, assess and price risk, including climate-related risk, at an expected economic profit to address the risk-transfer needs of their insurance customers.

Additional GHG policies, including legislation, may emerge that accelerate the transition to a lower-GHG emitting economy and could, in turn, increase costs for our businesses to comply with those policies, including BNSF and BHE, which combined represent more than 90% of Berkshire’s direct emissions. The failure to comply with new or existing regulations or reinterpretation of existing regulations relating to climate change could have a significant adverse effect on our financial results.

Risks unique to our regulated businesses

Our tolerance for underwriting risk in our various insurance businesses may result in significant underwriting losses.

When properly paid for the risk assumed, we have been and will continue to be willing to assume more risk from a single event than any other insurer has knowingly assumed. Accordingly, we could incur a significant loss from a single catastrophe event resulting from a natural disaster or man-made catastrophes such as terrorism or cyber-attacks. We employ various disciplined underwriting practices intended to mitigate potential losses, attempt to take into account all possible correlations and avoid writing groups of policies from which pre-tax losses from a single catastrophe event might aggregate in excess of \$15 billion. However, despite our efforts, it is possible that losses could manifest in ways that we do not anticipate and that our risk mitigation strategies are not designed to address. Various provisions of our policies, negotiated to limit our risk, such as limitations or exclusions from coverage, may not be enforceable in the manner we intend, as it is possible that a court or regulatory authority could nullify or void an exclusion or limitation, or legislation could be enacted modifying or barring the use of these exclusions and limitations. Our tolerance for significant insurance losses may result in lower reported earnings in a future period.

The principal cost associated with the property and casualty insurance business is claims. In writing property and casualty insurance policies, we receive premiums today and promise to pay covered losses in the future. However, it will take decades before all claims that have occurred as of any given balance sheet date will be reported and settled. Although we believe that recorded liabilities for unpaid losses are adequate, we will not know whether these liabilities or the premiums charged for the coverages provided were sufficient until well after the balance sheet date. Estimating insurance claim costs is inherently imprecise. It is possible that significant claims may emerge or develop in the future from the policies we have written in the past. As industry practices and legal, social and other environmental conditions change, unexpected and unintended issues related to claims and coverage may emerge, including new or expanded theories of liability. These or other changes could impose new financial obligations on us by extending coverage beyond our underwriting intent. In some instances, these changes may not become apparent until sometime after we have issued insurance or reinsurance contracts that are affected by the changes. As a result, the full extent of liability under our insurance or reinsurance contracts may not be known for many years after a contract is issued. Our estimated unpaid losses arising under contracts covering property and casualty insurance risks are large (\$146 billion at December 31, 2023), and a small percentage increase to those liabilities can result in materially lower reported earnings.

Changes in regulations and regulatory actions can adversely affect our operating results and our ability to allocate capital.

Our insurance businesses are subject to regulation in the jurisdictions in which we operate. Such regulations may relate to, among other things, the types of business that can be written, the rates that can be charged for coverage, the level of capital that must be maintained and restrictions on the types and size of investments that can be made. Regulations may also restrict the timing and amount of dividend payments to Berkshire by these businesses. U.S. state insurance regulators and international insurance regulators are also actively developing various regulatory mechanisms to address the regulation of large internationally active insurance groups, including regulations concerning group capital, liquidity, governance and risk management. Accordingly, changes in regulations related to these or other matters or regulatory actions imposing restrictions on our insurance businesses may adversely impact our results of operations and restrict our ability to allocate capital.

Our railroad business conducted through BNSF is also subject to a significant number of laws and regulations with respect to rates and practices, taxes, railroad operations and a variety of health, safety, labor, environmental and other matters. Failure to comply with applicable laws and regulations could have a material adverse effect on BNSF's business. Governments may change the legislative and/or regulatory framework within which BNSF operates, without providing any recourse for any adverse effects that the change may have on the business. Complying with legislative and regulatory changes may pose significant operating and implementation risks and require significant capital expenditures.

BNSF derives significant amounts of revenue from the transportation of energy-related commodities, particularly coal. To the extent that changes in government policies limit or restrict the usage of coal as a fuel source in generating electricity or alternate fuels, such as natural gas, or otherwise displace coal as an energy source, revenues and earnings could be adversely affected. As a common carrier, BNSF is also required to transport toxic inhalation hazard chemicals and other hazardous materials. A release of hazardous materials could expose BNSF to significant claims, losses, penalties and environmental remediation obligations. Changes in the regulation of the rail industry could negatively impact BNSF's ability to determine prices for rail services and to make capital improvements to its rail network, resulting in an adverse effect on our results of operations, financial condition and/or liquidity.

Our utilities and energy businesses operated under BHE are highly regulated by numerous federal, state, local and foreign governmental authorities in the jurisdictions in which they operate. These laws and regulations are complex, dynamic and subject to new interpretations or change. Regulations affect almost every aspect of our utilities and energy businesses. Regulations broadly apply and may limit management's ability to independently make and implement decisions regarding numerous matters including: acquiring businesses; constructing, acquiring, disposing or retiring of operating assets; operating and maintaining generating facilities and transmission and distribution system assets; complying with pipeline safety and integrity and environmental requirements; setting rates charged to customers; establishing capital structures and issuing debt; managing and reporting transactions between our domestic utilities and our other subsidiaries and affiliates; and paying dividends or similar distributions. Failure to comply with or reinterpretations of existing regulations and new legislation or regulations, such as those relating to air quality, climate change, emissions performance standards, water quality, coal ash disposal and other environmental matters, or changes in the nature of the regulatory process may have a significant adverse impact on our financial results.

Our railroad business requires significant ongoing capital investment to improve and maintain its railroad network so that transportation services can be safely and reliably provided to customers on a timely basis. Our utilities and energy businesses also require significant amounts of capital to construct, operate and maintain generation, transmission and distribution systems to meet their customers' needs and reliability criteria. System assets may need to be operational for long periods of time to justify the financial investment. The operational or financial failure of capital projects may not be recoverable through rates that are charged to customers. Further, a significant portion of costs of capital improvements may be funded through debt issued by BNSF and BHE and their subsidiaries. Disruptions in debt capital markets that restrict access to funding when needed could adversely affect the results of operations, liquidity and/or capital resources of these businesses.

Item 1B. Unresolved Staff Comments

None.

Item 1C. Cybersecurity

Berkshire recognizes that maintaining processes for identifying, assessing, and managing cybersecurity threats is important in dealing with its significant business risks. As such, Berkshire has implemented a framework for cybersecurity and cyber-related information management across Berkshire's diverse groups of businesses. The framework permits each Berkshire Business Group ("Business Group") to tailor solutions to identify, manage, and mitigate risks based on their own assessment of their unique cybersecurity risks in conjunction with each Business Group's overall risk management processes. At the same time, the framework helps enable consistent and appropriate compliance in reporting material cyber events and risks across Berkshire.

Each Business Group's Chief Information Security Officer ("CISO") on at least an annual basis is to provide a report to the Business Group's senior management, regarding the state of their cybersecurity program and its material cyber risks. These reports are also shared with Berkshire's internal audit group to inform and enhance the overall company's risk management processes. In addition, each Business Group is required to maintain an incident reporting process to report significant cybersecurity events to Berkshire. Berkshire and its Business Groups engage and partner with a wide range of third parties to assess, audit, educate, implement, operate, protect, and remediate various cybersecurity related elements.

Berkshire and its Business Groups rely on third-party service providers for a variety of products and services to run their information systems. This dependence exposes us, along with others who use these service providers, to the impact of a cyber-attack on their service providers. On occasion, a cyber-attack at a third party service provider could have a significant financial, operational or reputational impact to Berkshire. Berkshire and its Business Groups continuously monitor the risks associated with its service providers.

The Audit Committee of Berkshire's Board of Directors has responsibility for oversight of Berkshire's cybersecurity risk management program. The Audit Committee receives periodic reports regarding the number of and impact from cybersecurity incidents reported through Berkshire's cybersecurity incident reporting process. Additionally, the Audit Committee is updated on cybersecurity trends and common deficiencies. Furthermore, the Audit Committee approves and receives updates on the workplan performed by Berkshire's internal audit group that focuses on information technology and cybersecurity risks. This includes audit procedures related to internal and external penetration testing, attack simulations, vulnerability assessments, cybersecurity program reviews and other audits designed to investigate specific risks. The frequency of these updates is determined by the Audit Committee in conjunction with Berkshire's senior management.

In addition to the Audit Committee's oversight, the senior management of Berkshire's Businesses Groups are responsible for the day-to-day operations of protecting their businesses' information systems. Each Business Group is required to report significant cybersecurity events to Berkshire. Berkshire's senior management reviews incident reports to determine whether a cyber incident report should be filed with the SEC.

Item 2. Description of Properties

The properties used by Berkshire's business segments are summarized in this section. Berkshire's railroad and utilities and energy businesses, in particular, utilize considerable physical assets in their businesses.

Railroad Business—Burlington Northern Santa Fe

Through BNSF Railway, BNSF operates over 32,500 route miles of track (excluding multiple main tracks, yard tracks and sidings) in 28 states, and also operates in three Canadian provinces. BNSF owns over 23,000 route miles, including easements, and operates over 9,000 route miles of trackage rights that permit BNSF to operate its trains with its crews over other railroads' tracks. As of December 31, 2023, the total BNSF Railway system, including single and multiple main tracks, yard tracks and sidings, consisted of over 50,000 operated miles of track.

BNSF operates various facilities and equipment to support its transportation system, including its infrastructure, locomotives and freight cars. It also owns or leases other equipment to support rail operations, such as vehicles. Support facilities for rail operations include yards and terminals throughout its rail network, system locomotive shops to perform locomotive servicing and maintenance, a centralized network operations center for train dispatching and network operations monitoring and management, computers, telecommunications equipment, signal systems and other support systems. Transfer facilities are maintained for rail-to-rail as well as intermodal transfer of containers, trailers and other freight traffic and include approximately 25 intermodal hubs located across the system. BNSF owns or holds under non-cancelable leases exceeding one year approximately 7,500 locomotives and 72,800 freight cars, in addition to maintenance of way and other equipment.

In the ordinary course of business, BNSF incurs significant costs in repairing and maintaining its properties. In 2023, BNSF recorded approximately \$2.5 billion in repairs and maintenance expense.

Utilities and Energy Businesses

Berkshire Hathaway Energy

BHE's energy properties consist of the physical assets necessary to support its electricity and natural gas businesses. Properties of BHE's electricity businesses include electric generation, transmission and distribution facilities, as well as coal mining assets that support certain of BHE's electric generating facilities. Properties of BHE's natural gas businesses include natural gas distribution facilities, interstate pipelines, storage facilities, liquefied natural gas facilities, compressor stations and meter stations. The transmission and distribution assets are primarily within each of BHE's utility service territories. In addition to these physical assets, BHE has rights-of-way, mineral rights and water rights that enable BHE to utilize its facilities. Pursuant to separate financing agreements, the majority of these properties are pledged or encumbered to support or otherwise provide the security for the related subsidiary debt. BHE or its affiliates own or have interests in the following types of operating electric generating facilities at December 31, 2023:

Energy Source	Entity	Location by Significance	Facility Net Capacity (MW) ⁽¹⁾	Net Owned Capacity (MW) ⁽¹⁾
Wind	PacifiCorp, MEC, BHE Canada, BHE Montana and BHE Renewables	Iowa, Wyoming, Texas, Montana, Nebraska, Washington, California, Illinois, Canada, Oregon and Kansas	12,524	12,524
Natural gas	PacifiCorp, MEC, NV Energy, BHE Canada and BHE Renewables	Nevada, Utah, Iowa, Illinois, Washington, Wyoming, Oregon, New York, Texas, Arizona and Canada	11,250	10,971
Coal	PacifiCorp, MEC and NV Energy	Iowa, Wyoming, Utah, Nevada, Colorado and Montana	12,174	7,483
Solar	MEC, NV Energy, Northern Powergrid and BHE Renewables	California, Australia, Texas, Arizona, Iowa, Minnesota and Nevada	2,120	1,972
Hydroelectric	PacifiCorp, MEC and BHE Renewables	Washington, Oregon, Idaho, Utah, Hawaii, Montana, Illinois, California and Wyoming	985	985
Nuclear	MEC	Illinois	1,809	452
Geothermal	PacifiCorp and BHE Renewables	California and Utah	377	377
Total			41,239	34,764

⁽¹⁾ Facility Net Capacity in megawatts (MW) represents the lesser of nominal ratings or any limitations under applicable interconnection, power purchase, or other agreements for intermittent resources and the total net dependable capability available during summer conditions for all other units. An intermittent resource's nominal rating is the manufacturer's contractually specified capability (in MW) under specified conditions. Net Owned Capacity indicates BHE's ownership of Facility Net Capacity.

As of December 31, 2023, BHE's subsidiaries also have electric generating facilities that are under construction in Nevada, Wyoming and California having total Facility Net Capacity and Net Owned Capacity of 1,284 MW. BHE's subsidiaries also have battery energy storage systems in Nevada having total Facility Net Capacity and Net Owned Capacity in operation of 220 MW and under construction of 100 MW.

PacifiCorp, MEC and NV Energy own electric transmission and distribution systems, including approximately 27,900 miles of transmission lines and approximately 1,670 substations, and gas distribution facilities, including approximately 28,500 miles of gas mains and service lines.

Northern Powergrid (Northeast) and Northern Powergrid (Yorkshire) operate an electricity distribution network that includes approximately 17,100 miles of overhead lines, approximately 44,000 miles of underground cables and approximately 790 major substations. AltaLink's electricity transmission system includes approximately 8,300 miles of transmission lines and approximately 310 substations.

The BHE GT&S pipeline system consists of approximately 5,400 miles of natural gas transmission, gathering and storage pipelines located in portions of Maryland, New York, Ohio, Pennsylvania, Virginia, West Virginia, South Carolina and Georgia. Storage services are provided through the operation of 17 underground natural gas storage fields located in Pennsylvania, West Virginia and New York. BHE GT&S also operates, as the general partner, and owns a 75% limited partnership interest in one liquefied natural gas export, import and storage facility in Maryland and operates and has ownership interests in three smaller liquefied natural gas facilities in Alabama, Florida and Pennsylvania.

Northern Natural's pipeline system consists of approximately 14,200 miles of natural gas pipelines, including approximately 5,800 miles of mainline transmission pipelines and approximately 8,400 miles of branch and lateral pipelines. Northern Natural's end-use and distribution market area includes points in Iowa, Nebraska, Minnesota, Wisconsin, South Dakota, Michigan and Illinois and its natural gas supply and delivery service area includes points in Kansas, Texas, Oklahoma and New Mexico. Storage services are provided through the operation of one underground natural gas storage field in Iowa, two underground natural gas storage facilities in Kansas and two liquefied natural gas storage peaking units, one in Iowa and one in Minnesota.

Kern River's system consists of approximately 1,400 miles of natural gas pipelines, which extends from the system's point of origination in Wyoming through the Central Rocky Mountains into California.

Pilot Travel Centers

PTC owns and operates approximately 600 travel center locations across the U.S., primarily under the names Pilot or Flying J, owning approximately 90% and leasing 10% of the properties. Additionally, PTC operates 12 wholesale and retail fuel distribution facilities, 37 fuel mixing and processing facilities, 47 cardlock locations, an ethanol plant and a water disposal business in the oil fields sector.

Other Segments

Significant physical properties used by Berkshire's other business segments are summarized below:

Business	Country	Locations	Property/Facility type	Number of Properties	
				Owned	Leased
Insurance:					
GEICO	U.S.		Offices and claims centers	9	91
BHRG	U.S.		Offices	1	34
	Non-U.S.	Locations in 25 countries	Offices	1	52
BH Primary	U.S.		Offices	5	55
	Non-U.S.	Locations in 8 countries	Offices	—	15
Manufacturing	U.S.		Manufacturing facility	536	178
			Offices/Warehouses	224	461
			Retail/Showroom	232	208
			Housing subdivisions	296	—
	Non-U.S.	Locations in 61 countries	Manufacturing facility	172	102
			Offices/Warehouses	111	437
Service	U.S.		Training facilities/Hangars	11	86
			Offices/Distribution	13	140
			Production facilities	3	3
			Leasing/Showroom/Retail	35	38
	Non-U.S.	Locations in 18 countries	Training facilities/Hangars	1	14
			Offices/Distribution	—	49
McLane	U.S.		Distribution centers/Offices	64	28
Retailing	U.S.		Offices/Warehouses	23	25
			Retail/Showroom	145	467
	Non-U.S.	Locations in 7 countries	Retail/Offices/Warehouses	—	94

Item 3. Legal Proceedings

Berkshire and its subsidiaries are parties in a variety of legal actions that routinely arise out of the normal course of business, including legal actions seeking to establish liability directly through insurance contracts or indirectly through reinsurance contracts issued by Berkshire subsidiaries. Plaintiffs occasionally seek punitive or exemplary damages. We do not believe that such normal and routine litigation will have a material effect on our financial condition or results of operations.

Reference is made to Note 27 to the accompanying Consolidated Financial Statements for information concerning certain litigation involving Berkshire subsidiaries. Berkshire and certain of its subsidiaries are also involved in other kinds of legal actions, some of which assert or may assert claims or seek to impose fines and penalties. We currently believe that any liability that may arise as a result of other pending legal actions will not have a material effect on our consolidated financial condition or results of operations.

Item 4. Mine Safety Disclosures

Information regarding the Company's mine safety violations and other legal matters disclosed in accordance with Section 1503(a) of the Dodd-Frank Reform Act is included in Exhibit 95 to this Form 10-K.

Executive Officers of the Registrant

Following is a list of the Registrant's named executive officers:

Name	Age	Position with Registrant	Since
Warren E. Buffett	93	Chairman and Chief Executive Officer	1970
Gregory E. Abel	61	Vice Chairman – Non-Insurance Operations	2018
Ajit Jain	72	Vice Chairman – Insurance Operations	2018
Marc D. Hamburg	74	Senior Vice-President – Chief Financial Officer	1992

Each executive officer serves, in accordance with the by-laws of the Registrant, until the first meeting of the Board of Directors following the next annual meeting of shareholders and until a successor is chosen and qualified or until such executive officer sooner dies, resigns, is removed or becomes disqualified.

FORWARD-LOOKING STATEMENTS

Investors are cautioned that certain statements contained in this document as well as some statements in periodic press releases and some oral statements of Berkshire officials during presentations about Berkshire or its subsidiaries are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995 (the "Act"). Forward-looking statements include statements which are predictive in nature, which depend upon or refer to future events or conditions, or which include words such as "expects," "anticipates," "intends," "plans," "believes," "estimates" or similar expressions. In addition, any statements concerning future financial performance (including future revenues, earnings or growth rates), ongoing business strategies or prospects and possible future Berkshire actions, which may be provided by management, are also forward-looking statements as defined by the Act. Forward-looking statements are based on current expectations and projections about future events and are subject to risks, uncertainties and assumptions about Berkshire and its subsidiaries, economic and market factors and the industries in which we do business, among other things. These statements are not guarantees of future performance and we have no specific intention to update these statements.

Actual events and results may differ materially from those expressed or forecasted in forward-looking statements due to a number of factors. The principal risk factors that could cause our actual performance and future events and actions to differ materially from such forward-looking statements include, but are not limited to, changes in market prices of our investments in fixed maturity and equity securities; losses realized from derivative contracts; the occurrence of one or more catastrophic events, such as an earthquake, hurricane, geopolitical conflict, act of terrorism or cyber-attack that causes losses insured by our insurance subsidiaries and/or losses to our business operations; the frequency and severity of epidemics, pandemics or other outbreaks, that negatively affect our operating results and restrict our access to borrowed funds through the capital markets at reasonable rates; changes in laws or regulations affecting our insurance, railroad, utilities and energy and finance subsidiaries; changes in federal income tax laws; and changes in general economic and market factors that affect the prices of securities or the industries in which we do business.

Part II

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

Market Information

Berkshire's Class A and Class B common stock are listed for trading on the New York Stock Exchange, trading symbols: BRK.A and BRK.B, respectively.

Shareholders

Berkshire had approximately 1,200 record holders of its Class A common stock and 18,000 record holders of its Class B common stock at February 12, 2024. Record owners included nominees holding at least 323,000 shares of Class A common stock and 1,307,000,000 shares of Class B common stock on behalf of beneficial-but-not-of-record owners.

Dividends

Berkshire has not declared a cash dividend since 1967.

Common Stock Repurchase Program

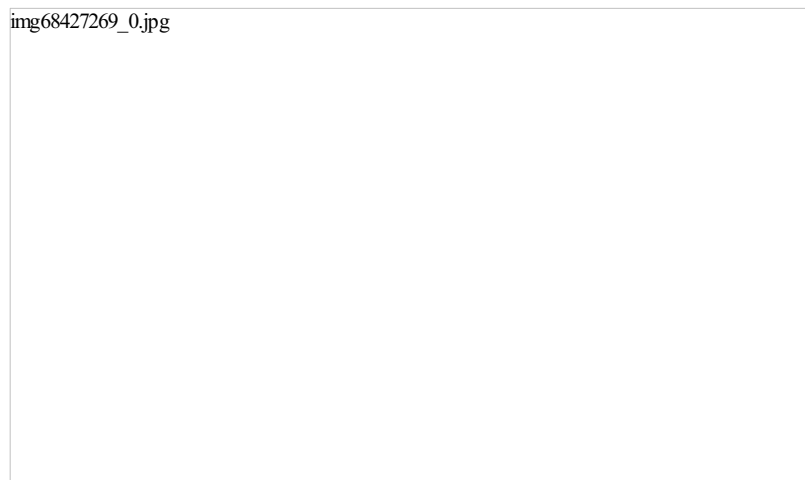
Berkshire's common stock repurchase program permits Berkshire to repurchase its Class A and Class B shares at any time that Warren Buffett, Berkshire's Chairman of the Board and Chief Executive Officer, believes that the repurchase price is below Berkshire's intrinsic value, conservatively determined. Repurchases may be in the open market or through privately negotiated transactions. Information with respect to Berkshire's Class A and Class B common stock repurchased during the fourth quarter of 2023 follows.

<u>Period</u>	<u>Total number of shares purchased</u>	<u>Average price paid per share</u>	<u>Total number of shares purchased as part of publicly announced program</u>	<u>Maximum number or value of shares that yet may be repurchased under the program</u>
October				
Class A common stock	1,815	\$ 522,756.10	1,815	*
Class B common stock	—	\$ —	—	*
November				
Class A common stock	1,705	\$ 536,048.49	1,705	*
Class B common stock	660,585	\$ 347.16	660,585	*
December				
Class A common stock	103	\$ 541,062.03	103	*
Class B common stock	—	\$ —	—	*

* The program does not specify a maximum number of shares to be repurchased or obligate Berkshire to repurchase any specific dollar amount or number of Class A or Class B shares and there is no expiration date to the repurchase program. Berkshire will not repurchase its common stock if the repurchases reduce the total value of Berkshire's consolidated cash, cash equivalents and U.S. Treasury Bills holdings to less than \$30 billion.

Stock Performance Graph

The following chart compares the subsequent value of \$100 invested in Berkshire common stock on December 31, 2018 with a similar investment in the Standard & Poor's 500 Stock Index and in the Standard & Poor's Property & Casualty Insurance Index.**



** Cumulative return for the Standard & Poor's indices based on reinvestment of dividends.*

*** It is difficult to develop a peer group of companies similar to Berkshire. Berkshire owns subsidiaries engaged in a number of diverse business activities of which an important component is the property and casualty insurance business. Accordingly, Berkshire uses the Standard & Poor's Property & Casualty Insurance Index for comparative purposes.*

Item 6. [Reserved]

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

Results of Operations

Net earnings (loss) attributable to Berkshire Hathaway shareholders for each of the past three years are disaggregated in the table that follows. Amounts are after deducting income taxes and exclude earnings attributable to noncontrolling interests (in millions).

	2023	2022	2021
Insurance – underwriting	\$ 5,428	\$ (30)	\$ 870
Insurance – investment income	9,567	6,484	4,807
BNSF	5,087	5,946	5,990
Berkshire Hathaway Energy (“BHE”)	2,331	3,904	3,572
Pilot Travel Centers (“PTC”)	603	—	—
Manufacturing, service and retailing	12,759	12,512	11,120
Non-controlled businesses*	1,750	1,528	804
Investment and derivative contract gains (losses)	58,873	(53,612)	62,340
Other	(175)	509	434
Net earnings (loss) attributable to Berkshire Hathaway shareholders	\$ 96,223	\$ (22,759)	\$ 89,937

* Includes certain businesses in which Berkshire had between a 20% and 50% ownership interest.

Through our subsidiaries, we engage in numerous diverse business activities. We manage our operating businesses on an unusually decentralized basis. There are few centralized or integrated business functions. Our senior corporate management team participates in and is ultimately responsible for significant capital allocation decisions, investment activities and the selection of the Chief Executive to head each of the operating businesses. The business segment data (Note 26 to the accompanying Consolidated Financial Statements) should be read in conjunction with this discussion.

To varying degrees, our operating businesses have been impacted by government and private sector actions taken to mitigate the adverse economic effects of the COVID-19 virus and its variants, as well as by the development of global geopolitical conflicts, supply chain disruptions and government actions to slow inflation. We cannot reliably predict the future economic effects of these events on our businesses.

Insurance underwriting generated after-tax earnings of \$5.4 billion in 2023, losses of \$30 million in 2022 and earnings of \$870 million in 2021. Earnings in 2023 benefited from relatively low losses from significant catastrophe events during the year and improved underwriting results at GEICO compared to 2022, reflecting the impacts of premium rate increases and lower claims frequencies. Underwriting results in 2022 and 2021 included after-tax losses from significant catastrophe events of approximately \$2.4 billion and \$2.3 billion, respectively. Underwriting losses in 2022 also reflected accelerating claims costs at GEICO. Earnings from insurance underwriting increased \$60 million in 2022 and \$142 million in 2021 from amounts previously reported due to the retrospective adoption of ASU 2018-12.

After-tax earnings from insurance investment income increased \$3.1 billion (47.5%) in 2023 and \$1.7 billion in 2022 (34.9%) compared to corresponding prior years. These increases were primarily attributable to higher short-term interest rates, which resulted in significant increases in earnings from our short-term investments.

After-tax earnings of BNSF declined 14.4% in 2023 compared to 2022 and were relatively unchanged in 2022 compared to 2021. The decrease in 2023 was primarily attributable to lower overall freight volumes and higher non-fuel operating costs, partially offset by lower fuel costs. Results in 2022 reflected higher revenue per car/unit, substantially offset by lower overall freight volumes and higher fuel and other operating costs compared to 2021.

After-tax earnings of our utilities and energy business declined 40.3% in 2023 compared to 2022 and increased 9.3% in 2022 compared to 2021. The earnings decline in 2023 reflected lower earnings from the U.S. regulated utilities, reflecting increased wildfire loss estimates, as well as lower earnings from other energy businesses and real estate brokerage businesses. The increase in 2022 reflected higher earnings from other energy businesses, including tax equity investments and the Northern Powergrid businesses, as well as from the natural gas pipeline businesses, partly offset by lower earnings from the real estate brokerage business.

As disclosed in Note 2 to the accompanying Consolidated Financial Statements, we increased our ownership in PTC from 38.6% to 80% on January 31, 2023 and we began consolidating PTC's results of operations on February 1, 2023. In 2021 and 2022 and through January 31, 2023, earnings from PTC on our 38.6% interest were determined under the equity method and are included in earnings from non-controlled businesses in the preceding table.

Management's Discussion and Analysis

Results of Operations

Earnings from our manufacturing, service and retailing businesses increased 2.0% in 2023 compared to 2022 and 12.5% in 2022 compared to 2021. Earnings in 2023 reflected increases at certain industrial products manufacturers and services businesses and the impact of Alleghany's non-insurance businesses acquired in 2022, partially offset by lower earnings from several of our other manufacturing businesses, and from certain of our service and retailing businesses. Operating results in 2022 were mixed among our various businesses. While customer demand for products and services was relatively good in 2022, we experienced weakening demand in the second half of the year at certain of our businesses, which continued through 2023.

Investment and derivative contract gains (losses) in each of the three years predominantly derived from our investments in equity securities and included significant net unrealized gains and losses from market price changes. We believe that investment gains and losses on investments in equity securities, whether realized from dispositions or unrealized from changes in market prices, are generally meaningless in understanding our reported periodic results or evaluating the economic performance of our operating businesses. These gains and losses have caused and will continue to cause significant volatility in our periodic earnings. Investment and derivative contract gains (losses) also included an after-tax non-cash remeasurement gain of approximately \$2.4 billion in the first quarter of 2023 related to our previously held 38.6% interest in PTC through the application of the acquisition accounting method.

Other earnings included after-tax foreign exchange rate gains of approximately \$200 million in 2023, \$1.3 billion in 2022 and \$1.0 billion in 2021 related to the non-U.S. Dollar denominated debt issued by Berkshire and its U.S.-based finance subsidiary, Berkshire Hathaway Finance Corporation ("BHFC").

Insurance—Underwriting

Our management views our insurance businesses as possessing two distinct activities – underwriting and investing. Underwriting decisions are the responsibility of the unit managers, while investing decisions are the responsibility of Berkshire's Chairman and CEO, Warren E. Buffett and Berkshire's corporate investment managers. Accordingly, we evaluate performance of underwriting operations without any allocation of investment income or investment gains and losses. We consider investment income as an integral component of our aggregate insurance operating results. However, we consider investment gains and losses, whether realized or unrealized, as non-operating. We believe that such gains and losses are not meaningful in understanding the periodic operating results of our insurance businesses.

The timing and magnitude of catastrophe losses can produce significant volatility in our periodic underwriting results, particularly with respect to our reinsurance businesses. We currently consider pre-tax incurred losses exceeding \$150 million from a current year catastrophic event to be significant. Significant catastrophe events in 2023 were a cyclone and floods in New Zealand and a hailstorm in Italy. In 2022, significant events were Hurricane Ian and floods in Australia, while significant events in 2021 included Hurricane Ida, floods in Europe and Winter Storm Uri.

Changes in estimates for unpaid losses and loss adjustment expenses, including amounts established for occurrences in prior years, can also significantly affect our periodic underwriting results. Unpaid loss estimates, including estimates under retroactive reinsurance contracts, were approximately \$146 billion as of December 31, 2023 and \$143 billion as of December 31, 2022. Our periodic underwriting results may also include foreign currency transaction gains and losses arising from the changes in the valuation of non-U.S. Dollar denominated liabilities of our U.S.-based subsidiaries due to foreign currency exchange rate fluctuations.

We provide primary insurance and reinsurance products covering property and casualty risks, as well as life and health risks. Our insurance and reinsurance businesses are GEICO, Berkshire Hathaway Primary Group ("BH Primary") and Berkshire Hathaway Reinsurance Group ("BHRG"). Berkshire acquired Alleghany Corporation ("Alleghany") on October 19, 2022. Alleghany conducts property and casualty insurance businesses through RSUI Group Inc. and CapSpecialty, Inc. ("RSUI and CapSpecialty" or "Alleghany Insurance"), and reinsurance businesses through Transatlantic Reinsurance Company and affiliates ("TransRe Group"). Underwriting results of Alleghany Insurance are included in BH Primary and underwriting results of TransRe Group are included in BHRG.

We strive to produce pre-tax underwriting earnings (defined as premiums earned less insurance losses/benefits incurred and underwriting expenses) over the long term in all business categories, except in BHRG's retroactive reinsurance and periodic payment annuity businesses. Time-value-of-money is an important element in establishing prices for retroactive reinsurance and periodic payment annuity policies. We normally receive premiums at the contract inception date, which are then available for investment. Ultimate claim payments can extend for decades and are expected to exceed premiums, producing underwriting losses over the claim settlement periods, primarily through deferred charge asset amortization and liability discount accretion charges.

Management's Discussion and Analysis

Insurance—Underwriting

Underwriting results of our insurance businesses are summarized below (dollars in millions). BHRG's pre-tax underwriting earnings in 2022 and 2021 were revised from amounts previously reported for the retrospective adoption of ASU 2018-12.

	2023	2022	2021
Pre-tax underwriting earnings (loss):			
GEICO	\$ 3,635	\$ (1,880)	\$ 1,259
Berkshire Hathaway Primary Group	1,374	393	607
Berkshire Hathaway Reinsurance Group	1,904	1,465	(755)
Pre-tax underwriting earnings (loss)	6,913	(22)	1,111
Income taxes and noncontrolling interests	1,485	8	241
Net underwriting earnings (loss)	\$ 5,428	\$ (30)	\$ 870
Effective income tax rate	21.5%	*	21.7%

* Not meaningful.

GEICO

GEICO primarily writes private passenger automobile insurance, offering coverages to insureds in all 50 states and the District of Columbia. GEICO markets its policies mainly by direct response methods where most customers apply for coverage directly to the company via the Internet or over the telephone. GEICO also operates an insurance agency that offers primarily homeowners and renters insurance to its auto policyholders. A summary of GEICO's underwriting results follows (dollars in millions).

	2023		2022		2021	
	Amount	%	Amount	%	Amount	%
Premiums written	\$ 39,837		\$ 39,107		\$ 38,395	
Premiums earned	\$ 39,264	100.0	\$ 38,984	100.0	\$ 37,706	100.0
Losses and loss adjustment expenses	31,814	81.0	36,297	93.1	30,999	82.2
Underwriting expenses	3,815	9.7	4,567	11.7	5,448	14.5
Total losses and expenses	35,629	90.7	40,864	104.8	36,447	96.7
Pre-tax underwriting earnings (loss)	\$ 3,635		\$ (1,880)		\$ 1,259	

GEICO's pre-tax underwriting earnings in 2023 reflected higher average premiums per auto policy, lower claims frequencies, reductions in prior accident years' claims estimates and a reduction in advertising costs. However, average claims severities continued to rise in 2023 due to higher auto repair parts prices, labor costs and medical inflation. Pre-tax underwriting losses in 2022 reflected higher claims frequencies and significant increases in average claims severities, primarily due to substantial cost inflation, which began to accelerate in the second half of 2021 and continued through 2022. GEICO sought rate increases in numerous states in 2022 and 2023 in response to accelerating claims costs. GEICO also significantly reduced advertising expenditures in 2022 and 2023, which contributed to reductions of policies-in-force.

2023 versus 2022

Premiums written increased \$730 million (1.9%) in 2023 compared to 2022, reflecting higher average premiums per auto policy (16.8%) due to rate increases, partially offset by a 9.8% decrease in policies-in-force. Premiums earned increased \$280 million (0.7%) in 2023 compared to 2022.

Losses and loss adjustment expenses decreased \$4.5 billion (12.4%) in 2023 compared to 2022. GEICO's loss ratio (losses and loss adjustment expenses to premiums earned) was 81.0% in 2023, a decrease of 12.1 percentage points compared to 2022. The decline reflected the impact of higher average premiums per auto policy, lower claims frequencies and increased favorable development of prior accident years' claims estimates, partially offset by increases in average claims severities.

Management's Discussion and Analysis

Insurance—Underwriting

GEICO (Continued)

Claims frequencies in 2023 were lower for property damage and collision coverages (seven to eight percent range), while claims frequencies increased for bodily injury coverage (one to two percent range). Average claims severities in 2023 were higher for all coverages, including property damage (fourteen to sixteen percent range), collision (four to six percent range) and bodily injury (five to seven percent range). Losses and loss adjustment expenses included reductions in the ultimate loss estimates for prior accident years' claims of \$1.5 billion in 2023 and \$653 million in 2022. The reductions in each year were across several major coverages. In 2022, the reduction was partially offset by an increase in property damage prior years' claims incurred.

Underwriting expenses declined \$752 million (16.5%) in 2023 compared to 2022. GEICO's expense ratio (underwriting expense to premiums earned) was 9.7% in 2023, a decrease of 2.0 percentage points compared to 2022, attributable to reduced advertising expenses and improved operating leverage. The earnings from GEICO's insurance agency (third-party commissions, net of operating expenses) are included as a reduction of underwriting expenses.

2022 versus 2021

Premiums written increased \$712 million (1.9%) in 2022 compared to 2021, reflecting increases in average premiums per auto policy due to rate increases, which were substantially offset by a decrease in policies-in-force. Voluntary auto policies-in-force declined 8.9% in 2022 compared to 2021 while average premiums per auto policy increased 10.5%. Premiums earned increased \$1.3 billion (3.4%) in 2022 compared to 2021, partially attributable to a reduction in 2021 from the remaining impact of the GEICO Giveback program, which provided a premium reduction on voluntary auto and motorcycle policies from April 2020 to October 2020.

Losses and loss adjustment expenses increased \$5.3 billion (17.1%) compared to 2021. GEICO's loss ratio was 93.1% in 2022, an increase of 10.9 percentage points over 2021. The increase was primarily attributable to higher claims frequencies and significantly higher severities, as well as lower reductions of ultimate loss estimates for prior years' events.

Claims frequencies in 2022 were higher for all coverages, including property damage (one to two percent range), bodily injury and collision (four to five percent range) and personal injury (three to four percent range). Average claims severities in 2022 were higher for all coverages, including property damage (twenty-one to twenty-two percent range), collision (fourteen to sixteen percent range) and bodily injury (nine to eleven percent range). Losses and loss adjustment expenses reflected reductions in the ultimate loss estimates for prior years' loss events of \$653 million in 2022 and \$1.8 billion in 2021. Losses and loss adjustment expenses were approximately \$400 million from Hurricane Ian in 2022 and \$375 million from Hurricane Ida in 2021.

Underwriting expenses decreased \$881 million (16.2%) in 2022 compared to 2021, primarily due to significant reductions in advertising costs and lower employee-related costs. GEICO's expense ratio was 11.7% in 2022, a decrease of 2.8 percentage points compared to 2021, attributable to both the decrease in expenses as well as higher premiums earned.

Berkshire Hathaway Primary Group

The Berkshire Hathaway Primary Group consists of several independently managed businesses that provide a variety of primarily commercial insurance solutions, including healthcare professional liability, workers' compensation, automobile, general liability, property and specialty coverages for small, medium and large clients. BH Primary's insurers include Berkshire Hathaway Specialty Insurance ("BHSI"), Berkshire Hathaway Homestate Companies ("BHC"), MedPro Group, Berkshire Hathaway GUARD Insurance Companies ("GUARD"), National Indemnity Company ("NICO Primary"), Berkshire Hathaway Direct Insurance Company ("BH Direct") and U.S. Liability Insurance Company ("USLI"). This group also includes RSUI and CapSpecialty beginning October 19, 2022.

