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

(Mark One)

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

For the quarterly period ended June 30, 2023

OR

	TRANSITION REPORT PURSUANT TO SECTION 1	3 OR 15(d) OF	THE SECURITIES	EXCHANGE ACT	Γ OF 1934
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For the transition period from Commission file number 001-14905

BERKSHIRE HATHAWAY INC.

(Exact name of registrant as specified in its charter)

Delaware

47-0813844

(State or other jurisdiction of incorporation or organization)

(I.R.S. Employer Identification Number)

3555 Farnam Street, Omaha, Nebraska 68131 (Address of principal executive office) (Zip Code) (402) 346-1400

(Registrant's telephone number, including area code) (Former name, former address and former fiscal year, if changed since last report)

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

Class A Common Stock BRK.B New York Stock Exchange 1.300% Senior Notes due 2024 BRK.24 New York Stock Exchange 0.000% Senior Notes due 2025 BRK.25 New York Stock Exchange 1.125% Senior Notes due 2027 BRK.27 New York Stock Exchange 1.500% Senior Notes due 2028 BRK.28 New York Stock Exchange 1.500% Senior Notes due 2030 BRK.30 New York Stock Exchange 2.000% Senior Notes due 2034 BRK.34 New York Stock Exchange 1.625% Senior Notes due 2035 BRK.35 New York Stock Exchange 2.375% Senior Notes due 2039 BRK.39 New York Stock Exchange 0.500% Senior Notes due 2041 BRK.41 New York Stock Exchange 1.625% Senior Notes due 2059 BRK.59 New York Stock Exchange 1.625% Senior Notes due 2059 BRK.59 New York Stock Exchange 1.625% Senior Notes due 2059 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 15 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 days. Yes No □ Indicate by check mark whether the Registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 40	d
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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 North Indicate by check mark whether the Registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or a growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule Exchange Act.	of Regulation □ □ □ □ □ □ □ □ □
Large accelerated filer Accelerated filer Accelerated filer	
Non-accelerated filer Smaller reporting compar	y 🗆
Emerging growth compa	ıy 🗆
If an emerging growth company, indicate by check mark if the Registrant has elected not to use the extended transition period for complying with an revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. □ Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes □ No ⊠ Number of shares of common stock outstanding as of July 26, 2023: Class A — 575,320	y new or
Class B— 1,308,070,268	

BERKSHIRE HATHAWAY INC.

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Part I Financial Information Item 1. Financial Statements BERKS HIRE HATHAWAY INC. and Subsidiaries

CONSOLIDATED BALANCE SHEETS

(dollars in millions)

	June 30, 2023 (Unaudited)	December 31, 2022
ASSETS		
Insurance and Other:		
Cash and cash equivalents*	\$ 44,611	\$ 32,260
Short-term investments in U.S. Treasury Bills	97,322	92,774
Investments in fixed maturity securities	22,353	25,128
Investments in equity securities	353,409	308,793
Equity method investments	27,493	28,050
Loans and finance receivables	23,530	23,208
Other receivables	45,590	43,490
Inventories	25,295	25,366
Property, plant and equipment	21,413	21,113
Equipment held for lease	16,028	15,584
Goodwill	50,982	51,522
Other intangible assets	29,819	29,187
Deferred charges - retroactive reinsurance	9,454	9,870
Other	19,917	19,657
	787,216	726,002
Railroad, Utilities and Energy:		
Cash and cash equivalents*	5,444	3,551
Receivables	6,067	4,795
Property, plant and equipment	171,747	160,268
Goodwill	34,871	26,597
Regulatory assets	5,452	5,062
Other	30,776	22,190
	254,357	222,463
	\$ 1,041,573	\$ 948,465

 $^{* \}textit{Includes U.S. Treasury Bills with maturities of three months or less when purchased of \$24.5 \textit{ billion at June 30, 2023 and \$2.6 \textit{ billion at December 31, 2022.}}$

BERKS HIRE HATHAWAY INC. and Subsidiaries CONSOLIDATED BALANCE SHEETS

(dollars in millions)

	June 30, 2023 (Unaudited)		cember 31, 2022
LIABILITIES AND SHAREHOLDERS' EQUITY			
Insurance and Other:			
Unpaid losses and loss adjustment expenses	\$ 109,030	\$	107,472
Unpaid losses and loss adjustment expenses - retroactive reinsurance contracts	34,421		35,415
Unearned premiums	31,173		28,657
Life, annuity and health insurance benefits	19,635		19,753
Other policyholder liabilities	10,868		11,370
Accounts payable, accruals and other liabilities	31,999		33,201
Aircraft repurchase liabilities and unearned lease revenues	7,375		6,820
Notes payable and other borrowings	41,389		46,538
	285,890		289,226
Railroad, Utilities and Energy:			
Accounts payable, accruals and other liabilities	20,234		16,615
Regulatory liabilities	6,719		7,369
Notes payable and other borrowings	83,958		76,206
	110,911		100,190
Income taxes, principally deferred	93,011		77,368
Total liabilities	489,812		466,784
Redeemable noncontrolling interests	3,210		_
Shareholders' equity:			
Common stock	8		8
Capital in excess of par value	35,140		35,167
Accumulated other comprehensive income	(4,240)		(5,052)
Retained earnings	582,543		511,127
Treasury stock, at cost	(73,568)		(67,826)
Berkshire Hathaway shareholders' equity	539,883		473,424
Noncontrolling interests	8,668		8,257
Total shareholders' equity	548,551		481,681
	\$ 1,041,573	\$	948,465

BERKSHIRE HATHAWAY INC. and Subsidiaries

CONSOLIDATED STATEMENTS OF EARNINGS

(dollars in millions except per share amounts)
(Unaudited)

		Second	Ouar	ter	First Six	Mon	ths
		2023		2022	2023		2022
Revenues:							
Insurance and Other:							
Insurance premiums earned	\$	20,561	\$	18,081 \$	40,357	\$	35,569
Sales and service revenues		39,126		40,220	77,514		78,082
Leasing revenues		2,079		1,887	4,123		3,559
Interest, dividend and other investment income		3,846		2,861	7,075		4,723
		65,612		63,049	129,069		121,933
Railroad, Utilities and Energy:		,		,			
Freight rail transportation revenues		5,808		6,612	11,809		12,556
Utility and energy operating revenues		19,593		4,935	34,510		9,753
Service revenues and other income		1,490		1,605	2,508		2,802
		26,891		13,152	48,827		25,111
Total revenues		92,503		76,201	177,896		147,044
		7_,		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	211,020		
Investment and derivative contract gains (losses)		33,061		(66,919)	67,819		(68,897)
Costs and expenses:							
Insurance and Other:							
Insurance losses and loss adjustment expenses		14,089		13,620	28,310		26,952
Life, annuity and health insurance benefits		1,128		1,186	1,913		2,523
Insurance underwriting expenses		3,729		2,377	7,316		4,981
Cost of sales and services		30,621		31,633	60,940		61,418
		1,457			2,934		
Cost of leasing				1,498	,		2,730
Selling, general and administrative expenses		5,005		3,762	10,607		8,013
Interest expense		314		302	642		566
Duilnoud Hillidian and Frances		56,343		54,378	112,662		107,183
Railroad, Utilities and Energy:		4.01.4		4.260	0.175		0.105
Freight rail transportation expenses		4,014		4,260	8,175		8,185
Utilities and energy cost of sales and other expenses		18,159		3,844	32,005		7,435
Other expenses		1,189		1,527	2,060		2,683
Interest expense		935		785	1,825		1,555
m . N		24,297		10,416	44,065		19,858
Total costs and expenses		80,640		64,794	156,727		127,041
Earnings (loss) before income taxes and equity method earnings		44,924		(55,512)	88,988		(48,894)
Equity method earnings		511		204	1,199		543
Earnings (loss) before income taxes		45,435		(55,308)	90,187		(48,351)
Income tax expense (benefit)		9,236		(12,066)	18,231		(10,814)
Net earnings (loss)		36,199		(43,242)	71,956		(37,537)
Earnings attributable to noncontrolling interests	•	287	Ф	379	540	Φ.	504
Net earnings (loss) attributable to Berkshire Hathaway shareholders	\$	35,912	_	(43,621) \$	71,416	_	(38,041)
Net earnings (loss) per average equivalent Class A share	\$	24,775		(29,663) \$	49,152		(25,832)
Net earnings (loss) per average equivalent Class B share*	\$	16.52	\$	(19.78) \$	32.77	\$	(17.22)
Average equivalent Class A shares outstanding		1,449,542		1,470,577	1,452,971		1,472,628
Average equivalent Class B shares outstanding		2,174,313,670		2,205,865,262	2,179,456,816		2,208,942,539

^{*} Class B shares are economically equivalent to one-fifteen-hundredth of a Class A share. Accordingly, net earnings per average equivalent Class B share outstanding is equal to one-fifteen-hundredth of the equivalent Class A amount. See Note 19.