	2023		2022		2021	
	Amount	%	Amount	%	Amount	%
Premiums written	\$ 18,142		\$ 14,619		\$ 12,595	
Premiums earned	\$ 17,129	100.0	\$ 13,746	100.0	\$ 11,575	100.0
Losses and loss adjustment expenses	11,224	65.5	9,889	71.9	8,107	70.0
Underwriting expenses	4,531	26.5	3,464	25.2	2,861	24.8
Total losses and expenses	15,755	92.0	13,353	97.1	10,968	94.8
Pre-tax underwriting earnings	\$ 1,374		\$ 393		\$ 607	

Management's Discussion and Analysis

Insurance—Underwriting

Berkshire Hathaway Primary Group (Continued)

Premiums written increased \$3.5 billion (24.1%) in 2023 compared to 2022. The increase was primarily due to RSUI and CapSpecialty (\$2.1 billion), as well as comparative increases from BHSI and BH Direct, and to a lesser extent the other businesses. Premiums written increased \$2.0 billion (16.1%) in 2022 compared to 2021, reflecting increases at BHSI (16%), USLI (16%), BHHC (15%) and MedPro Group (10%) across a variety of coverages and in several markets, and from the acquisition of RSUI and CapSpecialty (\$435 million).

Losses and loss adjustment expenses increased \$1.3 billion (13.5%) in 2023 compared to 2022, which increased \$1.8 billion (22.0%) versus 2021. The loss ratio decreased 6.4 percentage points in 2023 compared to 2022, reflecting lower incurred losses from current year catastrophes and changes in business mix, including the impact of RSUI and CapSpecialty.

Incurred losses from significant catastrophes were \$37 million in 2023 and \$641 million in 2022. Incurred losses and loss adjustment expenses also reflected net reductions in estimated ultimate liabilities for prior years' loss events of \$537 million in 2023 and \$428 million in 2022, primarily due to reductions in ultimate medical professional liability and property losses. In 2021, we incurred losses of \$433 million from significant catastrophes and recorded net reductions in estimated ultimate liabilities for prior years' loss events of \$631 million.

BH Primary insurers write significant levels of workers' compensation, commercial and professional liability insurance and the related claim costs may be subject to high severity and long claim-tails. Ultimate claim liabilities could be greater than anticipated due to a variety of factors, including adverse legal and judicial rulings.

Underwriting expenses increased \$1.1 billion (30.8%) in 2023 compared to 2022 and \$603 million (21.1%) in 2022 compared to 2021. The increases were primarily attributable to the increases in premiums earned and changes in business mix, including the effects of the acquisition of RSUI and CapSpecialty.

Berkshire Hathaway Reinsurance Group

The Berkshire Hathaway Reinsurance Group ("BHRG") offers excess-of-loss and quota-share reinsurance coverages on property and casualty risks to insurers and reinsurers worldwide through several subsidiaries, led by National Indemnity Company ("NICO"), General Reinsurance Corporation, General Reinsurance AG and, beginning on October 19, 2022, TransRe Group. We also write life and health reinsurance coverages through General Re Life Corporation, General Reinsurance AG and Berkshire Hathaway Life Insurance Company of Nebraska ("BHLN"). We assume property and casualty risks under retroactive reinsurance contracts written through NICO and we write periodic payment annuity contracts through BHLN.

A summary of BHRG's premiums and pre-tax underwriting results follows (in millions). The retrospective adoption of ASU 2018-12 increased BHRG's pre-tax underwriting earnings \$76 million in 2022 and reduced pre-tax underwriting losses \$175 million in 2021 from the amounts previously reported.

	Premiums earned			Pre-tax underwriting earnings (loss)		
	2023	2022	2021	2023	2022	2021
Property/casualty	\$ 21,938	\$ 16,040	\$ 13,740	\$ 3,508	\$ 2,180	\$ 667
Life/health	5,072	5,224	5,648	354	109	(237)
Retroactive reinsurance	—	—	136	(1,541)	(668)	(782)
Periodic payment annuity	—	582	655	(650)	(623)	(572)
Variable annuity	—	—	—	233	467	169
	<u>\$ 27,010</u>	<u>\$ 21,846</u>	<u>\$ 20,179</u>	<u>\$ 1,904</u>	<u>\$ 1,465</u>	<u>\$ (755)</u>

Management's Discussion and Analysis

Insurance—Underwriting

Berkshire Hathaway Reinsurance Group (Continued)

Property/casualty

A summary of property/casualty reinsurance underwriting results follows (dollars in millions).

	2023		2022		2021	
	Amount	%	Amount	%	Amount	%
Premiums written	\$ 22,360		\$ 16,962		\$ 14,149	
Premiums earned	\$ 21,938	100.0	\$ 16,040	100.0	\$ 13,740	100.0
Losses and loss adjustment expenses	12,664	57.7	10,605	66.1	9,878	71.9
Underwriting expenses	5,766	26.3	3,255	20.3	3,195	23.2
Total losses and expenses	18,430	84.0	13,860	86.4	13,073	95.1
Pre-tax underwriting earnings	\$ 3,508		\$ 2,180		\$ 667	

Premiums written in 2023 increased 31.8% over 2022, which increased 19.9% over 2021. Premiums written included \$5.3 billion in 2023 and \$1.0 billion in 2022 from TransRe Group. Excluding TransRe Group, premiums written in 2023 increased \$1.1 billion (7.1%) compared to 2022, while premiums written increased 12.9% in 2022 compared to 2021. The increase in 2023 reflected net increases in new property business and higher rates. We have written considerable levels of property business in recent years and we generally do not retrocede the risks we assume. Our periodic underwriting earnings are subject to considerable volatility from significant catastrophe loss events.

Losses and loss adjustment expenses increased \$2.1 billion in 2023 and \$727 million in 2022 versus the corresponding prior year. Overall, the loss ratio declined 8.4 percentage points in 2023 compared to 2022, which decreased 5.8 percentage points versus 2021. Losses included \$3.2 billion in 2023 and \$638 million in 2022 from TransRe Group. Excluding TransRe Group, losses and loss adjustment expenses decreased \$509 million (5.1%) in 2023 compared to 2022 and increased \$89 million in 2022 compared to 2021. Losses incurred from significant current year catastrophes were approximately \$900 million in 2023, \$2.0 billion in 2022 and \$2.1 billion in 2021. The reductions in estimated ultimate liabilities for losses occurring in prior accident years were \$1.4 billion in 2023, \$1.6 billion in 2022 and \$718 million in 2021, attributable to lower than expected property and casualty losses.

Underwriting expenses increased \$2.5 billion in 2023 compared to 2022. The expense ratio increased 6.0 percentage points in 2023 compared to 2022, which declined 2.9 percentage points compared to 2021. The comparative changes in the expense ratio were primarily attributable to changes in foreign currency exchange rates related to the remeasurement of certain non-U.S. Dollar denominated liabilities and changes in business mix, including the impact of TransRe Group. Underwriting expenses included pre-tax foreign currency exchange losses of \$189 million in 2023 and gains of \$371 million in 2022 and \$173 million in 2021.

Life/health

A summary of our life/health reinsurance underwriting results follows (dollars in millions).

	2023		2022		2021	
	Amount	%	Amount	%	Amount	%
Premiums written	\$ 5,093		\$ 5,185		\$ 5,621	
Premiums earned	\$ 5,072	100.0	\$ 5,224	100.0	\$ 5,648	100.0
Life and health benefits	3,593	70.8	4,112	78.7	4,749	84.1
Underwriting expenses	1,125	22.2	1,003	19.2	1,136	20.1
Total benefits and expenses	4,718	93.0	5,115	97.9	5,885	104.2
Pre-tax underwriting earnings (loss)	\$ 354		\$ 109		\$ (237)	

Pre-tax underwriting earnings in 2023 included a gain of \$134 million from the commutation of several U.S. life reinsurance contracts, which reduced premiums earned by \$164 million and life and health benefits incurred and underwriting expenses by \$298 million. Otherwise, premiums earned were substantially unchanged and life benefits incurred decreased 5.3% in 2023 versus 2022. The underwriting expense ratio increased 3.0 percentage points in 2023 versus 2022, primarily attributable to the impact of the commutations and increased underwriting expenses.

Management's Discussion and Analysis

Insurance—Underwriting

Berkshire Hathaway Reinsurance Group (Continued)

Premiums written declined \$436 million (7.8%) in 2022 compared to 2021, primarily due to unfavorable foreign currency translation effects and, to a lesser extent, lower volume in the Asia-Pacific region. Life and health benefits incurred declined \$637 million (13.4%) in 2022 compared to 2021, primarily due to high pandemic-related life claims in the U.S., South Africa, India and Latin America in 2021.

Retroactive reinsurance

Pre-tax underwriting losses from retroactive reinsurance in each period derived from the amortization of deferred charges and the effects of changes in the estimated timing and amounts of future claim payments. Underwriting results also included pre-tax foreign currency exchange losses of \$57 million in 2023 and pre-tax gains of \$168 million in 2022 and \$58 million in 2021. Before foreign currency exchange effects, pre-tax underwriting losses were \$1.5 billion in 2023, \$836 million in 2022 and \$840 million in 2021.

Estimated ultimate claim liabilities increased \$1.1 billion in the fourth quarter of 2023, which net of changes in unamortized deferred charges, produced pre-tax underwriting losses of approximately \$650 million. The increase in ultimate liabilities derived from higher asbestos, environmental and other casualty claims estimates. We increased estimated ultimate claim liabilities for prior years' contracts \$86 million in 2022 and reduced estimated ultimate liabilities \$974 million in 2021. The reductions in 2021, net of changes in unamortized deferred charges, produced pre-tax underwriting earnings of \$142 million.

Unpaid losses assumed under retroactive reinsurance contracts were \$34.6 billion at December 31, 2023, a decline of \$768 million since December 31, 2022. Unamortized deferred charges on retroactive reinsurance contracts were \$9.5 billion at December 31, 2023, a decline of \$375 million since December 31, 2022. Deferred charge amortization will be included in underwriting earnings over the expected remaining claims settlement periods.

Periodic payment annuity

Periodic payment annuity business is price and demand sensitive and the supply of available business is affected by the timing of underlying legal claim settlements. Our volumes written may change rapidly due to changes in prices, as well as the level of competition. Beginning in the latter part of 2022, prices for new business declined to unacceptable levels and we have since not written new business.

Our periodic payment annuity contracts produced pre-tax underwriting losses in each period from the recurring accretion of time-value discounted liabilities, which includes liabilities for contracts without life contingencies. Underwriting results also included pre-tax foreign currency exchange losses of \$60 million in 2023, gains of \$71 million in 2022 and losses of \$18 million in 2021.

Pre-tax underwriting losses before foreign currency exchange effects were \$590 million in 2023, \$694 million in 2022 and \$554 million in 2021. Losses in 2022 included approximately \$130 million from the termination of an existing reinsurance contract in which the settlement payable exceeded the carrying value of the liabilities. Discounted periodic payment annuity liabilities were \$15.2 billion at December 31, 2023, including liabilities of \$4.0 billion for contracts without life contingencies. We adopted ASU 2018-12 on January 1, 2023, which requires quarterly adjustments of the discount rates on contracts with life-contingent liabilities based upon prevailing interest rates, with the effects of discount rate changes included in other comprehensive income.

Variable annuity

Our variable annuity guarantee reinsurance contracts produced pre-tax earnings of \$233 million in 2023, \$467 million in 2022 and \$169 million in 2021. Earnings are affected by changes in securities markets, interest rates and foreign currency exchange rates, which can be volatile. These contracts have been in run-off for many years.

Management's Discussion and Analysis

Insurance—Investment Income

A summary of net investment income attributable to our insurance operations follows (dollars in millions).

	2023		2022		2021		Percentage change	
							2023 vs 2022	2022 vs 2021
Dividend income	\$	5,500	\$	6,039	\$	5,060	(8.9)%	19.3%
Interest and other investment income		6,081		1,685		589	*	186.1
Pre-tax net investment income		11,581		7,724		5,649	49.9	36.7
Income taxes and noncontrolling interests		2,014		1,240		842		
Net investment income	\$	9,567	\$	6,484	\$	4,807		
Effective income tax rate		17.4%		16.0%		14.9%		

* Not meaningful.

Dividend income declined \$539 million (8.9%) in 2023 compared to 2022 and increased \$979 million (19.3%) in 2022 compared to 2021. The reduction in 2023 reflected the impact of net dispositions of investments since the end of the third quarter of 2022, partially offset by higher dividend rates on certain of our holdings. The increase in 2022 was primarily attributable to a net increase in equity security investments. Dividend income also included \$34 million in 2023, \$46 million in 2022 and \$121 million in 2021 from BHE preferred stock. Such amounts were deducted from earnings of the BHE segment. Dividend income varies from period to period due to changes in the investment portfolio and the frequency and timing of dividends from certain investees.

Interest and other investment income increased \$4.4 billion in 2023 compared to 2022 and increased \$1.1 billion in 2022 compared to 2021. The increases were primarily due to increases in interest rates, as well as the inclusion of interest income from Alleghany's insurance subsidiaries. We continue to hold substantial balances in short-term investments, including U.S. Treasury Bills. We continue to believe that maintaining ample liquidity is paramount and we insist on safety over yield with respect to short-term investments.

Invested assets of our insurance businesses derive from shareholder capital and net liabilities assumed under insurance and reinsurance contracts or "float." The major components of float are unpaid losses and loss adjustment expenses, including liabilities under retroactive reinsurance contracts, life, annuity and health benefit liabilities, unearned premiums and other liabilities due to policyholders, which are reduced by insurance premiums receivable, reinsurance receivables, deferred charges assumed under retroactive reinsurance contracts and deferred policy acquisition costs. The effect of discount rate changes recorded in accumulated other comprehensive income in the Consolidated Balance Sheets for long-duration insurance contracts are excluded from float, as such amounts are not included in underwriting earnings in the Consolidated Statements of Earnings. Float was approximately \$169 billion at December 31, 2023, \$164 billion at December 31, 2022 and \$147 billion at December 31, 2021. Our combined insurance operations generated pre-tax underwriting gains in 2023 and 2021, and the average cost of float was negative in those years. Our pre-tax underwriting losses in 2022 were \$22 million and the cost of float was nominal.

A summary of cash and investments held in our insurance businesses as of December 31, 2023 and 2022 follows (in millions).

	December 31,		December 31,	
	2023		2022	
Cash, cash equivalents and U.S. Treasury Bills	\$	121,845	\$	86,816
Equity securities		345,653		298,934
Fixed maturity securities		23,617		24,998
Other		1,188		3,417
	\$	492,303	\$	414,165

Management's Discussion and Analysis

Insurance—Investment Income

Fixed maturity investments as of December 31, 2023 were as follows (in millions).

	Amortized Cost	Unrealized Gains (Losses)	Carrying Value
U.S. Treasury, U.S. government corporations and agencies	\$ 10,300	\$ (40)	\$ 10,260
Foreign governments	11,695	17	11,712
Corporate bonds	1,205	238	1,443
Other	186	16	202
	<u>\$ 23,386</u>	<u>\$ 231</u>	<u>\$ 23,617</u>

U.S. government obligations are rated AA+ or Aaa by the major rating agencies. Approximately 95% of our foreign government obligations were rated AA or higher by at least one of the major rating agencies. Foreign government securities include obligations issued or unconditionally guaranteed by national or provincial government entities.

Railroad

Burlington Northern Santa Fe, LLC ("BNSF") operates one of the largest railroad systems in North America, with over 32,500 route miles of track in 28 states. BNSF also operates in three Canadian provinces. BNSF classifies its major business groups by type of product shipped including consumer products, industrial products, agricultural products and coal. A summary of BNSF's earnings follows (dollars in millions).

	2023	2022	2021	Percentage change	
				2023 vs 2022	2022 vs 2021
Railroad operating revenues	\$ 23,474	\$ 25,203	\$ 22,513	(6.9)%	11.9%
Railroad operating expenses:					
Compensation and benefits	5,500	5,253	4,696	4.7	11.9
Fuel	3,684	4,581	2,766	(19.6)	65.6
Purchased services	2,049	2,102	2,033	(2.5)	3.4
Depreciation and amortization	2,617	2,517	2,444	4.0	3.0
Equipment rents, materials and other	2,209	2,147	1,763	2.9	21.8
Total	16,059	16,600	13,702	(3.3)	21.2
Railroad operating earnings	7,415	8,603	8,811		
Interest expense	(1,048)	(1,025)	(1,032)		
Other revenues (expenses), net	247	130	82		
Pre-tax earnings	6,614	7,708	7,861		
Income taxes	1,527	1,762	1,871		
Net earnings	<u>\$ 5,087</u>	<u>\$ 5,946</u>	<u>\$ 5,990</u>		
Effective income tax rate	<u>23.1%</u>	<u>22.9%</u>	<u>23.8%</u>		

A summary of BNSF's railroad freight volumes by business group (cars/units in thousands) follows.

	2023	Cars/Units 2022	2021	Percentage change	
				2023 vs 2022	2022 vs 2021
Consumer products	4,765	5,202	5,673	(8.4)%	(8.3)%
Industrial products	1,605	1,618	1,709	(0.8)	(5.3)
Agricultural products	1,165	1,200	1,224	(2.9)	(2.0)
Coal	1,468	1,529	1,529	(4.0)	—
	<u>9,003</u>	<u>9,549</u>	<u>10,135</u>	<u>(5.7)</u>	<u>(5.8)</u>

2023 versus 2022

Railroad operating revenues declined 6.9% in 2023 compared to 2022, reflecting an overall volume decrease of 5.7% and a decrease in average revenue per car/unit of 0.6%, primarily attributable to lower fuel surcharge revenue, partially offset by favorable price and mix. Pre-tax earnings were \$6.6 billion in 2023, a decline of 14.2% from 2022, reflecting lower volumes and higher non-fuel operating costs, partially offset by lower fuel costs.

Management's Discussion and Analysis

Railroad

Operating revenues from consumer products declined 14.7% in 2023 to \$7.9 billion compared to 2022, reflecting a volume decrease of 8.4% and lower average revenue per car/unit. The volume decrease was primarily due to lower intermodal shipments resulting from reduced West Coast imports, the loss of an intermodal customer and competition from lower spot rates in the trucking market, which has impacted our domestic intermodal demand. These declines were partially offset by an increase in automotive volume from higher vehicle production.

Operating revenues from industrial products were \$5.7 billion in 2023, an increase of 1.8% from 2022, reflecting higher average revenue per car/unit, partially offset by a volume decrease of 0.8%. The volume decline was primarily due to lower demand for chemicals, plastics, minerals, paper and lumber, partially offset by increased shipments of steel and aggregates from infrastructure demand.

Operating revenues from agricultural products decreased 2.8% to \$5.6 billion in 2023 compared to 2022, attributable to a volume decrease of 2.9%, partially offset by slightly higher average revenue per car/unit. The volume decrease was primarily due to lower grain exports, partially offset by higher volumes of domestic grains and feedstocks and renewable diesel.

Operating revenues from coal declined 3.4% to \$3.8 billion in 2023 compared to 2022. The revenue decrease was attributable to a volume decrease of 4.0%, partially offset by higher average revenue per car/unit. The volume decline reflected moderating demand attributable to lower natural gas prices.

Railroad operating expenses were \$16.1 billion in 2023, a decline of \$541 million (3.3%) compared to 2022. The ratio of railroad operating expenses to railroad operating revenues increased 2.5 percentage points to 68.4% in 2023 versus 2022. Fuel expenses declined \$897 million (19.6%) compared to 2022, reflecting lower average fuel prices, lower volumes and improved efficiency. Compensation and benefits expenses increased \$247 million (4.7%) in 2023 compared to 2022, primarily due to higher headcount and wage inflation. Other revenues (expenses), net increased 90% compared to 2022, primarily due to an increase in interest income driven by higher interest rates.

2022 versus 2021

Railroad operating revenues increased 11.9% in 2022 compared to 2021, reflecting an 18.9% increase in average revenue per car/unit, including the impact from higher fuel surcharge revenue driven by higher fuel prices, partially offset by lower volumes of 5.8%. BNSF's pre-tax earnings decreased 1.9% in 2022 from 2021. Pre-tax earnings in 2022 were impacted by lower volumes and higher fuel and other operating costs, offset by higher yield and fuel surcharge revenue.

Operating revenues from consumer products increased 11.8% in 2022 to \$9.2 billion compared to 2021, reflecting higher average revenue per car/unit, partially offset by a volume decrease of 8.3%. The volume decrease was primarily due to lower intermodal shipments, resulting from supply chain disruptions and lower West Coast imports during the second half of the year.

Operating revenues from industrial products were \$5.6 billion in 2022, an increase of 5.6% from 2021, reflecting higher average revenue per car/unit, partially offset by a volume decrease of 5.3%. The volume decrease was primarily due to a decrease in petroleum products related to lower demand for shipments of crude by rail and lower building products, steel and taconite shipments, partially offset by increased mineral shipments.

Operating revenues from agricultural products increased 12.6% to \$5.7 billion in 2022 compared to 2021. The revenue increase reflected higher revenue per car/unit partially offset by lower volumes of 2.0%. The decrease in volumes was primarily due to lower grain exports and fertilizer shipments, partially offset by higher volumes of domestic grains, renewable diesel and feedstocks.

Operating revenues from coal increased 21.7% to \$3.9 billion in 2022 compared to 2021, attributable to higher average revenue per car/unit. Coal volumes were unchanged compared to 2021.

Railroad operating expenses were \$16.6 billion in 2022, an increase of \$2.9 billion (21.2%) compared to 2021. Our ratio of railroad operating expenses to railroad operating revenues increased 5.0 percentage points to 65.9% in 2022 versus 2021. The operating expense increase was primarily attributable to significant increases in the cost of fuel, as well as higher compensation and benefits expenses. Compensation and benefits expenses increased \$557 million (11.9%) in 2022 compared to 2021, primarily due to wage inflation, including the impact from the ratified union labor agreements, higher health and welfare costs and lower productivity. Fuel expenses increased \$1.8 billion (65.6%) in 2022 compared to 2021, primarily due to higher average fuel prices, partially offset by lower volumes. Equipment rents, materials and other expenses increased \$384 million (21.8%) in 2022 compared to 2021, due to general inflation, lower gains from land and easement sales and higher casualty and litigation costs.

Management's Discussion and Analysis

Utilities and Energy

We currently own 92% of Berkshire Hathaway Energy Company ("BHE"), which operates a global energy business. BHE's domestic regulated utility interests include PacifiCorp, MidAmerican Energy Company ("MEC") and NV Energy. BHE's natural gas pipelines consist of five domestic regulated interstate natural gas pipeline systems and a liquefied natural gas export, import and storage facility. Other energy businesses include subsidiaries that operate two regulated electricity distribution businesses in Great Britain ("Northern Powergrid"), a regulated electricity transmission-only business in Alberta, Canada, a diversified portfolio of mostly renewable independent power projects and investments and an unregulated retail energy services company. BHE also operates a residential real estate brokerage business and a large network of real estate brokerage franchises in the United States.

The rates our regulated businesses charge customers for energy and services are largely based on the costs of business operations, including income taxes and a return on capital, and are subject to regulatory approval. To the extent such costs are not allowed in the approved rates, operating results will be adversely affected. A summary of BHE's net earnings follows (dollars in millions).

	2023	2022	2021
Revenues:			
Energy operating revenue	\$ 21,280	\$ 21,069	\$ 18,935
Real estate operating revenue	4,322	5,268	6,215
Other income (loss)	406	56	(54)
Total revenue	26,008	26,393	25,096
Costs and expense:			
Energy cost of sales	7,057	6,757	5,504
Energy operating expenses	11,412	9,233	8,535
Real estate operating costs and expenses	4,316	5,117	5,710
Interest expense	2,283	2,140	2,054
Total costs and expenses	25,068	23,247	21,803
Pre-tax earnings	940	3,146	3,293
Income tax benefit*	(2,022)	(1,629)	(1,153)
Net earnings after income taxes	2,962	4,775	4,446
Noncontrolling interests of BHE subsidiaries	352	423	399
Net earnings attributable to BHE	2,610	4,352	4,047
Noncontrolling interests and preferred stock dividends	279	448	475
Net earnings attributable to Berkshire Hathaway shareholders	\$ 2,331	\$ 3,904	\$ 3,572
Effective income tax rate	(215.1)%	(51.8)%	(35.0)%

* Includes significant production tax credits from wind-powered electricity generation.

The discussion of BHE's operating results that follows is based on after-tax earnings, reflecting how the energy businesses are managed and evaluated. A summary of net earnings attributable to BHE follows (dollars in millions).

	2023	2022	2021	Percentage change	
				2023 vs 2022	2022 vs 2021
U.S. utilities	\$ 906	\$ 2,295	\$ 2,211	(60.5)%	3.8%
Natural gas pipelines	1,079	1,040	807	3.8	28.9
Other energy businesses	1,024	1,356	987	(24.5)	37.4
Real estate brokerage	13	100	387	(87.0)	(74.2)
Corporate interest and other	(412)	(439)	(345)	(6.2)	27.2
	<u>\$ 2,610</u>	<u>\$ 4,352</u>	<u>\$ 4,047</u>	(40.0)	7.5

Management's Discussion and Analysis

Utilities and Energy

2023 versus 2022

Our U.S. utilities operate independently in several states, including Oregon, Utah, Wyoming and other Western states (PacifiCorp), Iowa and Illinois (MEC) and Nevada (NV Energy). After-tax earnings decreased \$1.4 billion in 2023 compared to 2022. The decline reflected an increase in energy operating expenses, including an increase in estimated pre-tax loss accruals of \$1.6 billion, net of expected insurance recoveries, for wildfires in 2020 and in 2022 that arose in Oregon and California ("Wildfires"). See Note 27 to the Consolidated Financial Statements for additional information on the Wildfires. The decline in earnings also reflected higher interest expense and lower electric utility margin (operating revenue less cost of sales). These items were partially offset by increases in interest and other income and lower depreciation and amortization expense.

The U.S. utilities' electric utility margin was \$7.5 billion in 2023, a decrease of \$170 million (2.2%) versus 2022. The decline reflected lower volumes and wholesale rates, as well as increased energy costs, partially offset by an increase in retail customer rates in certain territories. Retail customer volumes decreased 0.8% overall (down 0.8% at PacifiCorp and 2.6% at NV Energy and up 1.3% at MEC) in 2023 compared to 2022, primarily due to the unfavorable impact of weather, partially offset by higher customer usage and an overall increase in the average number of customers.

After-tax earnings of natural gas pipelines increased \$39 million (3.8%) in 2023 compared to 2022. The increase reflected higher regulated transportation and storage services revenues from certain general rate cases and increased earnings from the acquisition of an additional 50% ownership interest in the Cove Point liquefied natural gas export, import and storage facility on September 1, 2023, partially offset by higher operating expenses.

After-tax earnings of other energy businesses decreased \$332 million (24.5%) in 2023 compared to 2022. The decline reflected lower earnings at Northern Powergrid due to unfavorable results at a natural gas exploration project, including the write-off of capitalized exploration costs and lower gas production volumes and prices, as well as from higher deferred income tax expense related to the enactment of the Energy Profits Levy income tax in the United Kingdom. The earnings decline was also attributable to lower earnings from renewable energy and retail services businesses. The decline in renewable energy and retail services earnings was primarily due to lower income tax benefits, higher operating expenses, lower solar and wind generation at owned projects and the impact of unfavorable changes in valuations of derivatives contracts, partially offset by debt extinguishment gains.

After-tax earnings of real estate brokerage decreased \$87 million (87.0%) in 2023 compared to 2022. The decrease reflected lower brokerage services revenues and margins, primarily due to a 19% reduction in closed brokerage transaction volumes, as well as lower mortgage services revenues and margins from a 28% decrease in closed transaction volumes. These declines were attributable to the impact of rising interest rates and lower existing home sales.

Corporate interest and other after-tax earnings increased \$27 million in 2023 compared to 2022, reflecting higher interest and other income, partially offset by unfavorable consolidated income tax adjustments, largely state-related, and higher BHE corporate interest expense from an April 2022 debt issuance.

2022 versus 2021

The U.S. utilities after-tax earnings increased \$84 million in 2022 compared to 2021. The earnings increase reflected higher electric utility margin and a \$157 million increase in production tax credits recognized on new wind-powered generating facilities placed in-service at PacifiCorp and MEC, partially offset by higher operating expenses and state income taxes. Operating expenses increased due to higher costs associated with certain regulatory mechanisms at MEC and NV Energy, increases in general and plant maintenance costs, incremental depreciation expense from additional assets placed in-service and an increase in estimated pre-tax loss accruals of \$60 million for the Wildfires, net of expected insurance recoveries.

The U.S. utilities' electric utility margin was \$7.7 billion in 2022, an increase of \$586 million (8.3%) compared to 2021. The increase reflected higher operating revenue from favorable retail and wholesale pricing and increases in retail customer volumes, partially offset by increases in thermal generation and purchased power costs. Retail customer volumes increased 2.4% (1.6% at PacifiCorp, 4.3% at MEC and 2.2% at NV Energy) in 2022 compared to 2021, primarily due to higher customer usage, an increase in the average number of customers and the favorable impact of weather.

Management's Discussion and Analysis

Utilities and Energy

Natural gas pipelines' after-tax earnings increased \$233 million in 2022 compared to 2021. Substantially all of the increase was derived from BHE GT&S, primarily attributable to higher regulated storage and service revenues from a general rate case settlement and higher revenues and margins from non-regulated activities, as well as income tax adjustments.

Other energy businesses' after-tax earnings increased \$369 million in 2022 compared to 2021. The increase was primarily due to increased wind tax equity investment earnings of \$200 million and the impact in 2021 on income tax expense of \$109 million related to the enactment in 2021 of an increase in the United Kingdom corporate income tax rate from 19% to 25%, effective April 1, 2023. The earnings increase also reflected higher operating revenue from owned renewable energy projects and earnings from new gas exploration and solar projects, partially offset by lower earnings from natural gas generating facilities and unfavorable foreign currency translation effects. The increase in wind tax equity investment earnings was attributable to the impact of losses in 2021 on pre-existing tax equity investments due to the February 2021 winter storms, as well as increased income tax benefits from projects reaching commercial operation over the past twelve months.

Real estate brokerage after-tax earnings decreased \$287 million in 2022 compared to 2021. The decrease reflected lower brokerage services revenues and margins, primarily due to an 11% reduction in closed brokerage transaction volumes, as well as lower mortgage services revenues and margins from a 40% decrease in closed transaction volumes, attributable to lower homeowner refinancing activity resulting from rising interest rates.

Corporate interest and other after-tax earnings decreased \$94 million in 2022 compared to 2021. The decrease was primarily due to lower state income tax benefits and higher interest expense from corporate debt issued in 2022.

Pilot Travel Centers, LLC ("PTC")

PTC operates travel centers, primarily under the names Pilot or Flying J, and fuel-only retail locations. PTC also operates large wholesale fuel and fuel marketing platforms in the U.S. A substantial portion of PTC's revenues and earnings derive from marketing fuel on a wholesale and retail basis and from other energy-related activities.

Through January 31, 2023, we owned a 38.6% interest in PTC, which we accounted for under the equity method. Our 38.6% proportionate share of PTC's net earnings for the month ending January 31, 2023 and twelve months ending December 31, 2022 and 2021 were included in equity method earnings in the accompanying Consolidated Statements of Earnings. Our equity method earnings in PTC are included in non-controlled businesses discussed on page K-56.

On January 31, 2023, we acquired an additional 41.4% interest in PTC and owned an 80% controlling financial interest as of that date. Thus, we began consolidating PTC's results of operations in our Consolidated Statements of Earnings on February 1, 2023. PTC's earnings for the eleven months ending December 31, 2023 are summarized below (in millions).

	Eleven Months Ending December 31, 2023	
Revenues	\$	51,739
Cost of sales		47,505
Operating expenses		2,852
Interest expense		414
Pre-tax earnings		968
Income taxes and noncontrolling interests		365
Net earnings attributable to Berkshire Hathaway shareholders	\$	603

PTC's consolidated pre-tax earnings for the years ending December 31, 2023 and 2022 are summarized below. Revenues, costs and expenses for 2022 and the first month of 2023 were not included in our Consolidated Financial Statements, whereas such information for the eleven months ending December 31, 2023 were included in our Consolidated Financial Statements (dollars in millions).

	2023		2022		Percentage Change
Revenues	\$	56,756	\$	72,739	(22.0)%
Cost of sales		52,196		67,602	(22.8)
Operating expenses		3,067		2,583	18.7
Interest expense		437		224	95.1
Pre-tax earnings	\$	1,056	\$	2,330	(54.7)

Management's Discussion and Analysis

Pilot Travel Centers, LLC ("PTC")

PTC's revenues and earnings are highly dependent on diesel fuel and gasoline volumes, prices and margins. Revenues for the twelve months ended December 31, 2023 were approximately \$56.8 billion, a decline of \$16.0 billion (22.0%) from 2022. The decline reflected lower fuel prices, as well as lower fuel sales volumes and in-store sales. PTC sold approximately 16.2 billion gallons of diesel fuel, gasoline and other fuel-related products in 2023 compared to 18.4 billion gallons in 2022. The decline in fuel volumes was predominantly in the wholesale fuel and fuel marketing businesses. Cost of sales in 2023 reflected lower fuel costs than in 2022. Depreciation and amortization expense was \$832 million in 2023 and \$436 million in 2022. The increase was due to the application of acquisition accounting beginning on February 1, 2023. Interest expense increased \$213 million in 2023 compared to 2022, primarily due to higher interest rates.

Manufacturing, Service and Retailing

A summary of revenues and earnings of our manufacturing, service and retailing businesses follows (dollars in millions).

	2023	2022	2021	Percentage change	
				2023 vs 2022	2022 vs 2021
Revenues					
Manufacturing	\$ 75,405	\$ 75,781	\$ 68,730	(0.5)%	10.3%
Service and retailing	92,603	91,512	84,282	1.2	8.6
	<u>\$ 168,008</u>	<u>\$ 167,293</u>	<u>\$ 153,012</u>	0.4	9.3
Pre-tax earnings					
Manufacturing	\$ 11,445	\$ 11,177	\$ 9,841	2.4%	13.6%
Service and retailing	5,176	5,042	4,711	2.7	7.0
	16,621	16,219	14,552	2.5	11.5
Income taxes and noncontrolling interests	3,862	3,707	3,432		
Net earnings*	<u>\$ 12,759</u>	<u>\$ 12,512</u>	<u>\$ 11,120</u>		
Effective income tax rate	<u>22.5%</u>	<u>22.2%</u>	<u>23.0%</u>		
Pre-tax earnings as a percentage of revenues	<u>9.9%</u>	<u>9.7%</u>	<u>9.5%</u>		

* Excludes certain acquisition accounting expenses, which primarily related to the amortization of identified intangible assets recorded in connection with our business acquisitions. The after-tax acquisition accounting expenses excluded from earnings were \$693 million in 2023, \$681 million in 2022 and \$690 million in 2021. These expenses are included in "Other" in the summary of earnings on page K-35 and in the "Other" earnings table on page K-57.

Manufacturing

Our manufacturing group includes a variety of industrial, building and consumer products businesses. A summary of revenues and pre-tax earnings of our manufacturing operations follows (dollars in millions).

	2023	2022	2021	Percentage change	
				2023 vs 2022	2022 vs 2021
Revenues					
Industrial products	\$ 34,884	\$ 30,824	\$ 28,176	13.2%	9.4%
Building products	25,965	28,896	24,974	(10.1)	15.7
Consumer products	14,556	16,061	15,580	(9.4)	3.1
	<u>\$ 75,405</u>	<u>\$ 75,781</u>	<u>\$ 68,730</u>		
Pre-tax earnings					
Industrial products	\$ 5,686	\$ 4,862	\$ 4,469	16.9%	8.8%
Building products	4,187	4,789	3,390	(12.6)	41.3
Consumer products	1,572	1,526	1,982	3.0	(23.0)
	<u>\$ 11,445</u>	<u>\$ 11,177</u>	<u>\$ 9,841</u>		
Pre-tax earnings as a percentage of revenues					
Industrial products	16.3%	15.8%	15.9%		
Building products	16.1%	16.6%	13.6%		
Consumer products	10.8%	9.5%	12.7%		

Management's Discussion and Analysis

Manufacturing, Service and Retailing

Industrial products

The industrial products group includes metal products for aerospace, power and general industrial markets (Precision Castparts Corp. ("PCC")), specialty chemicals (The Lubrizol Corporation ("Lubrizol")), metal cutting tools/systems (IMC International Metalworking Companies ("IMC")), and Marmon, which consists of more than 100 autonomous manufacturing and service businesses, internally aggregated into eleven groups, and includes equipment leasing for the rail, intermodal tank container and mobile crane industries. The industrial products group also includes equipment and systems for the livestock and agricultural industries (CTB International) and a variety of industrial products for diverse markets (Scott Fetzer and LiquidPower Specialty Products). Beginning October 19, 2022, this group includes the structural steel fabrication products business conducted through W&W/AFCO Steel ("W&W/AFCO"), acquired in connection with the Alleghany acquisition. Additionally, the Alleghany acquisition included certain other smaller manufacturers that became part of Marmon.

2023 versus 2022

Revenues of the industrial products group in 2023 increased \$4.1 billion (13.2%) and pre-tax earnings increased \$824 million (16.9%) compared to 2022. Pre-tax earnings as a percentage of revenues in 2023 was 16.3%, an increase of 0.5 percentage points compared to 2022.

PCC's revenues were \$9.3 billion in 2023, an increase of \$1.7 billion (22.7%) compared to 2022. PCC derives significant revenues and earnings from aerospace products. The revenue increase in 2023 was primarily attributable to higher demand for aerospace products, while power/energy and general and industrial products also contributed to the overall revenue increase. Long-term industry forecasts continue to show growth and strong demand for air travel and aerospace products.

PCC's pre-tax earnings were \$1.5 billion in 2023, an increase of 30.0% compared to 2022. The improved results in 2023 reflected increases in sales and improving manufacturing and operating efficiencies in aerospace businesses, partially offset by operating losses in energy products businesses. PCC continues to strive to improve manufacturing efficiencies, maintain safety and prepare for increasing demand for its products. Continued growth in PCC's revenues and earnings will be predicated on the ability to successfully increase production levels to match the expected growth in aerospace product demand.

Lubrizol's revenues were \$6.4 billion in 2023, a decline of 4.0% compared to 2022. The revenue decline was primarily due to a 7.9% decline in volumes and unfavorable foreign currency effects, partially offset by higher selling prices. The decline in sales volumes in 2023 was attributable to general market weakness and customer efforts to reduce their inventory levels.

Lubrizol's pre-tax earnings in 2023 were relatively unchanged compared to 2022. Earnings included insurance recoveries of \$11 million in 2023 and \$242 million in 2022 in connection with fires at the Rockton, Illinois facility in 2021 and the Rouen, France facility in 2019. Excluding insurance recoveries, earnings in 2023 were higher due to the favorable impacts of higher selling prices, favorable changes in product mix and lower raw material costs, partially offset by the impact of lower sales volumes, unfavorable foreign currency translation effects and higher operating expenses.

Marmon's revenues were \$11.9 billion in 2023, an increase of \$1.2 billion (11.6%) compared to 2022. Business acquisitions, including AP Emissions Technologies and three former Alleghany businesses: Kentucky Trailer, Wilbert Funeral Services, Inc. and Wilbert Plastics Services, accounted for substantially all of the comparative increase. In addition, the Rail & Leasing, Water Technologies, Medical, Metal Services and Crane Services groups generated higher revenues in 2023, primarily due to higher volumes and pricing improvements. Revenues in 2023 of the Electrical group's building wire business and the Metal Services and Plumbing & Refrigeration groups were negatively impacted by lower metals prices, while revenues of the Transportation Products group reflected reduced customer demand, which accelerated over the second half of 2023.

Marmon's pre-tax earnings increased 13.1% in 2023 compared to 2022. The earnings increase reflected the favorable impact of business acquisitions of \$90 million and losses of approximately \$90 million in 2022 from the shutdown of the Rail & Leasing group business in Russia. Earnings from eight of Marmon's eleven business groups increased in 2023 compared to 2022. The Rail & Leasing, Water Technologies and Plumbing & Refrigeration groups generated higher organic earnings in 2023, which were offset by lower earnings from the Electrical group's building wire business and from the Metals Services and Medical groups.

Management's Discussion and Analysis

Manufacturing, Service and Retailing

IMC's revenues increased 8.0% to \$4.0 billion in 2023 compared to 2022. The increase reflected the impact of business acquisitions, organic sales growth in North America and other regions and higher interest income due to higher interest rates, partially offset by lower revenues in the Asia-Pacific region, unfavorable foreign currency translation from a stronger U.S. Dollar and the impact of ongoing geopolitical conflicts. IMC's pre-tax earnings increased 6.9% in 2023 compared to 2022, primarily attributable to higher interest income and to a lesser extent increased operating earnings. The impact of the revenue increase was largely offset by higher raw material costs, changes in sales mix and the adverse effects of geopolitical conflicts. A large portion of IMC's products are manufactured in Israel. To date, IMC's operations in Israel have not been significantly impacted by the terrorist attack on Israel on October 7, 2023, and the ongoing conflicts in the region.

2022 versus 2021

Revenues of the industrial products group increased \$2.6 billion (9.4%) and pre-tax earnings increased \$393 million (8.8%) in 2022 compared to 2021. Pre-tax earnings as a percentage of revenues in 2022 was 15.8%, a decrease of 0.1 percentage points compared to 2021.

PCC's revenues were \$7.5 billion in 2022, an increase of \$1.1 billion (16.5%) compared to 2021. The revenue increase in 2022 was primarily attributable to higher demand for aerospace products. Commercial aircraft delivery rates by original equipment manufacturers ("OEMs") of narrow-body aircraft rebounded since the onset of the pandemic. Deliveries of wide-body aircraft were relatively low, in part, attributable to the pause in the Boeing 787 program. However, Boeing resumed deliveries in the third quarter of 2022.

PCC's pre-tax earnings were \$1.2 billion in 2022, an increase of 1.6% compared to 2021. PCC's results in 2022 were negatively affected by increased costs for labor and training, materials and utilities and supply chain disruptions, as well as a \$59 million reduction in pension plan income.

Lubrizol's revenues were \$6.7 billion in 2022, an increase of 3.2% compared to 2021. The revenue increase reflected higher average selling prices, partially offset by lower volumes and adverse foreign currency translation effects from the stronger U.S. Dollar. Sales volumes throughout 2022 were restricted by effects of supply constraints for certain raw materials and the effects of unplanned plant maintenance activities, both of which limited Lubrizol's production capabilities. The increase in average selling prices was driven by escalating prices for raw materials, including oil feedstocks, as well as for utilities, packaging, shipping and freight costs.

Lubrizol's pre-tax earnings increased 48.6% in 2022 compared to 2021. Pre-tax earnings in 2022 and 2021 included insurance recoveries of \$242 million and \$55 million, respectively, related to the Rockton and Rouen fires. Earnings in 2022 also included aggregate losses related to the Rockton fire of \$36 million compared to aggregate losses and asset impairment charges in 2021 of \$257 million related to the Rockton fire and an underperforming business in the Advanced Materials product lines. Earnings in 2022 were also negatively impacted by rising raw material costs, lower sales volumes, higher unplanned maintenance expenses, and by unfavorable foreign currency translation effects, partially offset by higher selling prices. Earnings in 2021 were negatively impacted by severe winter storms, which caused industry-wide temporary facilities closures, including at our Additives facilities, which experienced lost sales and incremental operating costs.

Marmon's revenues were \$10.7 billion in 2022, an increase of \$934 million (9.6%) compared to 2021. Nearly all of Marmon's business groups generated higher revenues in 2022, led by significant increases in the Transportation, Retail Solutions, Metal Services and Crane groups, which contributed 82% of the increase. These increases generally reflected higher volumes and prices in our heavy-duty truck & trailer, shopping cart and store shelving businesses, stronger demand in Canada for metal services and higher demand in the mining and infrastructure markets. Revenues of most of Marmon's other groups, particularly those serving the transit, oil & gas, utility and restaurant markets, also increased in 2022, reflecting higher volumes. These increases were partially offset by lower lease revenues in the Rail & Leasing group, reflecting lower renewal rates and fewer third-party tank car sales.

Management's Discussion and Analysis

Manufacturing, Service and Retailing

Marmon's pre-tax earnings increased 11.3% in 2022 compared to 2021. Earnings in 2022 reflected increases in the Transportation, Metal Services, Retail, Crane and several other business groups due to higher volumes and pricing, which were partially offset by lower earnings from the Rail & Leasing group, reflecting lower renewal rates, higher repair costs and the losses related to the shutdown of its business in Russia.

IMC's revenues increased 4.5% to \$3.7 billion in 2022 compared to 2021, reflecting increased sales in most regions, partially offset by the foreign currency translation effects of a stronger U.S. Dollar, lower sales in China (attributable to the pandemic) and the effects of the Russia-Ukraine conflict in Europe. IMC's pre-tax earnings decreased 2.5% in 2022 compared to 2021, primarily due to lower average gross sales margins from changes in product sales mix and higher raw material costs. Earnings were also negatively affected by unfavorable foreign currency translation effects and the Russian-Ukraine conflict.

Building products

The building products group includes manufactured and site-built home construction and related lending and financial services (Clayton Homes), flooring (Shaw), insulation, roofing and engineered products (Johns Manville), bricks and masonry products (Acme Building Brands), paint and coatings (Benjamin Moore) and residential and commercial construction and engineering products and systems (MiTek).

2023 versus 2022

Revenues of the building products group decreased \$2.9 billion (10.1%) and pre-tax earnings decreased \$602 million (12.6%) in 2023 compared to 2022. Pre-tax earnings as percentages of revenues were 16.1% in 2023 and 16.6% in 2022. Our building products businesses benefited in recent years from the low interest rate environment and strong residential and commercial construction markets. The effects of significant increases in home mortgage interest rates in the U.S. over the past year has slowed demand for our home building businesses and our other building products businesses. Such effects have been partially mitigated by new construction activity, resulting from low supplies of pre-existing homes for sale.

Clayton Homes' revenues were approximately \$11.4 billion in 2023, a decrease of \$1.3 billion (10.3%) compared to 2022. Revenues from home sales decreased \$1.6 billion (15.3%) in 2023 to approximately \$8.8 billion, primarily due to lower unit sales and changes in product mix. New home unit sales declined 13.7% in 2023, reflecting lower factory-built and site-built homes. Financial services revenues, which include mortgage, insurance and interest income from lending activities, increased 12.2% in 2023 compared to 2022, primarily due to increased interest income on higher average loan balances. Loan balances, net of allowances for credit losses, were approximately \$23.8 billion as of December 31, 2023, an increase of approximately \$2.5 billion from December 31, 2022.

Pre-tax earnings of Clayton Homes were approximately \$2.0 billion in 2023, a decrease of \$326 million (13.8%) compared to 2022. Earnings in 2023 reflected lower earnings from the home building businesses, partially offset by increased earnings from financial services. The decline in earnings from the home building businesses reflected the reduction in sales, a lower overall gross sales margin rate and higher operating expenses relative to sales. The increase in financial services earnings was primarily attributable to increased net interest income, partially offset by increased expected loan loss provisions and higher insurance claims.

Aggregate revenues of our other building products businesses were approximately \$14.5 billion in 2023, a decrease of 10.0% versus 2022. The decline in revenues reflected overall lower sales volumes and changes in product mix, partly offset by higher average selling prices.

Pre-tax earnings of the other building products businesses were approximately \$2.1 billion in 2023, a decrease of 11.4% compared to 2022. Pre-tax earnings as a percentage of revenues were 14.7% in 2023, a 0.3 percentage point decrease compared to 2022. The earnings decline in 2023 was driven by lower sales volumes, reduced manufacturing efficiencies and higher losses from restructurings, plant closures and divestitures in 2023, partially offset by lower raw materials costs and energy costs as well as reduced freight, shipping and utilities expenses. Earnings in 2022 benefited from higher selling prices, strong demand in certain product categories and an increase in gains from a business divestiture and asset sales.

Management's Discussion and Analysis

Manufacturing, Service and Retailing

2022 versus 2021

Revenues of the building products group increased \$3.9 billion (15.7%) in 2022 and pre-tax earnings increased \$1.4 billion (41.3%) compared to 2021. Pre-tax earnings as percentages of revenues were 16.6% in 2022 and 13.6% in 2021. During 2021 and much of 2022, our businesses experienced relatively strong customer demand and higher sales volumes. However, interest rates in the U.S. increased significantly during 2022, which contributed to slowing demand for new home construction in the fourth quarter.

Clayton Homes' revenues were approximately \$12.7 billion in 2022, an increase of \$2.2 billion (21.1%) over 2021. Revenues from home sales for the year increased \$2.1 billion (25.1%) in 2022 to approximately \$10.4 billion, primarily due to higher average selling prices. New home unit sales increased 6.2% in 2022, reflecting a 6.0% increase in factory-built manufactured home unit sales and a 7.1% increase in site-built home unit sales. However, unit sales in the fourth quarter of 2022 declined 3.9% from 2021, and our net order backlog declined significantly during 2022. Financial services revenues increased 4.7% in 2022 compared to 2021. Loan balances, net of allowances for credit losses, were approximately \$21.3 billion as of December 31, 2022, an increase of approximately \$2.5 billion from December 31, 2021. Actual and anticipated loan foreclosures rose during the fourth quarter of 2022.

Pre-tax earnings of Clayton Homes were approximately \$2.4 billion in 2022, an increase of \$685 million (40.7%) compared to 2021. Earnings in 2022 reflected higher home sales, gross margin rates and net interest income.

Aggregate revenues of the other building products businesses were approximately \$16.2 billion in 2022, an increase of 11.8% versus 2021. The increase was primarily due to higher average selling prices, and to a lesser extent, from higher unit volumes in certain product lines and product mix changes. Significant cost inflation in 2021, that continued through 2022, largely drove the increases in selling prices.

Pre-tax earnings of the other building products businesses were approximately \$2.4 billion in 2022, an increase of 41.9% over 2021. Pre-tax earnings as a percentage of revenues were 15.0% in 2022, a 3.2 percentage point increase compared to 2021. Earnings in 2022 benefited from higher selling prices and strong demand in certain product categories, as well as an increase in gains from certain business divestitures and asset sales and reduced impairment and restructuring charges. The increase in earnings in 2022 also reflected the negative impact of severe winter storms in the first quarter of 2021, which reduced sales and increased production and other operating costs in 2021.

Consumer products

The consumer products group includes leisure vehicles (Forest River), several apparel and footwear operations (including Fruit of the Loom, Garan, H.H. Brown Shoe Group and Brooks Sports) and a manufacturer of high-performance alkaline batteries (Duracell). This group also includes custom picture framing products (Larson-Juhl), jewelry products (Richline) and beginning October 19, 2022, Jazwares, LLC ("Jazwares"), a global toy company acquired in connection with the Alleghany acquisition.

2023 versus 2022

Consumer products group revenues declined \$1.5 billion (9.4%) in 2023 versus 2022. The decline reflected lower revenues at Forest River and our apparel and footwear operations, partially offset by the impact of the Jazwares acquisition, which contributed revenues of \$1.3 billion in 2023 and \$240 million in 2022.

Forest River revenues declined 26.2% in 2023 compared to 2022, reflecting a 29.3% decline in unit sales and changes in sales mix. Forest River experienced strong recreational vehicle unit sales in 2021 and through the first half of 2022. Through most of 2023, sales of recreational vehicles declined significantly, attributable in part to the impact of rising interest rates, inflation and other macroeconomic conditions. The decline in recreational vehicle sales was partially offset by increased sales from Forest River's bus and commercial business.

Revenues of our apparel and footwear businesses declined \$452 million (9.4%) in 2023 compared to 2022. The decline was primarily due to reduced apparel revenues, attributable to lower unit volumes, partially offset by higher average selling prices. Duracell's revenues in 2023 were relatively flat versus 2022.

Management's Discussion and Analysis

Manufacturing, Service and Retailing

Pre-tax earnings of the consumer products group increased \$46 million (3.0%) in 2023 compared to 2022. Pre-tax earnings in 2023 reflected the impact of the Jazwares acquisition and higher earnings from the apparel and footwear businesses, partially offset by lower earnings from Forest River and Duracell. Certain of our apparel and footwear businesses took actions in 2023 to reduce inventories and right-size operations. The earnings decline at Forest River was primarily due to the impact of lower sales volumes, while the decline at Duracell was primarily attributable to higher restructuring costs.

2022 versus 2021

Consumer products group revenues increased \$481 million (3.1%) in 2022 versus 2021, reflecting an 8.0% increase from Forest River and the impact of the Jazwares acquisition, substantially offset by lower apparel and footwear and Duracell revenues (4.7% in the aggregate). In the fourth quarter of 2022, consumer products group revenues before the impact of the Jazwares acquisition declined 15.7%, driven by significant declines in recreational vehicle unit sales. The declines in apparel and footwear revenues were driven by lower volumes, as major retailers reduced orders in response to rising inventories. Duracell's revenue decline was primarily due to lower volumes and unfavorable foreign currency translation effects of the stronger U.S. Dollar.

Pre-tax earnings of the consumer products group declined \$456 million (23.0%) in 2022 compared to 2021 and as a percentage of revenues in 2022 decreased 3.2 percentage points to 9.5%. The earnings decline reflected lower earnings from the apparel and footwear businesses (68.0%) and Duracell (30.6%), partially offset by higher earnings from Forest River (7.6%).

Our apparel businesses were negatively affected in 2022 by low sales volumes, reduced manufacturing efficiencies and higher input costs, including raw materials, freight, labor and other operating costs. The reductions in sales volumes and supply chain issues in 2021 and 2022 also elevated inventories. We began taking measures to right-size our operations for the long-term and reduce product inventories to more appropriate levels. Duracell's earnings in 2022 declined, primarily due to lower sales, cost inflation and foreign currency translation effects.

Earnings from Forest River increased in 2022, primarily due to an increase in unit sales in the first half of the year and higher average selling prices, partly offset by higher materials costs. However, unit sales and earnings declined over the second half of the year compared to the elevated levels in the first half of 2022 and in 2021.

Service and retailing

A summary of revenues and pre-tax earnings of our service and retailing businesses follows (dollars in millions).

	2023	2022	2021	Percentage change	
				2023 vs 2022	2022 vs 2021
Revenues					
Service	\$ 20,588	\$ 19,006	\$ 15,872	8.3%	19.7%
Retailing	19,408	19,297	18,960	0.6	1.8
McLane	52,607	53,209	49,450	(1.1)	7.6
	<u>\$ 92,603</u>	<u>\$ 91,512</u>	<u>\$ 84,282</u>		
Pre-tax earnings					
Service	\$ 2,995	\$ 3,047	\$ 2,672	(1.7)%	14.0%
Retailing	1,726	1,724	1,809	0.1	(4.7)
McLane	455	271	230	67.9	17.8
	<u>\$ 5,176</u>	<u>\$ 5,042</u>	<u>\$ 4,711</u>		
Pre-tax earnings as a percentage of revenues					
Service	14.5%	16.0%	16.8%		
Retailing	8.9%	8.9%	9.5%		
McLane	0.9%	0.5%	0.5%		

Management's Discussion and Analysis

Manufacturing, Service and Retailing

Service

Our service group consists of several businesses. The largest of these businesses are NetJets and FlightSafety (aviation services), which offer shared ownership programs for general aviation aircraft and high technology training products and services to operators of aircraft, and TTI, a distributor of electronics components. Our other service businesses franchise and service a network of quick service restaurants (Dairy Queen), lease transportation equipment (XTRA) and furniture (CORT), provide third party logistics services that primarily serve the petroleum and chemical industries (Charter Brokerage), distribute electronic news, multimedia and regulatory filings (Business Wire) and operate a television station in Miami, Florida (WPLG). Beginning, October 19, 2022, this group includes IPS-Integrated Project Services, LLC (IPS), a provider of various facilities construction management services.

2023 versus 2022

Revenues of the service group increased \$1.6 billion (8.3%) in 2023 compared to 2022. IPS produced revenues of \$1.3 billion in 2023 and \$358 million in 2022. Revenues from aviation services increased 11.5% in 2023 compared to 2022, primarily due to increases in the number of aircraft in shared aircraft ownership programs and a year-to-date increase in flight hours across NetJets' various programs, as well as higher average rates.

Revenues from TTI declined 2.7% in 2023 compared to 2022. Excluding the effects of business acquisitions in 2022 and 2023 and favorable foreign currency translation effects, revenues declined 5.2% in 2023 versus 2022. TTI experienced significant revenue growth in 2021 and much of 2022. New orders throughout 2023 slowed in several regions, particularly in the Asia-Pacific region, attributable to elevated customer inventory levels and increasing price competition. We currently expect these conditions will persist in 2024.

Pre-tax earnings of the service group decreased \$52 million (1.7%) in 2023 to \$3.0 billion. Pre-tax earnings as a percentage of revenues were 14.5% in 2023, a decrease of 1.5 percentage points compared to 2022. The change in comparative earnings in 2023 reflected lower earnings from TTI and certain of our other service businesses, partially offset by increased earnings from aviation services and the impact of the IPS acquisition. Earnings from TTI declined 17.3%, attributable to reduced sales and gross margin rates and higher operating expenses, partly offset by the impact of foreign currency exchange gains in 2023 compared to losses in 2022. The increase in earnings from aviation services was primarily attributable to a 14.4% increase in average aircraft in the NetJets' programs and higher rates.

2022 versus 2021

Service group revenues increased \$3.1 billion (19.7%) in 2022 compared to 2021, primarily attributable to revenue increases from TTI and aviation services, as well as the impact of the IPS acquisition. Revenues from TTI increased 17.4% in 2022 versus 2021. However, in the third quarter of 2022, new orders began to slow, attributable in part to elevated inventory levels within the supply chain. Revenues from aviation services increased 18.2% in 2022 compared to 2021. The revenue increase reflected increases in training hours (11%), customer flight hours (9%) and fuel surcharges to customers due to the increase in flight hours and fuel prices. The impact of these increases were partially offset by changes in sales mix.

Pre-tax earnings of our service group increased \$375 million (14.0%) in 2022 to \$3.0 billion. Pre-tax earnings as a percentage of revenues were 16.0% in 2022, a decrease of 0.8 percentage points compared to 2021. The earnings increase in 2022 was attributable to TTI (19.4%) and aviation services (3.4%), as well as increased earnings from several of our smaller service businesses. The increase from TTI was primarily attributable to the increase in sales and higher average gross margin rates, partially offset by unfavorable foreign currency effects in 2022 and a favorable legal settlement in 2021. The earnings increase from aviation services was primarily attributable to improved product sales margins, increased training hours and lower restructuring costs at FlightSafety. Earnings from our smaller service businesses increased \$106 million (19.3%) over 2021, reflecting a combination of higher revenues and operating cost leverage.

Management's Discussion and Analysis

Manufacturing, Service and Retailing

Retailing

Our largest retailing business is Berkshire Hathaway Automotive, Inc. ("BHA"), which represented 67% of our combined retailing revenue in 2023. BHA consists of over 80 auto dealerships that sell new and pre-owned automobiles and offer repair services and related products. BHA also offers and insures vehicle service contracts and related insurance products. Our retailing businesses also include four home furnishings businesses (Nebraska Furniture Mart, R.C. Willey, Star Furniture and Jordan's), which sell furniture, appliances, flooring and electronics. The home furnishings group represented 18% of the combined retailing revenues in 2023.

Other retailing businesses include three jewelry businesses (Borsheims, Helzberg and Ben Bridge), See's Candies (confectionary products), Pampered Chef (high quality kitchen tools), Oriental Trading Company (party supplies, school supplies and toys and novelties) and Detlev Louis Motorrad ("Louis"), a retailer of motorcycle accessories based in Germany.

2023 versus 2022

Retailing group revenues increased \$111 million (0.6%) in 2023 compared to 2022, reflecting an increase at BHA, partially offset by lower revenues from our other retailers. BHA's revenues increased 3.9% in 2023 compared to 2022. Revenues from new vehicle sales increased 12.6% in 2023 compared to 2022, while revenues from pre-owned retail vehicle sales declined 9.4%. Retail unit sales increased 2.7%, reflecting an 11.7% increase in new vehicles sold and a 4.7% decrease in pre-owned vehicles sold. Although new vehicle inventory levels remain well below historical levels, vehicle supply continues to gradually rise. Revenues from BHA's parts/service/repair operations increased 6.6% in 2023 versus 2022. Other retailing revenues in the aggregate declined 5.6% in 2023 versus 2022, due primarily to an 8.6% decline in revenues at our home furnishings businesses.

Retailing group pre-tax earnings were \$1.7 billion in 2023, unchanged from 2022. BHA's pre-tax earnings increased 17.7%, primarily due to earnings increases from the parts/service/repair and finance/service contract operations, as well as from higher investment income and lower operating and liability remeasurement expenses, partially offset by lower vehicle gross profit margin rates and higher floor plan interest expense. BHA's comparative vehicle gross profit margin rates peaked in mid-2022 due to supply chain disruptions and have since declined. Aggregate pre-tax earnings for the remainder of our retailing group declined \$168 million (21.8%) in 2023 compared to 2022, primarily due to a 28.3% decrease in home furnishings businesses earnings and the impact of a gain in 2022 from the divestiture of certain jewelry stores.

2022 versus 2021

Retailing group revenues increased \$337 million (1.8%) in 2022 compared to 2021, reflecting an increase at BHA, partially offset by combined lower revenues from our other retailers. BHA's revenues increased 6.1% in 2022 compared to 2021. Revenues from new and used retail vehicle sales increased 5.9% compared to 2021, attributable to higher average vehicle transaction prices, partly offset by a 4.5% decline in total retail units sold. New vehicle unit sales in 2022 were constrained by relatively low, but gradually rising, new vehicle supplies. Revenues from BHA's parts/service/repair operations increased 11.1% versus 2021. Revenues of the home furnishings group declined 2.6%, while revenues of all other retailers declined 8.9%, primarily due to lower sales at Pampered Chef.

Pre-tax earnings of the retailing group decreased \$85 million (4.7%) in 2022 compared to 2021 and the pre-tax margin rate decreased 0.6 percentage points to 8.9%. BHA's pre-tax earnings increased 18.4%, primarily due to increases in vehicle gross profit margins attributable to low available inventory. BHA's vehicle gross profit margin rates accelerated during the second half of 2021, peaked in the first half of 2022 and declined over the remainder of the year. Aggregate pre-tax earnings for the remainder of the retailing group decreased \$233 million (23.2%) in 2022 compared to 2021, primarily due to reduced earnings from the home furnishings group, See's Candies and Pampered Chef.

Management's Discussion and Analysis

Manufacturing, Service and Retailing

McLane

McLane Company, Inc. ("McLane") operates a wholesale distribution business that provides grocery and non-food consumer products to retailers and convenience stores ("grocery") and to restaurants ("foodservice"). McLane also operates businesses that are wholesale distributors of distilled spirits, wine and beer ("beverage"). The grocery and foodservice businesses generate high sales and very low profit margins. These businesses have several significant customers, including Walmart, 7-Eleven, Yum! Brands and others. Grocery sales comprised 62% of McLane's consolidated sales in 2023 with foodservice comprising most of the remainder. A curtailment of purchasing by any of its significant customers could have an adverse impact on periodic revenues and earnings.

2023 versus 2022

Revenues were \$52.6 billion in 2023, a decline of \$602 million (1.1%) compared to 2022. Revenues from the grocery and foodservice businesses declined 0.8% and 2.2%, respectively, while revenues from the beverage business increased 1.9% compared to 2022. Revenues of the grocery and the foodservice businesses were negatively affected in 2023 by lower unit volumes.

Pre-tax earnings increased \$184 million (67.9%) in 2023 compared to 2022. The increase reflected a slight increase in the overall gross sales margin rate, increased other income and lower fuel expenses, partly offset by higher personnel expenses.

2022 versus 2021

Revenues were \$53.2 billion in 2022, an increase of \$3.8 billion (7.6%) compared to 2021. Revenues from the grocery business increased 4.4%, while revenues from the foodservice and beverage businesses increased 14.1% and 6.0%, respectively.

Pre-tax earnings increased \$41 million (17.8%) in 2022 compared to 2021. The increase reflected slightly higher gross margin rates in the grocery and foodservice businesses, partly offset by higher personnel costs, fuel expense and insurance costs. McLane's grocery and foodservice operating results were adversely affected by supply chain constraints, including the effects of labor and truck driver shortages, high fuel costs and high inventory costs.

Non-Controlled Businesses

After-tax earnings of our non-controlled businesses include our proportionate share of earnings attributable to our investments in Kraft Heinz, Occidental Petroleum ("Occidental"), PTC (through January 31, 2023) and Berkadia. After-tax equity earnings attributable to these businesses increased \$222 million in 2023 compared to 2022, primarily due to increased earnings from Occidental. We adopted the equity method of accounting for our investment in Occidental common stock on August 4, 2022. Equity method after-tax earnings increased \$724 million in 2022 versus 2021, primarily due to higher earnings from Kraft Heinz and PTC and from the inclusion of Occidental in 2022.

Our after-tax earnings from Kraft Heinz were \$790 million in 2023, \$550 million in 2022 and \$317 million in 2021, which included our after-tax share of goodwill and other intangible asset impairment charges recorded by Kraft Heinz of \$126 million in 2023, \$157 million in 2022 and \$259 million in 2021. Occidental's financial information is not available in time for concurrent reporting in our Consolidated Financial Statements. Therefore, we report the equity method effects for Occidental on a one-quarter lag. Our after-tax earnings from Occidental were \$851 million in 2023 and \$258 million in 2022. As of January 31, 2023, we discontinued using the equity method for our pre-existing 38.6% interest in PTC upon acquiring a controlling interest in PTC. We began consolidating PTC's financial statements in our Consolidated Financial Statements on February 1, 2023. See Notes 2 and 5 to the Consolidated Financial Statements. Our after-tax equity earnings from PTC decreased \$559 million in 2023 compared to 2022 and increased \$267 million in 2022 compared to 2021.

Management's Discussion and Analysis

Investment and Derivative Contract Gains (Losses)

A summary of investment and derivative contract gains (losses) follows (dollars in millions).

	2023	2022	2021
Investment gains (losses)	\$ 74,855	\$ (67,623)	\$ 77,576
Derivative contract gains (losses)	—	(276)	966
Gains (losses) before income taxes and noncontrolling interests	74,855	(67,899)	78,542
Income taxes and noncontrolling interests	15,982	(14,287)	16,202
Net earnings (loss)	\$ 58,873	\$ (53,612)	\$ 62,340
Effective income tax rate	21.3%	20.9%	20.4%

Unrealized gains and losses arising from changes in market prices of our investments in equity securities are included in our reported earnings, which significantly increases the volatility of our periodic net earnings due to the magnitude of our equity securities portfolio and the inherent volatility of equity securities prices. Unrealized gains and losses also include the effects of changes in foreign currency exchange rates on investments in non-U.S. issuers that are held by our U.S.-based subsidiaries.

Pre-tax investment gains and losses included net unrealized gains of approximately \$69.1 billion in 2023, losses of approximately \$63.1 billion in 2022 and gains of approximately \$76.4 billion in 2021 attributable to changes in market prices of equity securities we held at the end of each year. We also recorded pre-tax gains and losses from market value changes during each year on equity securities sold during such year, including gains of \$2.7 billion in 2023, losses of \$3.9 billion in 2022 and gains of \$1.0 billion in 2021. Taxable investment gains on equity securities sold, which is generally the difference between sales proceeds and the original cost basis of the securities sold, were \$5.0 billion in 2023, \$769 million in 2022 and \$3.6 billion in 2021. Investment gains in 2023 included a non-cash pre-tax gain of approximately \$3.0 billion related to the remeasurement of our pre-existing interest in PTC to fair value through the application of acquisition accounting upon attaining control of PTC for financial reporting purposes.

We believe that investment gains and losses, whether realized from sales or unrealized from changes in market prices, are often meaningless in terms of understanding our reported consolidated earnings or evaluating our periodic economic performance. We continue to believe the investment gains and losses recorded in earnings in any given period has little analytical or predictive value.

Derivative contract gains and losses in 2022 and 2021 pertained to our equity index put option contract liabilities. Substantially all of our contracts are now expired and our exposure to loss in the future is insignificant.

Other

A summary of after-tax other earnings follows (in millions).

	2023	2022	2021
Acquisition accounting expenses	\$ (693)	\$ (681)	\$ (690)
Corporate interest expense, before foreign currency effects	(226)	(269)	(305)
Foreign currency exchange rate gains on Berkshire and BHFC non-U.S. Dollar senior notes	211	1,263	955
Other earnings	533	196	474
	\$ (175)	\$ 509	\$ 434

After-tax acquisition accounting expenses include charges arising from the application of the acquisition method in connection with certain of Berkshire's business acquisitions. Such charges arise primarily from the amortization of intangible assets recorded in connection with those business acquisitions.

Foreign currency exchange rate gains pertain to Berkshire's and BHFC's Euro, Great Britain Pound and Japanese Yen denominated debt. Changes in foreign currency exchange rates produce unrealized gains and losses from the periodic revaluation of these liabilities into U.S. Dollars. In each year, we recorded foreign currency exchange rate gains on these debt issues due to strengthening of the U.S. Dollar, which reduced the U.S. Dollar carrying value of the debt. The gains and losses recorded in any given period can be significant due to the magnitude of the borrowings and the inherent volatility in foreign currency exchange rates. Other earnings consist primarily of Berkshire parent company investment income, intercompany interest income where the interest expense is included in earnings of the operating businesses, corporate expenses and unallocated income taxes. Investment income increased by \$483 million in 2023 compared to 2022, primarily due to higher interest rates in 2023.

Management's Discussion and Analysis

Financial Condition

Our Consolidated Balance Sheet continues to reflect significant liquidity and a very strong capital base. Berkshire's shareholders' equity at December 31, 2023 was \$561.3 billion, an increase of \$87.8 billion since December 31, 2022. Net earnings attributable to Berkshire shareholders were \$96.2 billion and included after-tax investment gains of approximately \$58.9 billion. Over each of the last three years, investment gains and losses from changes in the market prices of our investments in equity securities produced significant volatility in our earnings.

Berkshire's common stock repurchase program, as amended, permits Berkshire to repurchase its Class A and Class B shares at prices below Berkshire's intrinsic value, as conservatively determined by Warren Buffett, Berkshire's Chairman of the Board. The program does not specify a maximum number of shares to be repurchased and does not require any specified repurchase amount. The program is expected to continue indefinitely. We will not repurchase our stock if it reduces the total amount of our consolidated cash, cash equivalents and U.S. Treasury Bills holdings to below \$30 billion. Financial strength and redundant liquidity will always be of paramount importance at Berkshire. Berkshire paid \$9.2 billion in 2023 to repurchase shares of its Class A and B common stock.

At December 31, 2023, our insurance and other businesses held cash, cash equivalents and U.S. Treasury Bills of \$163.3 billion, which included \$133.4 billion invested in U.S. Treasury Bills. Investments in equity and fixed maturity securities (excluding our investments in Kraft Heinz and Occidental common stock) were \$377.6 billion. During 2023, we paid cash of \$16.5 billion to acquire equity securities and we received proceeds of \$40.6 billion from sales of equity securities. On January 31, 2023, we acquired an additional 41.4% interest in PTC for approximately \$8.2 billion. On January 16, 2024, we acquired the remaining 20% ownership interest in PTC held by non-controlling shareholders for \$2.6 billion.

Our consolidated borrowings at December 31, 2023 were \$128.3 billion, of which over 95% were by the Berkshire parent company, BHFC, and by BNSF, BHE, PTC and their subsidiaries. During 2023, we issued term debt of approximately \$7.8 billion and paid approximately \$11.3 billion of maturing term debt. Expected principal and interest payments related to our consolidated borrowings in each of the next five years are (in billions): \$18.7 in 2024; \$11.6 in 2025; \$10.3 in 2026; \$8.7 in 2027; and \$10.4 in 2028.

Berkshire parent company debt outstanding at December 31, 2023 was \$18.8 billion, a decrease of \$2.6 billion from December 31, 2022. In 2023, Berkshire issued an aggregate ¥286.4 billion (approximately \$2.0 billion) of senior notes and repaid approximately \$4.3 billion of maturing senior notes. The carrying value of Berkshire parent company debt decreased \$371 million in 2023 from changes in foreign currency exchange rates on its non-U.S. Dollar denominated debt.

Senior note borrowings of BHFC, a wholly-owned financing subsidiary, were approximately \$18.0 billion at December 31, 2023, substantially unchanged from December 31, 2022. BHFC's borrowings are used to fund a portion of loans originated and acquired by Clayton Homes and equipment held for lease by our railcar leasing business. Berkshire guarantees BHFC's senior notes for the full and timely payment of principal and interest.

BNSF's outstanding debt was \$23.5 billion as of December 31, 2023, substantially unchanged from December 31, 2022. During 2023, BNSF issued \$1.6 billion of 5.2% debentures due in 2054 and repaid approximately \$1.6 billion of term debt. In 2023, BHE subsidiaries issued \$4.2 billion of term debt with a weighted average interest rate of 5.7% and maturity dates ranging from 2033 to 2055 and repaid approximately \$3.7 billion of term debt. In 2024, BHE subsidiaries issued \$5.1 billion of term debt with a weighted average interest rate of 5.4% and maturity dates ranging from 2029 to 2055 and repaid short term borrowings of approximately \$2.8 billion. Borrowings of PTC were \$5.8 billion at December 31, 2023, relatively unchanged since January 31, 2023. Berkshire does not guarantee the repayment of debt issued by BNSF, BHE, PTC or any of their subsidiaries or affiliates.

In each of the past three years, our diverse group of businesses generated net operating cash flows between \$37 billion and \$49 billion. Our consolidated capital expenditures for property, plant and equipment and equipment held for lease were \$19.4 billion in 2023, which included capital expenditures by BNSF and BHE of \$13.1 billion. BNSF and BHE maintain very large investments in capital assets (property, plant and equipment) and regularly make significant capital expenditures in the normal course of business. We forecast capital expenditures for BHE and BNSF in 2024 of approximately \$14.3 billion. On September 1, 2023, a BHE subsidiary acquired an additional 50% limited partner interest in its Cove Point LNG, LP subsidiary for \$3.3 billion.

Management's Discussion and Analysis

Contractual Obligations

We are party to other contracts associated with ongoing business activities, which will result in cash payments to counterparties in future periods. Our annual debt maturities for the next five years are summarized in Note 19 to the Consolidated Financial Statements. We also currently expect to pay interest on our debt of between \$4 billion and \$5 billion per annum over the next five years. Certain other obligations are included in our Consolidated Balance Sheets, such as operating lease liabilities and shared aircraft repurchase liabilities of NetJets. Estimated payments of these liabilities in each of the next five years are (in billions): \$1.9 in 2024; \$1.7 in 2025; \$1.5 in 2026; \$1.8 in 2027; and \$1.9 in 2028.

We are also obligated to pay claims arising from our property and casualty insurance companies. Such liabilities, including amounts from retroactive reinsurance, were approximately \$146 billion at December 31, 2023. We currently forecast claim payments in 2024 of approximately \$37 billion with respect to claims occurring prior to 2024. However, the timing and amount of the payments under insurance and reinsurance contracts are contingent upon the outcome of future events and can be highly uncertain. Actual payments will likely vary, perhaps materially, from the forecasted payments. We anticipate that these payments will be funded by operating cash flows.

Other obligations pertaining to the acquisition of goods or services in the future, such as certain purchase obligations, are not currently reflected in the Consolidated Financial Statements and will be recognized in future periods as the goods are delivered or services are provided. As of December 31, 2023, the largest categories of our long-term contractual obligations primarily related to fuel, capacity, transmission and maintenance contracts and capital expenditure commitments of BHE and BNSF, aircraft purchase commitments of NetJets and certain materials purchase commitments. We currently estimate future payments associated with these contracts over the next five years will approximate \$22 billion, including \$10 billion in 2024.

Critical Accounting Estimates

Certain accounting policies require us to make estimates and judgments in determining the amounts reflected in our Consolidated Financial Statements. Such estimates and judgments necessarily involve varying and possibly significant degrees of uncertainty. Accordingly, certain amounts currently recorded in our Consolidated Financial Statements will likely be adjusted in the future based on new available information and changes in other facts and circumstances. A discussion of our principal accounting policies that required the application of significant judgments as of December 31, 2023 follows.

Property and casualty insurance unpaid losses

We record liabilities for unpaid losses and loss adjustment expenses (also referred to as "gross unpaid losses" or "claim liabilities") based upon estimates of the ultimate amounts payable for loss events occurring on or before the balance sheet date. The timing and amount of ultimate loss payments are contingent upon, among other things, the timing of claim reporting from insureds and ceding companies and the final determination of the loss amount through the loss adjustment and settlement process.

As of the balance sheet date, recorded claim liabilities include estimates for reported claims and for incurred-but-not-reported ("IBNR") claims. The period between the loss occurrence date and loss settlement date is the "claim-tail." Property claims typically have relatively short claim-tails, while casualty claims usually have longer claim-tails, occasionally extending for decades. Casualty claims may be more susceptible to litigation and the impact of changing contract interpretations. The legal environment and judicial process further contribute to extending claim-tails.

Our consolidated claim liabilities, including liabilities from retroactive reinsurance contracts, as of December 31, 2023 were approximately \$146 billion, of which 76% related to GEICO and the Berkshire Hathaway Reinsurance Group. Additional information regarding significant uncertainties inherent in the processes and techniques for estimating unpaid losses of these businesses follows.

Management's Discussion and Analysis

Critical Accounting Estimates

Property and casualty insurance unpaid losses

GEICO

GEICO predominantly writes private passenger automobile insurance. As of December 31, 2023, GEICO's gross unpaid losses were \$24.4 billion and claim liabilities, net of reinsurance recoverable, were \$23.4 billion. GEICO's claim reserving methodologies produce liability estimates based upon the individual claims. The key assumptions affecting our liability estimates include projections of ultimate claim counts ("frequency") and average loss per claim ("severity"). We utilize a combination of several actuarial estimation methods, including Bornhuetter-Ferguson and chain-ladder methodologies.