BERKSHIRE HATHAWAY INC. and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(dollars in millions)
(Unaudited)

	Second (Quarte	First Six Months				
	2023		2022	2023	2022		
Net earnings (loss)	\$ 36,199	\$	(43,242)	\$ 71,956	\$ (37,537)		
Other comprehensive income:							
Unrealized gains (losses) on investments	(41)		(211)	206	(447)		
Applicable income taxes	21		44	(32)	95		
Foreign currency translation	383		(1,750)	632	(2,065)		
Applicable income taxes	(21)		63	(15)	52		
Long-duration insurance contract discount rate changes	487		2,734	120	5,812		
Applicable income taxes	(125)		(587)	(49)	(1,246)		
Defined benefit pension plans	2		15	52	41		
Applicable income taxes	(6)		(4)	(12)	(9)		
Other, net	57		68	(63)	155		
Other comprehensive income, net	757		372	839	2,388		
Comprehensive income	36,956		(42,870)	72,795	(35,149)		
Comprehensive income attributable to noncontrolling interests	308		350	567	472		
Comprehensive income attributable to Berkshire Hathaway shareholders	\$ 36,648	\$	(43,220)	\$ 72,228	\$ (35,621)		

BERKSHIRE HATHAWAY INC.

and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

(dollars in millions)
(Unaudited)

Berkshire Hathaway shareholders' equity

	an	ommon stock d capital in ess of par value	com	umulate d other iprehens ive ncome	etained arnings	reasury stock	contr	on- rolling crests	Total
For the second quarter and first six months of 2023									
Balance at December 31, 2022 as previously reported	\$	35,175	\$	(6,591)	\$ 511,602	\$ (67,826)	\$	8,257	\$ 480,617
Adoption of ASU 2018-12		_		1,539	(475)	_		_	1,064
Balance at December 31, 2022 as revised		35,175		(5,052)	511,127	(67,826)		8,257	481,681
Net earnings		_		_	35,504	_		253	35,757
Other comprehensive income, net		_		76	_	_		6	82
Acquisition of common stock		_		_	_	(4,439)		_	(4,439)
Transactions with noncontrolling interests and other		(11)		_	_	_		7	(4)
Balance at March 31, 2023	\$	35,164	\$	(4,976)	\$ 546,631	\$ (72,265)	\$	8,523	\$ 513,077
Net earnings		_		_	35,912	_		287	36,199
Other comprehensive income, net		_		736	_	_		21	757
Acquisition of common stock		_		_	_	(1,303)		_	(1,303)
Transactions with noncontrolling interests and other		(16)		_	_	_		(163)	(179)
Balance at June 30, 2023	\$	35,148	\$	(4,240)	\$ 582,543	\$ (73,568)	\$	8,668	\$ 548,551
For the second quarter and first six months of 2022									
Balance at December 31, 2021 as originally reported	\$	35,600	\$	(4,027)	\$ 534,421	\$ (59,795)	\$	8,731	\$ 514,930
Adoption of ASU 2018-12		_		(4,096)	(535)	_		_	(4,631)
Balance at December 31, 2021 as revised		35,600		(8,123)	533,886	(59,795)		8,731	510,299
Net earnings		_		_	5,580	_		125	5,705
Other comprehensive income, net		_		2,019	_	_		(3)	2,016
Acquisition of common stock		_		_	_	(3,111)			(3,111)
Transactions with noncontrolling interests and other		(6)		_	_	_		(129)	(135)
Balance at March 31, 2022	\$	35,594	\$	(6,104)	\$ 539,466	\$ (62,906)	\$	8,724	\$ 514,774
Net earnings (loss)		_		_	(43,621)	_		379	(43,242)
Other comprehensive income, net		_		401	_	_		(29)	372
Acquisition of common stock		_		_	_	(1,028)		_	(1,028)
Transactions with noncontrolling interests and other		(382)		_	_	_		(650)	(1,032)
Balance at June 30, 2022	\$	35,212	\$	(5,703)	\$ 495,845	\$ (63,934)	\$	8,424	\$ 469,844

BERKS HIRE HATHAWAY INC. and Subsidiaries CONSOLIDATED STATEMENTS OF CASH FLOWS

(dollars in millions)
(Unaudited)

(
	20	First Six N	Months	2022
Cash flows from operating activities:	20	123		2022
Net earnings (loss)	\$	71,956	\$	(37,537)
Adjustments to reconcile net earnings to operating cash flows:		· ·		` ' '
Investment (gains) losses		(67,819)		68,589
Depreciation and amortization		6,147		5,413
Other		(3,126)		(2,592)
Changes in operating assets and liabilities:		() /		()
Unpaid losses and loss adjustment expenses		275		1,505
Deferred charges - retroactive reinsurance		416		426
Unearned premiums		2,492		2,384
Receivables and originated loans		(1,194)		(6,455)
Inventories		505		(4,080)
Other assets		(980)		(620)
Other liabilities		(2,721)		1,247
Income taxes		15,176		(12,923)
Net cash flows from operating activities		21,127		15,357
Cash flows from investing activities:				,
Purchases of equity securities		(7,442)		(57,269)
Sales of equity securities		25,833		12,044
Purchases of U.S. Treasury Bills and fixed maturity securities		(99,060)		(100,355)
Sales of U.S. Treasury Bills and fixed maturity securities		39,991		54,637
Redemptions and maturities of U.S. Treasury Bills and fixed maturity securities		59,815		23,681
Acquisitions of businesses, net of cash acquired		(8,516)		(103)
Purchases of property, plant and equipment and equipment held for lease		(8,398)		(6,833)
Other		513		(0,035)
Net cash flows from investing activities		2,736		(74,173)
Cash flows from financing activities:		2,750		(17,175)
Proceeds from borrowings of insurance and other businesses		1,225		6,972
Repayments of borrowings of insurance and other businesses		(5,388)		(1,440)
Proceeds from borrowings of railroad, utilities and energy businesses		2,788		3,189
Repayments of borrowings of railroad, utilities and energy businesses		(2,187)		(1,374)
Changes in short-term borrowings, net		582		(85)
Acquisition of treasury stock		(5,850)		(4,191)
Other, principally transactions with noncontrolling interests		(803)		(1,464)
Net cash flows from financing activities		(9,633)		1,607
Effects of foreign currency exchange rate changes		24		(273)
Increase (decrease) in cash and cash equivalents and restricted cash		14,254		(57,482)
Cash and cash equivalents and restricted cash at beginning of year*		36,399		88,706
Cash and cash equivalents and restricted cash at end of second quarter*	\$	50,653	\$	31,224
*Cash and cash equivalents and restricted cash are comprised of:	φ	30,033	Φ	31,224
Beginning of year—				
Insurance and Other	\$	32,260	\$	85,319
Railroad, Utilities and Energy	· ·	3,551	-	2,865
Restricted cash included in other assets		588		522
	\$	36,399	\$	88,706
End of second quarter—	<u>, </u>			
Insurance and Other	\$	44,611	\$	26,534
Railroad, Utilities and Energy	,	5,444		4,074
Restricted cash included in other assets		598		616
	\$	50,653	\$	31,224

BERKSHIRE HATHAWAY INC. and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS June 30, 2023

Note 1. General

The accompanying unaudited Consolidated Financial Statements include the accounts of Berkshire Hathaway Inc. ("Berkshire" or "Company") consolidated with the accounts of all its subsidiaries and affiliates in which Berkshire holds controlling financial interests as of the financial statement date. In these notes, the terms "us," "we" or "our" refer to Berkshire and its consolidated subsidiaries. Reference is made to Berkshire's most recently issued Annual Report on Form 10-K ("Annual Report"), which includes information necessary or useful to understanding Berkshire's businesses and financial statement presentations. Our significant accounting policies and practices were presented as Note 1 to the Consolidated Financial Statements included in the Annual Report.

Financial information in this Quarterly Report reflects all adjustments that are, in the opinion of management, necessary to a fair statement of results for the interim periods in accordance with accounting principles generally accepted in the United States ("GAAP"). For several reasons, our results for interimperiods are not normally indicative of results to be expected for the year. The timing and magnitude of catastrophe losses incurred by insurance subsidiaries and the estimation error inherent to the process of determining liabilities for unpaid losses of insurance subsidiaries can be more significant to results of interimperiods than to results for a full year. Given the size of our equity security investment portfolio, changes in market prices and the related changes in unrealized gains and losses on equity securities will produce significant volatility in our interim and annual earnings. In addition, the magnitude of gains and losses from the periodic revaluation of certain assets and liabilities denominated in foreign currencies and asset impairment charges may cause significant variations in periodic net earnings.