Claim liability estimates for liability coverages (such as bodily injury ("BI"), uninsured motorists, and personal injury protection) are more uncertain due to the longer claim-tails, so we establish additional case development estimates. As of December 31, 2023, case development liabilities averaged approximately 28% of reported reserves. We select case development factors through analysis of the overall adequacy of historical case liabilities.

We test the adequacy of the aggregate claim liabilities using one or more actuarial projections based on claim closure models and paid and incurred loss triangles. Each type of projection analyzes loss occurrence data for claims occurring in a given period and projects the ultimate cost.

Our aggregate claim liability estimates recorded at the end of 2022 were reduced by \$1.5 billion during 2023, which produced a corresponding increase to pre-tax earnings. The assumptions used to estimate liabilities at December 31, 2023 reflect the most recent frequency and severity estimates. Future development of recorded liabilities will depend on whether actual frequency and severity of claims are more or less than anticipated.

With respect to liabilities for BI claims, we believe it is reasonably possible that average claims severities will change by at least one percentage point from the projected severities used in establishing the recorded liabilities at December 31, 2023. We estimate that a one percentage point increase or decrease in BI severities would produce a \$210 million increase or decrease in recorded liabilities, with a corresponding decrease or increase in pre-tax earnings. Many of the economic forces that would likely cause BI severity to differ from expectations would likely also cause severities for other injury coverages to differ in the same direction.

Berkshire Hathaway Reinsurance Group

BHRG's liabilities for unpaid losses and loss adjustment expenses derive primarily from reinsurance contracts issued through the NICO, General Re and TransRe Groups. A summary of BHRG's property and casualty unpaid losses and loss adjustment expenses, other than retroactive reinsurance losses and loss adjustment expenses, as of December 31, 2023 follows (in millions).

	Property	Casualty	Total
Reported case liabilities	\$ 8,159	\$ 11,455	\$ 19,614
IBNR liabilities	9,105	22,769	31,874
Gross unpaid losses and loss adjustment expenses	17,264	34,224	51,488
Reinsurance recoverable	689	1,481	2,170
Net unpaid losses and loss adjustment expenses	<u>\$ 16,575</u>	<u>\$ 32,743</u>	<u>\$ 49,318</u>

Gross unpaid losses and loss adjustment expenses consist primarily of traditional property and casualty coverages written under excess-of-loss and quota-share treaties. Under certain contracts, coverage can apply to multiple lines of business written and the ceding company may not report loss data by such lines consistently, if at all. In those instances, we judgmentally allocate losses to property and casualty coverages based on internal estimates.

The nature, extent, timing and perceived reliability of loss information received from ceding companies varies widely depending on the type of coverage and the contractual reporting terms. Reinsurance contract terms, conditions and coverages also tend to lack standardization and may evolve more rapidly than primary insurance policies.

Management's Discussion and Analysis

Critical Accounting Estimates

Property and casualty insurance unpaid losses

The loss information provided under many facultative (individual risk) or per occurrence excess contracts may be comparable to the information received under a primary insurance contract. However, loss information with respect to aggregate excess-of-loss and quota-share contracts is often in a summary form rather than on an individual claim basis. Loss data includes currently recoverable paid losses, as well as case loss estimates. Ceding companies infrequently provide reliable IBNR loss estimates.

Loss reporting to reinsurers is typically slower than primary insurers. In the U.S., client reporting is generally required at quarterly intervals ranging from 30 to 90 days after the end of the quarterly period, while outside of the U.S., reinsurance reporting practices may vary further, with some clients reporting annually ranging from 90 to 180 days after the end of the annual period. To the extent that reinsurers assume and cede underlying risks from other reinsurers, further delays in claims reporting may occur. The relative impact of reporting delays on the reinsurer may vary depending on the type of coverage, contractual reporting terms, the magnitude of the claim relative to the attachment point of the reinsurance coverage and other reasons.

As reinsurers, the premium and loss data we receive is at least one level removed from the underlying claimant, so there is a risk that the loss data reported is incomplete, inaccurate or the claim is outside the coverage terms. We maintain internal procedures to determine that the information is complete and in compliance with the contract terms. Generally, our reinsurance contracts permit us to access the ceding company's records with respect to the subject business, thus providing the ability to audit the reported information. In the normal course of business, disputes occasionally arise concerning whether claims are covered by our reinsurance policies. We resolve most coverage disputes through negotiation with the client. If disputes cannot be resolved, our contracts generally provide arbitration or alternative dispute resolution processes. We believe there are no coverage disputes at this time for which an adverse resolution would likely have a material impact on our consolidated results of operations or financial condition.

Establishing claim liability estimates for reinsurance requires evaluation of loss information received from our clients. We generally rely on the ceding companies' reported case loss estimates. We independently evaluate certain reported case losses and if appropriate, we use our own case liability estimate. For instance, as of December 31, 2023, our case loss estimates exceeded ceding company estimates by approximately \$575 million for certain legacy workers' compensation claims occurring over 10 years ago. We also periodically conduct detailed reviews of individual client claims, which may cause us to adjust our case estimates.

Although liabilities for losses are initially determined based on pricing and underwriting analysis, we use a variety of actuarial methodologies that place reliance on the extrapolation of historical data, loss development patterns, industry data and other benchmarks. The estimate of the IBNR liabilities also requires judgment by actuaries and management to reflect the impact of additional factors like change in business mix, volume, claim reporting and handling practices, inflation, social and legal environment and the terms and conditions of the contracts. The methodologies generally fall into or are hybrids of one or more of the following categories:

Paid and incurred loss development methods consider expected case loss emergence and development patterns, together with expected loss ratios by year. Factors affecting our loss development analysis include, but are not limited to, changes in the following: client claims reporting and settlement practices, the frequency of client company claim reviews, policy terms and coverage (such as loss retention levels and occurrence and aggregate policy limits), loss trends and legal trends that result in unanticipated losses. Collectively, these factors influence our selections of expected case loss emergence patterns.

Incurred and paid loss Bornhuetter-Ferguson methods consider actual paid and incurred losses and expected reporting patterns of paid and incurred losses, taking the initial expected ultimate losses into account to determine an estimate of the expected unpaid or unreported losses.

Management's Discussion and Analysis

Critical Accounting Estimates

Property and casualty insurance unpaid losses

Frequency and severity methods commonly focus on a review of the number of anticipated claims and the anticipated claims severity and may also rely on development patterns to derive such estimates. However, our processes and techniques for estimating liabilities in such analyses generally rely more on a per-policy assessment of the ultimate cost associated with the individual loss rather than with an analysis of historical development patterns of past losses.

Additional analysis – In some cases we have established reinsurance claim liabilities on a contract-by-contract basis, determined from case loss estimates reported by the ceding company and IBNR liabilities that are primarily a function of an anticipated loss ratio for the contract and the reported case loss estimate. Liabilities are adjusted upward or downward over time to reflect case losses reported versus expected case losses, which we use to form revised judgment on the adequacy of the expected loss ratio and the level of IBNR liabilities required for unreported claims. Anticipated loss ratios are also revised to include estimates of known major catastrophe events.

Our claim liability estimation process for short-tail lines, primarily property exposures, utilizes a combination of the paid and incurred loss development methods and the incurred and paid loss Bornhuetter-Ferguson methods. Certain property catastrophe, individual risk and aviation excess-of-loss contracts tend to generate low frequency/high severity losses. Our processes and techniques for estimating liabilities under such contracts generally rely more on a per contract assessment of the ultimate cost associated with the individual loss event rather than with an analysis of the historical development patterns of past losses.

For our long-tail lines, primarily casualty exposures, we may rely on different methods depending on the maturity of the business, with estimates for the most recent years being based on priced loss expectations and more mature years reflecting the paid or incurred development pattern indications.

In 2023, workers' compensation claims reported losses were less than expected. As a result, we reduced estimated ultimate losses for prior years' loss events by \$116 million. We estimate that increases of ten percent in the tail of the expected loss emergence pattern and in the expected loss ratios would produce a net increase of approximately \$1.0 billion in IBNR liabilities, producing a corresponding decrease in pre-tax earnings. We believe it is reasonably possible for these assumptions to increase at these rates.

For other casualty losses, other than asbestos and environmental, we reduced estimated ultimate liabilities for prior years' events by approximately \$225 million in 2023. For certain significant casualty and general liability portfolios, we estimate that increases of five percent in the claim-tails of the expected loss emergence patterns and in the expected loss ratios could produce a net increase in our nominal IBNR liabilities and a corresponding reduction in pre-tax earnings of approximately \$2 billion, although outcomes of greater than or less than \$2 billion are possible.

The change in estimated ultimate liabilities for asbestos and environmental claims, excluding amounts assumed under retroactive reinsurance contracts was not significant in 2023. Net liabilities for such claims were approximately \$2.0 billion at December 31, 2023. Loss estimations for these exposures are difficult to determine due to the changing legal environment and increases may be required in the future if new exposures or claimants are identified, new claims are reported or new theories of liability emerge.

Retroactive reinsurance

Our retroactive reinsurance contracts cover loss events occurring before the contract inception dates. Claim liabilities associated with our retroactive reinsurance contracts predominately pertain to casualty or liability exposures. We expect the claim-tails will be very long. At December 31, 2023, gross unpaid losses were \$34.6 billion and deferred charges were \$9.5 billion.

Our contracts are generally subject to maximum limits of indemnification and, as such, we currently expect that maximum remaining gross losses payable under our retroactive policies will not exceed \$50 billion. Absent significant judicial or legislative changes affecting asbestos, environmental or mass tort exposures, we also currently believe it unlikely that losses will develop upward to the maximum losses payable or downward by more than 15% of our current estimated gross liability.

Management's Discussion and Analysis

Critical Accounting Estimates

Property and casualty insurance unpaid losses

We establish liability estimates by individual contract, considering exposure and development trends, historical aggregate loss payment patterns and project expected ultimate losses under various scenarios. We apply judgmental probability factors to these scenarios to determine an expected outcome. We also monitor subsequent loss payment activity and ceding company reports and other available information. We re-estimate ultimate losses when significant events or significant deviations from expectations are revealed.

Certain of our retroactive reinsurance contracts include asbestos, environmental and other mass tort claims. Our estimated liabilities for asbestos and environmental exposures were approximately \$12.2 billion at December 31, 2023. We do not consistently receive reliable detailed underlying claims data from all ceding companies, particularly with respect to multi-line or aggregate excess-of-loss policies. When possible, we conduct a detailed analysis of the underlying loss data to make an estimate of ultimate reinsured losses. When detailed loss information is unavailable, we may apply recent industry trends and projections to aggregate client data. Judgments in these areas necessarily consider the stability of the legal and regulatory environment under which we expect claims will be adjudicated. Legal reform and legislation could also have a significant impact on our ultimate liabilities.

Deferred charges for retroactive reinsurance contracts, which at contract inception, represents the excess of the estimated ultimate liability for unpaid losses over premiums received. Deferred charges are subsequently charged to pre-tax earnings in future periods based on the expected timing and amount of loss payments. We adjust deferred charge balances for the impact of changes in the expected timing and ultimate amount of claim payments. Based on the contracts in effect as of December 31, 2023, we estimate that amortization expense in 2024 will approximate \$900 million.

We increased estimated ultimate liabilities for prior years' retroactive reinsurance contracts by \$1.1 billion in the fourth quarter of 2023, primarily for asbestos, environmental and other casualty exposures. This increase, net of related changes in unamortized deferred charges, produced an incremental pre-tax underwriting loss of approximately \$650 million.

Other Critical Accounting Estimates

Our Consolidated Balance Sheet at December 31, 2023 includes goodwill of acquired businesses of \$84.6 billion and indefinite-lived other intangible assets of \$18.9 billion. We evaluate these assets for impairment annually in the fourth quarter and on an interim basis if the facts and circumstances lead us to believe that more likely than not there has been an impairment.

Goodwill and indefinite-lived intangible asset impairment reviews include determining the estimated fair values of our reporting units and of indefinite-lived intangible assets. Several methods may be used to estimate fair values, including market quotations, multiples of earnings and other valuation techniques. We primarily use discounted projected future earnings or cash flow methods in determining fair values. The key assumptions and inputs used in such determinations may include forecasting revenues and expenses, cash flows and capital expenditures, as well as an appropriate discount rate and other inputs. Significant judgment by management is required in estimating the fair value of a reporting unit and in performing impairment reviews. Due to the inherent subjectivity and uncertainty in forecasting future cash flows and earnings over long periods of time, actual results may differ materially from the forecasts. If the carrying value of a reporting unit exceeds the estimated fair value of the reporting unit, then the excess, limited to the carrying amount of goodwill, is charged to earnings as an impairment loss. If the carrying value of the indefinite-lived intangible asset exceeds fair value, the excess is charged to earnings as an impairment loss.

As of December 31, 2023, we concluded it was more likely than not that goodwill recorded in our Consolidated Balance Sheet was not impaired. The fair value estimates of reporting units are and will likely be significantly affected by assumptions on the long-term effects of the COVID-19 pandemic on the reporting units businesses, as well as other assumptions concerning the long-term economic performance of the reporting units, which we cannot reliably predict. Consequently, any fair value estimates can be subject to wide variations.

Management's Discussion and Analysis

Critical Accounting Estimates

Other Critical Accounting Estimates

In connection with the annual goodwill impairment review conducted in the fourth quarter of 2023, the estimated fair values of nine reporting units did not exceed our carrying values by at least 20%. These reporting units included Precision Castparts Corp. ("PCC") and three reporting units acquired in late 2022 and early 2023. Our estimated fair value of PCC was approximately \$32.6 billion, exceeding our carrying value of approximately \$29.7 billion by 10%. Our carrying value of PCC included goodwill of approximately \$7.5 billion. The three reporting units acquired in late 2022 and early 2023 included PTC, Jazwares and IPS. The fair values of these entities at December 31, 2023 totaled approximately \$21.5 billion, which exceeded our carrying values by 1.5%. Goodwill associated with these reporting units was \$8.5 billion. The remaining five other reporting units had an aggregate estimated fair value of approximately \$4.4 billion, which exceeded our aggregate carrying value of approximately 10%. The carrying value of these units included goodwill of approximately \$1.3 billion.

Market Risk Disclosures

Our Consolidated Balance Sheets include substantial amounts of assets and liabilities whose fair values are subject to market risks. Our significant market risks are primarily associated with equity prices, interest rates, foreign currency exchange rates and commodity prices. The fair values of our investment portfolios remain subject to considerable volatility. The following sections address the significant market risks associated with our business activities.

Equity Price Risk

Investments in equity securities represent the most significant portion of our consolidated investment portfolio. Strategically, we strive to invest in businesses that possess excellent economics and able and honest management, and we prefer to invest a meaningful amount in each company. Historically, equity investments have been concentrated in relatively few issuers. At December 31, 2023, approximately 79% of the total fair value of equity securities was concentrated in five companies.

We often hold our equity securities for long periods and short-term price volatility has occurred in the past and will occur in the future. We also strive to maintain significant levels of shareholder capital and ample liquidity to provide a margin of safety against short-term price volatility.

The following table summarizes our investments in equity securities, other than our investments in Kraft Heinz and Occidental common stocks, and the estimated effects of a hypothetical 30% increase and a 30% decrease in market prices as of those dates. The selected 30% hypothetical increase and decrease does not reflect the best or worst case scenario. Indeed, results from declines could be far worse due both to the nature of equity markets and the aforementioned concentrations existing in our equity investment portfolio. Dollar amounts are in millions.

	Fair Value	Hypothetical Price Change	Estimated Fair Value After Hypothetical Change in Prices	Estimated Increase (Decrease) in Net Earnings ⁽¹⁾
<i>December 31, 2023</i>				
Investments in equity securities	\$ 353,842	30% increase	\$ 457,993	\$ 82,281
		30% decrease	249,885	(82,129)
<i>December 31, 2022</i>				
Investments in equity securities	\$ 308,793	30% increase	\$ 399,087	\$ 71,344
		30% decrease	218,688	(71,195)

⁽¹⁾ The estimated increase (decrease) is after income taxes.

Management's Discussion and Analysis

Interest Rate Risk

We also invest in bonds, loans or other interest rate sensitive instruments. Our strategy is to acquire or originate such instruments at prices or with interest rates considered appropriate relative to the perceived credit risk. We also issue debt in the ordinary course of business to fund business operations, business acquisitions and for other general purposes. We attempt to maintain high credit ratings in order to minimize the cost of our debt. We generally do not utilize derivative products, such as interest rate swaps, to manage interest rate risks and we do not attempt to match maturities of assets and liabilities.

The fair values of our fixed maturity investments, loans and finance receivables and notes payable and other borrowings will fluctuate in response to changes in market interest rates. Increases and decreases in interest rates generally translate into decreases and increases in fair values of these instruments. Additionally, fair values of interest rate sensitive instruments may be affected by the creditworthiness of the issuer, prepayment options, relative values of alternative investments, the liquidity of the instrument and other general market conditions.

The following table summarizes the estimated effects of hypothetical changes in interest rates on our significant assets and liabilities that are subject to significant interest rate risk. We assumed that the interest rate changes occur immediately and uniformly to each category of instrument and that there were no significant changes to other factors used to determine the value of the instrument. The hypothetical changes in interest rates do not reflect the best or worst case scenarios. Actual results may differ from those reflected in the table. Dollars are in millions.

		Estimated Fair Value After Hypothetical Change in Interest Rates (bp=basis points)			
	Fair Value	100 bp decrease	100 bp increase	200 bp increase	300 bp increase
December 31, 2023					
Assets:					
Investments in fixed maturity securities	\$ 23,758	\$ 23,937	\$ 23,585	\$ 23,419	\$ 23,258
Investments in equity securities*	8,688	9,069	8,329	7,990	7,670
Loans and finance receivables	24,190	25,187	23,266	22,409	21,612
Liabilities:					
Notes payable and other borrowings:					
Insurance and other	39,184	42,750	36,161	33,581	31,361
Railroad, utilities and energy	81,036	88,915	74,379	68,792	64,043
December 31, 2022					
Assets:					
Investments in fixed maturity securities	\$ 25,128	\$ 25,619	\$ 24,659	\$ 24,215	\$ 23,794
Investments in equity securities*	9,964	10,434	9,523	9,109	8,719
Loans and finance receivables	23,428	24,249	22,633	21,907	21,228
Liabilities:					
Notes payable and other borrowings:					
Insurance and other	41,961	45,535	38,941	36,367	34,157
Railroad, utilities and energy	67,651	74,698	61,725	56,710	52,430

* Includes Cumulative Perpetual Preferred Stocks

Foreign Currency Risk

Certain of our subsidiaries operate in foreign jurisdictions and we transact business in foreign currencies. In addition, we hold investments in common stocks of major multinational companies, who have significant foreign business and foreign currency risk of their own. We generally do not attempt to match assets and liabilities by currency and do not use derivative contracts to manage foreign currency risks in a meaningful way.

Management's Discussion and Analysis

Foreign Currency Risk

Our net assets subject to financial statement translation into U.S. Dollars are primarily in our insurance, utilities and energy and certain manufacturing subsidiaries. A portion of our financial statement translation-related impact from changes in foreign currency rates is recorded in other comprehensive income. In addition, we include gains or losses from changes in foreign currency exchange rates in net earnings related to non-U.S. Dollar denominated assets and liabilities of Berkshire and its U.S.-based subsidiaries. A summary of these gains (losses), after-tax, for each of the years ending December 31, 2023 and 2022 follows (in millions).

	2023		2022
Non-U.S. denominated debt included in net earnings	\$	211	\$ 1,263
Net liabilities under certain reinsurance contracts included in net earnings		(241)	482
Foreign currency translation included in other comprehensive income		749	(2,050)

Commodity Price Risk

Our subsidiaries use commodities in various ways in manufacturing and providing services. As such, we are subject to price risks related to various commodities. In most instances, we attempt to manage these risks through the pricing of our products and services to customers. To the extent that we are unable to sustain price increases in response to commodity price increases, our operating results will likely be adversely affected. We generally do not utilize derivative contracts to manage commodity price risks to any significant degree.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

See "Market Risk Disclosures" contained in Item 7 "Management's Discussion and Analysis of Financial Condition and Results of Operations."

Management's Report on Internal Control Over Financial Reporting

Management of Berkshire Hathaway Inc. is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Securities Exchange Act of 1934 Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2023, as required by the Securities Exchange Act of 1934 Rule 13a-15(c). In making this assessment, we used the criteria set forth in the framework in *Internal Control—Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework in *Internal Control—Integrated Framework* (2013), our management concluded that our internal control over financial reporting was effective as of December 31, 2023.

The effectiveness of our internal control over financial reporting as of December 31, 2023 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which appears on page K-67.

Berkshire Hathaway Inc.
February 24, 2024

Item 8. Financial Statements and Supplementary Data

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of
Berkshire Hathaway Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Berkshire Hathaway Inc. and subsidiaries (the “Company”) as of December 31, 2023 and 2022, the related consolidated statements of earnings, comprehensive income, changes in shareholders’ equity, and cash flows, for each of the three years in the period ended December 31, 2023, and the related notes (collectively referred to as the “financial statements”). We also have audited the Company’s internal control over financial reporting as of December 31, 2023, 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 financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

Change in Accounting Principle

As discussed in Note 1 to the financial statements, effective January 1, 2023, the Company adopted Accounting Standards Update 2018-12 Targeted Improvements to the Accounting for Long-Duration Contracts, using the modified retrospective approach.

Basis for Opinions

The Company’s management is responsible for these financial statements, 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 Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company’s internal control over financial reporting based on our audits.

We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company 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 audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the financial statements included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures to 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM (Continued)

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.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current-period audit of the financial statements that were communicated or required to be communicated to the audit committee and that (1) relate 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 matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Unpaid Losses and Loss Adjustment Expenses — Refer to Notes 1 and 16 to the financial statements

Critical Audit Matter Description

The Company's unpaid losses and loss adjustment expenses ("claim liabilities") include short duration property and casualty insurance and reinsurance contracts. Key assumptions affecting certain of these claim liabilities include anticipated claims and their severity, expected loss ratios, and expected patterns of paid and incurred losses.

Given the subjectivity of estimating these key assumptions, performing audit procedures to evaluate whether certain of these claim liabilities were appropriately recorded as of December 31, 2023 required a high degree of auditor judgment and an increased extent of effort, including the need to involve our actuarial specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the key assumptions affecting certain of these claim liabilities included the following, among others:

- We tested the operating effectiveness of controls over claim liabilities, including those over the key assumptions.
- We tested the underlying data that served as the basis for the actuarial analysis to evaluate that the inputs to the actuarial estimate were accurate and complete.
- With the assistance of our actuarial specialists:
 - We developed independent estimates of the claim liabilities, including loss data and industry claim development factors as needed, and compared our estimates to management's estimates.
 - We compared prior year estimates of expected incurred losses to actual experience during the most recent year to identify potential bias in management's determination of the claim liabilities.

Unpaid Losses and Loss Adjustment Expenses — Retroactive Reinsurance Contracts — Refer to Notes 1 and 17 to the financial statements

Critical Audit Matter Description

The Company's unpaid losses and loss adjustment expenses under retroactive reinsurance contracts ("retroactive claim liabilities") include property and casualty retroactive reinsurance contracts. Key assumptions affecting certain of these retroactive claim liabilities include anticipated claims and their severity, expected loss ratios, and expected patterns of paid and incurred losses.

Given the subjectivity of estimating these key assumptions, performing audit procedures to evaluate whether certain of these claim liabilities were appropriately recorded as of December 31, 2023, required a high degree of auditor judgment and an increased extent of effort, including the need to involve our actuarial specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the key assumptions affecting claim liabilities included the following, among others:

- We tested the operating effectiveness of controls over claim liabilities, including those over the key assumptions.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM (Continued)

- We tested the underlying data that served as the basis for the actuarial analysis, including historical claims, to test that the inputs to the actuarial estimate were accurate and complete.
- With the assistance of our actuarial specialists:
 - We developed independent claim liability estimates for certain retroactive reinsurance contracts and compared our estimates to management's estimates. For other retroactive reinsurance contracts, we evaluated the process used by management to develop the estimated claim liabilities.
 - We compared prior year estimates of expected incurred losses to actual experience during the most recent year to identify potential bias in management's determination of the claim liabilities.

Goodwill and Indefinite-Lived Intangible Assets — Refer to Notes 1 and 13 to the financial statements

Critical Audit Matter Description

The Company's evaluation of goodwill and indefinite-lived intangible assets for impairment involves the comparison of the fair value of each reporting unit or asset to its carrying value. As of December 31, 2023, goodwill of approximately \$8 billion and indefinite-lived intangible assets of \$13 billion were recorded at the Precision Castparts Corp. ("PCC") reporting unit. PCC primarily uses discounted projected future net earnings to estimate fair value, which requires management to make significant estimates and assumptions related to forecasted future revenue, earnings before interest and taxes ("EBIT"), and discount rates.

Given the significant judgments made by management in their evaluation of potential impairment of PCC goodwill and PCC indefinite-lived intangible assets and the difference between their fair values and carrying values, performing audit procedures to evaluate the reasonableness of management's estimates and assumptions required a high degree of auditor judgment. Increased audit effort, including the need to involve our fair value specialists, was required to test management's estimates and assumptions of forecasted future revenue and EBIT and the selection of the discount rate.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to forecasts of future revenue and EBIT and the selection of the discount rate for the PCC reporting unit and certain customer relationships included the following, among others:

- We tested the effectiveness of controls over goodwill and indefinite-lived intangible assets, including those over the forecasts of future revenue and EBIT and the selection of the discount rate.
- We evaluated management's ability to accurately forecast future revenue and EBIT by comparing prior year forecasts to actual results in the respective years.
- We evaluated the reasonableness of management's current revenue and EBIT forecasts by comparing the forecasts to historical results, newly executed long-term contracts, customer demand and build schedules, and forecasted information included in analyst and industry reports and certain peer companies' disclosures.
- With the assistance of our fair value specialists, we evaluated the valuation methodologies, the terminal growth rates and discount rate, including testing the underlying source information and the mathematical accuracy of the calculations, and developed a range of independent estimates and compared those to the terminal growth rates and discount rate selected by management.
- With the assistance of our fair value specialists, we evaluated the valuation methodologies, and the terminal growth rates and discount rate. We tested the underlying source information and mathematical accuracy of calculations and developed a range of independent estimates and compared those to the terminal growth rates and discount rate selected by management.

/s/ Deloitte & Touche LLP

Omaha, Nebraska

February 24, 2024

We have served as the Company's auditor since 1985.

BERKSHIRE HATHAWAY INC.
and Subsidiaries
CONSOLIDATED BALANCE SHEETS
(dollars in millions)

	December 31,	
	2023	2022
ASSETS		
<i>Insurance and Other:</i>		
Cash and cash equivalents*	\$ 33,672	\$ 32,260
Short-term investments in U.S. Treasury Bills	129,619	92,774
Investments in fixed maturity securities	23,758	25,128
Investments in equity securities	353,842	308,793
Equity method investments	29,066	28,050
Loans and finance receivables	24,681	23,208
Other receivables	44,174	43,490
Inventories	24,159	25,366
Property, plant and equipment	22,030	21,113
Equipment held for lease	16,947	15,584
Goodwill	50,868	51,522
Other intangible assets	29,327	29,187
Deferred charges - retroactive reinsurance	9,495	9,870
Other	19,568	19,657
	811,206	726,002
<i>Railroad, Utilities and Energy:</i>		
Cash and cash equivalents*	4,350	3,551
Receivables	7,086	4,795
Property, plant and equipment	177,616	160,268
Goodwill	33,758	26,597
Regulatory assets	5,565	5,062
Other	30,397	22,190
	258,772	222,463
	<u>\$ 1,069,978</u>	<u>\$ 948,465</u>

* Includes U.S. Treasury Bills with maturities of three months or less when purchased of \$4.8 billion at December 31, 2023 and \$2.6 billion at December 31, 2022.

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries
CONSOLIDATED BALANCE SHEETS
(dollars in millions)

	December 31,	
	2023	2022
LIABILITIES AND SHAREHOLDERS' EQUITY		
<i>Insurance and Other:</i>		
Unpaid losses and loss adjustment expenses	\$ 111,082	\$ 107,472
Unpaid losses and loss adjustment expenses - retroactive reinsurance contracts	34,647	35,415
Unearned premiums	30,507	28,657
Life, annuity and health insurance benefits	20,213	19,753
Other policyholder liabilities	11,545	11,370
Accounts payable, accruals and other liabilities	32,402	33,201
Aircraft repurchase liabilities and unearned lease revenues	8,253	6,820
Notes payable and other borrowings	42,692	46,538
	291,341	289,226
<i>Railroad, Utilities and Energy:</i>		
Accounts payable, accruals and other liabilities	22,461	16,615
Regulatory liabilities	6,818	7,369
Notes payable and other borrowings	85,579	76,206
	114,858	100,190
Income taxes, principally deferred	93,009	77,368
Total liabilities	499,208	466,784
Redeemable noncontrolling interests	3,261	—
<i>Shareholders' equity:</i>		
Common stock	8	8
Capital in excess of par value	34,480	35,167
Accumulated other comprehensive income	(3,763)	(5,052)
Retained earnings	607,350	511,127
Treasury stock, at cost	(76,802)	(67,826)
Berkshire Hathaway shareholders' equity	561,273	473,424
Noncontrolling interests	6,236	8,257
Total shareholders' equity	567,509	481,681
	<u>\$ 1,069,978</u>	<u>\$ 948,465</u>

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries
CONSOLIDATED STATEMENTS OF EARNINGS
(dollars in millions except per share amounts)

	Year Ended December 31,		
	2023	2022	2021
Revenues:			
<i>Insurance and Other:</i>			
Insurance premiums earned	\$ 83,403	\$ 74,576	\$ 69,460
Sales and service revenues	155,687	157,518	145,043
Leasing revenues	8,416	7,514	5,988
Interest, dividend and other investment income	15,561	10,263	7,465
	263,067	249,871	227,956
<i>Railroad, Utilities and Energy:</i>			
Freight rail transportation revenues	23,791	25,802	23,177
Utility and energy operating revenues	72,693	21,023	18,891
Service revenues and other income	4,931	5,324	6,161
	101,415	52,149	48,229
Total revenues	364,482	302,020	276,185
Investment and derivative contract gains (losses)	74,855	(67,899)	78,542
Costs and expenses:			
<i>Insurance and Other:</i>			
Insurance losses and loss adjustment expenses	57,187	57,646	49,964
Life, annuity and health benefits	4,029	5,243	5,824
Insurance underwriting expenses	15,270	11,706	12,559
Cost of sales and services	122,569	124,319	114,138
Cost of leasing	6,037	5,550	4,201
Selling, general and administrative expenses	22,605	19,506	18,843
Interest expense	1,258	1,187	1,086
	228,955	225,157	206,615
<i>Railroad, Utilities and Energy:</i>			
Freight rail transportation expenses	16,464	17,282	14,477
Utilities and energy cost of sales and other expenses	67,964	15,896	13,959
Other expenses	4,016	4,984	5,615
Interest expense	3,745	3,165	3,086
	92,189	41,327	37,137
Total costs and expenses	321,144	266,484	243,752
Earnings (loss) before income taxes and equity method earnings	118,193	(32,363)	110,975
Equity method earnings	1,973	1,863	886
Earnings (loss) before income taxes	120,166	(30,500)	111,861
Income tax expense (benefit)	23,019	(8,502)	20,912
Net earnings (loss)	97,147	(21,998)	90,949
Earnings attributable to noncontrolling interests	924	761	1,012
Net earnings (loss) attributable to Berkshire Hathaway shareholders	\$ 96,223	\$ (22,759)	\$ 89,937
Net earnings (loss) per average equivalent Class A share	\$ 66,412	\$ (15,494)	\$ 59,554
Net earnings (loss) per average equivalent Class B share*	\$ 44.27	\$ (10.33)	\$ 39.70
Average equivalent Class A shares outstanding	1,448,880	1,468,876	1,510,180
Average equivalent Class B shares outstanding	2,173,319,709	2,203,313,642	2,265,269,867

* Net earnings per average equivalent Class B share outstanding are equal to one-fifteen-hundredth of the equivalent Class A amount. See Note 22.

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(dollars in millions)

	Year Ended December 31,		
	2023	2022	2021
Net earnings (loss)	\$ 97,147	\$ (21,998)	\$ 90,949
Other comprehensive income:			
Unrealized gains (losses) on investments	477	(713)	(217)
Applicable income taxes	(100)	158	50
Foreign currency translation	782	(2,138)	(1,011)
Applicable income taxes	(7)	22	(6)
Long-duration insurance contract discount rate changes	(237)	7,177	2,108
Applicable income taxes	49	(1,540)	(453)
Defined benefit pension plans	578	(253)	1,775
Applicable income taxes	(123)	47	(457)
Other, net	(101)	250	100
Other comprehensive income, net	1,318	3,010	1,889
Comprehensive income	98,465	(18,988)	92,838
Comprehensive income attributable to noncontrolling interests	953	700	1,030
Comprehensive income attributable to Berkshire Hathaway shareholders	\$ 97,512	\$ (19,688)	\$ 91,808

BERKSHIRE HATHAWAY INC.
and Subsidiaries
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY
(dollars in millions)

	Berkshire Hathaway shareholders' equity					
	Common stock and capital in excess of par value	Accumulated other comprehensive income	Retained earnings	Treasury stock	Non-controlling interests	Total
Balance at December 31, 2020	\$ 35,634	\$ (4,243)	\$ 444,626	\$ (32,853)	\$ 8,172	\$ 451,336
Adoption of ASU 2018-12	—	(5,751)	(677)	—	—	(6,428)
Balance at January 1, 2021	35,634	(9,994)	443,949	(32,853)	8,172	444,908
Net earnings (loss)	—	—	89,937	—	1,012	90,949
Other comprehensive income, net	—	1,871	—	—	18	1,889
Acquisition of common stock	—	—	—	(26,942)	—	(26,942)
Transactions with noncontrolling interests and other	(34)	—	—	—	(471)	(505)
Balance at December 31, 2021	35,600	(8,123)	533,886	(59,795)	8,731	510,299
Net earnings (loss)	—	—	(22,759)	—	761	(21,998)
Other comprehensive income, net	—	3,071	—	—	(61)	3,010
Acquisition of common stock	—	—	—	(8,031)	—	(8,031)
Transactions with noncontrolling interests and other	(425)	—	—	—	(1,174)	(1,599)
Balance at December 31, 2022	35,175	(5,052)	511,127	(67,826)	8,257	481,681
Net earnings (loss)	—	—	96,223	—	924	97,147
Other comprehensive income, net	—	1,289	—	—	29	1,318
Acquisition of common stock	—	—	—	(8,976)	—	(8,976)
Transactions with noncontrolling interests and other	(687)	—	—	—	(2,974)	(3,661)
Balance at December 31, 2023	\$ 34,488	\$ (3,763)	\$ 607,350	\$ (76,802)	\$ 6,236	\$ 567,509

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries
CONSOLIDATED STATEMENTS OF CASH FLOWS
(dollars in millions)

	Year Ended December 31,		
	2023	2022	2021
Cash flows from operating activities:			
Net earnings (loss)	\$ 97,147	\$ (21,998)	\$ 90,949
Adjustments to reconcile net earnings (loss) to operating cash flows:			
Investment (gains) losses	(74,855)	67,623	(77,576)
Depreciation and amortization	12,486	10,899	10,718
Other	(6,023)	(4,206)	(3,382)
Changes in operating assets and liabilities:			
Unpaid losses and loss adjustment expenses	2,628	4,057	4,194
Deferred charges - retroactive reinsurance	375	769	1,802
Unearned premiums	1,854	1,861	2,306
Receivables and originated loans	(1,949)	(5,621)	(5,864)
Inventories	1,426	(4,779)	(1,862)
Other assets	(1,328)	(378)	154
Other liabilities	2,570	1,995	2,658
Income taxes	14,865	(12,872)	15,330
Net cash flows from operating activities	49,196	37,350	39,427
Cash flows from investing activities:			
Purchases of equity securities	(16,462)	(67,930)	(8,448)
Sales of equity securities	40,631	33,664	15,849
Purchases of U.S. Treasury Bills and fixed maturity securities	(235,007)	(183,922)	(152,637)
Sales of U.S. Treasury Bills and fixed maturity securities	52,302	90,088	27,188
Redemptions and maturities of U.S. Treasury Bills and fixed maturity securities	153,201	66,318	160,402
Acquisitions of businesses, net of cash acquired	(8,604)	(10,594)	(456)
Purchases of property, plant and equipment and equipment held for lease	(19,409)	(15,464)	(13,276)
Other	685	239	770
Net cash flows from investing activities	(32,663)	(87,601)	29,392
Cash flows from financing activities:			
Proceeds from borrowings of insurance and other businesses	2,133	7,822	2,961
Repayments of borrowings of insurance and other businesses	(5,921)	(1,502)	(3,032)
Proceeds from borrowings of railroad, utilities and energy businesses	5,684	4,873	3,959
Repayments of borrowings of railroad, utilities and energy businesses	(5,390)	(2,426)	(4,016)
Changes in short term borrowings, net	2,407	(596)	(624)
Acquisitions of treasury stock	(9,171)	(7,854)	(27,061)
Other, principally transactions with noncontrolling interests	(4,147)	(1,979)	(695)
Net cash flows from financing activities	(14,405)	(1,662)	(28,508)
Effects of foreign currency exchange rate changes	116	(394)	(1)
Increase (decrease) in cash and cash equivalents and restricted cash	2,244	(52,307)	40,310
Cash and cash equivalents and restricted cash at the beginning of the year*	36,399	88,706	48,396
Cash and cash equivalents and restricted cash at the end of the year*	\$ 38,643	\$ 36,399	\$ 88,706
* Cash and cash equivalents and restricted cash at the end of year are comprised of:			
Insurance and Other	\$ 33,672	\$ 32,260	\$ 85,319
Railroad, Utilities and Energy	4,350	3,551	2,865
Restricted cash included in other assets	621	588	522
	<u>\$ 38,643</u>	<u>\$ 36,399</u>	<u>\$ 88,706</u>

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2023

(1) Significant accounting policies and practices

(a) Nature of operations and basis of consolidation

Berkshire Hathaway Inc. ("Berkshire") is a holding company owning subsidiaries engaged in numerous diverse business activities, including insurance and reinsurance, freight rail transportation, utilities and energy, manufacturing, service and retailing. In these notes the terms "us," "we," or "our" refer to Berkshire and its consolidated subsidiaries. Further information regarding our reportable business segments is contained in Note 26. Information concerning significant business acquisitions completed over the past three years appears in Note 2. We believe that reporting the Railroad, Utilities and Energy subsidiaries separately is appropriate given the relative significance of their long-lived assets, capital expenditures and debt, which is not guaranteed by Berkshire.