To varying degrees, our operating businesses have been impacted 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 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.

Note 2. New accounting pronouncements

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 modifies the accounting, reporting and disclosures related to long-duration insurance contracts, including the measurement of our long-duration life, annuity and health benefit liabilities. ASU 2018-12 was applied retrospectively to contracts in-force beginning as of January 1, 2021 (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. Our Consolidated Financial Statements for the years ending December 31, 2022 and 2021 and as of the January 1, 2021 transition date were revised for the effects of adopting ASU 2018-12. These effects were included in Part II, Item 5 to our Form 10-Q for the period ending March 31, 2023.

Beginning as of January 1, 2021, the cash flow assumptions used to measure benefit liabilities 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 quarterly reporting period with the effects of changes reported in other comprehensive income. Discount rates are 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 and amortizing capitalized acquisition costs under long-duration insurance contracts, we generally aggregate contracts by issuance year. See Note 16 for disclosures related to our long-duration insurance contracts.

A summary of the impacts of adopting ASU 2018-12 on our periodic payment annuity and life and health insurance benefits liabilities as of the January 1, 2021 transition date follows in millions.

	Period				
	an	nuities	Life	and health	Total
Balance at December 31, 2020, as previously reported	\$	10,974	\$	10,642	\$ 21,616
Reclassifications to other policyholder liabilities		(286)		(929)	(1,215)
Balance at December 31, 2020 after reclassifications		10,688		9,713	20,401
Change in discount rate assumptions		6,553		1,447	8,000
Change in cash flow assumptions		(117)		552	435
Balance as of January 1, 2021	\$	17,124	\$	11,712	\$ 28,836

Note 2. New accounting pronouncements (Continued)

The reclassifications to other policyholder liabilities are primarily related to certain liabilities arising under our variable annuity guarantee reinsurance contracts. These liabilities are not classified as life, annuity and health insurance benefits liabilities under ASU 2018-12.

The effects of adopting ASU 2018-12 on our Consolidated Statements of Earnings and Comprehensive Income for the second quarter and first six months of 2022 follows in millions, except per share amounts.

	Second Quarter					First Six Months						
	Previously reported			icrease ecrease)) As revised		Previously reported		Increase (decrease)		٨	revised
Revenues:	1,	eporteu	(decrease)		A	s ieviseu	reported		(decrease)		A	reviseu
Insurance premiums earned	\$	18,087	\$	(6)	\$	18,081	\$	35,579	\$	(10)	\$	35,569
Costs and expenses:												
Life, annuity and health insurance benefits		1,282		(96)		1,186		2,605		(82)		2,523
Insurance underwriting expenses		2,461		(84)		2,377		5,228		(247)		4,981
Earnings (loss) before income taxes		(55,482)		174		(55,308)		(48,670)		319		(48,351)
Income tax expense (benefit)		(12,106)		40		(12,066)		(10,879)		65		(10,814)
Net earnings (loss)		(43,376)		134		(43,242)		(37,791)		254		(37,537)
Net earnings (loss) attributable to Berkshire Hathaway shareholders	\$	(43,755)	\$	134	\$	(43,621)	\$	(38,295)	\$	254	\$	(38,041)
Other comprehensive income:												
Foreign currency translation		(1,751)		1		(1,750)		(2,067)		2		(2,065)
Long-duration insurance contracts		_		2,147		2,147		_		4,566		4,566
Other comprehensive income, net		(1,776)		2,148		372		(2,180)		4,568		2,388
Comprehensive income attributable to Berkshire Hathaway shareholder	s \$	(45,502)	\$	2,282	\$	(43,220)	\$	(40,443)	\$	4,822	\$	(35,621)
Net earnings (loss) per average equivalent Class A share	\$	(29,754)	\$	91	\$	(29,663)	\$	(26,005)	\$	173	\$	(25,832)
Net earnings (loss) per average equivalent Class B share	\$	(19.84)	\$	0.06	\$	(19.78)	\$	(17.34)	\$	0.12	\$	(17.22)

In March 2023, the 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, regardless of the tax credit program from which the income tax credits are received, using the proportional amortization method 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, and is applied either on a retrospective basis beginning as of the earliest period presented or a modified retrospective basis in the period of adoption. We are evaluating the effects of this standard on our Consolidated Financial Statements.

Note 3. 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 ("Pilot") for approximately \$8.2 billion. We previously owned a 38.6% interest in Pilot and accounted for that investment under the equity method. We now possess a controlling interest in Pilot for financial reporting purposes. We applied the equity method through the end of January 2023 and began consolidating Pilot's financial statements in our Consolidated Financial Statements on February 1, 2023.

Pilot is headquartered in Knoxville, Tennessee and operates travel centers in North America (primarily under the names Pilot or Flying J) with more than 650 travel center locations across 43 U.S. states and six Canadian provinces. Pilot also has over 150 retail locations in the U.S. and Canada where it sells diesel fuel through various arrangements with third party travel centers. Among its business activities, Pilot operates large wholesale fuel and fuel marketing platforms in the U.S. and operates a water hauling and disposal business in the oil fields sector. As Pilot's most significant business activities involve purchasing and selling fuel (energy) on a wholesale and retail basis, and engaging in other energy-related business activities, including oil field services, we have included Pilot within the railroad, utilities and energy sections of our Consolidated Balance Sheet and Consolidated Statement of Earnings beginning February 1, 2023.

Note 3. Significant business acquisitions (Continued)

Pilot's revenues and net earnings attributable to Berkshire shareholders included in Berkshire's Consolidated Financial Statements for the five months ending June 30, 2023 were \$24.3 billion and \$197 million, respectively. Our equity method earnings from Pilot for the month of January 2023 were \$105 million. In applying the acquisition method of accounting, we were required to remeasure our previously held 38.6% investment in Pilot to fair value. In the first quarter of 2023, we 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, as a component of investment gains (losses).

The holder of the remaining noncontrolling interest in Pilot has the option to require us to redeem for cash, all or a portion of the interest beginning in 2024. The cash consideration will be based on Pilot's future earnings, cash and debt. We have concluded that the remaining Pilot noncontrolling interest represents a redeemable interest under GAAP and are presenting such interests between liabilities and shareholders' equity in the Consolidated Balance Sheet. We valued the noncontrolling interest at fair value as of the acquisition date. Thereafter, we will increase or decrease the redeemable noncontrolling interest by the share of the earnings or losses attributable to the interest and will further adjust the balance, as appropriate, if the current estimated redemption value exceeds the carrying value.

The preliminary values of Pilot's assets acquired, liabilities assumed and redeemable noncontrolling interests as of January 31, 2023 are summarized as follows (in millions). The valuations of certain assets and liabilities, including property, plant and equipment, other intangible assets and goodwill, as of the acquisition date have not been finalized and are provisional.

	Pilot
Property, plant and equipment	\$ 8,082
Goodwill and other intangible assets	13,309
Other assets	6,994
Assets acquired	\$ 28,385
Notes payable	\$ 5,876
Other liabilities	4,774
Liabilities assumed	10,650
Noncontrolling interests, predominantly redeemable	
	3,370
Net assets	\$ 14,365

On October 19, 2022, Berkshire acquired all of the outstanding common stock of Alleghany Corporation ("Alleghany") for \$11.5 billion. Alleghany operates a group of property and casualty reinsurance and insurance businesses. It also owns a portfolio of 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).

	Alleghany
Cash, cash equivalents and U.S. Treasury Bills	\$ 3,762
Investments in fixed maturity and equity securities	15,982
Loans and other receivables	5,650
Goodwill	3,900
Other intangible assets	2,659
Other assets	3,637
Assets acquired	\$ 35,590
Unpaid losses and loss adjustment expenses	\$ 15,080
Unearned premiums	3,536
Notes payable	2,169
Other liabilities	3,300
Liabilities assumed	24,085
Net assets	\$ 11,505

Certain unaudited pro forms revenue and consolidated earnings (loss) data for the six months ended June 30, 2022 as if the Alleghany and Pilot acquisitions were consummated on the same terms at the beginning of 2022 follows (in millions, except per share amounts).

	June 30, 2022
Revenues	\$ 188,855
Net earnings (loss) attributable to Berkshire Hathaway shareholders	(38,169)
Net earnings (loss) per equivalent Class A common share	(25,919)

Note 4. Investments in fixed maturity securities

Investments in fixed maturity securities as of June 30, 2023 and December 31, 2022 are summarized by type below (in millions).

	Amortized Cost		Unrealized Gains		Unrealized Losses			Fair Value
<u>June 30, 2023</u>								
U.S. Treasury, U.S. government corporations and agencies	\$	9,242	\$	2	\$	(192)	\$	9,052
Foreign governments		11,571		70		(160)		11,481
Corporate bonds		1,333		228		(7)		1,554
Other		250		20		(4)		266
	\$	22,396	\$	320	\$	(363)	\$	22,353
<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
	\$	25,173	\$	395	\$	(440)	\$	25,128

As of June 30, 2023, the fair value of investments in U.S. Treasury securities that mature in 2023 and 2024 was approximately \$8.3 billion. As of June 30, 2023, approximately 94% of our foreign government holdings were rated AA or higher by at least one of the major rating agencies. The amortized cost and estimated fair value of fixed maturity securities at June 30, 2023 are summarized below by contractual maturity dates. Amounts are in millions. Actual maturities may differ from contractual maturities due to prepayment rights held by issuers.

	e in one ir or less	year	ifter one through years	Due aft years t ten y	hrough	after /ears	b	rtgage- acked curities	Total
Amortized cost	\$ 15,632	\$	5,748	\$	708	\$ 136	\$	172	\$ 22,396
Fair value	15,452		5,654		916	145		186	22,353

Note 5. Investments in equity securities

Investments in equity securities as of June 30, 2023 and December 31, 2022 are summarized as follows (in millions).

	Co	ost Basis	Net	t Unrealized Gains	Fair Value
<u>June 30, 2023*</u>					
Banks, insurance and finance	\$	23,547	\$	43,056	\$ 66,603
Consumer products		36,550		169,760	206,310
Commercial, industrial and other		55,560		24,936	80,496
	\$	115,657	\$	237,752	\$ 353,409

^{*} Approximately 78% of the aggregate fair value was concentrated in five companies (American Express Company – \$26.4 billion; Apple Inc. – \$177.6 billion; Bank of America Corporation – \$29.6 billion; The Coca-Cola Company – \$24.1 billion and Chevron Corporation – \$19.4 billion).

	C	ost Basis	t 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		
	\$	131,610	\$	177,183	\$	308,793		

^{*} 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).

Note 5. Investments in equity securities (Continued)

During 2022, we began to acquire common stock of Occidental Petroleum Corporation ("Occidental"). Our aggregate voting interest in Occidental exceeded 20% on August 4, 2022 and we adopted the equity method as of that date. See Note 6. We report our investments in Occidental Cumulative Perpetual Preferred Stock and Occidental common stock warrants at fair value as equity securities in our Consolidated Balance Sheets, as such interests 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, plus any accumulated and unpaid dividends. As of June 30, 2023, our investment in Occidental preferred stock had an aggregate liquidation value of approximately \$8.8 billion. During the first six months of 2023, Occidental issued mandatory redemption notifications at a price of 110% of the liquidation value, plus accrued and unpaid dividends for \$1.2 billion of the aggregate liquidation value. The mandatory redemptions were due to excess distributions by Occidental to its common stockholders (as defined under the terms of Occidental preferred stock certificate of designations).

Our investment in Occidental warrants allows 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.

On June 30, 2023, we owned 151.6 million shares of American Express Company ("American Express") common stock representing 20.6% of the American Express outstanding common stock. 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.

Note 6. 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 June 30, 2023, we owned 26.5% of the outstanding Kraft Heinz common stock and 25.1% of the outstanding Occidental common stock, which excludes 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 our carrying values of these investments in addition to the carrying values of our other significant equity method investments are summarized as follows (in millions). We evaluated our investments in Kraft Heinz and Occidental for other-than-temporary impairment as of June 30, 2023, and based on the prevailing facts and circumstances, concluded the recognition of an impairment charge in earnings was not required.

		Carryin	g Value		Fair Value									
		June 30, Dec 2023								ember 31, 2022	June 30, 2023		Dece	ember 31, 2022
Kraft Heinz	\$	13,199	\$	12,937	\$	11,553	\$	13,249						
Occidental		13,861		11,484		13,179		12,242						
Other		433		3,629										
	\$	27,493	\$	28,050										

Note 6. Equity method investments (Continued)

Our other significant equity method investments included Pilot through January 31, 2023. Beginning February 1, 2023, we ceased accounting for Pilot under the equity method and began consolidating Pilot for financial reporting purposes. Our investment in Pilot under the equity method was \$3.2 billion at December 31, 2022. Other significant equity method investments also included our 50% interest in Berkadia Commercial Mortgage LLC ("Berkadia") with Jefferies Financial Group Inc. ("Jefferies") owning the other 50% interest. Berkadia provides capital solutions, investment sales advisory and mortgage servicing for multifamily and commercial real estate. 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.

The carrying values of our investments in Kraft Heinz and Berkadia approximate our share of the net 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 March 31, 2023 by approximately \$9 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). As previously indicated, we are reporting the equity method effects for Occidental on a one-quarter lag. Thus, the earnings we recorded in 2023 related to Occidental's earnings for the fourth quarter of 2022 and first quarter of 2023. Equity method earnings attributable to Pilot were \$105 million for the month ending January 31, 2023, \$95 million for the second quarter of 2022 and \$202 million for the first six months of 2022.

	Equity in Earnings						Distributions Received									
	Second Quarter First Six Months					ths	Second Quarter					First Six Months				
	2	023	2	022	2	2023	2	2022	2	023	2	2022	2	2023	2	022
Kraft Heinz	\$	265	\$	71	\$	487	\$	277	\$	130	\$	130	\$	260	\$	260
Occidental		234		_		604		_		36		_		61		_
Other		12		133		108		266		21		88		21		90
	\$	511	\$	204	\$	1,199	\$	543	\$	187	\$	218	\$	342	\$	350

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

	•				2022
Assets		\$	90,956	\$	90,513
Liabilities			40,942		41,643
	Second	Quarter	Fi	rst Six Moi	nths
	2023	2022	2023		2022
Sales	\$ 6,721	\$ 6,554	\$ 13	3,210 \$	12,599

1,000

265

1,836

1,041

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

Net earnings attributable to Kraft Heinz common shareholders

	March 31, 2023	December 31, 2022
Assets	\$ 71,600	\$ 72,609
Liabilities	42,041	42,524

	arter ending arch 31, 2023	Six months ending March 31, 2023		
Total revenues and other income	\$ 7,258	\$	15,584	
Net earnings attributable to Occidental common shareholders	983		2,710	

Note 7. Investment and derivative contract gains (losses)

Investment and derivative contract gains (losses) in the second quarter and first six months of 2023 and 2022 are summarized as follows (in millions).

	Second	Quar	ter	First Six	ths	
	2023		2022	2023		2022
Investment gains (losses):						
Equity securities:						
Change in unrealized investment gains (losses) during the period on						
securities held at the end of the period	\$ 33,046	\$	(66,860)	\$ 63,763	\$	(68,548)
Investment gains on securities sold during the period	31		32	1,001		34
	33,077		(66,828)	64,764		(68,514)
Fixed maturity securities:						
Gross realized gains	8		6	132		12
Gross realized losses	(25)		(27)	(77)		(76)
Other	1		(5)	3,000		(11)
Investment gains (losses)	33,061		(66,854)	67,819		(68,589)
Derivative contract gains (losses)	_		(65)	_		(308)
	\$ 33,061	\$	(66,919)	\$ 67,819	\$	(68,897)

Equity securities gains and losses include unrealized gains and losses from changes in fair values during the period on equity securities we still own, as well as gains and losses on securities we sold during the period. As reflected in the Consolidated Statements of Cash Flows, we received proceeds from sales of equity securities of approximately \$25.8 billion in the first six months of 2023 and \$12.0 billion in the first six months of 2022. In the preceding table, investment gains and losses on equity securities sold during the period represent the difference between the sales proceeds and the fair value of the equity securities sold at the beginning of the applicable period or, if later, the purchase date. Taxable gains and losses on equity securities sold are generally the difference between the proceeds from sales and original cost. Equity securities sold produced taxable gains of \$2.4 billion in the second quarter and \$4.6 billion in the first six months of 2023 compared to taxable gains of \$76 million in the second quarter of 2022 and taxable losses of \$663 million in the first six months of 2022. Other investment gains in the first six months of 2023 included approximately \$3 billion from the remeasurement of our pre-existing 38.6% interest in Pilot through the application of acquisition accounting under GAAP.

Note 8. Loans and finance receivables

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

	J	une 30, 2023	December 31, 2022
Loans and finance receivables before allowances and discounts	\$	25,064	\$ 24,664
Allowances for credit losses		(912)	(856)
Unamortized acquisition discounts and points		(622)	(600)
	\$	23,530	\$ 23,208

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 the first six months of 2023 and 2022 follow (in millions).

		First Six Months					
	20)23		2022			
Balance at beginning of year	\$	856	\$		765		
Provision for credit losses		90			50		
Charge-offs, net of recoveries		(34)			(12)		
Balance at June 30	\$	912	\$		803		

Note 8. Loans and finance receivables (Continued)

As of June 30, 2023, substantially all manufactured and site-built home loans were evaluated collectively for impairment. As of June 30, 2023, we considered approximately 97% of these loans 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 June 30, 2023 follows (in millions).