The accompanying Consolidated Financial Statements include the accounts of Berkshire consolidated with the accounts of all subsidiaries and affiliates in which we hold a controlling financial interest as of the financial statement date. Normally a controlling financial interest reflects ownership of a majority of the voting interests. We consolidate variable interest entities ("VIE") when we possess both the power to direct the activities of the VIE that most significantly affect its economic performance, and we (a) are obligated to absorb the losses that could be significant to the VIE or (b) hold the right to receive benefits from the VIE that could be significant to the VIE. Intercompany accounts and transactions have been eliminated. Certain immaterial balances in the Consolidated Financial Statements have been reclassified in prior years to conform to current year presentations.

(b) Use of estimates in preparation of financial statements

We prepare our Consolidated Financial Statements in conformity with accounting principles generally accepted in the United States ("GAAP") which requires us to make estimates and assumptions that affect the reported amounts of certain assets and liabilities at the balance sheet date and the reported amounts of certain revenues and expenses during the period. Our estimates of unpaid losses and loss adjustment expenses are subject to considerable estimation error due to the inherent uncertainty in projecting ultimate claim costs. In addition, estimates and assumptions associated with determinations of deferred charges on retroactive reinsurance contracts, fair values of certain financial instruments and evaluations of goodwill and indefinite-lived intangible assets for impairment require considerable judgment. Actual results may differ from the estimates used in preparing our Consolidated Financial Statements.

Our operating businesses have been impacted to varying degrees in recent years by government and private sector actions to mitigate the adverse economic effects of the COVID-19 virus and its variants as well as by the development of geopolitical conflicts, supply chain disruptions and government actions to slow inflation. The economic effects from these events over longer terms cannot be reasonably estimated at this time. Accordingly, significant estimates used in the preparation of our Consolidated Financial Statements, including those associated with evaluations of certain long-lived assets, goodwill and other intangible assets for impairment, expected credit losses on amounts owed to us and the estimations of certain losses assumed under insurance and reinsurance contracts, may be subject to significant adjustments in future periods.

(c) Cash and cash equivalents and short-term investments in U.S. Treasury Bills

Cash equivalents consist of demand deposit and money market accounts and investments with maturities of three months or less when purchased. Short-term investments in U.S. Treasury Bills have maturities exceeding three months and less than one year at the time of purchase.

(d) Investments in fixed maturity securities

We classify investments in fixed maturity securities on the acquisition date and at each balance sheet date. Securities classified as held-to-maturity are carried at amortized cost, reflecting the ability and intent to hold the securities to maturity. Securities classified as trading are acquired with the intent to sell in the near term and are carried at fair value with changes in fair value reported in earnings. All other securities are classified as available-for-sale and are carried at fair value. Our investments in fixed maturity securities are classified as available-for-sale. We amortize the difference between the original cost and maturity value of a fixed maturity security to earnings using the interest method.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(d) Investments in fixed maturity securities

We record investment gains and losses on available-for-sale fixed maturity securities in earnings when the securities are sold. For securities in an unrealized loss position, we recognize a loss in earnings for the excess of amortized cost over fair value if we intend to sell before the price recovers. As of the balance sheet date, we evaluate whether the other unrealized losses are attributable to credit losses or other factors. We consider the severity of the decline in value, creditworthiness of the issuer and other relevant factors. We record an allowance for credit losses, limited to the excess of amortized cost over fair value, with a corresponding charge to earnings if the present value of estimated expected cash flows is less than the present value of contractual cash flows. The allowance may be subsequently increased or decreased based on the prevailing facts and circumstances. The portion of the unrealized loss that we believe is not related to a credit loss is recognized in other comprehensive income.

(e) Investments in equity securities

We carry investments in equity securities at fair value and record the changes in fair values in the Consolidated Statements of Earnings as a component of investment gains and losses.

(f) Investments under the equity method

We utilize the equity method to account for investments when we possess the ability to exercise significant influence, but not control, over the operating and financial policies of the investee. The ability to exercise significant influence is presumed when the investor possesses more than 20% of the voting interests of the investee. This presumption may be overcome based on specific facts and circumstances that demonstrate that the ability to exercise significant influence is restricted. We apply the equity method to investments in common stock and other investments when such investments possess substantially identical subordinated interests to common stock, and do not apply the equity method to investments that are not in-substance common stock as defined by GAAP.

In applying the equity method, we record the investment at cost and subsequently increase or decrease the carrying amount of the investment by our proportionate share of the net earnings or losses and other comprehensive income of the investee. We record dividends or other equity distributions as reductions in the carrying value of the investment. If net losses reduce our carrying amount to zero, additional net losses may be recorded if other investments in the investee are at-risk, even if we have not committed to provide financial support to the investee. Such additional equity method losses are based upon the change in our claim on the investee's book value.

(g) Loans and finance receivables

Loans and finance receivables are primarily manufactured home loans, and to a lesser extent, commercial loans and site-built home loans. We carry substantially all loans and finance receivables at amortized cost, net of allowances for expected credit losses, based on our ability and intent to hold such loans to maturity. Acquisition costs and loan origination and commitment costs paid and fees received, as well as acquisition premiums or discounts, are amortized to investment income as yield adjustments over the lives of the loans.

Measurements of expected credit losses include provisions for non-collection, whether the risk is probable or remote. Expected credit losses on manufactured home loans are based on the net present value of future principal payments less estimated expenses related to the charge-off and foreclosure of expected uncollectible loans and include provisions for loans that are not in foreclosure. Our principal credit quality indicator is whether the loans are performing. Expected credit loss estimates consider historical default rates, collateral recovery rates, historical runoff rates, interest rates, reductions of future cash flows for modified loans and the historical time elapsed from last payment until foreclosure, among other factors. In addition, our estimates consider current conditions and reasonable and supportable forecasts.

Loans are considered delinquent when payments are more than 30 days past due. We place loans over 90 days past due on nonaccrual status and accrued but uncollected interest is reversed. Subsequent collections on the loans are first applied to the principal and interest owed for the most delinquent amount. We resume interest income accrual once a loan is less than 90 days delinquent.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(g) Loans and finance receivables

Loans are considered non-performing when the foreclosure process has started. Once a loan is in the process of foreclosure, interest income is not recognized until the foreclosure is cured or the loan is modified. Once a modification is complete, interest income is recognized based on the terms of the new loan. Foreclosed loans are charged off when the collateral is sold. Loans not in foreclosure are evaluated for charge-off based on individual circumstances concerning the future collectability of the loan and the condition of the collateral securing the loan.

(h) Other receivables

Other receivables include balances due from customers, insurance premiums receivable and reinsurance losses recoverable, as well as other receivables. Trade receivables, insurance premiums receivables and other receivables are primarily short-term in nature with stated collection terms of less than one year from the date of origination. Reinsurance recoverables are comprised of amounts ceded under reinsurance contracts or pursuant to mandatory government-sponsored insurance programs. Reinsurance recoverables relate to unpaid losses and loss adjustment expenses arising from property and casualty contracts and benefits under life and health contracts. Receivables are stated net of estimated allowances for uncollectible balances.

We measure expected credit losses primarily utilizing credit loss history. In addition, our credit loss estimates consider current conditions and reasonable and supportable forecasts. In evaluating expected credit losses of reinsurance recoverables on unpaid losses, we review the credit quality of the counterparty and consider right-of-offset provisions within reinsurance contracts and other forms of credit enhancement including collateral, guarantees and other available information. We charge off receivables against the allowances after reasonable collection efforts are exhausted.

(i) Derivatives

We carry assets and liabilities arising from derivative contracts at fair value in other assets and accounts payable, accruals and other liabilities in our Consolidated Balance Sheets. Balances are net of reductions permitted under master netting agreements with counterparties. We record the changes in fair value of derivative contracts that do not qualify as hedging instruments for financial reporting purposes in earnings or, if such contracts involve our regulated utilities subsidiaries, as regulatory assets or liabilities when inclusion in regulated rates is probable.

(j) Fair value measurements

As defined under GAAP, fair value is the price that would be received to sell an asset or paid to transfer a liability between market participants in the principal market or in the most advantageous market when no principal market exists. Adjustments to transaction prices or quoted market prices may be required in illiquid or disorderly markets when estimating fair value. In such circumstances, alternative valuation techniques may be appropriate to determine the value that would be received to sell an asset or paid to transfer a liability in an orderly transaction. Market participants are assumed to be independent, knowledgeable, and able and willing to transact an exchange and not acting under duress. Our nonperformance or credit risk is considered in determining the fair value of liabilities. Considerable judgment may be required in interpreting market data used to develop the estimates of fair value. Accordingly, estimates of fair value presented herein are not necessarily indicative of the amounts that could be realized in a current or future market exchange.

(k) Inventories

Inventories consist of manufactured goods, goods or products acquired for resale and homes constructed for sale. Manufactured inventory costs include materials, direct and indirect labor and factory overhead. At December 31, 2023, we used the last-in-first-out ("LIFO") method to value approximately 30% of consolidated inventories with the remainder primarily determined under first-in-first-out and average cost methods. Non-LIFO inventories are stated at the lower of cost or net realizable value. The excess of current or replacement costs over costs determined under LIFO was approximately \$2.3 billion as of December 31, 2023 and \$2.5 billion as of December 31, 2022.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(l) Property, plant and equipment and equipment held for lease

We use property, plant and equipment in our operations. We also own equipment that we lease to others under lease contracts. We record additions to such property at cost, which includes asset additions, improvements and betterments. With respect to constructed assets, all materials, direct labor and contract services as well as certain indirect costs are capitalized. Indirect costs include interest over the construction period. With respect to constructed assets of our utility and energy subsidiaries that are subject to authoritative guidance for regulated operations, capitalized costs also include an allowance for funds used during construction, which represents the cost of equity funds used to finance the construction of the regulated facilities. Normal repairs and maintenance and other costs that do not improve the property, extend its useful life or otherwise do not meet capitalization criteria are charged to expense as incurred.

Depreciation of assets of our regulated utilities and railroad is generally determined using group depreciation methods where rates are based on periodic depreciation studies approved by the applicable regulator. Under group depreciation, a composite rate is applied to the gross investment in a particular class of property, despite differences in the service life or salvage value of individual property units within the same class. When such assets are retired or sold, no gain or loss is recognized. Gains or losses on disposals of all other assets are recorded through earnings.

Ranges of estimated useful lives of depreciable assets unique to our railroad business are as follows: track structure and other roadway – 10 to 100 years and locomotives, freight cars and other equipment – 6 to 45 years. Ranges of estimated useful lives of assets unique to our utilities and energy businesses are as follows: utility generation, transmission and distribution systems – 5 to 80 years, interstate natural gas pipeline assets – 3 to 80 years, independent power plants and other assets – 2 to 50 years, buildings and improvements – 10 to 30 years and machinery, equipment and other – 3 to 10 years. We depreciate property, plant and equipment used by our other businesses to the estimated salvage value primarily using the straight-line method over estimated service lives. Ranges of estimated service lives of depreciable assets used in our other businesses are as follows: buildings and improvements – 5 to 50 years, machinery and equipment – 3 to 25 years and furniture, fixtures and other – 3 to 15 years. We depreciate the equipment held for lease to estimated salvage value primarily using the straight-line method over estimated useful lives ranging from 3 to 35 years. We use declining balance depreciation methods for assets when the revenue-earning power of the asset is greater during the earlier years of its life.

We evaluate property, plant and equipment and equipment held for lease for impairment when events or changes in circumstances indicate that the carrying value of such assets may not be recoverable or when the assets are held for sale. Upon the occurrence of a triggering event, we assess whether the estimated undiscounted cash flows expected from the use of the asset and the residual value from the ultimate disposal of the asset exceeds the carrying value. If the carrying value exceeds the estimated recoverable amounts, we reduce the carrying value to fair value and record an impairment loss in earnings, except with respect to impairment of assets of our regulated utility and energy subsidiaries where the impacts of regulation are considered in evaluating the carrying value.

(m) Leases

We are party to contracts where we lease property from others. When we lease assets from others, we record right-of-use assets and lease liabilities. Right-of-use assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. In this regard, lease payments include fixed payments and variable payments that depend on an index or rate. The lease term is considered the non-cancellable lease period. Certain lease contracts contain renewal options or other terms that provide for variable payments based on performance or usage. Options are not included in determining right-of-use assets or lease liabilities unless it is reasonably certain that options will be exercised. Generally, incremental borrowing rates are used in measuring lease liabilities. Right-of-use assets are subject to review for impairment. As permitted under GAAP, for some leases we do not separate lease components from non-lease components by class of asset and we do not record assets or liabilities for leases with terms of one year or less.

(n) Goodwill and other intangible assets

Goodwill represents the excess of the acquisition price of a business over the acquisition date values of identified net assets of that business. We evaluate goodwill for impairment at least annually. When evaluating goodwill for impairment, we estimate the fair value of the reporting unit. Several methods may be used to estimate a reporting unit's fair value, including market quotations, asset and liability fair values and other valuation techniques, including, but not limited to, discounted projected future net earnings or net cash flows and multiples of earnings. When the carrying amount of a reporting unit, including goodwill, exceeds the estimated fair value, the excess up to the balance of goodwill is charged to earnings as an impairment loss.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(n) Goodwill and other intangible assets

Intangible assets with indefinite lives are also tested for impairment at least annually and when events or changes in circumstances indicate that, more-likely-than-not, the asset is impaired. Significant judgment is required in estimating fair values and performing goodwill and indefinite-lived intangible asset impairment tests. We amortize intangible assets with finite lives in a pattern that reflects the expected consumption of related economic benefits or on a straight-line basis over the estimated economic useful lives. Intangible assets with finite lives are reviewed for impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable.

(o) Revenue recognition

We earn insurance premiums on prospective property/casualty insurance and reinsurance contracts over the loss exposure or coverage period in proportion to the level of protection provided. We earn premiums, in most cases, ratably over the term of the contract with unearned premiums computed on a monthly or daily pro-rata basis. Premiums on retroactive property/casualty reinsurance contracts are normally received in full and are fully earned at the inception of the contracts, as all underlying loss events covered by the policies occurred prior to contract inception. Premiums for life reinsurance and periodic payment annuity contracts are earned when due. Premiums for periodic payment annuity contracts are fully received and earned at the inception of the contracts. Premiums earned are stated net of amounts ceded to reinsurers. Premiums earned on contracts with experience-rating provisions reflect estimated loss experience under such contracts.

Sales and service revenues are recognized when goods or services are transferred to a customer. A good or service is transferred when (or as) the customer obtains control of that good or service. Revenues are based on the consideration we expect to receive in connection with our promises to deliver goods and services to our customers.

We manufacture and/or distribute a wide variety of industrial, building and consumer products. Our sales contracts provide customers with products directly or through wholesale and retail channels in exchange for consideration specified under the contracts. Contracts generally represent customer orders for individual products at stated prices. Sales contracts may contain either single or multiple performance obligations. In instances where contracts contain multiple performance obligations, we allocate the revenue to each obligation based on the relative stand-alone selling prices of each product or service.

Sales revenues reflect reductions for returns, allowances, late delivery penalties, volume discounts and other incentives, some of which may be contingent on future events. In certain customer contracts, sales revenues include certain state and local excise taxes billed to customers on specified products when those taxes are levied directly upon us by the taxing authorities. Sales revenues exclude sales taxes and value-added taxes collected on behalf of taxing authorities. Sales revenues include consideration for shipping and other fulfillment activities performed prior to the customer obtaining control of the goods. We also elect to treat consideration for such services performed after control has passed to the customer as sales revenue.

Product sales revenues are generally recognized at a point in time when control of the product transfers to the customer, which coincides with customer pickup or product delivery or acceptance, depending on terms of the arrangement. We recognize sales revenues and related costs with respect to certain contracts over time, relating to certain bridge and structural steel, castings, forgings and aerostructures contracts. Control of the product units under these contracts transfers continuously to the customer as the product is manufactured. These products generally have no alternative use and the contract requires the customer to provide reasonable compensation if terminated for reasons other than breach of contract.

The primary performance obligation under our freight rail transportation service contracts is to move freight from a point of origin to a point of destination. The performance obligations are represented by bills of lading which create a series of distinct services that have a similar pattern of transfer to the customer. The revenues for each performance obligation are based on various factors including the product being shipped, the origin and destination pair and contract incentives, which are outlined in various private rate agreements, common carrier public tariffs, interline foreign road agreements and pricing quotes. The transaction price is generally a per car/unit amount to transport railcars from a specified origin to a specified destination. Freight revenues are recognized over time as the service is performed because the customer simultaneously receives and consumes the benefits of the service. Revenues recognized represent the portion of the service completed as of the balance sheet date. Invoices for freight transportation services are generally issued to customers and paid within 30 days or less. Customer incentives, which are primarily provided for shipping a specified cumulative volume or shipping to/from specific locations, are recorded as a reduction to revenue on a pro-rata basis based on actual or projected future customer shipments.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(o) Revenue recognition

Utilities and energy revenues derive primarily from regulated electricity and natural gas sales and sales of fuel. Regulated electricity and natural gas revenues are primarily tariff-based sales arrangements approved by various regulatory commissions. These tariff-based revenues are mainly comprised of energy, transmission, distribution and natural gas and have performance obligations to deliver energy products and services to customers which are satisfied over time as energy is delivered or services are provided. Such revenues are equivalent to the amounts we have the right to invoice and correspond directly with the value to the customer of the performance to date and include billed and unbilled amounts. Payments from customers are generally due within 30 days of billing. Rates charged for regulated energy products and services are established by regulators or contractual arrangements that establish the transaction price, as well as the allocation of price among the separate performance obligations. When preliminary regulated rates are permitted to be billed prior to final approval by the applicable regulator, certain revenue collected may be subject to refund and a liability for estimated refunds is accrued. Nonregulated energy revenues include fuel sales, and to a lesser extent, renewable energy and other products. Fuels sold include diesel, gasoline and related products sold on a retail and wholesale basis. Fuel sales are recognized at the point-in-time when the product is delivered, and control is transferred to the customer, and include related excise taxes.

Other service revenues derive from contracts with customers in which performance obligations are satisfied over time, where customers receive and consume benefits as we perform the services or at a point in time when the services are completed. Other service revenues primarily derive from real estate brokerage, automotive repair, aircraft management, aviation training, franchising activities and news distribution.

Leasing revenue is generally recognized ratably over the term of the lease or based on usage, if applicable under the terms of the contract. A substantial portion of our lessor contracts are classified as operating leases.

(p) Losses and loss adjustment expenses

We record liabilities for unpaid losses and loss adjustment expenses under property/casualty insurance and reinsurance contracts for loss events that have occurred on or before the balance sheet date. Such liabilities represent the estimated ultimate payment amounts without discounting for time value.

We base liability estimates on (1) loss reports from policyholders and cedents, (2) individual case estimates and (3) estimates of incurred but not reported losses. Losses and loss adjustment expenses in the Consolidated Statements of Earnings include paid claims, claim settlement costs and changes in estimated claim liabilities. Losses and loss adjustment expenses in the Consolidated Statements of Earnings are stated net of amounts recovered and estimates of amounts recoverable under ceded reinsurance contracts. Reinsurance contracts do not relieve the ceding company of its obligations to indemnify policyholders with respect to the underlying insurance and reinsurance contracts.

(q) Retroactive reinsurance contracts

We record liabilities for unpaid losses and loss adjustment expenses under short duration retroactive reinsurance contracts consistent with property/casualty insurance and reinsurance contracts described in Note 1(p). With respect to retroactive reinsurance contracts, we also record deferred charge assets at the inception of the contracts, representing the excess, if any, of the estimated ultimate claim liabilities over the premiums earned. We subsequently amortize the deferred charge assets over the expected claim settlement periods using the interest method. Changes to the estimated timing or amount of future loss payments also produce changes in deferred charge assets. We apply changes in such estimates retrospectively and the resulting changes in deferred charge assets, together with periodic amortization, are included in insurance losses and loss adjustment expenses in the Consolidated Statements of Earnings.

(r) Insurance policy acquisition costs

We capitalize the direct incremental costs that relate to the successful sale of insurance contracts, subject to ultimate recoverability. Direct incremental acquisition costs include commissions, premium taxes and certain other costs associated with successful efforts. We expense all other underwriting costs as incurred. For short duration property and casualty insurance contracts, we amortize deferred policy acquisition costs over the contract term as the related premiums are earned. For long-duration life and health insurance contracts, we amortize deferred policy acquisition costs at a constant level based on the expected amount of insurance in-force and the expected term of the contract using the assumptions consistent with those used in determining related insurance liabilities. Deferred policy acquisition costs are included in other assets and were approximately \$4.6 billion and \$3.8 billion at December 31, 2023 and 2022, respectively, of which \$3.9 billion and \$3.2 billion, respectively, related to property and casualty insurance contracts.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(s) Life, annuity and health insurance benefits

Liabilities for life, annuity and health insurance benefits under long-duration insurance contracts represent the present value of expected future cash outflows from future benefit payments and non-acquisition variable expenses, less the present value of expected future “net premiums” which is the portion of gross premiums required to provide for all expected future benefits and variable expenses. Periodic payment and annuity reinsurance contracts are regarded as limited payment contracts under GAAP. Such liabilities include the present value of expected future payments based on the discount rates used to measure benefit liabilities and a deferred profit liability, representing the unamortized excess of gross premiums received over the net premiums established at the inception of the contract.

In estimating future cash flows, we consider the timing and amount of future claims, premiums and expenses, which require estimates of future investment yields, expected mortality, morbidity and lapse rates. Cash flow assumptions are reviewed at least annually, with the effects of assumption changes recorded in earnings. The discount rate assumptions used to measure benefit liabilities are revised each reporting period based on the prevailing upper-medium grade corporate bond yields (generally single-A rated credit ratings) that reflect the duration characteristics and currency attributes of the liabilities. In measuring benefit liabilities, we generally group contracts by contract issue year. The effects of changes in discount rates are recorded in other comprehensive income.

(t) Regulated utilities and energy businesses

Certain energy subsidiaries prepare their financial statements in accordance with authoritative guidance for regulated operations, reflecting the economic effects of regulation from the ability to recover certain costs from customers and the requirement to return revenues to customers in the future through the regulated rate-setting process. Accordingly, certain costs are deferred as regulatory assets and certain income is accrued as regulatory liabilities.

Regulatory assets and liabilities will be amortized into operating expenses and revenues over various future periods. Regulatory assets and liabilities are continually assessed for probable future inclusion in regulatory rates by considering factors such as applicable regulatory or legislative changes and recent rate orders received by other regulated entities. If future inclusion in regulatory rates ceases to be probable, the amount no longer probable of inclusion in regulatory rates is charged or credited to earnings (or other comprehensive income, if applicable) or returned to customers.

(u) Foreign currency

The accounts of certain subsidiaries are measured using functional currencies other than the U.S. Dollar. Revenues and expenses in the financial statements of these subsidiaries are translated into U.S. Dollars at the average exchange rate for the period and assets and liabilities are translated at the exchange rate as of the end of the reporting period. The net effects of translating the financial statements of these subsidiaries are included in shareholders' equity as a component of accumulated other comprehensive income. Gains and losses arising from transactions denominated in a currency other than the functional currency of the entity, including gains and losses from the remeasurement of assets and liabilities due to changes in currency exchange rates, are included in earnings.

(v) Income taxes

Berkshire files a consolidated federal income tax return in the U.S., which includes eligible subsidiaries. In addition, we file income tax returns in U.S. state and local and in foreign jurisdictions. Provisions for current income tax liabilities are calculated and accrued on income and expense amounts expected to be included in the income tax returns for the current year. Income taxes reported in earnings also include deferred income tax provisions.

Deferred income tax assets and liabilities are computed on differences between the financial statement bases and tax bases of assets and liabilities at the enacted tax rates. Changes in deferred income tax assets and liabilities associated with components of other comprehensive income are charged or credited directly to other comprehensive income. Otherwise, changes in deferred income tax assets and liabilities are included as a component of income tax expense. The effect on deferred income tax assets and liabilities attributable to changes in enacted tax rates are charged or credited to income tax expense in the period of enactment. Valuation allowances are established for certain deferred income tax assets when realization is not likely.

Liabilities are established for uncertain tax positions taken or positions expected to be taken in income tax returns when such positions, in our judgment, do not meet a more-likely-than-not threshold based on the technical merits of the positions. Estimated interest and penalties related to uncertain tax positions are included as a component of income tax expense.

Notes to Consolidated Financial Statements

(1) Significant accounting policies and practices

(w) Accounting pronouncement adopted in 2023

We adopted Accounting Standards Update 2018-12, “Targeted Improvements to the Accounting for Long-Duration Contracts” (“ASU 2018-12”), as of January 1, 2023, which modified the accounting, reporting and disclosures related to our long-duration insurance contracts. See Note 1(s). ASU 2018-12 was applied retrospectively as of January 1, 2021 (the “transition date”) to contracts in-force as of the transition date. As of the transition date, the after-tax impact of changes in cash flow assumptions were recorded in retained earnings and the after-tax effect of changes in discount rate assumptions were recorded in accumulated other comprehensive income.

Certain items in the accompanying Consolidated Financial Statements in 2022 and 2021 were revised in connection with the retrospective adoption. The revisions in 2022 and 2021 were primarily attributable to the effects of discount rate changes, which were recorded in accumulated other comprehensive income, and are shown in the accompanying Consolidated Statements of Comprehensive Income and Statements of Changes in Shareholders’ Equity. We also increased previously reported net earnings attributable to Berkshire Hathaway shareholders by \$142 million in 2021 and \$60 million in 2022. We believe such effects are immaterial to our Consolidated Financial statements.

A summary of the effects of adopting ASU 2018-12 on selected financial statement line items as of the transition date follows (in millions).

	Balance at December 31, 2020	Increase (decrease)	Balance at January 1, 2021
Life, annuity and health insurance benefits	\$ 21,616	\$ 7,220	\$ 28,836
Other policyholder liabilities	8,670	1,697	10,367
Income taxes, principally deferred	74,098	(1,695)	72,403
Accumulated other comprehensive income	(4,243)	(5,751)	(9,994)
Retained earnings	444,626	(677)	443,949
Berkshire Hathaway shareholders’ equity	443,164	(6,428)	436,736

(x) Accounting pronouncements to be adopted subsequent to December 31, 2023

In March 2023, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update 2023-02, “Accounting for Investments in Tax Credit Structures Using the Proportional Amortization Method” (“ASU 2023-02”). ASU 2023-02 permits reporting entities to elect to account for tax equity investments from which the income tax credits are received using the proportional amortization method at the program level if certain conditions are met. Currently, the proportional amortization method is limited to certain affordable housing tax credit investments. ASU 2023-02 is effective for fiscal years beginning after December 15, 2023. We believe that the adoption of ASU 2023-02 will not have a material effect on our Consolidated Financial Statements.

In November 2023, the FASB issued Accounting Standards Update 2023-07, “Improvements to Reportable Segment Disclosures” (“ASU 2023-07”), which requires disclosures of significant expenses by segment and interim disclosure of items that were previously required on an annual basis. ASU 2023-07 is to be applied on a retrospective basis and is effective for fiscal years beginning after December 15, 2023 and interim periods within fiscal years beginning after December 15, 2024. We are evaluating the impact of ASU 2023-07 on disclosures in our Consolidated Financial Statements.

In December 2023, the FASB issued Accounting Standards Update 2023-09, “Improvements to Income Tax Disclosures” (“ASU 2023-09”), which provides for additional disclosures primarily related to the income tax rate reconciliations and income taxes paid. ASU 2023-09 requires entities to annually disclose the income tax rate reconciliation using both amounts and percentages, considering several categories of reconciling items, including state and local income taxes, foreign tax effects, tax credits and nontaxable or nondeductible items, among others. Disclosure of the reconciling items is subject to a quantitative threshold and disaggregation by nature and jurisdiction. ASU 2023-09 also requires entities to disclose net income taxes paid or received to federal, state and foreign jurisdictions, as well as by individual jurisdiction, subject to a five percent quantitative threshold. ASU 2023-09 may be adopted on a prospective or retrospective basis and is effective for fiscal years beginning after December 15, 2024 with early adoption permitted. We are evaluating the impact of ASU 2023-09 on disclosures in our Consolidated Financial Statements.

Notes to Consolidated Financial Statements

(2) Significant business acquisitions

Our long-held acquisition strategy is to acquire businesses that have consistent earning power, good returns on equity and able and honest management. Financial results attributable to business acquisitions are included in our Consolidated Financial Statements beginning on their respective acquisition dates.

On January 31, 2023, we acquired an additional 41.4% interest in Pilot Travel Centers, LLC ("PTC") for approximately \$8.2 billion. The acquisition increased our interest to 80%, representing a controlling interest in PTC for financial reporting purposes as of that date. We began consolidating PTC's financial statements in our Consolidated Financial Statements on February 1, 2023. Since PTC's most significant business activities involve purchasing and selling fuel (energy) on a wholesale and retail basis, and other energy-related businesses, we include PTC within the railroad, utilities and energy sections of our Consolidated Balance Sheet and Consolidated Statement of Earnings beginning February 1, 2023. We previously owned a 38.6% interest in PTC, which we accounted for under the equity method through the end of January 2023.

PTC operates more than 650 travel center and 75 fuel-only locations across 44 U.S. states and five Canadian provinces, primarily under the names Pilot or Flying J, as well as large wholesale fuel and fuel marketing businesses in the U.S. PTC also sells diesel fuel at other locations in the U.S. and Canada through various arrangements with third party travel centers and operates a water disposal business in the oil fields sector. PTC's revenues and net earnings attributable to Berkshire shareholders for the eleven months ending December 31, 2023 were \$51.7 billion and \$603 million, respectively. In applying the acquisition method of accounting, we remeasured our previously held 38.6% investment in PTC to fair value and recognized a one-time, non-cash remeasurement gain of approximately \$3.0 billion, representing the excess of the fair value of that interest over the carrying value under the equity method. In addition, we valued the noncontrolling interests at fair value as of January 31, 2023.

Pilot Corporation, the holder of the remaining noncontrolling interests in PTC, had an annual option to require us to redeem for cash all or a portion of its interests beginning in 2024. The redemption price was to be based on a multiple of PTC's earnings for the preceding year, with specified other adjustments, including the amount of PTC's net debt. Pilot Corporation filed a lawsuit against Berkshire during the fourth quarter of 2023 concerning the application of certain terms underlying the formula for calculating the purchase price to be paid upon exercise of the option. Subsequently, Berkshire filed a counterclaim against Pilot Corporation. All litigation between Pilot Corporation and Berkshire was settled in January 2024, and we acquired Pilot Corporation's noncontrolling interest in PTC for \$2.6 billion, increasing our interest in PTC to 100%.

A summary of the values of PTC's assets acquired, liabilities assumed and redeemable noncontrolling interests as of January 31, 2023 are summarized as follows (in millions). Goodwill from this acquisition is expected to be deductible for income tax purposes.

<u>Assets acquired</u>		<u>Liabilities assumed and noncontrolling interests</u>	
Property, plant and equipment	\$ 8,015	Notes payable	\$ 5,876
Goodwill	6,605	Other liabilities	4,918
Other intangible assets	6,853		
Other assets	7,047	Liabilities assumed	10,794
		Noncontrolling interests, predominantly redeemable	3,361
Assets acquired	<u>\$ 28,520</u>	Liabilities assumed and noncontrolling interests	<u>\$ 14,155</u>
Net assets	<u>\$ 14,365</u>		

On October 19, 2022, Berkshire acquired all of the outstanding common stock of Alleghany Corporation ("Alleghany") for \$11.5 billion. Alleghany operates property and casualty reinsurance and insurance businesses and owns several non-financial businesses. Goodwill arising from Berkshire's acquisition is not expected to be deductible for income tax purposes. A summary of the values of the Alleghany assets acquired and liabilities assumed as of October 19, 2022 follows (in millions).

<u>Assets acquired</u>		<u>Liabilities assumed</u>	
Cash, cash equivalents and U.S. Treasury Bills	\$ 3,762	Unpaid losses and loss adjustment expenses	\$ 15,080
Investments in fixed maturity and equity securities	15,982	Unearned premiums	3,536
Loans, receivables and other assets	9,287	Notes payable	2,169
Goodwill	3,900	Other liabilities	3,300
Other intangible assets	2,659		
Assets acquired	<u>\$ 35,590</u>	Liabilities assumed	<u>\$ 24,085</u>
Net assets	<u>\$ 11,505</u>		

Notes to Consolidated Financial Statements

(2) Significant business acquisitions

Certain unaudited pro forma revenue and consolidated earnings (loss) data for the year ended December 31, 2022 as if the Alleghany and PTC acquisitions were completed on the same terms at the beginning of 2022 follows (in millions, except per share amounts).

	2022
Revenues	\$ 383,115
Net earnings (loss) attributable to Berkshire Hathaway shareholders	(23,947)
Net earnings (loss) per equivalent Class A common share	(16,303)

On September 1, 2023, a Berkshire Hathaway Energy (“BHE”) subsidiary acquired an additional 50% limited partner interest in Cove Point LNG, LP (“Cove Point”) for \$3.3 billion, which increased our economic interest from 25% to 75%. Prior to the transaction, we also owned 100% of the general partner interests. We previously treated Cove Point as a consolidated subsidiary for financial reporting purposes because we concluded we have the power to direct the activities that most significantly affect Cove Point, as well as the obligation to absorb losses and benefits that could be significant to Cove Point. Accordingly, the interest acquired in the third quarter was an acquisition of a noncontrolling interest. We recorded a charge based on Berkshire’s ownership percentage of BHE of \$667 million to capital in excess of par for the excess of the consideration paid over the carrying value of the noncontrolling interest acquired and deferred income tax assets arising from the transaction.

(3) Investments in fixed maturity securities

Investments in fixed maturity securities are summarized by type below (in millions).

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
<u>December 31, 2023</u>				
U.S. Treasury, U.S. government corporations and agencies	\$ 10,308	\$ 14	\$ (53)	\$ 10,269
Foreign governments	11,788	58	(41)	11,805
Corporate bonds	1,212	241	(4)	1,449
Other	217	21	(3)	235
	<u>\$ 23,525</u>	<u>\$ 334</u>	<u>\$ (101)</u>	<u>\$ 23,758</u>
<u>December 31, 2022</u>				
U.S. Treasury, U.S. government corporations and agencies	\$ 10,039	\$ 12	\$ (249)	\$ 9,802
Foreign governments	10,454	50	(177)	10,327
Corporate bonds	1,945	256	(6)	2,195
Other	2,735	77	(8)	2,804
	<u>\$ 25,173</u>	<u>\$ 395</u>	<u>\$ (440)</u>	<u>\$ 25,128</u>

Approximately 95% of our foreign government holdings were rated AA or higher by at least one of the major rating agencies as of December 31, 2023. The amortized cost and estimated fair value of fixed maturity securities at December 31, 2023 are summarized below by contractual maturity dates (in millions). Actual maturities may differ from contractual maturities due to prepayment rights held by issuers.

	Due in one year or less	Due after one year through five years	Due after five years through ten years	Due after ten years	Mortgage-backed securities	Total
Amortized cost	\$ 18,888	\$ 3,744	\$ 611	\$ 128	\$ 154	\$ 23,525
Fair value	18,875	3,754	823	138	168	23,758

Notes to Consolidated Financial Statements

(4) Investments in equity securities

Investments in equity securities are summarized as follows (in millions).

	Cost Basis	Net Unrealized Gains	Fair Value
December 31, 2023 *			
Banks, insurance and finance	\$ 27,136	\$ 51,176	\$ 78,312
Consumer products	34,248	166,895	201,143
Commercial, industrial and other	48,032	26,355	74,387
	<u>\$ 109,416</u>	<u>\$ 244,426</u>	<u>\$ 353,842</u>

* Approximately 79% of the aggregate fair value was concentrated in five companies (American Express Company – \$28.4 billion; Apple Inc. – \$174.3 billion; Bank of America Corporation – \$34.8 billion; The Coca-Cola Company – \$23.6 billion and Chevron Corporation – \$18.8 billion).

	Cost Basis	Net Unrealized Gains	Fair Value
December 31, 2022 *			
Banks, insurance and finance	\$ 25,893	\$ 43,663	\$ 69,556
Consumer products	40,508	112,384	152,892
Commercial, industrial and other	65,209	21,136	86,345
	<u>\$ 131,610</u>	<u>\$ 177,183</u>	<u>\$ 308,793</u>

* Approximately 75% of the aggregate fair value was concentrated in five companies (American Express Company – \$22.4 billion; Apple Inc. – \$119.0 billion; Bank of America Corporation – \$34.2 billion; The Coca-Cola Company – \$25.4 billion and Chevron Corporation – \$30.0 billion).

In 2019, we invested \$10 billion in non-voting Cumulative Perpetual Preferred Stock of Occidental Petroleum Corporation (“Occidental”) and in Occidental common stock warrants. During 2022, we began acquiring common stock of Occidental. Our aggregate voting interest in Occidental common stock exceeded 20% on August 4, 2022, and we adopted the equity method as of that date. See Note 5. Our investments in the Occidental preferred stock and Occidental common stock warrants are recorded at fair value and included as equity securities in our Consolidated Balance Sheets, as such investments are not in-substance common stock under GAAP and are not eligible for the equity method.

The Occidental preferred stock accrues dividends at 8% per annum and is redeemable at the option of Occidental commencing in 2029 at a redemption price equal to 105% of the liquidation value. As of December 31, 2023, our investment in Occidental preferred stock had an aggregate liquidation value of approximately \$8.5 billion. During 2023, Occidental issued mandatory redemption notifications for approximately \$1.5 billion of the aggregate liquidation value at a price of 110% of the liquidation value, plus accrued and unpaid dividends. The mandatory redemptions were due to excess distributions by Occidental to its common stockholders, as defined under the terms of the Occidental preferred stock certificate of designations.

The Occidental common stock warrants allow us to purchase up to 83.86 million shares of Occidental common stock at an exercise price of \$59.62 per share. The warrants are exercisable in whole or in part until one year after the date the preferred stock is fully redeemed.

As of December 31, 2023, we owned 151.6 million shares of American Express Company (“American Express”) common stock representing 21% of the outstanding common stock of American Express. Since 1995, we have been party to an agreement with American Express whereby we agreed to vote a significant portion of our shares in accordance with the recommendations of the American Express Board of Directors. We have also agreed to passivity commitments as requested by the Board of Governors of the Federal Reserve System, which collectively, in our judgment, restrict our ability to exercise significant influence over the operating and financial policies of American Express. Accordingly, we do not use the equity method with respect to our investment in American Express common stock and we continue to record our investment at fair value.

Notes to Consolidated Financial Statements

(5) Equity method investments

Berkshire and its subsidiaries hold investments in certain businesses that are accounted for pursuant to the equity method. Currently, the most significant of these are our investments in the common stock of The Kraft Heinz Company (“Kraft Heinz”) and Occidental. As of December 31, 2023, we owned 26.7% of the Kraft Heinz outstanding common stock and 27.8% of the outstanding Occidental common stock, which excluded the potential effect of the exercise of the Occidental common stock warrants.

Kraft Heinz manufactures and markets food and beverage products, including condiments and sauces, cheese and dairy, meals, meats, refreshment beverages, coffee and other grocery products. Occidental is an international energy company, whose activities include oil and natural gas exploration, development and production, and chemicals manufacturing businesses. Occidental’s financial information is not available in time for concurrent reporting in our Consolidated Financial Statements. Therefore, we report the equity method effects for Occidental on a one-quarter lag.