				Originati	on Ye	ar			
	2	2023	2022	2021		2020	2019	Prior	Total
Performing	\$	3,273	\$ 4,568	\$ 3,459	\$	2,694	\$ 1,907	\$ 7,933	\$ 23,834
Non-performing		7	5	10		10	6	44	82
	\$	3,280	\$ 4,573	\$ 3,469	\$	2,704	\$ 1,913	\$ 7,977	\$ 23,916

We are also a lender under commercial loan agreements, which had an aggregate principal value of approximately \$1.1 billion at June 30, 2023 and \$1.9 billion at December 31, 2022. The largest commercial loan is currently to Seritage Growth Properties, with an unpaid principal balance of \$550 million at June 30, 2023. Our commercial loans are generally secured by real estate properties or by other assets.

Note 9. Other receivables

Other receivables are comprised of the following (in millions). Receivables of the railroad, utilities and energy businesses at June 30, 2023 included approximately \$1.6 billion related to Pilot.

	June 202			
Insurance and other:				
Insurance premiums receivable	\$	19,700	\$	18,395
Reinsurance recoverables		7,186		7,106
Trade receivables		15,160		14,510
Other		4,204		4,154
Allowances for credit losses		(660)		(675)
	\$	45,590	\$	43,490
Railroad, utilities and energy:				
Trade receivables	\$	5,228	\$	4,182
Other		998		754
Allowances for credit losses		(159)		(141)
	\$	6,067	\$	4,795

Provisions for credit losses in the first six months with respect to these receivables were \$278 million in 2023 and \$211 million in 2022. Charge-offs, net of recoveries, in the first six months were \$280 million in 2023 and \$189 million in 2022.

Note 10. Inventories

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

	June 30, 2023	December 31, 2022
Raw materials	\$ 6,395	\$ 6,381
Work in process and other	3,532	3,464
Finished manufactured goods	5,545	5,739
Goods acquired for resale	9,823	9,782
	\$ 25,295	\$ 25,366

Inventories of our railroad, utilities and energy businesses are included in other assets and were approximately \$4.3 billion at June 30, 2023, of which approximately \$1.9 billion was attributable to Pilot.

Note 11. Property, plant and equipment

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

	une 30, 2023	D	ecember 31, 2022
Land, buildings and improvements	\$ 14,695	\$	14,761
Machinery and equipment	27,464		26,690
Furniture, fixtures and other	5,297		4,847
	47,456		46,298
Accumulated depreciation	(26,043)		(25,185)
	\$ 21,413	\$	21,113

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 Pilot are included in land, buildings, improvements and other within the utilities and energy section of the following table.

	June 30, 2023	De	cember 31, 2022
Railroad:			
Land, track structure and other roadway	\$ 68,885	\$	67,350
Locomotives, freight cars and other equipment	16,051		16,031
Construction in progress	2,009		1,743
	86,945		85,124
Accumulated depreciation	(18,750)		(17,899)
	68,195		67,225
Utilities and energy:			
Utility generation, transmission and distribution systems	94,351		92,759
Interstate natural gas pipeline assets	18,605		18,328
Independent power plants and other assets	14,680		14,650
Land, buildings, improvements and other	8,300		_
Construction in progress	7,610		5,357
	143,546		131,094
Accumulated depreciation	(39,994)		(38,051)
	103,552		93,043
	\$ 171,747	\$	160,268

Depreciation expense for the first six months of 2023 and 2022 is summarized below (in millions).

	First Six Months				
	2023		2022		
Insurance and other	\$ 1,158	\$	1,127		
Railroad, utilities and energy	3,494		3,091		
	\$ 4,652	\$	4,218		

Note 12. 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, 2022	
Railcars	\$	9,747	\$ 9,612
Aircraft		11,438	10,667
Other		5,347	5,212
		26,532	25,491
Accumulated depreciation		(10,504)	(9,907)
	\$	16,028	\$ 15,584

Note 12. Equipment held for lease (Continued)

Depreciation expense for equipment held for lease in the first six months was \$623 million in 2023 and \$593 million in 2022. Fixed and variable operating lease revenues for the second quarter and first six months of 2023 and 2022 are summarized below (in millions).

		Second Quarter					First Six Months				
	2	2023		2022		2023		2022			
Fixed lease revenue	\$	1,478	\$	1,264	\$	2,895	\$		2,452		
Variable lease revenue		601		623		1,228			1,107		
	\$	2,079	\$	1,887	\$	4,123	\$		3,559		

Note 13. Goodwill and other intangible assets

Reconciliations of the changes in the carrying value of goodwill for the first six months of 2023 and for the year ended December 31, 2022 follow (in millions).

	June 30, 2023	December 31, 2022		
Balance at beginning of year	\$ 78,119	\$	73,875	
Business acquisitions	8,413		4,657	
Other, including acquisition period remeasurements and foreign currency translation	(679)		(413)	
Balance at end of period*	\$ 85,853	\$	78,119	

^{*} Net of accumulated goodwill impairments of \$11.0 billion as of June 30, 2023 and December 31, 2022.

Other intangible assets are summarized below (in millions). Other intangible assets of the railroad, utilities and energy businesses are included in other assets. The net carrying value of such assets at June 30, 2023 included \$6.6 billion related to Pilot.

	June 30, 2023					December 31, 2022						
	c	Gross arrying mount		ımulated rtization	C	Net carrying value		Gross arrying amount		umulated ortization	(Net carrying value
Insurance and other:												
Customer relationships	\$	28,276	\$	7,558	\$	20,718	\$	27,765	\$	7,174	\$	20,591
Trademarks and trade names		5,626		838		4,788		5,603		822		4,781
Patents and technology		5,060		3,901		1,159		4,943		3,748		1,195
Other		4,810		1,656		3,154		4,150		1,530		2,620
	\$	43,772	\$	13,953	\$	29,819	\$	42,461	\$	13,274	\$	29,187
Railroad, utilities and energy:												
Customer relationships and contracts	\$	5,334	\$	695	\$	4,639	\$	1,507	\$	541	\$	966
Trademarks and trade names		2,228		51		2,177		217		39		178
Other		1,093		62		1,031		190		42		148
	\$	8,655	\$	808	\$	7,847	\$	1,914	\$	622	\$	1,292

Intangible asset amortization expense in the first six months was \$872 million in 2023 and \$602 million in 2022. Intangible assets with indefinite lives were \$20.5 billion as of June 30, 2023 and \$18.3 billion as of December 31, 2022 and primarily related to certain customer relationships and trademarks and trade names.

Note 14. Unpaid loss es and loss adjustment expenses

A reconciliation of the changes in unpaid losses and loss adjustment expenses ("claim liabilities"), excluding liabilities under retroactive reinsurance contracts (see Note 15), for each of the six-month periods ending June 30, 2023 and 2022 follows (in millions).

	20	023	2022
Balances at beginning of year:			
Gross liabilities	\$	107,472	\$ 86,664
Reinsurance recoverable on unpaid losses		(5,025)	(2,960)
Net liabilities		102,447	83,704
Incurred losses and loss adjustment expenses:			
Current accident year		29,827	27,427
Prior accident years		(1,948)	(887)
Total		27,879	26,540
Paid losses and loss adjustment expenses:			
Current accident year		(9,968)	(10,085)
Prior accident years		(16,664)	(13,820)
Total		(26,632)	(23,905)
Foreign currency effect		267	(568)
Balances at June 30:			
Net liabilities		103,961	85,771
Reinsurance recoverable on unpaid losses		5,069	2,789
Gross liabilities	\$	109,030	\$ 88,560

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 were recorded in earnings and 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.

In the first six months, we recorded net reductions of estimated ultimate liabilities for prior accident years of \$1.9 billion in 2023 and \$887 million in 2022, which produced corresponding reductions in incurred losses and loss adjustment expenses. These reductions, as percentages of the net liabilities at the beginning of each year, were 1.9% in 2023 and 1.1% in 2022.

We reduced estimated ultimate liabilities for prior accident years of primary insurance businesses in the first six months by \$1.1 billion in 2023 and \$313 million in 2022. In 2023, the reductions were driven by private passenger auto claims, whereas the decreases in 2022 were primarily attributable to private passenger auto, medical professional liability and workers' compensation claims, partly offset by increases with respect to other casualty claims. In the first six months, estimated ultimate liabilities for prior accident years of property and casualty reinsurance businesses were reduced \$883 million in 2023 and \$574 million in 2022.

Note 15. 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. Reconciliations of the changes in estimated liabilities for retroactive reinsurance unpaid losses and loss adjustment expenses and incurred losses and loss adjustment expenses to the amounts recorded in the Consolidated Statements of Earnings for each of the six-month periods ended June 30, 2023 and 2022 follow (in millions).