The common stock of Kraft Heinz and Occidental are publicly traded. The fair values and carrying values of these two investments in addition to the carrying values of our other significant equity method investments are summarized as follows (in millions).

	Carrying Value December 31,		Fair Value December 31,	
	2023	2022	2023	2022
Kraft Heinz	\$ 13,230	\$ 12,937	\$ 12,035	\$ 13,249
Occidental	15,410	11,484	14,552	12,242
Other	426	3,629		
	<u>\$ 29,066</u>	<u>\$ 28,050</u>		

As of December 31, 2023, the excess of our carrying values over the fair values of our investments in Kraft Heinz and Occidental were 9% and 6%, respectively, of the carrying values. We evaluated our investments in Kraft Heinz and Occidental for other-than-temporary impairment as of December 31, 2023, and based on the prevailing facts and circumstances, concluded the recognition of impairment charges in earnings were not required.

Our other significant equity method investments included our 50% interest in Berkadia Commercial Mortgage LLC (“Berkadia”), in which Jefferies Financial Group (“Jefferies”) owns the other 50% interest, and PTC through January 31, 2023. Berkadia engages in mortgage banking, investment sales and servicing of commercial/multi-family real estate loans. Berkadia’s commercial paper borrowing capacity (currently limited to \$1.5 billion) is supported by a surety policy issued by a Berkshire insurance subsidiary. Jefferies is obligated to indemnify us for one-half of any losses incurred under the policy.

Beginning February 1, 2023, we ceased accounting for PTC under the equity method and began consolidating PTC for financial reporting purposes. Our investment in PTC under the equity method was \$3.2 billion at December 31, 2022. Equity method earnings attributable to PTC were \$105 million in 2023, \$812 million in 2022 and \$474 million in 2021.

As of December 31, 2023, the carrying values of our investments in Kraft Heinz and Berkadia approximated our share of shareowners’ equity of each of these entities. The carrying value of our investment in Occidental common stock exceeded our share of its shareholders’ equity as of September 30, 2023 by approximately \$9.6 billion. Based upon the limited information available to us, we concluded the excess represents goodwill.

Our earnings and distributions received from equity method investments are summarized in the following table (in millions). The earnings we recorded in 2023 for Occidental included our share of its earnings for the fourth quarter of 2022 and first nine months of 2023. The earnings we recorded in 2022 for Occidental included our share of its earnings from August 4, 2022 through September 30, 2022.

	Equity in Earnings Year ended December 31,			Distributions Received Year ended December 31,		
	2023	2022	2021	2023	2022	2021
Kraft Heinz	\$ 758	\$ 628	\$ 269	\$ 521	\$ 521	\$ 521
Occidental	1,077	323	—	142	24	—
Other	138	912	617	58	284	1,057
	<u>\$ 1,973</u>	<u>\$ 1,863</u>	<u>\$ 886</u>	<u>\$ 721</u>	<u>\$ 829</u>	<u>\$ 1,578</u>

Notes to Consolidated Financial Statements

(5) Equity method investments

Summarized consolidated financial information of Kraft Heinz follows (in millions).

	December 30, 2023	December 31, 2022
Assets	\$ 90,339	\$ 90,513
Liabilities	40,617	41,643

	December 30, 2023	Year ended December 31, 2022	December 25, 2021
Sales	\$ 26,640	\$ 26,485	\$ 26,042
Net earnings attributable to Kraft Heinz common shareholders	2,855	2,363	1,012

Summarized consolidated financial information of Occidental follows (in millions).

	September 30, 2023	December 31, 2022
Assets	\$ 71,827	\$ 72,609
Liabilities	42,515	42,524

	Twelve months ending September 30, 2023
Total revenues and other income	\$ 29,715
Net earnings attributable to Occidental common shareholders	4,471

(6) Investment and derivative contract gains (losses)

Investment and derivative contract gains (losses) for each of the three years ending December 31, 2023 are summarized as follows (in millions).

	2023	2022	2021
Investment gains (losses):			
Equity securities:			
Change in unrealized investment gains (losses) during the year on securities held at the end of the year	\$ 69,144	\$ (63,120)	\$ 76,375
Investment gains (losses) during the year on securities sold	2,698	(3,927)	997
	71,842	(67,047)	77,372
Fixed maturity securities:			
Gross realized gains	139	134	85
Gross realized losses	(86)	(684)	(29)
Other	2,960	(26)	148
Investment gains (losses)	74,855	(67,623)	77,576
Derivative contract gains (losses)	—	(276)	966
	<u>\$ 74,855</u>	<u>\$ (67,899)</u>	<u>\$ 78,542</u>

Equity securities gains and losses include unrealized gains and losses from changes in fair values during the year on equity securities we still own, as well as gains and losses on securities we sold during the year. As shown in the Consolidated Statements of Cash Flows, our proceeds from sales of equity securities were approximately \$40.6 billion in 2023, \$33.7 billion in 2022 and \$15.8 billion in 2021. In the preceding table, investment gains and losses on equity securities sold during the year represent the difference between the sales proceeds and the fair value of the equity securities sold at the beginning of the applicable year or, if later, the purchase date. Our taxable gains and losses on equity securities sold are generally the difference between the proceeds from sales and cost at the acquisition date. Equity securities sold produced taxable gains of \$5.0 billion in 2023, \$769 million in 2022 and \$3.6 billion in 2021. Other investment gains included approximately \$3.0 billion in 2023 from the remeasurement of our pre-existing 38.6% interest in PTC through the application of acquisition accounting under GAAP.

Notes to Consolidated Financial Statements

(7) Loans and finance receivables

Loans and finance receivables are summarized as follows (in millions).

	December 31,	
	2023	2022
Loans and finance receivables before allowances and discounts	\$ 26,289	\$ 24,664
Allowances for credit losses	(950)	(856)
Unamortized acquisition discounts and points	(658)	(600)
	<u>\$ 24,681</u>	<u>\$ 23,208</u>

Loans and finance receivables are principally manufactured home loans, and to a lesser extent, commercial loans and site-built home loans. Reconciliations of the allowance for credit losses on loans and finance receivables for each of the three years ending December 31, 2023 follow (in millions).

	2023	2022	2021
Balance at the beginning of the year	\$ 856	\$ 765	\$ 712
Provision for credit losses	169	124	88
Charge-offs, net of recoveries	(75)	(33)	(35)
Balance at December 31	<u>\$ 950</u>	<u>\$ 856</u>	<u>\$ 765</u>

At December 31, 2023, substantially all manufactured and site-built home loan balances were evaluated collectively for impairment, and we considered approximately 96% of the loan balances to be current as to payment status. A summary of performing and non-performing home loans before discounts and allowances by year of loan origination as of December 31, 2023 follows (in millions).

	Origination Year						Total
	2023	2022	2021	2020	2019	Prior	
Performing	\$ 5,716	\$ 4,368	\$ 3,321	\$ 2,575	\$ 1,820	\$ 7,432	\$ 25,232
Non-performing	8	11	17	12	11	53	112
	<u>\$ 5,724</u>	<u>\$ 4,379</u>	<u>\$ 3,338</u>	<u>\$ 2,587</u>	<u>\$ 1,831</u>	<u>\$ 7,485</u>	<u>\$ 25,344</u>

We are also a lender under commercial loan agreements, which had an aggregate carrying value of approximately \$850 million at December 31, 2023 and \$1.9 billion at December 31, 2022. The decline in loan balances during 2023 was primarily attributable to prepayments and dispositions. These commercial loans are generally secured by real estate properties or by other assets and are individually evaluated for expected credit losses.

(8) Other receivables

Other receivables are comprised of the following (in millions).

	December 31,	
	2023	2022
Insurance and other:		
Insurance premiums receivable	\$ 19,052	\$ 18,395
Reinsurance recoverables	7,060	7,106
Trade receivables	14,449	14,510
Other	4,269	4,154
Allowances for credit losses	(656)	(675)
	<u>\$ 44,174</u>	<u>\$ 43,490</u>
Railroad, utilities and energy:		
Trade receivables	\$ 6,034	\$ 4,182
Other	1,228	754
Allowances for credit losses	(176)	(141)
	<u>\$ 7,086</u>	<u>\$ 4,795</u>

Receivables of the railroad, utilities and energy businesses at December 31, 2023 included approximately \$2.1 billion related to PTC. Aggregate provisions for credit losses with respect to receivables in the preceding table were \$513 million in 2023, \$409 million in 2022 and \$441 million in 2021. Charge-offs, net of recoveries, were \$474 million in 2023, \$432 million in 2022 and \$420 million in 2021.

Notes to Consolidated Financial Statements

(9) Inventories

Inventories of our insurance and other businesses are comprised of the following (in millions).

		December 31,	
	2023	2022	
Raw materials	\$ 6,026	\$ 6,381	
Work in process and other	3,345	3,464	
Finished manufactured goods	4,969	5,739	
Goods acquired for resale	9,819	9,782	
	<u>\$ 24,159</u>	<u>\$ 25,366</u>	

Inventories, materials and supplies of our railroad, utilities and energy businesses are included in other assets and were approximately \$4.2 billion at December 31, 2023, which included approximately \$1.7 billion attributable to PTC.

(10) Property, plant and equipment

A summary of property, plant and equipment of our insurance and other businesses follows (in millions).

		December 31,	
	2023	2022	
Land, buildings and improvements	\$ 15,058	\$ 14,761	
Machinery and equipment	28,010	26,690	
Furniture, fixtures and other	5,566	4,847	
	48,634	46,298	
Accumulated depreciation	(26,604)	(25,185)	
	<u>\$ 22,030</u>	<u>\$ 21,113</u>	

A summary of property, plant and equipment of railroad and utilities and energy businesses follows (in millions). The utility generation, transmission and distribution systems and interstate natural gas pipeline assets are owned by regulated public utility and natural gas pipeline subsidiaries. Assets of PTC are included within the utilities and energy section below.

		December 31,	
	2023	2022	
Railroad:			
Land, track structure and other roadway	\$ 71,692	\$ 67,350	
Locomotives, freight cars and other equipment	16,256	16,031	
Construction in progress	1,715	1,743	
	89,663	85,124	
Accumulated depreciation	(19,464)	(17,899)	
	70,199	67,225	
Utilities and energy:			
Utility generation, transmission and distribution systems	96,195	92,759	
Interstate natural gas pipeline assets	19,226	18,328	
Independent power plants and other	14,781	14,650	
Land, buildings and improvements	4,540	—	
Machinery, equipment and other	3,855	—	
Construction in progress	9,551	5,357	
	148,148	131,094	
Accumulated depreciation	(40,731)	(38,051)	
	107,417	93,043	
	<u>\$ 177,616</u>	<u>\$ 160,268</u>	

Depreciation expense for each of the three years ending December 31, 2023 is summarized below (in millions).

	2023	2022	2021
Insurance and other	\$ 2,388	\$ 2,276	\$ 2,318
Railroad, utilities and energy	7,004	6,181	5,990
	<u>\$ 9,392</u>	<u>\$ 8,457</u>	<u>\$ 8,308</u>

Notes to Consolidated Financial Statements

(11) Equipment held for lease

Equipment held for lease includes railcars, aircraft, and other equipment, including over-the-road trailers, intermodal tank containers, cranes, storage units and furniture. Equipment held for lease is summarized below (in millions).

	December 31,	
	2023	2022
Railcars	\$ 10,031	\$ 9,612
Aircraft	12,537	10,667
Other	5,576	5,212
	28,144	25,491
Accumulated depreciation	(11,197)	(9,907)
	<u>\$ 16,947</u>	<u>\$ 15,584</u>

Depreciation expense for equipment held for lease was \$1,266 million in 2023, \$1,209 million in 2022 and \$1,158 million in 2021. Fixed and variable operating lease revenues for each of the three years ending December 31, 2023 are summarized below (in millions).

	2023	2022	2021
Fixed lease revenue	\$ 5,902	\$ 5,184	\$ 4,482
Variable lease revenue	2,514	2,330	1,506
	<u>\$ 8,416</u>	<u>\$ 7,514</u>	<u>\$ 5,988</u>

A summary of future operating lease receipts as of December 31, 2023 follows (in millions).

2024	2025	2026	2027	2028	Thereafter	Total
\$ 3,942	\$ 3,077	\$ 2,346	\$ 1,569	\$ 771	\$ 283	\$ 11,988

(12) Leases

We are party to contracts where we lease property from others under contracts classified as operating leases. We primarily lease buildings, offices and operating facilities. Operating lease right-of-use assets are included in other assets and operating lease liabilities are included in accounts payable, accruals and other liabilities. Information related to our operating leases follows (dollars in millions).

	Right-of-use assets	Lease liabilities	Weighted average remaining term in years	Weighted average discount rate used to measure liabilities
December 31, 2023	\$ 5,277	\$ 5,299	7.0	4.2%
December 31, 2022	4,975	4,939	7.0	3.7%

A summary of our remaining future operating lease payments reconciled to lease liabilities as of December 31, 2023 and December 31, 2022 follows (in millions).

	Year 1	Year 2	Year 3	Year 4	Year 5	Thereafter	Total lease payments	Amount representing interest	Lease liabilities
December 31:									
2023	\$ 1,422	\$ 1,172	\$ 815	\$ 666	\$ 463	\$ 1,680	\$ 6,218	\$ (919)	\$ 5,299
2022	1,283	1,073	822	560	449	1,464	5,651	(712)	4,939

Components of operating lease expense for each of the three years ending December 31, 2023, are summarized as follows (in millions).

	2023	2022	2021
Operating lease expense	\$ 1,535	\$ 1,361	\$ 1,426
Short-term lease expense	219	233	154
Variable lease expense	216	217	223
	<u>\$ 1,970</u>	<u>\$ 1,811</u>	<u>\$ 1,803</u>

Notes to Consolidated Financial Statements

(13) Goodwill and other intangible assets

Reconciliations of the changes in the carrying value of goodwill during 2023 and 2022 follow (in millions).

	December 31,	
	2023	2022
Balance at the beginning of the year	\$ 78,119	\$ 73,875
Business acquisitions	7,347	4,657
Other, including acquisition period remeasurements and foreign currency translation	(840)	(413)
Balance at the end of the year*	<u>\$ 84,626</u>	<u>\$ 78,119</u>

* Net of accumulated goodwill impairments of \$11.1 billion as of December 31, 2023 and \$11.0 billion as of December 31, 2022.

Other intangible assets are summarized below (in millions).

	December 31, 2023			December 31, 2022		
	Gross carrying amount	Accumulated amortization	Net carrying value	Gross carrying amount	Accumulated amortization	Net carrying value
Insurance and other:						
Customer relationships	\$ 28,305	\$ 7,901	\$ 20,404	\$ 27,765	\$ 7,174	\$ 20,591
Trademarks and trade names	5,619	846	4,773	5,603	822	4,781
Patents and technology	5,238	4,109	1,129	4,943	3,748	1,195
Other	4,826	1,805	3,021	4,150	1,530	2,620
	<u>\$ 43,988</u>	<u>\$ 14,661</u>	<u>\$ 29,327</u>	<u>\$ 42,461</u>	<u>\$ 13,274</u>	<u>\$ 29,187</u>
Railroad, utilities and energy:						
Customer relationships and contracts	\$ 4,092	\$ 791	\$ 3,301	\$ 1,507	\$ 541	\$ 966
Trademarks and trade names	3,592	98	3,494	217	39	178
Other	1,174	156	1,018	190	42	148
	<u>\$ 8,858</u>	<u>\$ 1,045</u>	<u>\$ 7,813</u>	<u>\$ 1,914</u>	<u>\$ 622</u>	<u>\$ 1,292</u>

Other intangible assets of the railroad, utilities and energy businesses are included in other assets. The net carrying value at December 31, 2023 included \$6.6 billion related to PTC.

Intangible asset amortization expense was \$1,828 million in 2023, \$1,233 million in 2022 and \$1,252 million in 2021. Estimated amortization expense over the next five years follows (in millions): 2024 – \$2,059; 2025 – \$1,988; 2026 – \$1,898; 2027 – \$1,754 and 2028 – \$1,684. Intangible assets with indefinite lives were \$18.9 billion as of December 31, 2023 and \$18.3 billion as of December 31, 2022 and primarily related to certain customer relationships and trademarks and trade names.

(14) Supplemental cash flow information

A summary of supplemental cash flow information follows (in millions).

	2023	2022	2021
Cash paid during the year for:			
Income taxes	\$ 7,765	\$ 4,236	\$ 5,412
Interest:			
Insurance and other	1,272	1,150	1,227
Railroad, utilities and energy	3,725	3,195	3,162
Non-cash investing and financing activities:			
Liabilities assumed in connection with business acquisitions	10,938	24,186	102
Operating lease liabilities arising from obtaining right-of-use assets	1,645	1,118	687

Notes to Consolidated Financial Statements

(15) Dividend restrictions – Insurance subsidiaries

Payments of dividends by our insurance subsidiaries are restricted by insurance statutes and regulations. Without prior regulatory approval, our principal insurance subsidiaries may declare up to approximately \$31 billion as ordinary dividends during 2024. Investments in fixed maturity and equity securities and short-term investments on deposit with U.S. state insurance authorities in accordance with state insurance regulations were approximately \$5.2 billion at December 31, 2023 and \$4.9 billion at December 31, 2022.

Combined shareholders' equity of U.S.-based insurance subsidiaries determined pursuant to statutory accounting rules (Surplus as Regards Policyholders) was approximately \$303 billion at December 31, 2023 and \$272 billion at December 31, 2022. Statutory surplus differs from the corresponding amount based on GAAP due to differences in accounting for certain assets and liabilities. For instance, deferred charges reinsurance assumed, the measurement of life, annuity and health insurance benefits liabilities, deferred policy acquisition costs, unrealized gains on certain investments and related deferred income taxes are recognized for GAAP but not for statutory reporting purposes. In addition, the carrying values of certain assets, such as goodwill and non-insurance entities owned by our insurance subsidiaries, are not fully recognized for statutory reporting purposes.

(16) Unpaid losses and loss adjustment expenses

Reconciliations of the changes in unpaid losses and loss adjustment expenses ("claim liabilities"), excluding liabilities under retroactive reinsurance contracts (see Note 17), for each of the three years ended December 31, 2023 follows (in millions). Net liabilities of acquired businesses in 2022 were from the Alleghany acquisition. See Note 2.

	2023	2022	2021
Balance at the beginning of the year:			
Gross liabilities	\$ 107,472	\$ 86,664	\$ 79,854
Reinsurance recoverable on unpaid losses	(5,025)	(2,960)	(2,912)
Net liabilities	102,447	83,704	76,942
Incurred losses and loss adjustment expenses:			
Current accident year	59,244	59,463	52,099
Prior accident years	(3,541)	(2,672)	(3,116)
Total	55,703	56,791	48,983
Paid losses and loss adjustment expenses:			
Current accident year	(25,184)	(27,236)	(22,897)
Prior accident years	(27,065)	(23,083)	(18,904)
Total	(52,249)	(50,319)	(41,801)
Foreign currency effect	288	(508)	(420)
Net liabilities of acquired businesses	—	12,779	—
Balance at December 31:			
Net liabilities	106,189	102,447	83,704
Reinsurance recoverable on unpaid losses	4,893	5,025	2,960
Gross liabilities	\$ 111,082	\$ 107,472	\$ 86,664

Our claim liabilities under property and casualty insurance and reinsurance contracts are based upon estimates of the ultimate claim costs associated with claim occurrences as of the balance sheet date and include estimates for incurred-but-not-reported ("IBNR") claims. Incurred losses and loss adjustment expenses shown in the preceding table related to insured events occurring in the current year ("current accident year") and events occurring in all prior years ("prior accident years"). Incurred and paid losses and loss adjustment expenses are net of reinsurance recoveries. Current accident year incurred losses from significant catastrophe events (losses in excess of \$150 million per event) were approximately \$925 million in 2023, \$3.1 billion in 2022 (\$2.5 billion from Hurricane Ian) and \$2.9 billion in 2021 (\$1.5 billion from Hurricane Ida). Current accident year incurred losses for private passenger auto insurance declined in 2023 compared to 2022, reflecting lower claims frequencies and higher average claims severities and increased significantly in 2022 versus 2021, attributable to increases in claims frequencies and severities.

Notes to Consolidated Financial Statements

(16) Unpaid losses and loss adjustment expenses

We recorded net reductions of estimated ultimate liabilities for prior accident years of \$3.5 billion in 2023, \$2.7 billion in 2022 and \$3.1 billion in 2021, which produced corresponding reductions in incurred losses and loss adjustment expenses in those periods. These reductions, as percentages of the net liabilities at the beginning of each year, were 3.5% in 2023, 3.2% in 2022 and 4.0% in 2021.

We reduced estimated ultimate liabilities for prior accident years of primary insurance businesses by \$2.1 billion in 2023, \$1.1 billion in 2022 and \$2.4 billion in 2021. The reductions in each year derived from private passenger auto, medical professional liability, and property claims. Estimated ultimate liabilities for prior accident years of property and casualty reinsurance businesses were reduced \$1.4 billion in 2023, \$1.6 billion in 2022 and \$718 million in 2021. The reductions in each year reflected reduced estimates from both property and casualty claims.

Estimated net claim liabilities for environmental and asbestos exposures, excluding liabilities under retroactive reinsurance contracts, were approximately \$2.0 billion at December 31, 2023 and \$2.1 billion at December 31, 2022. These liabilities are subject to change due to changes in the legal and regulatory environment, among other factors. We are unable to reliably estimate additional losses or a range of losses that are reasonably possible to arise from these factors.

Disaggregated information concerning our claim liabilities is provided below and in the pages that follow. In this discussion, “claim-tail” refers to the period between the claim occurrence date and claim settlement or payment date. A reconciliation of the disaggregated net unpaid losses and allocated loss adjustment expenses (the latter referred to as “ALAE”) to our consolidated claim liabilities as of December 31, 2023 follows (in millions).

	GEICO		BH Primary Workers’ Compensatio n/ Other Casualty		BHRG		Total
	Physical Damage	Auto Liability	Medical Professional Liability		Property	Casualty	
Unpaid losses and ALAE, net	\$ 737	\$ 20,477	\$ 9,166	\$ 21,230	\$ 16,499	\$ 32,393	\$ 100,502
Reinsurance recoverable	4	900	26	1,547	689	1,481	4,647
Unallocated loss adjustment expenses							2,467
Other losses and loss adjustment expenses							3,466
Unpaid losses and loss adjustment expenses							<u>\$ 111,082</u>

GEICO

GEICO’s claim liabilities predominantly relate to various types of private passenger auto liability and physical damage claims. For such claims, we establish and evaluate unpaid claim liabilities using standard actuarial loss development methods and techniques. The actuarial methods utilize historical claims data, adjusted when deemed appropriate to reflect perceived changes in loss patterns. Claim liabilities include average, case, case development and IBNR estimates.

We establish average liabilities based on expected severities for newly reported physical damage and liability claims prior to establishing individual case reserves when insufficient time or information is available for specific claim estimates and for large volumes of minor physical damage claims that are quickly settled. We establish case loss estimates for liability claims, including estimates for loss adjustment expenses based on the facts and merits of the claim.

Claim estimates for liability coverages normally reflect greater uncertainty than for physical damage coverages, primarily due to the longer claim-tails, the greater chance of litigation and the time needed to evaluate facts at the time the case estimate is first established. Consequently, we establish additional case development liabilities, which are usually percentages of the case liabilities. For unreported claims, IBNR claim liabilities are estimated by projecting the ultimate number of claims expected (reported and unreported) for each significant coverage based on historical data, from which reported claims are deducted to produce the estimated number of unreported claims. The product of the average cost per unreported claim and the number of unreported claims produces the IBNR liability estimate. We may record supplemental IBNR liabilities in certain situations when actuarial techniques are difficult to apply.

Notes to Consolidated Financial Statements

(16) Unpaid losses and loss adjustment expenses

GEICO's net incurred and paid auto physical damage and liability losses and ALAE are summarized by accident year below. IBNR and case development liabilities are as of December 31, 2023 and are net of estimated salvage and subrogation recoveries. Claim counts are established when accidents that could result in a liability are reported and are based on policy coverage. Each claim event may generate claims under multiple coverages and may result in multiple counts. The "Cumulative Number of Reported Claims" includes the combined number of reported claims for all auto policy coverages. Dollars are in millions.

Physical Damage

Incurred Losses and ALAE through December 31,					IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
Accident Year	2022*	2023				
2022	\$ 14,138	\$ 13,699			\$ (56)	9,161
2023		12,273			(691)	7,295
Incurred losses and ALAE		\$ 25,972				

Cumulative Paid Losses and ALAE through December 31,						
Accident Year	2022*	2023				
2022	\$ 13,251	\$ 13,731				
2023		11,567				
Paid losses and ALAE		25,298				
Net unpaid losses and ALAE for 2022 – 2023 accident years				674		
Net unpaid losses and ALAE for accident years before 2022				63		
Net unpaid losses and ALAE				\$ 737		

Auto Liability

Incurred Losses and ALAE through December 31,							IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
Accident Year	2019*	2020*	2021*	2022*	2023			
2019	\$ 16,901	\$ 16,678	\$ 16,191	\$ 16,151	\$ 16,168	\$ 348		2,797
2020		14,637	14,024	13,697	13,593	666		2,123
2021			17,481	17,457	17,229	1,559		2,446
2022				19,645	18,903	3,316		2,360
2023					17,948	5,567		1,804
Incurred losses and ALAE					\$ 83,841			

Cumulative Paid Losses and ALAE through December 31,								
Accident Year	2019*	2020*	2021*	2022*	2023			
2019	\$ 6,742	\$ 11,671	\$ 13,851	\$ 15,084	\$ 15,593			
2020		5,395	9,839	11,794	12,608			
2021			6,450	12,681	14,863			
2022				7,614	13,838			
2023					7,191			
Paid losses and ALAE					64,093			
Net unpaid losses and ALAE for 2019 – 2023 accident years					19,748			
Net unpaid losses and ALAE for accident years before 2019					729			
Net unpaid losses and ALAE					\$ 20,477			

* Unaudited required supplemental information

Notes to Consolidated Financial Statements

(16) Unpaid losses and loss adjustment expenses

BH Primary

BH Primary's liabilities for unpaid losses and loss adjustment expenses primarily derive from medical professional liability and workers' compensation and other casualty insurance, which includes commercial auto and general liability insurance. Net incurred and paid losses and ALAE are summarized by accident year in the following tables, disaggregated by medical professional liability coverages and workers' compensation and other casualty coverages. IBNR and case development liabilities are as of December 31, 2023. The cumulative number of reported claims reflects the number of individual claimants and includes claims that ultimately resulted in no liability or payment. Dollars are in millions.

Medical Professional Liability

We estimate the ultimate expected incurred losses and loss adjustment expenses for medical professional claim liabilities using a variety of commonly accepted actuarial methodologies, such as the paid and incurred development method and Bornhuetter-Ferguson based methods, as well as other techniques that consider insured loss exposures and historical and expected loss trends, among other factors. These methodologies produce loss estimates from which we determine our best estimate. In addition, we study developments in older accident years and adjust initial loss estimates to reflect recent developments based upon claimage, coverage and litigation experience.

Incurred Losses and ALAE through December 31,												Cumulative Number of
Accident Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023	IBNR and Case Development Liabilities	Reported Claims (in thousands)
2014	\$ 1,370	\$ 1,375	\$ 1,305	\$ 1,246	\$ 1,218	\$ 1,127	\$ 1,061	\$ 1,033	\$ 1,029	\$ 1,007	\$ 45	11
2015		1,374	1,342	1,269	1,290	1,218	1,157	1,093	1,033	1,016	55	12
2016			1,392	1,416	1,414	1,394	1,341	1,288	1,216	1,188	105	15
2017				1,466	1,499	1,495	1,474	1,382	1,349	1,315	117	21
2018					1,602	1,650	1,659	1,580	1,616	1,606	205	24
2019						1,670	1,691	1,663	1,614	1,534	320	21
2020							1,704	1,751	1,698	1,631	615	32
2021								1,852	1,855	1,787	1,053	25
2022									1,927	1,912	1,403	20
2023										1,964	1,781	17
Incurred losses and ALAE										\$ 14,960		

Cumulative Paid Losses and ALAE through December 31,											
Accident Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023	
2014	\$ 21	\$ 106	\$ 238	\$ 396	\$ 540	\$ 671	\$ 752	\$ 788	\$ 840	\$ 869	
2015		23	108	218	382	543	663	719	799	843	
2016			22	115	274	461	620	712	822	908	
2017				27	128	300	457	582	739	877	
2018					35	166	367	543	728	949	
2019						39	160	314	536	757	
2020							34	148	321	531	
2021								36	136	333	
2022									38	182	
2023										28	
Paid losses and ALAE										6,277	
Net unpaid losses and ALAE for 2014 – 2023 accident years										8,683	
Net unpaid losses and ALAE for accident years before 2014										483	
Net unpaid losses and ALAE										\$ 9,166	

* Unaudited required supplemental information

Notes to Consolidated Financial Statements

(16) Unpaid losses and loss adjustment expenses

Workers' Compensation and Other Casualty

We periodically evaluate ultimate loss and loss adjustment expense estimates for workers' compensation and other casualty claims using a combination of commonly accepted actuarial methodologies such as the Bornhuetter-Ferguson and chain-ladder approaches using paid and incurred loss data. Paid and incurred loss data is segregated and analyzed by state due to the different state regulatory frameworks that may impact certain factors, including the duration and amount of loss payments. We also separately study the various components of liabilities, such as employee lost wages, medical expenses and the costs of claims investigations and administration. We establish case liabilities for reported claims based upon the facts and circumstances of the claim. The excess of the ultimate projected losses, including the expected development of case estimates, and the case-basis liabilities is included in IBNR liabilities.

Incurred Losses and ALAE through December 31,											IBNR and Case Develop- ment Liabili- ties	Cumulativ e Number of Reported Claims (in thousands)
Accid ent Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023		
2014	\$ 2,138	\$ 2,064	\$ 2,036	\$ 1,970	\$ 1,901	\$ 1,906	\$ 1,875	\$ 1,861	\$ 1,829	\$ 1,810	\$ 115	103
2015		2,580	2,539	2,455	2,426	2,428	2,402	2,408	2,393	2,358	201	120
2016			2,931	2,848	2,793	2,772	2,815	2,825	2,864	2,840	361	125
2017				3,473	3,337	3,299	3,310	3,322	3,320	3,321	422	143
2018					3,998	3,886	3,967	4,030	4,091	4,177	643	163
2019						4,584	4,623	4,692	4,763	4,847	867	184
2020							5,030	4,881	4,775	4,774	1,467	156
2021								5,899	5,856	5,882	2,455	316
2022									6,796	6,757	3,646	308
2023										7,299	5,187	132
Incurred losses and ALAE										\$ 44,065		

Cumulative Paid Losses and ALAE through December 31,												
Accid ent Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023		
2014	\$ 286	\$ 683	\$ 1,002	\$ 1,269	\$ 1,407	\$ 1,504	\$ 1,557	\$ 1,600	\$ 1,617	\$ 1,646		
2015		329	804	1,187	1,507	1,766	1,873	1,966	2,041	2,070		
2016			373	908	1,359	1,765	1,998	2,140	2,303	2,377		
2017				480	1,133	1,645	2,050	2,279	2,492	2,673		
2018					583	1,340	1,902	2,324	2,746	3,120		
2019						725	1,598	2,214	2,898	3,430		
2020							736	1,498	2,066	2,598		
2021								869	1,751	2,440		
2022									962	2,012		
2023										1,056		
Paid losses and ALAE										23,422		
Net unpaid losses and ALAE for 2014 – 2023 accident years										20,643		
Net unpaid losses and ALAE for accident years before 2014										587		
Net unpaid losses and ALAE										\$ 21,230		

* Unaudited required supplemental information

BHRG

We use a variety of methodologies to establish BHRG's estimates for property and casualty claim liabilities. These methodologies include paid and incurred loss development techniques, incurred and paid loss Bornhuetter-Ferguson techniques and frequency and severity techniques, as well as ground-up techniques when appropriate.

Notes to Consolidated Financial Statements

(16) Unpaid losses and loss adjustment expenses

Our claim liabilities are principally a function of reported losses from ceding companies, case development and IBNR liability estimates. Case loss estimates are reported either individually or in bulk as provided under the terms of the contracts. We may independently evaluate case losses reported by the ceding company, and if deemed appropriate, establish additional case liabilities based on our estimates.

Estimated IBNR liabilities are affected by expected case loss emergence patterns and expected loss ratios, which are evaluated as groups of contracts with similar exposures or on a contract-by-contract basis. Estimated case and IBNR liabilities for major catastrophe events are generally based on a per-contract assessment of the ultimate cost associated with the individual loss event. Claim count data is not provided consistently by ceding companies under our contracts or is otherwise considered unreliable.

Net incurred and paid losses and ALAE of BHRG are disaggregated based on losses that are expected to have shorter claim-tails (property) and losses expected to have longer claim-tails (casualty). Under certain contracts, the coverage can apply to multiple lines of business written by the ceding company, whether property, casualty or combined, and the ceding company may not report loss data by such lines consistently, if at all. In those instances, we allocated losses to property and casualty coverages based on internal estimates. BHRG's disaggregated incurred and paid losses and ALAE are summarized by accident year. IBNR and case development liabilities are as of December 31, 2023. Dollars are in millions.

Property

Incurred Losses and ALAE through December 31,

Accident Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023	IBNR and Case Development Liabilities
2014	\$ 3,095	\$ 2,849	\$ 2,725	\$ 2,567	\$ 2,508	\$ 2,432	\$ 2,400	\$ 2,393	\$ 2,373	\$ 2,376	\$ 27
2015		3,605	3,414	2,847	3,237	3,232	3,253	3,255	3,248	3,272	60
2016			3,926	4,515	4,192	4,155	4,150	4,139	4,117	4,106	26
2017				6,397	6,096	5,918	5,791	5,713	5,631	5,612	64
2018					5,486	5,579	5,437	5,293	5,299	5,249	172
2019						4,986	5,129	4,901	4,574	4,527	162
2020							6,928	7,208	6,876	6,657	610
2021								8,103	7,976	7,640	896
2022									8,880	8,453	2,228
2023										7,993	4,140
Incurred losses and ALAE										\$ 55,885	

Cumulative Paid Losses and ALAE through December 31,

Accident Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023
2014	\$ 572	\$ 1,520	\$ 1,899	\$ 2,059	\$ 2,135	\$ 2,187	\$ 2,218	\$ 2,242	\$ 2,272	\$ 2,295
2015		671	1,804	2,210	2,429	2,538	2,721	2,807	2,860	2,933
2016			915	2,214	2,677	3,167	3,436	3,632	3,741	3,820
2017				1,348	3,508	4,583	4,936	5,171	5,364	5,454
2018					1,208	3,093	3,735	4,020	4,265	4,473
2019						1,012	2,848	3,566	3,898	4,058
2020							1,255	3,584	4,634	5,298
2021								1,624	4,095	5,414
2022									1,814	4,333
2023										1,777
Paid losses and ALAE										39,855
Net unpaid losses and ALAE for 2014 – 2023 accident years										16,030
Net unpaid losses and ALAE for accident years before 2014										469
Net unpaid losses and ALAE										<u>\$ 16,499</u>

* Unaudited required supplemental information

Notes to Consolidated Financial Statements

(16) Unpaid losses and loss adjustment expenses

Casualty

Incurred Losses and ALAE through December 31,

Accident Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023	IBNR and Case Development Liabilities
2014	\$ 3,507	\$ 3,672	\$ 3,619	\$ 3,557	\$ 3,456	\$ 3,472	\$ 3,446	\$ 3,334	\$ 3,298	\$ 3,265	\$ 424
2015		3,422	3,628	3,668	3,580	3,438	3,401	3,364	3,310	3,312	373
2016			3,788	3,998	3,902	3,870	3,819	3,775	3,746	3,773	416
2017				4,039	4,474	4,351	4,244	4,176	4,165	4,222	547
2018					4,886	5,537	5,489	5,358	5,285	5,370	756
2019						5,572	6,043	5,902	5,736	5,695	1,228
2020							6,214	6,231	6,047	6,093	1,750
2021								6,310	6,285	5,957	2,299
2022									6,061	6,112	3,505
2023										6,071	4,656
Incurred losses and ALAE										\$ 49,870	

Cumulative Paid Losses and ALAE through December 31,

Accident Year	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023
2014	\$ 429	\$ 1,002	\$ 1,390	\$ 1,662	\$ 1,917	\$ 2,103	\$ 2,311	\$ 2,405	\$ 2,493	\$ 2,560
2015		446	995	1,431	1,731	2,003	2,197	2,345	2,481	2,590
2016			654	1,359	1,801	2,149	2,420	2,613	2,789	2,963
2017				607	1,311	1,829	2,478	2,727	2,945	3,171
2018					695	1,742	2,792	3,258	3,637	3,954
2019						841	1,872	2,423	3,190	3,736
2020							868	1,905	2,715	3,379
2021								766	1,785	2,661
2022									622	1,338
2023										692
Paid losses and ALAE										27,044
Net unpaid losses and ALAE for 2014 – 2023 accident years										22,826
Net unpaid losses and ALAE for accident years before 2014										9,567
Net unpaid losses and ALAE										<u>\$ 32,393</u>

* Unaudited required supplemental information

Required supplemental unaudited average historical claims duration information based on the net losses and ALAE incurred and paid accident year data in the preceding tables follows. The percentages show the average portions of net losses and ALAE paid by each succeeding year, with year 1 representing the current accident year.

Average Annual Percentage Payout of Incurred Losses by Age, Net of Reinsurance

In Year	1	2	3	4	5	6	7	8	9	10
GEICO Physical Damage	97%	3%								
GEICO Auto Liability	41%	31%	13%	7%	4%					
BH Primary Medical Professional Liability	2%	8%	12%	14%	13%	12%	8%	6%	5%	3%
BH Primary Workers' Compensation and Other Casualty	15%	18%	14%	13%	9%	6%	5%	3%	1%	2%
BHRG Property	22%	35%	15%	8%	4%	4%	2%	2%	2%	1%
BHRG Casualty	14%	17%	13%	11%	8%	6%	5%	4%	3%	2%

Notes to Consolidated Financial Statements

(17) Retroactive reinsurance contracts

Retroactive reinsurance policies provide indemnification of losses and loss adjustment expenses of short-duration insurance contracts with respect to underlying loss events that occurred prior to the contract inception date, which may include significant levels of asbestos, environmental and other mass tort claims. Retroactive reinsurance contracts are generally subject to aggregate policy limits and thus, our exposure to such claims under these contracts is likewise limited. Reconciliations of the changes in estimated liabilities for retroactive reinsurance unpaid losses and loss adjustment expenses for each of the three years ended December 31, 2023 follow (in millions).