		2023	2022
Balances at beginning of year	\$	35,415	\$ 37,855
Incurred losses and loss adjustment expenses:			
Current year contracts		_	_
Prior years' contracts		15	(14)
Total		15	(14)
Paid losses and loss adjustment expenses		(1,033)	(1,008)
Foreign currency effect		24	(157)
Balances at June 30	\$	34,421	\$ 36,676
Incurred losses and loss adjustment expenses above	\$	15	\$ (14)
Deferred charge amortization and adjustments		416	426
Incurred losses and loss adjustment expenses included in the Consolidated Statements of Earnings	<u>\$</u>	431	\$ 412

In the preceding table, classifications of incurred losses and loss adjustment expenses are based on the inception dates of the contracts, which reflect when our exposure to losses began. Claims payments may commence immediately after the contract date or, when applicable, after a contractual retention amount has been reached. Incurred 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. Unamortized deferred charges related to retroactive reinsurance contracts were \$9.5 billion at June 30, 2023 and \$9.9 billion at December 31, 2022.

Note 16. 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 as of June 30, 2023 and 2022, disaggregated for our two primary product categories, periodic payment annuities and life and health insurance, follows (in millions). Other liabilities primarily consist of incurred-but-not-reported claims and claims in the course of settlement.

	June 30,				
	2023		2022		
Periodic payment annuities	\$ 10,820	\$	11,826		
Life and health	5,523		5,810		
Other liabilities	3,292		3,316		
	\$ 19,635	\$	20,952		

Note 16. Long-duration insurance contracts (Continued)

Reconciliations of our periodic payment annuity and life and health insurance benefits liabilities for the first six months of 2023 and 2022 follow (in millions). The information reflects the changes in discounted present values of expected future policy benefits and expected future net premiums. In this context, 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			
	2	2023		2022		2023		2022	
Expected future policy benefits:									
Balance at beginning of period	\$	10,640	\$	16,153	\$	52,008	\$	63,648	
Balance at beginning of period at original discount rate		11,549		11,261		63,584		60,133	
Impact of cash flow assumption changes		_		_		10		318	
Effect of actual from expected results		2		3		(411)		248	
Change in benefits, net		(230)		85		(1,346)		(1,285)	
Interest accrual		266		268		852		807	
Foreign currency effect		83		(109)		100		(1,645)	
Ending balance at original discount rate		11,670		11,508		62,789		58,576	
Effect of changes in discount rate assumptions		(850)		318		(12,741)		(8,191)	
Expected future policy benefits at June 30	\$	10,820	\$	11,826	\$	50,048	\$	50,385	
Expected future net premiums:									
Balance at beginning of period					\$	46,129	\$	55,960	
Balance at beginning of period at original discount rate						56,535		53,277	
Impact of cash flow assumption changes						18		324	
Effect of actual from expected results						(251)		90	
Change in premiums, net						(1,222)		(988)	
Interest accrual						745		701	
Foreign currency effect						83		(1,550)	
Ending balance at original discount rate						55,908		51,854	
Effect of changes in discount rate assumptions						(11,383)		(7,279)	
Expected future net premiums at June 30					\$	44,525	\$	44,575	
Liability for future policy benefits at June 30	\$	10,820	\$	11,826	\$	5,523	\$	5,810	
Reinsurance recoverables		_		_		(1,549)		(1,650)	
Liability for future policy benefits at June 30,									
net of reinsurance recoverables	\$	10,820	\$	11,826	\$	3,974	\$	4,160	

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 June 30, 2023 and 2022 are summarized below (in millions).

	_	nted expected oss premiums			Discounted expected future gross premiums				Undiscounted expected future benefits			
	2023		2022		2023		2022		2023		2022	
Periodic payment annuities	\$ _	\$	_	\$	_	\$	_	\$	31,232	\$	31,084	
Life and health	108,089		107,647		65,599		64,832		103,012		102,305	

Gross premiums earned on long-duration contracts are included in insurance premiums earned and interest expense associated with long-duration insurance contracts is included as a component of life, annuity and health benefits expenses in our Consolidated Statements of Earnings. Gross premiums earned and interest expense for the first six months of 2023 and 2022 were as follows (in millions).

		Gross Pr	emiums		In	terest Ex	pense		
	20	123		2022	2023			2022	
Periodic payment annuities	\$	_	\$	337	\$ 2	266	\$		268
Life and health		1,644		1.793		107			106

Note 16. Long-duration insurance contracts (Continued)

The weighted average discount rates, interest accretion rates and the average contract durations as of June 30, 2023 and 2022 for periodic payment annuities and life and health insurance are summarized below.

	June 30,		
	2023	2022	
Periodic payment annuities			
Weighted average discount rate	5.3 %	4.7%	
Weighted average accretion rate	4.8%	4.9%	
Weighted average duration	18 years	18 years	
Life and health			
Weighted average discount rate	5.0%	4.5%	
Weighted average accretion rate	3.3 %	3.3 %	
Weighted average duration	14 years	14 years	

We also reinsure closed blocks of guaranteed minimum death and living benefits associated with variable annuity products, referred to as market risk benefits. These liabilities are included in other policyholder liabilities and are measured at estimated fair value under ASU 2018-12. Such liabilities were approximately \$1.0 billion as of June 30, 2023 and \$1.25 billion as of December 31, 2022. During the first six months of 2023, we reduced liability estimates by \$194 million, for the effects of changes in securities markets, interest rates and other inputs used to estimate liabilities. Cash settlements during the first six months of 2023 were relatively insignificant.

Note 17. Notes payable and other borrowings

Notes payable and other borrowings of our insurance and other businesses are summarized below (in millions). The weighted average interest rates and maturity date ranges are based on borrowings as of June 30, 2023.

	Weighted Average Interest Rate	June 30, 2023	December 31, 2022
Insurance and other:			
Berkshire Hathaway Inc. ("Berkshire"):			
U.S. Dollar denominated due 2025-2047	3.5% \$	3,735	\$ 6,231
Euro denominated due 2024-2041	1.1%	6,069	7,344
Japanese Yen denominated due 2024-2060	0.7%	7,850	7,818
Berkshire Hathaway Finance Corporation ("BHFC"):			
U.S. Dollar denominated due 2027-2052	3.6%	14,460	14,458
Great Britain Pound denominated due 2039-2059	2.5%	2,186	2,078
Euro denominated due 2030-2034	1.8%	1,358	1,332
Other subsidiary borrowings due 2023-2051	4.6%	4,908	5,967
Subsidiary short-term borrowings	6.6%	823	1,310
	\$	41,389	\$ 46,538

Note 17. Notes payable and other borrowings (Continued)

In the first six months of 2023, Berkshire repaid approximately \$4.3 billion of maturing senior notes. In April 2023, Berkshire issued ¥164.4 billion (approximately \$1.2 billion) of senior notes. 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 June 30, 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 (66.85 billion, £1.75 billion and \$1,137\$ billion par at June 30, 2023) reflect the applicable exchange rates as of each balance sheet date. The effects of changes in foreign currency exchange rates during the period are recorded in earnings as a component of selling, general and administrative expenses. Changes in the exchange rates produced pre-tax gains of \$555 million in the second quarter and \$529 million in the first six months of 2023 as compared to pre-tax gains of \$1.4 billion in the second quarter and \$2.1 billion in the first six months of 2022.

Notes payable and other borrowings of our railroad, utilities and energy businesses are summarized below (in millions). The weighted average interest rates and maturity date ranges are based on borrowings as of June 30, 2023.

	Weighted Average Interest Rate	June 30, 2023	December 31, 2022
Railroad, utilities and energy:			
Berkshire Hathaway Energy Company ("BHE") and subsidiaries:			
BHE senior unsecured debt due 2023-2053	4.4%	\$ 13,599	\$ 13,996
Subsidiary and other debt due 2023-2064	4.3 %	38,021	37,639
Short-term borrowings	5.5%	2,243	1,119
Pilot Travel Centers ("Pilot") and subsidiaries due 2023-2028	7.0%	5,789	_
Burlington Northern Santa Fe ("BNSF") and subsidiaries due 2023-2097	4.6%	24,306	23,452
		\$ 83,958	\$ 76,206

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 May 2023, a BHE subsidiary issued \$1.2 billion of 5.5% first mortgage bonds due in 2054. During the first six months of 2023, BHE and its subsidiaries repaid approximately \$1.4 billion of term debt.

Pilot's borrowings primarily represent secured syndicated loans. BNSF's borrowings are primarily senior unsecured debentures. In June 2023, BNSF issued \$1.6 billion of 5.2% debentures due in 2054. During the first six months of 2023, BNSF repaid approximately \$700 million of term debt. As of June 30, 2023, BHE, BNSF and Pilot 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, Pilot or their subsidiaries.