	2023	2022	2021
Balance at the beginning of the year	\$ 35,415	\$ 37,855	\$ 40,623
Incurring losses and loss adjustment expenses:			
Current year contracts	—	—	153
Prior years' contracts	1,109	86	(974)
Total	1,109	86	(821)
Paid losses and loss adjustment expenses	(1,934)	(2,358)	(1,889)
Foreign currency effect	57	(168)	(58)
Balance at December 31	\$ 34,647	\$ 35,415	\$ 37,855
Incurring losses and loss adjustment expenses above	\$ 1,109	\$ 86	\$ (821)
Deferred charge amortization and adjustments	375	769	1,802
Incurring losses and loss adjustment expenses included in the Consolidated Statements of Earnings	\$ 1,484	\$ 855	\$ 981

In the preceding table, the classification of incurred losses and loss adjustment expenses is based on the inception dates of the contracts, which reflect when our exposure to losses began. We believe that analysis of losses incurred and paid by accident year of the underlying event is irrelevant given that our exposure to losses incepts when the contract incepts and that the classification of reported claims and case development liabilities has little or no practical analytical value.

Incurring losses and loss adjustment expenses in the Consolidated Statements of Earnings include changes in estimated liabilities and related deferred charge asset amortization and adjustments arising from the changes in estimated timing and amount of future loss payments. In 2023, we increased estimated ultimate liabilities under certain contracts by \$1.1 billion, which after adjustments to related deferred charge assets, produced an increase in incurred losses and loss adjustment expenses of approximately \$650 million. The increase derived from higher estimates for asbestos, environmental and other casualty claims. Unamortized deferred charges on retroactive reinsurance contracts were \$9.5 billion at December 31, 2023 and \$9.9 billion at December 31, 2022.

In establishing retroactive reinsurance claim liabilities, we analyze historical aggregate loss payment patterns and project losses into the future under various probability-weighted scenarios. We expect the claim-tail to be very long for many contracts, with some lasting several decades. We monitor claim payment activity and review ceding company reports and other information concerning the underlying losses. We revise the expected timing and amounts of ultimate losses periodically or when significant events are revealed.

We monitor evolving case law and its effect on asbestos, environmental and other mass tort claims. Changing laws or government regulations, as well as newly identified toxins and injury events, newly reported claims, new theories of liability, new contract interpretations and other factors could result in increases in these liabilities, which could be material to our results of operations. We are unable to reliably estimate the amount of additional net loss or the range of net loss that is reasonably possible. Our estimates of ultimate liabilities for asbestos and environmental exposures under our contracts were approximately \$12.2 billion at December 31, 2023 and \$12.1 billion at December 31, 2022.

Notes to Consolidated Financial Statements

(18) Long-duration insurance contracts

We write periodic payment annuity and life and health insurance contracts, which are considered long-duration insurance contracts under GAAP. A summary of our life, annuity and health insurance benefits liabilities disaggregated by our two primary product categories, periodic payment annuities and life and health insurance, and other liabilities, which primarily consist of incurred-but-not-reported claims and claims in the course of settlement, follows (in millions).

	December 31,		
	2023	2022	2021
Periodic payment annuities	\$ 11,212	\$ 10,640	\$ 16,153
Life and health	5,749	5,879	7,688
Other liabilities	3,252	3,234	3,454
	<u>\$ 20,213</u>	<u>\$ 19,753</u>	<u>\$ 27,295</u>

Reconciliations of our periodic payment annuity and life and health insurance benefits liabilities before ceded reinsurance for each of the three years ended December 31, 2023 follow (in millions). This information reflects the changes in discounted present values of expected future policy benefits and expected future net premiums. Net premiums represent the portion of expected gross premiums that are required to provide for future policy benefits and variable expenses.

	Periodic payment annuities			Life and health		
	2023	2022	2021	2023	2022	2021
<u>Expected future policy benefits:</u>						
Balance at the beginning of the year	\$ 10,640	\$ 16,153	\$ 17,122	\$ 52,008	\$ 63,648	\$ 66,528
Balance at the beginning of the year - original discount rates	11,549	11,261	10,569	63,584	60,133	58,247
Effect of cash flow assumption changes	—	—	—	(829)	2,261	(354)
Effect of actual from expected experience	5	121	8	(352)	927	1,011
Change in benefits, net	(470)	(297)	138	1,616	671	394
Interest accrual	537	535	528	1,787	1,644	1,670
Foreign currency effect	60	(71)	18	65	(2,052)	(835)
Balance at December 31 - original discount rates	11,681	11,549	11,261	65,871	63,584	60,133
Effect of changes in discount rate assumptions	(469)	(909)	4,892	(13,206)	(11,576)	3,515
Balance at December 31	<u>\$ 11,212</u>	<u>\$ 10,640</u>	<u>\$ 16,153</u>	<u>\$ 52,665</u>	<u>\$ 52,008</u>	<u>\$ 63,648</u>

<u>Expected future net premiums:</u>						
Balance at the beginning of the year				\$ 46,129	\$ 55,960	\$ 58,198
Balance at the beginning of the year - original discount rates				56,535	53,277	51,370
Effect of cash flow assumption changes				(880)	2,163	(270)
Effect of actual from expected experience				(181)	676	572
Change in premiums, net				1,645	928	908
Interest accrual				1,566	1,434	1,444
Foreign currency effect				46	(1,943)	(747)
Balance at December 31 - original discount rates				58,731	56,535	53,277
Effect of changes in discount rate assumptions				(11,815)	(10,406)	2,683
Balance at December 31				<u>\$ 46,916</u>	<u>\$ 46,129</u>	<u>\$ 55,960</u>

<u>Liability for future policy benefits:</u>						
Balance at December 31	\$ 11,212	\$ 10,640	\$ 16,153	\$ 5,749	\$ 5,879	\$ 7,688
Reinsurance recoverables	—	—	—	(1,571)	(1,559)	(2,152)
Balance at December 31, net of reinsurance recoverables	<u>\$ 11,212</u>	<u>\$ 10,640</u>	<u>\$ 16,153</u>	<u>\$ 4,178</u>	<u>\$ 4,320</u>	<u>\$ 5,536</u>

Notes to Consolidated Financial Statements

(18) Long-duration insurance contracts

The undiscounted and discounted expected future gross premiums to be collected and undiscounted expected future benefits for periodic payment annuities and life and health insurance as of December 31, 2023, 2022 and 2021 are summarized below (in millions).

	Undiscounted expected future gross premiums			Discounted expected future gross premiums			Undiscounted expected future benefits		
	2023	2022	2021	2023	2022	2021	2023	2022	2021
Periodic payment annuities	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 31,066	\$ 31,156	\$ 30,260
Life and health	117,078	109,321	102,768	66,692	66,460	64,378	111,630	104,544	98,224

Gross premiums earned on long-duration contracts are included in insurance premiums earned, and interest expense on long-duration insurance contracts is included as a component of life, annuity and health benefits in our Consolidated Statements of Earnings. Gross premiums earned and interest expense before the impact of reinsurance ceded for each of the three years ended December 31, 2023 follow (in millions).

	Gross Premiums			Interest Expense		
	2023	2022	2021	2023	2022	2021
Periodic payment annuities	\$ —	\$ 582	\$ 655	\$ 537	\$ 535	\$ 528
Life and health	3,627	3,760	3,906	221	210	226

The weighted average discount rates, interest accretion rates and the average contract durations as of December 31, 2023, 2022 and 2021 for periodic payment annuities and life and health insurance are summarized below.

	2023	2022	2021
<u>Periodic payment annuities</u>			
Weighted average discount rate	5.1 %	5.3 %	2.7 %
Weighted average accretion rate	4.8 %	4.8 %	4.9 %
Weighted average duration	18 years	17 years	22 years
<u>Life and health</u>			
Weighted average discount rate	5.1 %	4.7 %	2.4 %
Weighted average accretion rate	3.3 %	3.4 %	3.4 %
Weighted average duration	13 years	14 years	15 years

(19) Notes payable and other borrowings

Notes payable and other borrowings of our insurance and other businesses are summarized below (dollars are in millions). The weighted average interest rates and maturity date ranges are based on borrowings as of December 31, 2023.

	Weighted Average Interest Rate	2023	December 31, 2022
Insurance and other:			
Berkshire Hathaway Inc. ("Berkshire"):			
U.S. Dollar denominated due 2025-2047	3.5 %	\$ 3,740	\$ 6,231
Euro denominated due 2024-2041	1.1 %	6,145	7,344
Japanese Yen denominated due 2024-2060	0.8 %	8,896	7,818
Berkshire Hathaway Finance Corporation ("BHFC"):			
U.S. Dollar denominated due 2027-2052	3.6 %	14,463	14,458
Great Britain Pound denominated due 2039-2059	2.5 %	2,191	2,078
Euro denominated due 2030-2034	1.8 %	1,374	1,332
Other subsidiary borrowings due 2024-2051	4.5 %	4,696	5,967
Short-term subsidiary borrowings	7.3 %	1,187	1,310
		<u>\$ 42,692</u>	<u>\$ 46,538</u>

Notes to Consolidated Financial Statements

(19) Notes payable and other borrowings

Berkshire parent company borrowings consist of senior unsecured debt. During 2023, Berkshire repaid approximately \$4.3 billion of maturing senior notes and issued ¥286.4 billion par (approximately \$2.05 billion) of senior notes with a weighted average interest rate of 1.15% and maturity dates ranging from 2026 to 2058. Borrowings of BHFC, a wholly owned finance subsidiary of Berkshire, consist of senior unsecured notes used to fund manufactured housing loans originated or acquired and equipment held for lease of certain subsidiaries. BHFC borrowings are fully and unconditionally guaranteed by Berkshire. Berkshire also guarantees certain debt of other subsidiaries, aggregating approximately \$2.7 billion at December 31, 2023. Generally, Berkshire's guarantee of a subsidiary's debt obligation is an absolute, unconditional and irrevocable guarantee for the full and prompt payment when due of all payment obligations.

The carrying values of Berkshire and BHFC non-U.S. Dollar denominated senior notes (€6.85 billion, £1.75 billion and ¥1,259 billion par at December 31, 2023) reflect the applicable exchange rates as of each balance sheet date. The effects of changes in foreign currency exchange rates during the period on our borrowings are recorded in earnings as a component of selling, general and administrative expenses. Changes in the exchange rates produced pre-tax gains of \$217 million in 2023, \$1.7 billion in 2022 and \$1.3 billion in 2021.

Notes payable and other borrowings of our railroad, utilities and energy businesses are summarized below (dollars are in millions). The weighted average interest rates and maturity date ranges are based on borrowings as of December 31, 2023.

	Weighted Average Interest Rate	December 31,	
		2023	2022
Railroad, utilities and energy:			
Berkshire Hathaway Energy Company ("BHE") and subsidiaries:			
BHE senior unsecured debt due 2025-2053	4.4%	\$ 13,101	\$ 13,996
Subsidiary and other debt due 2024-2064	4.4%	39,072	37,639
Short-term borrowings	5.9%	4,148	1,119
Pilot Travel Centers ("PTC") and subsidiaries due 2024-2028	7.2%	5,776	—
Burlington Northern Santa Fe ("BNSF") and subsidiaries due 2024-2097	4.6%	23,482	23,452
		<u>\$ 85,579</u>	<u>\$ 76,206</u>

BHE subsidiary debt represents amounts issued pursuant to separate financing agreements. Substantially all of the assets of certain BHE subsidiaries are, or may be, pledged or encumbered to support or otherwise secure such debt. These borrowing arrangements generally contain various covenants, including covenants which pertain to leverage ratios, interest coverage ratios and/or debt service coverage ratios. In 2023, BHE subsidiaries issued \$4.2 billion par of term debt with a weighted average interest rate of 5.7% and maturity dates ranging from 2033 to 2055, and BHE and its subsidiaries repaid approximately \$3.7 billion of term debt. In 2024, BHE subsidiaries issued \$5.1 billion of term debt with a weighted average interest rate of 5.4% and maturity dates ranging from 2029 to 2055 and repaid short term borrowings of approximately \$2.8 billion.

PTC's borrowings primarily represent secured syndicated loans. BNSF's borrowings are primarily senior unsecured debentures. During 2023, BNSF issued \$1.6 billion par of 5.2% debentures due in 2054 and repaid approximately \$1.6 billion of term debt. As of December 31, 2023, BHE, BNSF and PTC and their subsidiaries were in compliance with all applicable debt covenants. Berkshire does not guarantee any debt, borrowings or lines of credit of BHE, BNSF, PTC or their subsidiaries.

Unused lines of credit and commercial paper capacity to support operations and provide additional liquidity for our subsidiaries were approximately \$9.4 billion at December 31, 2023, of which approximately \$6.0 billion related to BHE and its subsidiaries.

Debt principal repayments expected during each of the next five years are as follows (in millions). Amounts in 2024 include short-term borrowings.

	2024	2025	2026	2027	2028
Insurance and other	\$ 3,295	\$ 3,076	\$ 4,499	\$ 2,877	\$ 1,413
Railroad, utilities and energy	10,564	3,972	1,554	1,672	5,020
	<u>\$ 13,859</u>	<u>\$ 7,048</u>	<u>\$ 6,053</u>	<u>\$ 4,549</u>	<u>\$ 6,433</u>

Notes to Consolidated Financial Statements

(20) Income taxes

Liabilities for income taxes reflected in our Consolidated Balance Sheets are as follows (in millions).

	December 31,	
	2023	2022
Currently payable	\$ 185	\$ 511
Deferred	92,344	76,417
Other	480	440
	<u>\$ 93,009</u>	<u>\$ 77,368</u>

The tax effects of temporary differences that pertain to our deferred income tax assets and liabilities are shown below (in millions).

	December 31,	
	2023	2022
Deferred income tax liabilities:		
Investments, including unrealized appreciation	\$ 56,766	\$ 41,150
Deferred charges reinsurance assumed	1,994	2,073
Property, plant and equipment and equipment held for lease	32,991	32,080
Goodwill and other intangible assets	7,546	7,010
Other	4,452	5,162
	<u>103,749</u>	<u>87,475</u>
Deferred income tax assets:		
Unpaid losses and loss adjustment expenses	(1,255)	(1,290)
Unearned premiums	(1,285)	(1,196)
Accrued liabilities	(2,626)	(1,790)
Regulatory liabilities	(1,248)	(1,323)
Deferred revenue	(2,282)	(1,880)
Other	(2,709)	(3,579)
	<u>(11,405)</u>	<u>(11,058)</u>
Net deferred income tax liability	<u>\$ 92,344</u>	<u>\$ 76,417</u>

We have not established deferred income taxes on accumulated undistributed earnings of certain foreign subsidiaries, which are expected to be reinvested indefinitely. Repatriation of all accumulated earnings of foreign subsidiaries would be impracticable to the extent that such earnings represent capital to support ongoing business operations. Generally, no U.S. federal income taxes will be imposed on future distributions of foreign earnings under current law. However, distributions to the U.S. or other foreign jurisdictions could be subject to withholding and other local taxes.

Income tax expense (benefit) reflected in our Consolidated Statements of Earnings for each of the three years ending December 31, 2023 was as follows (in millions).

	2023	2022	2021
U.S. Federal	\$ 20,764	\$ (10,316)	\$ 20,384
U.S. State	763	762	(527)
Foreign	1,492	1,052	1,055
	<u>\$ 23,019</u>	<u>\$ (8,502)</u>	<u>\$ 20,912</u>
Current	\$ 7,642	\$ 4,815	\$ 5,326
Deferred	15,377	(13,317)	15,586
	<u>\$ 23,019</u>	<u>\$ (8,502)</u>	<u>\$ 20,912</u>

Notes to Consolidated Financial Statements

(20) Income taxes

Income tax expense (benefit) is reconciled to hypothetical amounts computed at the U.S. federal statutory rate for each of the three years ending December 31, 2023 in the table below (dollars in millions).

	2023	2022	2021
Earnings (loss) before income taxes	\$ 120,166	\$ (30,500)	\$ 111,861
Hypothetical income tax expense (benefit) at the U.S. federal statutory rate	\$ 25,235	\$ (6,405)	\$ 23,491
Dividends received deduction and tax-exempt interest	(678)	(512)	(457)
State income taxes, less U.S. federal income tax effect	603	602	(417)
U.S. income tax credits*	(2,186)	(2,187)	(1,860)
Other differences, net	45	—	155
	\$ 23,019	\$ (8,502)	\$ 20,912
Effective income tax rate	19.2%	27.9%	18.7%

* U.S. income tax credits derive primarily from production tax credits associated with wind-energy generation of BHE and tax credits arising from affordable housing investments.

We file income tax returns in the U.S. and in state, local and foreign jurisdictions. We have settled income tax liabilities with the U.S. federal taxing authority ("IRS") for tax years through 2011. The 2012 and 2013 tax years are under review by the IRS's Independent Office of Appeals, and the IRS is currently auditing tax years 2014 through 2019. We are also under audit or subject to audit with respect to income taxes in state and foreign jurisdictions. It is reasonably possible that certain of these income tax examinations will be settled in 2024. We currently do not believe that the outcome of unresolved issues or claims will be material to our Consolidated Financial Statements.

At December 31, 2023 and 2022, net unrecognized tax benefits were \$480 million and \$440 million, respectively. Included in the balance at December 31, 2023, were \$420 million of tax positions that, if recognized, would impact the effective tax rate. We do not expect material increases to the estimated amount of unrecognized tax benefits during 2024.

On August 16, 2022, the Inflation Reduction Act of 2022 ("the 2022 Act") was signed into law. The 2022 Act contains numerous provisions, including a 15% corporate alternative minimum income tax ("CAMT") on "adjusted financial statement income", expanded tax credits for clean energy incentives and a 1% excise tax on corporate stock repurchases. The provisions of the 2022 Act are effective for tax years beginning after December 31, 2022. The extent to which the Company incurs CAMT will depend on the facts and circumstances of the given tax year. We do not expect to incur a CAMT liability in 2023. The Internal Revenue Service and the U.S. Department of Treasury may release additional guidance in the future. We will continue to evaluate the impact of the 2022 Act as more guidance becomes available.

The Organization for Economic Co-operation and Development has issued Pillar Two model rules introducing a new global minimum tax of 15% intended to be effective on January 1, 2024. While the U.S. has not yet adopted the Pillar Two rules, various other governments around the world are enacting legislation. As currently designed, Pillar Two will ultimately apply to our worldwide operations. Considering we do not have material operations in jurisdictions with tax rates lower than the Pillar Two minimum, these rules are not expected to materially increase our global tax costs. There remains uncertainty as to the final Pillar Two model rules. We will continue to monitor U.S. and global legislative action related to Pillar Two for potential impacts.

Notes to Consolidated Financial Statements

(21) Fair value measurements

Our financial assets and liabilities are summarized below, with fair values shown according to the fair value hierarchy (in millions). The carrying values of cash and cash equivalents, U.S. Treasury Bills, other receivables and accounts payable, accruals and other liabilities are considered to be reasonable estimates of or otherwise approximate the fair values.

	Carrying Value	Fair Value	Quoted Prices (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2023					
Investments in fixed maturity securities:					
U.S. Treasury, U.S. government corporations and agencies	\$ 10,269	\$ 10,269	\$ 10,234	\$ 35	\$ —
Foreign governments	11,805	11,805	11,559	246	—
Corporate bonds	1,449	1,449	—	860	589
Other	235	235	—	235	—
Investments in equity securities	353,842	353,842	343,358	10	10,474
Investments in Kraft Heinz & Occidental common stock	28,640	26,587	26,587	—	—
Loans and finance receivables	24,681	24,190	—	892	23,298
Derivative contract assets ⁽¹⁾	334	334	39	282	13
Derivative contract liabilities ⁽¹⁾	213	213	7	111	95
Notes payable and other borrowings:					
Insurance and other	42,692	39,184	—	39,153	31
Railroad, utilities and energy	85,579	81,036	—	81,036	—
December 31, 2022					
Investments in fixed maturity securities:					
U.S. Treasury, U.S. government corporations and agencies	\$ 9,802	\$ 9,802	\$ 9,733	\$ 69	\$ —
Foreign governments	10,327	10,327	9,854	473	—
Corporate bonds	2,195	2,195	—	1,546	649
Other	2,804	2,804	—	2,804	—
Investments in equity securities	308,793	308,793	296,610	9	12,174
Investments in Kraft Heinz & Occidental common stock	24,421	25,491	25,491	—	—
Loans and finance receivables	23,208	23,428	—	1,513	21,915
Derivative contract assets ⁽¹⁾	589	589	56	474	59
Derivative contract liabilities ⁽¹⁾	242	242	8	122	112
Notes payable and other borrowings:					
Insurance and other	46,538	41,961	—	41,061	900
Railroad, utilities and energy	76,206	67,651	—	67,651	—

⁽¹⁾ Assets are included in other assets, and liabilities are included in accounts payable, accruals and other liabilities.

Notes to Consolidated Financial Statements

(21) Fair value measurements

The fair values of substantially all of our financial instruments were measured using market or income approaches. The hierarchy for measuring fair value consists of Levels 1 through 3, which are described below.

Level 1 – Inputs represent unadjusted quoted prices for identical assets or liabilities exchanged in active markets.

Level 2 – Inputs include directly or indirectly observable inputs (other than Level 1 inputs) such as quoted prices for similar assets or liabilities exchanged in active or inactive markets; quoted prices for identical assets or liabilities exchanged in inactive markets; other inputs that may be considered in fair value determinations of the assets or liabilities, such as interest rates and yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates; and inputs that are derived principally from or corroborated by observable market data by correlation or other means. Pricing evaluations generally reflect discounted expected future cash flows, which incorporate yield curves for instruments with similar characteristics, such as credit ratings, estimated durations and yields for other instruments of the issuer or entities in the same industry sector.

Level 3 – Inputs include unobservable inputs used in the measurement of assets and liabilities. Management is required to use its own assumptions regarding unobservable inputs because there is little, if any, market activity in the assets or liabilities and it may be unable to corroborate the related observable inputs. Unobservable inputs require management to make certain projections and assumptions about the information that would be used by market participants in valuing assets or liabilities.

Reconciliations of significant assets and liabilities measured and carried at fair value on a recurring basis with the use of significant unobservable inputs (Level 3) for each of the three years ending December 31, 2023 follow (in millions).

	Balance at the beginning of the year	Gains (losses) included in earnings	Acquisitions, dispositions and settlements	Transfers out of Level 3	Balance at the end of the year
Investments in equity securities:					
2023	\$ 12,169	\$ (40)	\$ (1,661)	\$ —	\$ 10,468
2022	11,480	689	—	—	12,169
2021	8,978	1,902	1,100	(500)	11,480
Equity index put option contract liabilities:					
2021	(1,065)	966	—	99	—

Quantitative information as of December 31, 2023 for the significant assets measured and carried at fair value on a recurring basis with the use of significant unobservable inputs (Level 3) follows (dollars in millions).

	Fair Value	Principal Valuation Techniques	Unobservable Inputs	Weighted Average
Investments in equity securities:				
Preferred stock	\$ 8,688	Discounted cash flow	Expected duration	6 years
			Discount for transferability restrictions and subordination	372 bps
Common stock warrants	1,780	Warrant pricing model	Expected duration	6 years
			Volatility	41%

Notes to Consolidated Financial Statements

(21) Fair value measurements

Investments in equity securities in the preceding table include our investments in certain preferred and common stock warrants that do not have readily determinable market values as defined under GAAP. These investments are private placements with contractual terms that restrict transfers and currently prevent us from economically hedging our investments. We applied discounted cash flow techniques in valuing the preferred stock and we made assumptions regarding the expected duration of the investment and the effects of subordination in liquidation. In valuing the common stock warrants, we used a warrant valuation model. While most of the inputs to the warrant model are observable, we made assumptions regarding the expected duration and volatility.

(22) Common stock

The changes in Berkshire's issued, treasury and outstanding common stock for each of the three years ending December 31, 2023 are shown in the table below. In addition, 1,000,000 shares of preferred stock are authorized, but none are issued.

	Class A, \$5 Par Value (1,650,000 shares authorized)			Class B, \$0.0033 Par Value (3,225,000,000 shares authorized)		
	Issued	Treasury	Outstanding	Issued	Treasury	Outstanding
Balance at December 31, 2020						1,350,043,471
	678,523	(34,592)	643,931	1,469,359,852	(119,316,381)	
Conversions of Class A to Class B common stock	(12,622)	—	(12,622)	18,933,000	—	18,933,000
Treasury stock acquired	—	(14,196)	(14,196)	—	(78,501,968)	(78,501,968)
Balance at December 31, 2021						1,290,474,503
	665,901	(48,788)	617,113	1,488,292,852	(197,818,349)	
Conversions of Class A to Class B common stock	(14,451)	—	(14,451)	21,676,500	—	21,676,500
Treasury stock acquired	—	(11,098)	(11,098)	—	(9,896,927)	(9,896,927)
Balance at December 31, 2022						1,302,254,076
	651,450	(59,886)	591,564	1,509,969,352	(207,715,276)	
Conversions of Class A to Class B common stock	(12,122)	—	(12,122)	18,183,000	—	18,183,000
Treasury stock acquired	—	(11,667)	(11,667)	—	(9,875,568)	(9,875,568)
Balance at December 31, 2023						1,310,561,508
	<u>639,328</u>	<u>(71,553)</u>	<u>567,775</u>	<u>1,528,152,352</u>	<u>(217,590,844)</u>	

Each Class A common share is entitled to one vote per share. Class B common stock possesses dividend and distribution rights equal to one-fifteen-hundredth (1/1,500) of such rights of Class A common stock. Each Class B common share possesses voting rights equal to one-ten-thousandth (1/10,000) of the voting rights of a Class A share. Unless otherwise required under Delaware General Corporation Law, Class A and Class B common shares vote as a single class. Each share of Class A common stock is convertible, at the option of the holder, into 1,500 shares of Class B common stock. Class B common stock is not convertible into Class A common stock. On an equivalent Class A common stock basis, there were 1,441,483 shares outstanding as of December 31, 2023 and 1,459,733 shares outstanding as of December 31, 2022.

Since we have two classes of common stock, we provide earnings per share data on the Consolidated Statements of Earnings for average equivalent Class A shares outstanding and average equivalent Class B shares outstanding. Class B shares are economically equivalent to one-fifteen-hundredth (1/1,500) of a Class A share. Average equivalent Class A shares outstanding represents average Class A shares outstanding plus one-fifteen-hundredth (1/1,500) of the average Class B shares outstanding. Average equivalent Class B shares outstanding represents average Class B shares outstanding plus 1,500 times average Class A shares outstanding.

Berkshire's common stock repurchase program, as amended, permits Berkshire to repurchase shares any time that Warren Buffett, Berkshire's Chairman of the Board and Chief Executive Officer, believes that the repurchase price is below Berkshire's intrinsic value, conservatively determined. The program continues to allow share repurchases in the open market or through privately negotiated transactions and does not specify a maximum number of shares to be repurchased. However, repurchases will not be made if they would reduce the total value of Berkshire's consolidated cash, cash equivalents and U.S. Treasury Bill holdings below \$30 billion. The repurchase program does not obligate Berkshire to repurchase any specific dollar amount or number of Class A or Class B shares and there is no expiration date to the program.

Notes to Consolidated Financial Statements

(23) Revenues from contracts with customers

The following table summarizes customer contract revenues disaggregated by reportable segment and the source of the revenue for each of the three years ended December 31, 2023 (in millions). Revenues from PTC in 2023 are for the eleven months ending December 31, 2023. Other revenues, which are not considered to be revenues from contracts with customers under GAAP, are primarily insurance premiums earned, interest, dividend and other investment income and leasing revenues.

	Manufactur ing	McLane	Service and Retailing	BNSF	Berkshire Hathaway Energy	PTC	Insurance, Corporate and other	Total
2023								
Manufactured products:								
Industrial and commercial	\$ 28,066	\$ —	\$ 233	\$ —	\$ —	\$ —	\$ —	\$ 28,299
Building	20,119	—	—	—	—	—	—	20,119
Consumer	17,702	—	—	—	—	—	—	17,702
Grocery and convenience store distribution	—	31,524	—	—	—	—	—	31,524
Food and beverage distribution	—	19,040	—	—	—	—	—	19,040
Auto sales	—	—	10,747	—	—	—	—	10,747
Other retail and wholesale distribution	3,289	—	16,289	—	—	2,423	—	22,001
Service	1,457	1,079	5,474	23,724	4,055	264	—	36,053
Electricity, natural gas and fuel	—	—	—	—	20,647	48,774	—	69,421
Total	70,633	51,643	32,743	23,724	24,702	51,461	—	254,906
Other revenues	4,650	171	7,136	67	1,258	203	96,091	109,576
	<u>\$ 75,283</u>	<u>\$ 51,814</u>	<u>\$ 39,879</u>	<u>\$ 23,791</u>	<u>\$ 25,960</u>	<u>\$ 51,664</u>	<u>\$ 96,091</u>	<u>\$ 364,482</u>
2022								
Manufactured products:								
Industrial and commercial	\$ 24,566	\$ —	\$ 199	\$ —	\$ —	—	\$ —	\$ 24,765
Building	22,762	—	—	—	—	—	—	22,762
Consumer	19,912	—	—	—	—	—	—	19,912
Grocery and convenience store distribution	—	32,599	—	—	—	—	—	32,599
Food and beverage distribution	—	19,388	—	—	—	—	—	19,388
Auto sales	—	—	10,486	—	—	—	—	10,486
Other retail and wholesale distribution	3,195	—	16,931	—	—	—	—	20,126
Service	1,199	1,103	4,439	25,742	4,933	—	—	37,416
Electricity and natural gas	—	—	—	—	20,317	—	—	20,317
Total	71,634	53,090	32,055	25,742	25,250	—	—	207,771
Other revenues	4,016	119	6,154	60	1,097	—	82,803	94,249
	<u>\$ 75,650</u>	<u>\$ 53,209</u>	<u>\$ 38,209</u>	<u>\$ 25,802</u>	<u>\$ 26,347</u>	—	<u>\$ 82,803</u>	<u>\$ 302,020</u>
2021								
Manufactured products:								
Industrial and commercial	\$ 22,184	\$ —	\$ 159	\$ —	\$ —	—	\$ —	\$ 22,343
Building	19,604	—	—	—	—	—	—	19,604
Consumer	18,540	—	—	—	—	—	—	18,540
Grocery and convenience store distribution	—	31,245	—	—	—	—	—	31,245
Food and beverage distribution	—	17,332	—	—	—	—	—	17,332
Auto sales	—	—	9,966	—	—	—	—	9,966
Other retail and wholesale distribution	2,997	—	15,898	—	—	—	—	18,895
Service	1,486	751	4,123	23,120	5,583	—	—	35,063
Electricity and natural gas	—	—	—	—	18,264	—	—	18,264
Total	64,811	49,328	30,146	23,120	23,847	—	—	191,252
Other revenues	3,766	122	4,601	57	1,205	—	75,182	84,933
	<u>\$ 68,577</u>	<u>\$ 49,450</u>	<u>\$ 34,747</u>	<u>\$ 23,177</u>	<u>\$ 25,052</u>	—	<u>\$ 75,182</u>	<u>\$ 276,185</u>

Notes to Consolidated Financial Statements

(23) Revenues from contracts with customers

A summary of the transaction price allocated to the significant unsatisfied remaining performance obligations related to contracts with expected durations exceeding one year as of December 31, 2023 and the timing of when the performance obligations are expected to be satisfied follows (in millions).

	Less than 12 months	Greater than 12 months	Total
Electricity, natural gas and fuel	\$ 3,039	\$ 20,019	\$ 23,058
Other sales and service contracts	3,163	5,181	8,344

(24) Pension plans

Certain Berkshire subsidiaries sponsor defined benefit pension plans. Benefits under the plans are generally based on years of service and compensation or fixed benefit rates. Plan sponsors may make contributions to the plans to meet regulatory requirements and may also make discretionary contributions. Our net periodic pension expense for each of the three years ending December 31, 2023 was as follows (in millions).

	2023	2022	2021
Service cost	\$ 111	\$ 181	\$ 257
Interest cost	640	482	410
Expected return on plan assets	(785)	(975)	(1,008)
Other	2	156	203
Net periodic pension expense	<u>\$ (32)</u>	<u>\$ (156)</u>	<u>\$ (138)</u>

The projected benefit obligation ("PBO") is the actuarial present value of benefits earned based upon service and compensation prior to the valuation date and, if applicable, includes assumptions regarding future compensation levels. Benefit obligations under qualified U.S. defined benefit pension plans are funded through assets held in trusts. Pension obligations under certain other plans are unfunded and the aggregate PBOs of such plans were \$1.0 billion and \$1.1 billion as of December 31, 2023 and 2022, respectively. The costs of certain BHE pension plans are expected to be recoverable through the regulated rate making process.

The funded status reflected in the Consolidated Balance Sheets at year end 2023 and 2022 and reconciliations of the changes in PBOs and plan assets related to BHE's pension plans and all other pension plans for each of the two years ending December 31, 2023 follow (in millions).

	2023			2022		
	BHE	Other	Total	BHE	Other	Total
PBOs						
Balance at the beginning of the year	\$ 3,215	\$ 9,523	\$ 12,738	\$ 4,780	\$ 14,012	\$ 18,792
Service cost	21	90	111	36	145	181
Interest cost	167	473	640	118	364	482
Benefits paid	(274)	(578)	(852)	(250)	(585)	(835)
Settlements paid	—	(448)	(448)	(164)	(678)	(842)
Actuarial (gains) losses and other	140	438	578	(1,305)	(3,735)	(5,040)
Balance at the end of the year	<u>\$ 3,269</u>	<u>\$ 9,498</u>	<u>\$ 12,767</u>	<u>\$ 3,215</u>	<u>\$ 9,523</u>	<u>\$ 12,738</u>
Plan assets						
Balance at the beginning of the year	\$ 3,376	\$ 9,216	\$ 12,592	\$ 5,158	\$ 13,462	\$ 18,620
Employer contributions	27	118	145	29	133	162
Benefits paid	(274)	(578)	(852)	(250)	(585)	(835)
Settlements paid	—	(448)	(448)	(164)	(678)	(842)
Actual return on plan assets	271	1,512	1,783	(1,162)	(2,971)	(4,133)
Other	71	88	159	(235)	(145)	(380)
Balance at the end of the year	<u>\$ 3,471</u>	<u>\$ 9,908</u>	<u>\$ 13,379</u>	<u>\$ 3,376</u>	<u>\$ 9,216</u>	<u>\$ 12,592</u>
Funded status – net (asset) liability	<u>\$ (202)</u>	<u>\$ (410)</u>	<u>\$ (612)</u>	<u>\$ (161)</u>	<u>\$ 307</u>	<u>\$ 146</u>

Notes to Consolidated Financial Statements

(24) Pension plans

The funded status at December 31, 2023 reflected in assets was \$1,823 million and in liabilities was \$1,211 million. The funded status at December 31, 2022 included in assets was \$1,510 million and in liabilities was \$1,656 million.

The accumulated benefit obligation (“ABO”) is the actuarial present value of benefits earned based on service and compensation prior to the valuation date. The ABO was \$12.3 billion at December 31, 2023 and \$12.2 billion at December 31, 2022. Information for plans with PBOs and ABOs in excess of plan assets as of December 31, 2023 and 2022 follows (in millions).

	2023	2022
PBOs	\$ 5,679	\$ 6,422
Plan assets	4,469	4,766
ABOs	1,246	5,594
Plan assets	222	4,234

Weighted average assumptions used in determining PBOs and net periodic pension expense follow.

	2023	2022	2021
Discount rate applicable to PBOs	5.0%	5.2%	2.7%
Expected long-term rate of return on plan assets	6.0	5.9	6.1
Rate of compensation increase	2.6	2.5	2.6
Discount rate applicable to net periodic pension expense	5.3	2.9	2.4

Pension benefit payments expected over the next ten years follow (in millions): 2024 – \$895; 2025 – \$886; 2026 – \$885; 2027 – \$896; 2028 – \$885; and 2029 through 2033 – \$4,434. We expect to contribute \$118 million to the pension plans in 2024.

Fair value measurements of plan assets as of December 31, 2023 and 2022 follow (in millions).

	Total	Fair Value Level 1	Level 2	Level 3	Investments carried at net asset value
December 31, 2023					
Cash and cash equivalents	\$ 449	\$ 370	\$ 79	\$ —	\$ —
Equity securities	8,487	7,808	543	136	—
Fixed maturity securities	2,138	1,277	851	10	—
Investment funds and other	2,305	342	272	42	1,649
	<u>\$ 13,379</u>	<u>\$ 9,797</u>	<u>\$ 1,745</u>	<u>\$ 188</u>	<u>\$ 1,649</u>
December 31, 2022					
Cash and cash equivalents	\$ 602	\$ 523	\$ 79	\$ —	\$ —
Equity securities	7,673	7,112	321	240	—
Fixed maturity securities	2,152	1,328	824	—	—
Investment funds and other	2,165	198	394	42	1,531
	<u>\$ 12,592</u>	<u>\$ 9,161</u>	<u>\$ 1,618</u>	<u>\$ 282</u>	<u>\$ 1,531</u>

See Note 21 for a discussion of fair value measurements. Plan assets are generally invested with the long-term objective of producing earnings to adequately cover expected benefit obligations, while assuming a prudent level of risk. Allocations may change due to changing market conditions and investment opportunities. The expected rates of return on plan assets reflect subjective assessments of expected long-term investment returns. Generally, past investment returns are not given significant consideration when establishing assumptions for expected long-term rates of return on plan assets. Actual experience will differ from the assumed rates of return.

Notes to Consolidated Financial Statements

(24) Pension plans

A reconciliation of the pre-tax accumulated other comprehensive income (loss) of our defined benefit pension plans for each of the two years ending December 31, 2023 follows (in millions).

	2023	2022
Balance at the beginning of the year	\$ (738)	\$ (485)
Amount included in net periodic pension expense	(12)	123
Actuarial gains (losses) and other	589	(376)
Balance at the end of the year	<u>\$ (161)</u>	<u>\$ (738)</u>

Several of our subsidiaries also sponsor defined contribution retirement plans, such as 401(k) or profit-sharing plans. Employee contributions are subject to regulatory limitations and specific plan provisions. Several plans provide for employer matching contributions as specified in the plans and may provide for additional discretionary employer contributions. Our defined contribution plan expense was approximately \$1.1 billion in 2023, \$0.8 billion in 2022 and \$1.0 billion in 2021.

(25) Accumulated other comprehensive income

A summary of the net changes in after-tax accumulated other comprehensive income attributable to Berkshire Hathaway shareholders for each of the three years ending December 31, 2023 follows (in millions).