Our subsidiaries have unused lines of credit and commercial paper capacity to support short-term borrowing programs and provide additional liquidity. Unused lines of credit were approximately \$12.0 billion at June 30, 2023, which included approximately \$8.6 billion related to BHE and its subsidiaries.

Note 18. Fair value measurements

Our financial assets and liabilities are summarized below as of June 30, 2023 and December 31, 2022, 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	F	air Value	Quoted Prices (Level 1)	Significant Other Observable Inputs (Level 2)	Uno	nificant bservable inputs evel 3)
<u>June 30, 2023</u>								
Investments in fixed maturity securities:								
U.S. Treasury, U.S. government corporations								
and agencies	\$	9,052	\$	9,052	\$ 9,017	\$ 35	\$	_
Foreign governments		11,481		11,481	11,170	311		_
Corporate bonds		1,554		1,554	_	908		646
Other		266		266	_	266		_
Investments in equity securities		353,409		353,409	342,596	11		10,802
Investments in Kraft Heinz & Occidental common stock		27,060		24,732	24,732	_		_
Loans and finance receivables		23,530		24,020	_	1,097		22,923
Derivative contract assets (1)		355		355	74	256		25
Derivative contract liabilities (1)		309		309	48	73		188
Notes payable and other borrowings:								
Insurance and other		41,389		36,100	_	36,071		29
Railroad, utilities and energy		83,958		77,040	_	77,040		_
<u>December 31, 2022</u>								
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		_

 $^{{\}it (1)} Assets\ are\ included\ in\ other\ assets\ and\ liabilities\ are\ included\ in\ accounts\ payable,\ accruals\ and\ other\ liabilities.$

Note 18. Fair value measurements (Continued)

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.

<u>Level 1</u> – 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.

<u>Level 3</u> – 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 the six months ended June 30, 2023 and 2022 follow (in millions).

	beg	lance at ginning f year	Gains (losses) included in earnings		Acquisitions, dispositions and settlements		Transfers out of Level 3		Balance at June 30	
Investments in equity securities:										
2023	\$	12,169	\$	(86)	\$ (1,2	286) \$	\$ —	\$	10,797	
2022		11,480		455		_	_		11,935	

Quantitative information as of June 30, 2023 for the significant assets and liabilities 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	\$	8,994	Discounted cash flow	Expected duration	6 years
				Discounts for liquidity and subordination	372 bps
Common stock warrants		1,803	Warrant pricing model	Expected duration	6 years
				Volatility	40%

Investments in equity securities in the preceding table include our investments in certain preferred stock 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 liquidity and subordination in liquidation. In valuing the common stock warrants, we used a warrant valuation model. While most of the inputs to the model are observable, we made assumptions regarding the expected duration and volatility of the warrants.

Note 19, Common stock

Changes in Berkshire's issued, treasury and outstanding common stock during the first six months of 2023 are shown in the table below. In addition to our common stock, 1,000,000 shares of preferred stock are authorized, but none are issued.

		ss A, \$5 Par Value 00 shares authorized	d)	Class B, \$0.0033 Par Value (3,225,000,000 shares authorized)					
	Issued	Treasury	Outstanding	Issued	Treasury	Outstanding			
Balances at December 31, 2022	651,450	(59,886)	591,564	1,509,969,352	(207,715,276)	1,302,254,076			
Conversions of Class A to									
Class B common stock	(9,871)	_	(9,871)	14,806,500	_	14,806,500			
Treasury stock acquired	_	(6,145)	(6,145)	_	(9,071,308)	(9,071,308)			
Balances at June 30, 2023	641,579	(66,031)	575,548	1,524,775,852	(216,786,584)	1,307,989,268			

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 1,447,541 shares outstanding as of June 30, 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 the average Class A shares outstanding.

Berkshire's common stock repurchase program permits Berkshire to repurchase its shares any time that Warren Buffett, Berkshire's Chairman of the Board and Chief Executive Officer, and Charlie Munger, Vice Chairman of the Board, believe 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.

Note 20. Income taxes

Our consolidated effective income tax rates were 20.3% in the second quarter and 20.2% in the first six months of 2023 compared to 21.8% in the second quarter and 22.4% in the first six months of 2022. Our effective income tax rate normally reflects recurring benefits from dividends-received deductions applicable to investments in certain equity securities and production tax credits related to wind-powered electricity generation placed in service in the U.S. Our periodic effective income tax rate will also vary due to the changes in mix of pre-tax earnings, including investment gains or losses with respect to our investments in equity securities, the amount of non-deductible goodwill impairment charges and other expenses and the underlying income tax rates applicable in the various taxing jurisdictions, and enacted changes thereto.

Note 21. Accumulated other comprehensive income

A summary of the net changes in after-tax accumulated other comprehensive income attributable to Berkshire Hathaway shareholders for the six months ending June 30, 2023 and 2022 follows (in millions).

	Unrealized gains (losses) on investments		cu	oreign rrency islation	du inst	ong- ration urance itracts	b pe	Defined benefit pension plans		Other	Total
First six months of 2023											
Beginning of year as previously reported	\$	(187)	\$	(6,140)	\$	_	\$	(552)	\$	288	\$ (6,591)
Adoption of ASU 2018-12		_		(2)		1,541		_		_	1,539
Beginning balance as revised		(187)		(6,142)		1,541		(552)		288	(5,052)
Other comprehensive income		174		592		71		41		(66)	812
Balance at end of period	\$	(13)	\$	(5,550)	\$	1,612	\$	(511)	\$	222	\$ (4,240)
First six months of 2022											
Beginning of year as previously reported	\$	369	\$	(4,092)	\$	_	\$	(347)	\$	43	\$ (4,027)
Adoption of ASU 2018-12		—		_		(4,096)		_		_	(4,096)
Beginning balance as revised		369		(4,092)		(4,096)		(347)		43	(8,123)
Other comprehensive income		(352)		(1,969)		4,566		27		148	2,420
Balance at end of period	\$	17	\$	(6,061)	\$	470	\$	(320)	\$	191	\$ (5,703)

Note 22. Supplemental cash flowinformation

A summary of supplemental cash flow information is presented in the following table (in millions).

	First Six Months						
		2023		2022			
Cash paid during the period for:							
Income taxes	\$	2,962	\$	1,951			
Interest:							
Insurance and other		725		567			
Railroad, utilities and energy		1,857		1,564			
Non-cash investing and financing activities:							
Liabilities assumed in connection with business acquisitions		10,815		21			

Note 23. 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. Generally, we do not believe that such normal and routine litigation will have a material effect on our financial condition or results of operations.

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.

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.

Note 23. Contingencies and commitments (Continued)

Investigations into the cause and origin of each wildfire are complex and ongoing and 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.

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"). Amounts sought in the lawsuits, complaints and demands filed in Oregon total over \$7 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.

Several insurance carriers have filed subrogation complaints in Oregon and California with allegations similar to those made in the aforementioned lawsuits. Additionally, certain governmental agencies have informed PacifiCorp that they are contemplating filing actions in connection with certain of the Oregon 2020 Wildfires.

In June 2023, a jury issued a verdict for the 17 named plaintiffs in 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. PacifiCorp intends to vigorously appeal the jury's findings and damage awards, including whether the case can proceed as a class action. The appeals process and further actions could take several years.

Based on the facts and circumstances available to us as of the date of this filing, which includes the status of the verdict in the James case with respect to the 17 named plaintiffs, other litigation and recent settlements, PacifiCorp has accrued cumulative estimated pre-tax probable losses associated with the 2020 Wildfires of \$1,018 million through June 30, 2023, or \$608 million net of probable insurance recoveries. PacifiCorp's cumulative accrual includes estimates of probable losses 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 reasonably able to estimate at this time. For certain aspects of the 2020 Wildfires for which loss is considered probable, information necessary to reasonably estimate the potential losses, such as those related to certain areas of natural resource damages, is not currently available.

It is reasonably possible PacifiCorp will incur significant additional losses beyond the amounts currently accrued; however, we are 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.

On July 10, 2023, BHE announced that it had executed an agreement to acquire an additional 50% interest in Cove Point LNG, LP, which would increase its interest to 75%. The transaction is valued at \$3.3 billion and is subject to applicable regulatory approvals.

Note 24. Revenues from contracts with customers

The following tables summarize customer contract revenues disaggregated by reportable segment and the source of the revenue for the second quarter and first six months of 2023 and 2022 (in millions). Revenues from Pilot in 2023 are for the five months ending June 30, 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.

	Man	nufacturin g			BNSF	H	erkshire athaway Energy	Pilot	C	nsurance, Corporate and other	Total		
Three months ending June 30, 2023		Ü			Ü								
Manufactured products:													
Industrial and commercial products	\$	7,221	\$	_	\$ 54	\$	_	\$	_	\$ _	\$	_	\$ 7,275
Building products		5,178		_	_		_		_	_		_	5,178
Consumer products		4,343		_	_		_		_	_		_	4,343
Grocery and convenience store distribution		_		7,535	_		_		_	_		_	7,535
Food and beverage distribution		_		4,902	_		_		_	_		_	4,902
Auto sales		_		_	2,789		_		_	_		_	2,789
Other retail and wholesale distribution		814		_	4,138		_		_	681		_	5,633
Service		347		213	1,390		5,791		1,217	88		_	9,046
Electricity, natural gas and fuel		_		_	_		_		4,779	13,903		_	18,682
Total		17,903		12,650	8,371		5,791		5,996	14,672		_	65,383
Other revenues		1,171		47	1,738		17		354	61		23,732	27,120
	\$	19,074	\$	12,697	\$ 10,109	\$	5,808	\$	6,350	\$ 14,733	\$	23,732	\$ 92,503
Six months ending June 30, 2023													
Manufactured products:													
Industrial and commercial products	\$	14,450	\$	_	\$ 119	\$	_	\$	_	\$ _	\$	_	\$ 14,569
Building products		9,936		_	_		_		_	_		_	9,936
Consumer products		8,378		_	_		_		_	_		_	8,378
Grocery and convenience store distribution		_		15,328	_		_		_	_		_	15,328
Food and beverage distribution		_		9,664	_		_		_	_		_	9,664
Auto sales		_		_	5,354		_		_	_		_	5,354
Other retail and wholesale distribution		1,613		_	8,368		_		_	1,103		_	11,084
Service		701		497	2,716		11,776		2,028	109		_	17,827
Electricity, natural gas and fuel		_		_	_		_		10,070	22,918		_	32,988
Total		35,078		25,489	16,557		11,776		12,098	24,130		_	125,128
Other revenues		2,261		89	3,454		33		691	99		46,141	52,768
	\$	37,339	\$	25,578	\$ 20,011	\$	11,809	\$	12,789	\$ 24,229	\$	46,141	\$ 177,896

${\bf Notes\ to\ Consolidated\ Financial\ Statements\ (\it Continued)}$

Note 24. Revenues from contracts with customers (Continued)

	Ma	nufacturin g	I	VicLane		Service and etailing		BNSF	H	erkshire athaway Energy	Pilot	C	isurance, orporate nd other	Total
Three months ending June 30, 2022														
Manufactured products:														
Industrial and commercial products	\$	6,142	\$	_	\$	48	\$	_	\$	_	\$ _	\$	_	\$ 6,190
Building products		5,970		_		_		_		_	_		_	5,970
Consumer products		5,509		_		_		_		_	_		_	5,509
Grocery and convenience store distribution		_		7,979		_		_		_	_		_	7,979
Food and beverage distribution		_		5,002		_		_		_	_		_	5,002
Auto sales		_		_		2,675		_		_	_		_	2,675
Other retail and wholesale distribution		818		_		4,265		_		_	_		_	5,083
Service		302		248		1,078		6,596		1,561	_		_	9,785
Electricity and natural gas		_		_		_		_		4,740	_		_	4,740
Total		18,741		13,229		8,066		6,596		6,301	_		_	52,933
Other revenues		995		33		1,527		16		239	_		20,458	23,268
	\$	19,736	\$	13,262	\$	9,593	\$	6,612	\$	6,540	\$ _	\$	20,458	\$ 76,201
					-		-							
Six months ending June 30, 2022														
Manufactured products:														
Industrial and commercial products	\$	12,074	\$	_	\$	97	\$	_	\$	_	\$ _	\$	_	\$ 12,171
Building products		11,389		_		_		_		_	_		_	11,389
Consumer products		10,602		_		_		_		_	_		_	10,602
Grocery and convenience store distribution		_		15,685		_		_		_	_		_	15,685
Food and beverage distribution		_		9,564		_		_		_	_		_	9,564
Auto sales		_		_		5,202		_		_	_		_	5,202
Other retail and wholesale distribution		1,540		_		8,440		_		_	_		_	9,980
Service		566		462		2,084		12,527		2,673	_		_	18,312
Electricity and natural gas		_		_		_		_		9,454	_		_	9,454
Total		36,171		25,711		15,823		12,527		12,127	_		_	102,359
Other revenues		1,950		65		2,861		29		428	_		39,352	44,685
	\$	38,121	\$	25,776	\$	18,684	\$	12,556	\$	12,555	\$	\$	39,352	\$ 147,044

A summary of the transaction price allocated to the significant unsatisfied remaining performance obligations relating to contracts with expected durations in excess of one year as of June 30, 2023 and the timing of when the performance obligations are expected to be satisfied follows (in millions).

	Less than 12 months	Greater 12 mo		Total
Electricity, natural gas and fuel	\$ 3,390	\$	20,764	\$ 24,154
Other sales and service contracts	3,377		5,258	8,635

Note 25. 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 and marketing, selling and distribution characteristics, even though those business units are operated under separate local management. We acquired control of Pilot Travel Centers ("Pilot") on January 31, 2023. Pilot's revenues, costs and earnings are included in our Consolidated Financial Statements, and Pilot is considered a reportable segment beginning February 1, 2023. In this presentation, the revenues and pre-tax earnings of the Pilot segment are for the five months ending June 30, 2023. Previously, our earnings from Pilot were determined under the equity method and are included in earnings from equity method investments. Revenues and earnings (loss) before income taxes by segment for the second quarter and first six months of 2023 and 2022 were as follows (in millions).

	Second	Quarte	r	First Six	ix Months		
	2023		2022	2023		2022	
Revenues of Operating Businesses							
Insurance:							
Underwriting:							
GEICO	\$ 9,714	\$	9,807	\$ 19,340	\$	19,361	
Berkshire Hathaway Primary Group	4,233		3,313	8,194		6,431	
Berkshire Hathaway Reinsurance Group	6,614		4,961	12,823		9,777	
Investment income	2,918		2,284	5,310		3,648	
Total insurance	23,479		20,365	45,667		39,217	
BNSF	5,828		6,640	11,847		12,608	
Berkshire Hathaway Energy ("BHE")	6,362		6,545	12,813		12,565	
Pilot Travel Centers ("Pilot")	14,754		_	24,262		_	
Manufacturing	19,102		19,772	37,391		38,193	
McLane	12,883		13,262	25,942		25,777	
Service and retailing	10,141		9,617	20,072		18,732	
	92,549		76,201	177,994		147,092	
Reconciliation of segments to consolidated amount							
Corporate, eliminations and other	(46)		_	(98)		(48)	
	\$ 92,503	\$	76,201	\$ 177,896	\$	147,044	

	Second (Quartei		First Six Months			
	2023	2022		2023			2022
Earnings (Loss) Before Income Taxes of Operating Businesses							
Insurance:							
Underwriting:							
GEICO	\$ 514	\$	(487)	\$	1,217	\$	(665)
Berkshire Hathaway Primary Group	272		242		540		334
Berkshire Hathaway Reinsurance Group	827		1,141		1,058		1,442
Investment income	2,912		2,283		5,297		3,644
Total insurance	4,525		3,179		8,112		4,755
BNSF	1,615		2,151		3,264		3,960
BHE	624		591		847		1,304
Pilot	186		_		322		_
Manufacturing	3,103		3,028		5,714		5,852
McLane	129		76		242		158
Service and retailing	1,262		1,199		2,483		2,334
	11,444		10,224		20,984		18,363
Reconciliation of segments to consolidated amount							
Investment and derivative gains (losses)	33,061		(66,919)		67,819		(68,897)
Interest expense, not allocated to segments	(103)		(100)		(217)		(204)
Equity method investments	511		204		1,199		543
Corporate, eliminations and other	522		1,283		402		1,844
	\$ 45,435	\$	(55,308)	\$	90,187	\$	(48,351)

Results of Operations

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

		Second	Quar	ter	First Siz	x Mon	ths
	2023 2022				2023		2022
Insurance – underwriting	\$	1,247	\$	715	\$ 2,158	\$	882
Insurance – investment income		2,369		1,906	4,338		3,076
BNSF		1,264		1,664	2,511		3,035
Berkshire Hathaway Energy ("BHE")		785		789	1,201		1,564
Pilot Travel Centers ("Pilot")		114		_	197		_
Manufacturing, service and retailing		3,389		3,249	6,371		6,274
Non-controlled businesses*		535		182	1,103		464
Investment and derivative contract gains (losses)		25,869		(53,038)	53,308		(54,618)
Other		340		912	229		1,282
Net earnings (loss) attributable to Berkshire Hathaway shareholders	\$	35,912	\$	(43,621)	\$