	Unrealized gains (losses) on investments	Foreign currency translation	Long-duration insurance contracts	Defined benefit pension plans	Other	Total
Balance at December 31, 2020	\$ 536	\$ (3,082)	\$ —	\$ (1,645)	\$ (52)	\$ (4,243)
Adoption of ASU 2018-12	—	—	(5,751)	—	—	(5,751)
Balance at January 1, 2021	536	(3,082)	(5,751)	(1,645)	(52)	(9,994)
Other comprehensive income	(167)	(1,010)	1,655	1,298	95	1,871
Balance at December 31, 2021	369	(4,092)	(4,096)	(347)	43	(8,123)
Other comprehensive income	(556)	(2,050)	5,637	(205)	245	3,071
Balance at December 31, 2022	(187)	(6,142)	1,541	(552)	288	(5,052)
Other comprehensive income	377	749	(188)	455	(104)	1,289
Balance at December 31, 2023	<u>\$ 190</u>	<u>\$ (5,393)</u>	<u>\$ 1,353</u>	<u>\$ (97)</u>	<u>\$ 184</u>	<u>\$ (3,763)</u>

Notes to Consolidated Financial Statements

(26) Business segment data

Our operating businesses include a large and diverse group of insurance, manufacturing, service and retailing businesses. We organize our reportable business segments in a manner that reflects how management views those business activities. Certain businesses are grouped together for segment reporting based upon similar products or product lines, marketing, selling and distribution characteristics, even though those business units are operated under separate local management. We acquired control of PTC on January 31, 2023 and PTC is considered a reportable segment beginning February 1, 2023. In this presentation, statement of earnings and capital expenditures data of the PTC segment are for the eleven months ending December 31, 2023. Previously, our earnings from PTC were determined under the equity method and included in earnings from non-controlled businesses.

The tabular information that follows shows data of reportable segments reconciled to amounts reflected in our Consolidated Financial Statements. Intersegment transactions are not eliminated from segment results when management considers those transactions in assessing the results of the respective segments. Furthermore, our management does not consider investment and derivative gains/losses, impairments or amortization of certain business acquisition accounting adjustments or certain other corporate income and expense items in assessing the financial performance of operating units. Collectively, these items are included in reconciliations of segment amounts to consolidated amounts.

Berkshire's operating segments are as follows.

Business Identity	Business Activity
Insurance:	
GEICO	Underwriting private passenger automobile insurance mainly by direct response methods
Berkshire Hathaway Primary Group	Underwriting multiple lines of property and casualty insurance policies for primarily commercial accounts
Berkshire Hathaway Reinsurance Group	Underwriting excess-of-loss, quota-share and facultative reinsurance worldwide
Railroad ("BNSF")	Operation of one of the largest railroad systems in North America through Burlington Northern Santa Fe, LLC
Berkshire Hathaway Energy ("BHE")	Regulated electric and gas utility, including power generation and distribution activities and real estate brokerage activities through Berkshire Hathaway Energy Company and affiliates
Pilot Travel Centers ("PTC")	Largest operator of travel centers in North America and a marketer of wholesale fuel
Manufacturing	Manufacturers of numerous products including industrial, consumer and building products, including home building and related financial services
McLane Company ("McLane")	Wholesale distribution of groceries and non-food items
Service and retailing	Providers of numerous services including shared aircraft ownership programs, aviation pilot training, electronic components distribution, various retailing businesses, including automobile dealerships and trailer and furniture leasing

Notes to Consolidated Financial Statements

(26) Business segment data

A disaggregation of our consolidated data for each of the three most recent years is presented as follows (in millions).

	Revenues			Earnings (loss) before income taxes		
	2023	2022	2021	2023	2022	2021
Operating Businesses						
Insurance:						
Underwriting:						
GEICO	\$ 39,264	\$ 38,984	\$ 37,706	\$ 3,635	\$ (1,880)	\$ 1,259
Berkshire Hathaway Primary Group	17,129	13,746	11,575	1,374	393	607
Berkshire Hathaway Reinsurance Group	27,010	21,846	20,179	1,904	1,465	(755)
Insurance underwriting	83,403	74,576	69,460	6,913	(22)	1,111
Investment income	11,619	7,734	5,662	11,581	7,724	5,649
Total insurance	95,022	82,310	75,122	18,494	7,702	6,760
BNSF	23,876	25,888	23,282	6,614	7,708	7,861
BHE	26,008	26,393	25,096	940	3,146	3,293
PTC	51,739	—	—	968	—	—
Manufacturing	75,405	75,781	68,730	11,445	11,177	9,841
McLane	52,607	53,209	49,450	455	271	230
Service and retailing	39,996	38,303	34,832	4,721	4,771	4,481
	364,653	301,884	276,512	43,637	34,775	32,466
Reconciliation to consolidated amount						
Investment and derivative gains (losses)	—	—	—	74,855	(67,899)	78,542
Interest expense, not allocated to segments	—	—	—	(426)	(420)	(455)
Non-controlled businesses	—	—	—	1,973	1,863	886
Corporate, eliminations and other	(171)	136	(327)	127	1,181	422
	\$ 364,482	\$ 302,020	\$ 276,185	\$ 120,166	\$ (30,500)	\$ 111,861
	Interest expense			Income tax expense (benefit)		
	2023	2022	2021	2023	2022	2021
Operating Businesses						
Insurance						
	\$ —	\$ —	\$ —	\$ 3,497	\$ 1,247	\$ 1,083
BNSF	1,048	1,025	1,032	1,527	1,763	1,871
BHE	2,283	2,140	2,054	(2,022)	(1,629)	(1,153)
PTC	414	—	—	169	—	—
Manufacturing	784	739	704	2,487	2,403	2,193
McLane	—	—	—	117	66	61
Service and retailing	101	42	38	1,135	1,131	1,086
	4,630	3,946	3,828	6,910	4,981	5,141
Reconciliation to consolidated amount						
Investment and derivative gains (losses)	—	—	—	15,930	(14,166)	16,025
Interest expense, not allocated to segments	426	420	455	(90)	(88)	(96)
Non-controlled businesses	—	—	—	223	334	82
Corporate, eliminations and other	(53)	(14)	(111)	46	437	(240)
	\$ 5,003	\$ 4,352	\$ 4,172	\$ 23,019	\$ (8,502)	\$ 20,912

Notes to Consolidated Financial Statements

(26)Business segment data

	Capital expenditures			Depreciation of tangible assets		
	2023	2022	2021	2023	2022	2021
Operating Businesses						
Insurance	\$ 68	\$ 82	\$ 62	\$ 72	\$ 69	\$ 72
BNSF	3,920	3,532	2,910	2,581	2,479	2,406
BHE	9,148	7,505	6,611	3,913	3,702	3,584
PTC	705	—	—	510	—	—
Manufacturing	2,714	2,477	2,100	2,099	2,021	2,037
McLane	264	93	106	208	176	189
Service and retailing	2,590	1,775	1,487	1,275	1,219	1,177
	<u>\$ 19,409</u>	<u>\$ 15,464</u>	<u>\$ 13,276</u>	<u>\$ 10,658</u>	<u>\$ 9,666</u>	<u>\$ 9,465</u>
	Goodwill at year-end			Identifiable assets at year-end		
	2023	2022	2021	2023	2022	2021
Operating Businesses						
Insurance	\$ 16,563	\$ 16,548	\$ 15,181	\$ 538,860	\$ 459,917	\$ 483,417
BNSF	15,350	14,852	14,852	79,227	77,752	76,586
BHE	11,804	11,745	11,906	124,383	118,114	113,447
PTC	6,605	—	—	21,404	—	—
Manufacturing	27,831	28,460	25,463	115,875	113,578	107,231
McLane	232	232	232	6,861	7,049	6,841
Service and retailing	6,241	6,282	6,241	34,600	31,291	28,221
	<u>\$ 84,626</u>	<u>\$ 78,119</u>	<u>\$ 73,875</u>	<u>921,210</u>	<u>807,701</u>	<u>815,743</u>
Reconciliation to consolidated amount						
Corporate and other				64,142	62,645	69,770
Goodwill				84,626	78,119	73,875
				<u>\$ 1,069,978</u>	<u>\$ 948,465</u>	<u>\$ 959,388</u>

Property/casualty and life/health insurance premiums written and earned are summarized below (in millions).

	Property/Casualty			Life/Health		
	2023	2022	2021	2023	2022	2021
Premiums Written:						
Direct	\$ 61,990	\$ 56,700	\$ 53,829	\$ —	\$ 582	\$ 646
Assumed	20,751	15,143	12,461	5,126	5,222	5,670
Ceded	(2,402)	(1,155)	(1,015)	(33)	(37)	(40)
	<u>\$ 80,339</u>	<u>\$ 70,688</u>	<u>\$ 65,275</u>	<u>\$ 5,093</u>	<u>\$ 5,767</u>	<u>\$ 6,276</u>
Premiums Earned:						
Direct	\$ 60,437	\$ 55,879	\$ 52,139	\$ —	\$ 582	\$ 646
Assumed	20,442	14,184	12,072	5,105	5,263	5,698
Ceded	(2,548)	(1,293)	(1,054)	(33)	(39)	(41)
	<u>\$ 78,331</u>	<u>\$ 68,770</u>	<u>\$ 63,157</u>	<u>\$ 5,072</u>	<u>\$ 5,806</u>	<u>\$ 6,303</u>

Insurance premiums written by geographic region (based upon the domicile of the insured or reinsured) are summarized below (in millions).

	Property/Casualty			Life/Health		
	2023	2022	2021	2023	2022	2021
United States	\$ 67,831	\$ 59,648	\$ 55,451	\$ 1,285	\$ 2,107	\$ 2,143
Asia Pacific	5,306	4,699	3,822	1,760	1,704	2,030
Western Europe	5,014	4,901	4,613	1,323	1,235	1,298
All other	2,188	1,440	1,389	725	721	805
	<u>\$ 80,339</u>	<u>\$ 70,688</u>	<u>\$ 65,275</u>	<u>\$ 5,093</u>	<u>\$ 5,767</u>	<u>\$ 6,276</u>

Notes to Consolidated Financial Statements

(26) Business segment data

Consolidated sales, service and leasing revenues were \$164.1 billion in 2023, \$165.0 billion in 2022 and \$151.0 billion in 2021. Sales, service and leasing revenues attributable to the United States were 85% in 2023, 86% in 2022 and 85% in 2021 of such amounts. The remainder of sales, service and leasing revenues were primarily in Europe, the Asia-Pacific region and Canada. Railroad, utilities and energy revenues were \$101.4 billion in 2023, \$52.1 billion in 2022 and \$48.2 billion in 2021. Railroad, utilities and energy revenues attributable to the United States were 94% in 2023 and 96% in both 2022 and 2021. At December 31, 2023, approximately 90% of our consolidated net property, plant and equipment and equipment held for lease was located in the United States with the remainder primarily in the United Kingdom and Canada.

(27) Contingencies and commitments

We are parties in a variety of legal actions that routinely arise out of the normal course of business, including legal actions seeking to establish liability directly through insurance contracts or indirectly through reinsurance contracts issued by Berkshire subsidiaries. Plaintiffs occasionally seek punitive or exemplary damages. We do not believe that such normal and routine litigation will have a material effect on our financial condition or results of operations.

PacifiCorp, a wholly owned subsidiary of Berkshire's 92% owned subsidiary, Berkshire Hathaway Energy Company ("BHE"), operates as a regulated electric utility in Oregon and other Western states. In September 2020, a severe weather event resulting in high winds, low humidity and warm temperatures, contributed to several major wildfires (the "2020 Wildfires"), which resulted in real and personal property and natural resource damage, personal injuries and loss of life and widespread power outages in Oregon and Northern California. The wildfires spread across certain parts of PacifiCorp's service territory and surrounding areas across multiple counties in Oregon and California, including Siskiyou County, California; Jackson County, Oregon; Douglas County, Oregon; Marion County, Oregon; Lincoln County, Oregon; and Klamath County, Oregon, burning over 500,000 acres in aggregate. Third-party reports for these wildfires indicate over 2,000 structures destroyed, including residences; several structures damaged; multiple individuals injured; and several fatalities.

On July 29, 2022, the 2022 McKinney Fire began in the Oak Knoll Ranger District of the Klamath National Forest in Siskiyou County, California located in PacifiCorp's service territory (the "2022 Wildfire"). Third-party reports indicate that the 2022 Wildfire resulted in 11 structures damaged, 185 structures destroyed, 12 injuries and four fatalities and consumed 60,000 acres in aggregate. The 2020 Wildfires and 2022 Wildfire, together, are referred to as the "Wildfires".

Investigations into the cause and origin of each of the Wildfires are complex and ongoing and have been or are being conducted by various entities, including the U.S. Forest Service, the California Public Utilities Commission, the Oregon Department of Forestry, the Oregon Department of Justice, PacifiCorp and various experts engaged by PacifiCorp.

As of the date of this filing, a significant number of complaints and demands alleging similar claims related to the 2020 Wildfires have been filed in Oregon and California, including a class action complaint in Oregon for which two jury verdicts were issued in June 2023 and January 2024 as described below. The plaintiffs seek damages for economic losses, noneconomic losses, including mental suffering, emotional distress, personal injury and loss of life, punitive damages, other damages and attorneys' fees. Several insurance carriers have filed subrogation complaints in Oregon and California with allegations similar to those made in the aforementioned complaints. Additionally, the U.S. and Oregon Departments of Justice have informed PacifiCorp that they are contemplating filing actions against PacifiCorp in connection with certain of the Oregon 2020 Wildfires. PacifiCorp is actively cooperating with the U.S. and Oregon Departments of Justice on resolving these alleged claims, including through the pursuit of alternative dispute resolution.

Numerous lawsuits on behalf of plaintiffs related to the 2020 Wildfires have been filed in Oregon and California, including a class action complaint against PacifiCorp that was filed in 2020, captioned *Jeanyne James et al. v. PacifiCorp et al.*, in Multnomah County Circuit Court, Oregon (the "James case"). The plaintiffs seek damages for economic losses, non-economic losses, including mental suffering, emotional distress, personal injury and loss of life, punitive damages, other damages and attorneys' fees.

Amounts sought in the complaints and demands filed in Oregon and in certain demands in California approximate \$8 billion, excluding any doubling or trebling of damages included in the complaints. Generally, the complaints filed in California do not specify damages sought and are not included in this amount. Final determinations of liability will only be made following the completion of comprehensive investigations, litigation and similar processes. Multiple lawsuits have also been filed in California on behalf of plaintiffs related to the 2022 Wildfire. The plaintiffs seek damages for economic losses, non-economic losses, including mental suffering, emotional distress, personal injury and loss of life, punitive damages, other damages and attorneys' fees, but the amount of damages sought is not specified.

Notes to Consolidated Financial Statements

(27) Contingencies and commitments

In June 2023, a jury issued its verdict for the 17 named plaintiffs in the James case finding PacifiCorp liable to the 17 individual plaintiffs and to the class with respect to the four 2020 Wildfires named in the complaint. The jury awarded the 17 named plaintiffs \$90 million of damages, including \$4 million of economic and property damages, \$68 million of non-economic damages and \$18 million of punitive damages based on a 0.25 multiplier of the economic and non-economic damages.

In September 2023, the Multnomah County Circuit Court ordered trial dates for two consolidated jury trials including approximately 10 class members each and a third trial for certain commercial timber plaintiffs wherein plaintiffs in each of the three damages phase trials will present evidence regarding their damages. The first of these trials addressing nine individual plaintiffs was held in January 2024 while the remaining trials are scheduled at various dates through April 2024.

In January 2024, the Multnomah County Circuit Court entered a limited judgment and money award for the June 2023 James case verdict. The limited judgment awards the aforementioned damages, as well as doubling of the economic damages and offsetting of any insurance proceeds received by plaintiffs. The limited judgment created a lien against PacifiCorp, attaching a debt for the money awards. PacifiCorp posted a supersedeas bond, which stays any effort to seek payment of the judgment pending final resolution of any appeals. Under ORS 82.010, interest at a rate of 9% per annum will accrue on the judgment commencing at the date the judgment was entered until the entire money award is paid, amended or reversed by an appellate court.

In January 2024, the jury for the first James damages phase trial awarded nine plaintiffs \$62 million of damages, including \$6 million of economic damages and \$56 million of noneconomic damages. After the January 2024 jury verdict, the Multnomah County Circuit Court doubled the economic damages to \$12 million and added \$16 million of punitive damages using the 0.25 multiplier determined by the jury for the June 2023 James case verdict. PacifiCorp will request that the Multnomah County Circuit Court judge offset the damage awards by deducting insurance proceeds received by any of the nine plaintiffs.

PacifiCorp has filed its notice of appeal of the jury's findings and damage awards associated with the June 2023 verdict in the James case, including whether the case can proceed as a class action, and filed a motion to stay further damages phase trials. On February 14, 2024, the Oregon Court of Appeals denied PacifiCorp's request to stay the damages phase trials. PacifiCorp intends to appeal the jury's damage awards associated with the January 2024 jury verdict once the judgment is entered. On February 13, 2024, the 17 named plaintiffs filed a notice of cross-appeal as to the January 2024 limited judgment and money award. The appeals process and further actions could take several years.

A provision for a loss contingency is recorded when it is probable a liability has been incurred and the amount of loss can be reasonably estimated. PacifiCorp evaluates the related range of reasonably estimated losses and records a loss based on its best estimate within that range or the lower end of the range if there is no better estimate.

Estimated probable losses associated with the Wildfires were based on the information available to the date of this filing, including (i) ongoing cause and origin investigations; (ii) ongoing settlement and mediation discussions; (iii) other litigation matters and upcoming legal proceedings; and (iv) the status of the James case. Wildfire estimated losses include estimates for fire suppression costs, real and personal property damages, natural resource damages for certain areas and non-economic damages such as personal injury damages and loss of life damages that are considered probable of being incurred and that it is able to reasonably estimate at this time and which is subject to change as additional relevant information becomes available.

PacifiCorp recorded estimated pre-tax probable Wildfire losses, before expected related insurance recoveries, of approximately \$1.9 billion in 2023 and \$225 million in 2022. Such amounts, net of expected insurance recoveries, were approximately \$1.7 billion in 2023 and \$64 million in 2022, which were included in energy operating expenses in the accompanying Consolidated Statements of Earnings. PacifiCorp paid \$631 million in settlements in 2023 and \$53 million in 2022 associated with the 2020 Wildfires. PacifiCorp's cumulative charges to date for estimated probable Wildfire losses through December 31, 2023, before expected insurance recoveries, were \$2.4 billion.

It is reasonably possible PacifiCorp will incur significant additional Wildfire losses beyond the amounts currently accrued; however, it is currently unable to reasonably estimate the range of possible additional losses that could be incurred due to the number of properties and parties involved, including claimants in the class to the James case, the variation in those types of properties and lack of available details and the ultimate outcome of legal actions.

Notes to Consolidated Financial Statements

(27) Contingencies and commitments

HomeServices of America, Inc. (“HomeServices”), a wholly owned subsidiary of BHE, is currently defending against eleven antitrust cases, all in federal district courts. In each case, plaintiffs claim HomeServices and certain of its subsidiaries conspired with co-defendants to artificially inflate real estate commissions by following and enforcing multiple listing service (“MLS”) rules that require listing agents to offer a commission split to cooperating agents in order for the property to appear on the MLS (“Cooperative Compensation Rule”). None of the complaints specify damages sought. However, two cases also allege Texas state law deceptive trade practices claims, for which plaintiffs have provided written notice of the damages sought totaling approximately \$9 billion by separate notice as required by Texas law.

In one of these cases, Burnett (formerly Sitzler) et al. v. HomeServices of America, Inc. et al., a jury trial commenced on October 16, 2023, and the jury returned a verdict for the plaintiffs on October 31, 2023, finding that the named defendants participated in a conspiracy to follow and enforce the Cooperative Compensation Rule, which had the purpose or effect of raising, inflating, or stabilizing broker commission rates paid by home sellers. The jury further found that the class plaintiffs had proved damages in the amount of \$1.8 billion. Federal law authorizes trebling of damages and the award of pre-judgment interest and attorney fees. Joint and several liability applies for the co-defendants. HomeServices intends to vigorously appeal on multiple grounds the jury’s findings and damage award. The appeals process and further actions could take several years.

Based on available information to date, HomeServices believes losses are likely to occur as a result of the jury verdict in the Burnett case and that such damages could be up to \$5.4 billion, excluding attorneys’ fees, prejudgment interest and other costs subject to determination by the court. However, HomeServices is currently unable to reasonably estimate such loss due to, among other reasons, the joint and several nature of the liability and the early stages of the appeals process.

It is also reasonably possible that HomeServices will incur losses from the ten other antitrust cases. However, HomeServices is unable to reasonably estimate a specific range of possible losses that could be incurred due to, among other reasons, lack of information about the size of the plaintiff class and potential damages, as well as the joint and several nature of potential liability of the defendants.

Berkshire and certain of its subsidiaries are also involved in other kinds of legal actions, some of which assert or may assert claims or seek to impose fines and penalties. We currently believe that liabilities that may arise as a result of such other pending legal actions will not have a material effect on our consolidated financial condition or results of operations.

Our subsidiaries regularly make commitments in the ordinary course of business to purchase goods and services in the future for use in their businesses, which are not yet reflected in our Consolidated Financial Statements. The most significant of our long-term commitments relate to our railroad, utilities and energy businesses, our shared aircraft ownership and leasing business and certain materials purchase commitments. As of December 31, 2023, estimated future payments under those arrangements over the next five years were as follows: \$10 billion in 2024, \$4 billion in 2025, \$3 billion in 2026, \$3 billion in 2027 and \$2 billion in 2028.

We may be obligated to acquire certain noncontrolling interests in less-than-wholly-owned subsidiaries in the future, pursuant to the terms of agreements with the noncontrolling shareholders for cash or other assets. The timing and the amount of any future payments that might be required to such noncontrolling shareholders are contingent on future actions of the noncontrolling owners and the value of the interest being acquired.

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

None

Item 9A. Controls and Procedures

At the end of the period covered by this Annual Report on Form 10-K, the Corporation carried out an evaluation, under the supervision and with the participation of the Corporation's management, including the Chairman (Chief Executive Officer) and the Senior Vice President (Chief Financial Officer), of the effectiveness of the design and operation of the Corporation's disclosure controls and procedures pursuant to Exchange Act Rule 13a-15. Based upon that evaluation, the Chairman (Chief Executive Officer) and the Senior Vice President (Chief Financial Officer) concluded that the Corporation's disclosure controls and procedures are effective in timely alerting them to material information relating to the Corporation (including its consolidated subsidiaries) required to be included in the Corporation's periodic SEC filings. The report called for by Item 308(a) of Regulation S-K is incorporated herein by reference to Management's Report on Internal Control Over Financial Reporting, included on page K-66 of this report. The attestation report called for by Item 308(b) of Regulation S-K is incorporated herein by reference to the Report of Independent Registered Public Accounting Firm, included on page K-67 of this report. There has been no change in the Corporation's internal control over financial reporting during the quarter ended December 31, 2023 that has materially affected, or is reasonably likely to materially affect, the Corporation's internal control over financial reporting.

Item 9B. Other Information

Berkshire has not adopted a Rule 10b5-1 trading arrangement (as defined in Item 408(a)(1)(i) of Regulation S-K) and no directors or executive officers adopted or terminated a Rule 10b5-1 trading arrangement or a non-Rule 10b5-1 trading arrangement (as defined in Item 408(c) of Regulation S-K) during the fourth quarter of 2023.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspection

Not applicable.

Part III

Except for the information set forth under the caption "Executive Officers of the Registrant" in Part I hereof, information required by this Part (Items 10, 11, 12, 13 and 14) is incorporated by reference from the Registrant's definitive proxy statement, filed pursuant to Regulation 14A, for the Annual Meeting of Shareholders of the Registrant to be held on May 4, 2024, which will involve the election of directors.

Part IV**Item 15. Exhibits and Financial Statement Schedules****(a) 1. Financial Statements**

The following Consolidated Financial Statements, as well as the Report of Independent Registered Public Accounting Firm, are included in Part II Item 8 of this report:

	PAGE
Report of Independent Registered Public Accounting Firm (PCAOB ID No. 34)	K-67
Consolidated Balance Sheets—	
December 31, 2023 and December 31, 2022	K-70
Consolidated Statements of Earnings—	
Years Ended December 31, 2023, December 31, 2022, and December 31, 2021	K-72
Consolidated Statements of Comprehensive Income—	
Years Ended December 31, 2023, December 31, 2022, and December 31, 2021	K-73
Consolidated Statements of Changes in Shareholders' Equity—	
Years Ended December 31, 2023, December 31, 2022, and December 31, 2021	K-73
Consolidated Statements of Cash Flows—	
Years Ended December 31, 2023, December 31, 2022, and December 31, 2021	K-74
Notes to Consolidated Financial Statements	K-75
2. Financial Statement Schedule	
Report of Independent Registered Public Accounting Firm	K-119
Schedule I—Parent Company Condensed Financial Information	
Balance Sheets as of December 31, 2023 and 2022, Statements of Earnings and Comprehensive Income and Cash Flows for the years ended December 31, 2023, December 31, 2022, and December 31, 2021 and Note to Condensed Financial Information	K-120

Other schedules are omitted because they are not required, information therein is not applicable, or is reflected in the Consolidated Financial Statements or notes thereto.

(b) Exhibits

See the "Exhibit Index" at page K-122.

K-118

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of
Berkshire Hathaway Inc.

Opinion on the Financial Statement Schedule

We have audited the consolidated financial statements of Berkshire Hathaway Inc. and subsidiaries (the “Company”) as of December 31, 2023 and 2022, and for each of the three years in the period ended December 31, 2023, and the Company’s internal control over financial reporting as of December 31, 2023, and have issued our report thereon dated February 24, 2024; such consolidated financial statements and report are included elsewhere in this Form 10-K. Our audits also included the financial statement schedule of the Company listed in the Index at Item 15. This financial statement schedule is the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statement schedule based on our audits. In our opinion, such financial statement schedule, when considered in relation to the financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ Deloitte & Touche LLP
Omaha, Nebraska
February 24, 2024

K-119

BERKSHIRE HATHAWAY INC. (Parent Company)
Condensed Financial Information
(Dollars in millions)
Schedule I
Balance Sheets

	December 31,	
	2023	2022
Assets:		
Cash and cash equivalents	\$ 5,566	\$ 2,777
Short-term investments in U.S. Treasury Bills	16,140	17,628
Investments in and advances to consolidated subsidiaries	546,566	463,094
Investment in The Kraft Heinz Company	13,230	12,937
Other assets	16	12
	<u>\$ 581,518</u>	<u>\$ 496,448</u>
Liabilities and Shareholders' Equity:		
Accounts payable, accrued interest and other liabilities	\$ 235	\$ 355
Income taxes, principally deferred	1,229	1,276
Notes payable and other borrowings	18,781	21,393
	20,245	23,024
Berkshire Hathaway shareholders' equity	561,273	473,424
	<u>\$ 581,518</u>	<u>\$ 496,448</u>

Statements of Earnings and Comprehensive Income

	Year ended December 31,		
	2023	2022	2021
Income items:			
From consolidated subsidiaries:			
Dividends and distributions	\$ 9,717	\$ 15,724	\$ 13,462
Undistributed earnings (losses)	85,550	(39,579)	74,961
	95,267	(23,855)	88,423
Investment gains (losses)	(7)	(34)	35
Equity in earnings of The Kraft Heinz Company	758	628	269
Other income	906	413	73
	96,924	(22,848)	88,800
Cost and expense items:			
General and administrative	244	131	136
Interest expense	636	513	444
Foreign exchange gains on non-U.S. Dollar denominated debt	(371)	(1,401)	(1,281)
Income tax expense (benefit)	192	668	(436)
	701	(89)	(1,137)
Net earnings (loss) attributable to Berkshire Hathaway shareholders	96,223	(22,759)	89,937
Other comprehensive income attributable to Berkshire Hathaway shareholders	1,289	3,071	1,871
Comprehensive income attributable to Berkshire Hathaway shareholders	<u>\$ 97,512</u>	<u>\$ (19,688)</u>	<u>\$ 91,808</u>

See Note to Condensed Financial Information

BERKSHIRE HATHAWAY INC. (Parent Company)
Condensed Financial Information
(Dollars in millions)
Schedule I (continued)
Statements of Cash Flows

	Year ended December 31,		
	2023	2022	2021
Cash flows from operating activities:			
Net earnings (loss) attributable to Berkshire Hathaway shareholders	\$ 96,223	\$ (22,759)	\$ 89,937
Adjustments to reconcile net earnings (loss) to operating cash flows:			
Investment (gains) losses	7	34	(35)
Undistributed (earnings) losses of consolidated subsidiaries	(85,550)	39,579	(74,961)
Non-cash dividends from subsidiaries	(1,811)	(7,220)	(2,126)
Income taxes payable	(44)	661	(389)
Other	(1,214)	(1,833)	(1,038)
Net cash flows from operating activities	7,611	8,462	11,388
Cash flows from investing activities:			
Investments in and advances to consolidated subsidiaries, net	2,649	(11,852)	(174)
Purchases of U.S. Treasury Bills	(27,278)	(44,187)	(34,988)
Sales and maturities of U.S. Treasury Bills	31,234	37,915	57,296
Other	—	128	—
Net cash flows from investing activities	6,605	(17,996)	22,134
Cash flows from financing activities:			
Proceeds from borrowings	2,054	1,970	2,174
Repayments of borrowings	(4,310)	(602)	(2,167)
Acquisition of treasury stock	(9,171)	(7,854)	(27,061)
Net cash flows from financing activities	(11,427)	(6,486)	(27,054)
Increase (decrease) in cash and cash equivalents	2,789	(16,020)	6,468
Cash and cash equivalents at the beginning of the year	2,777	18,797	12,329
Cash and cash equivalents at the end of the year	<u>\$ 5,566</u>	<u>\$ 2,777</u>	<u>\$ 18,797</u>
Other cash flow information:			
Income taxes paid	\$ 5,630	\$ 2,259	\$ 3,403
Interest paid	297	332	377

Note to Condensed Financial Information

Certain 2022 and 2021 amounts were revised for the adoption of Accounting Standards Update 2018-12 “Targeted Improvements to the Accounting for Long-Duration Contracts.” See Note 1(w) to the Consolidated Financial Statements.

As of December 31, 2023, Berkshire owned 26.7% of the outstanding shares of The Kraft Heinz Company (“Kraft Heinz”) common stock, which is accounted for pursuant to the equity method. See Note 5 to the Consolidated Financial Statements. On October 19, 2022, Berkshire acquired all of the outstanding common stock of Alleghany Corporation for \$11.5 billion. See Note 2 to the Consolidated Financial Statements.

During 2023, the Parent Company repaid approximately \$4.3 billion of maturing senior notes and issued ¥286.4 billion (approximately \$2.05 billion) of senior notes with a weighted average interest rate of 1.15% and maturities ranging from 2026 to 2058. As of December 31, 2023, the Parent Company’s non-U.S. Dollar denominated borrowings included €5.6 billion and ¥1,259 billion par value senior notes. The gains and losses from the periodic remeasurement of these non-U.S. Dollar denominated notes due to changes in foreign currency exchange rates are included in earnings.

Parent Company debt maturities over the next five years are as follows: 2024—\$1.9 billion; 2025—\$2.0 billion; 2026—\$4.4 billion; 2027—\$2.0 billion and 2028—\$1.4 billion. The Parent Company guarantees certain debt of subsidiaries, which aggregated approximately \$20.9 billion at December 31, 2023 and primarily consisted of debt issued by Berkshire Hathaway Finance Corporation. Such guarantees are an absolute, unconditional and irrevocable guarantee for the full and prompt payment when due of all present and future payment obligations. The Parent Company has also provided guarantees in connection with certain retroactive reinsurance contracts issued by subsidiaries. The amounts of subsidiary payments under these contracts, if any, are contingent upon the outcome of future events.

EXHIBIT INDEX

Exhibit No.

- 2(i) [Agreement and Plan of Merger dated as of June 19, 1998 between Berkshire and General Re Corporation. Incorporated by reference to Annex I to Registration Statement No. 333-61129 filed on Form S-4.](#)
- 2(ii) [Agreement and Plan of Merger dated as of November 2, 2009 by and among Berkshire, R Acquisition Company, LLC and BNSF. Incorporated by reference to Annex A to Registration Statement No. 333-163343 on Form S-4.](#)
- 2(iii) [Agreement and Plan of Merger dated August 8, 2015, by and among Berkshire, NW Merger Sub Inc. and Precision Castparts Corporation \(“PCC”\). Incorporated by reference to Exhibit 2.1 to PCC’s Current Report on Form 8-K filed on August 10, 2015 \(SEC File No. 001-10348\)](#)
- 3(i) [Restated Certificate of Incorporation Incorporated by reference to Exhibit 3\(i\) to Form 10-K filed on March 2, 2015.](#)
- 3(ii) [By-Laws Incorporated by reference to Exhibit 3\(ii\) to Form 8-K filed on May 10, 2023.](#)
- 4.1 [Indenture, dated as of December 22, 2003, between Berkshire Hathaway Finance Corporation, Berkshire Hathaway Inc. and The Bank of New York Mellon Trust Company, N.A. \(as successor to J.P. Morgan Trust Company, National Association\), as trustee. Incorporated by reference to Exhibit 4.1 on Form S-4 of Berkshire Hathaway Finance Corporation and Berkshire Hathaway Inc. filed on February 4, 2004. SEC File No. 333-112486](#)
- 4.2 [Indenture, dated as of February 1, 2010, among Berkshire Hathaway Inc., Berkshire Hathaway Finance Corporation and The Bank of New York Mellon Trust Company, N.A., as trustee. Incorporated by reference to Exhibit 4.1 to Berkshire’s Registration Statement on Form S-3 filed on February 1, 2010. SEC File No. 333-164611](#)
- 4.3 [Indenture, dated as of January 26, 2016, by and among Berkshire Hathaway Inc., Berkshire Hathaway Finance Corporation and The Bank of New York Mellon Trust Company, N.A., as trustee. Incorporated by reference to Exhibit 4.1 to Berkshire’s Registration Statement on Form S-3 filed on January 26, 2016. SEC File No. 333-209122](#)
- 4.4 [Indenture, dated as of December 1, 1995, between BNSF and The First National Bank of Chicago, as trustee. Incorporated by reference to Exhibit 4 on Form S-3 of BNSF filed on February 8, 1999.](#)
- 4.5 [Indenture, dated as of October 4, 2002, by and between MidAmerican Energy Holdings Company and The Bank of New York, Trustee. Incorporated by reference to Exhibit 4.1 to the Berkshire Hathaway Energy Company Registration Statement No. 333-101699 dated December 6, 2002.](#)
- 4.6 [Indenture, dated as of January 28, 2022, by and among Berkshire Hathaway Inc., as an issuer and a guarantor of the debt securities issued by Berkshire Hathaway Finance Corporation, Berkshire Hathaway Finance Corporation, as an issuer, and The Bank of New York Mellon Trust Company, N.A., as trustee. Incorporated by reference to Exhibit 4.1 to Berkshire’s Registration Statement on Form S-3 filed on January 28, 2022. SEC File No 333-262384.](#)
- Other instruments defining the rights of holders of long-term debt of Registrant and its subsidiaries are not being filed since the total amount of securities authorized by all other such instruments does not exceed 10% of the total assets of the Registrant and its subsidiaries on a consolidated basis as of December 31, 2023. The Registrant hereby agrees to furnish to the Commission upon request a copy of any such debt instrument to which it is a party.**
- 10.1 [Equity Commitment Letter of Berkshire Hathaway Inc. with Hawk Acquisition Holding Corporation dated February 13, 2013. Incorporated by reference to Exhibit 10.1 on Form 8-K of Berkshire Hathaway Inc. filed on February 14, 2013.](#)
- 14 Code of Ethics
Berkshire’s Code of Business Conduct and Ethics is posted on its Internet website at [*www.berkshirehathaway.com*](http://www.berkshirehathaway.com)
- 21 [Subsidiaries of Registrant](#)
- 23 [Consent of Independent Registered Public Accounting Firm](#)

Exhibit No.

- | | |
|------|---|
| 31.1 | <u>Rule 13a—14(a)/15d-14(a) Certification</u> |
| 31.2 | <u>Rule 13a—14(a)/15d-14(a) Certification</u> |
| 32.1 | <u>Section 1350 Certification</u> |
| 32.2 | <u>Section 1350 Certification</u> |
| 95 | <u>Mine Safety Disclosures</u> |
| 97 | <u>Policy Relating to Recovery of Erroneously Awarded Compensation</u> |
| 101 | The following financial information from Berkshire Hathaway Inc.'s Annual Report on Form 10-K for the year ended December 31, 2023, formatted in iXBRL (Inline Extensible Business Reporting Language) includes: (i) the Cover Page (ii) the Consolidated Balance Sheets, (iii) the Consolidated Statements of Earnings, (iv) the Consolidated Statements of Comprehensive Income, (v) the Consolidated Statements of Changes in Shareholders' Equity, (vi) the Consolidated Statements of Cash Flows, and (vii) the Notes to Consolidated Financial Statements and Schedule I, tagged in summary and detail. |
| 104 | Cover Page Interactive Data File (formatted as iXBRL and contained in Exhibit 101) |

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.

BERKSHIRE HATHAWAY INC.

Date: February 24, 2024

/S/ MARC D. HAMBURG

Marc D. Hamburg
Senior Vice President and
Principal Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ WARREN E. BUFFETT</div> <div style="padding-top: 2px;">Warren E. Buffett</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Chairman of the Board of Directors—Chief Executive Officer</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ GREGORY E. ABEL</div> <div style="padding-top: 2px;">Gregory E. Abel</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director—Vice Chairman—Non-Insurance Operations</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ HOWARD G. BUFFETT</div> <div style="padding-top: 2px;">Howard G. Buffett</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ SUSAN A. BUFFETT</div> <div style="padding-top: 2px;">Susan A. Buffett</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ STEPHEN B. BURKE</div> <div style="padding-top: 2px;">Stephen B. Burke</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ KENNETH I. CHENAULT</div> <div style="padding-top: 2px;">Kenneth I. Chenault</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ CHRISTOPHER C. DAVIS</div> <div style="padding-top: 2px;">Christopher C. Davis</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ SUSAN L. DECKER</div> <div style="padding-top: 2px;">Susan L. Decker</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ CHARLOTTE GUYMAN</div> <div style="padding-top: 2px;">Charlotte Guyman</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ AJIT JAIN</div> <div style="padding-top: 2px;">Ajit Jain</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director—Vice Chairman—Insurance Operations</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ THOMAS S. MURPHY, JR.</div> <div style="padding-top: 2px;">Thomas S. Murphy, Jr.</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ RONALD L. OLSON</div> <div style="padding-top: 2px;">Ronald L. Olson</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ WALLACE R. WEITZ</div> <div style="padding-top: 2px;">Wallace R. Weitz</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ MERYL B. WITMER</div> <div style="padding-top: 2px;">Meryl B. Witmer</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Director</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ MARC D. HAMBURG</div> <div style="padding-top: 2px;">Marc D. Hamburg</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Senior Vice President—Principal Financial Officer</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>
<div style="border-bottom: 1px solid black; padding-bottom: 2px;">/S/ DANIEL J. JAKSICH</div> <div style="padding-top: 2px;">Daniel J. Jaksich</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">Vice President—Principal Accounting Officer</div>	<div style="border-bottom: 1px solid black; padding-bottom: 2px;"></div> <div style="padding-top: 2px;">February 24, 2024 Date</div>

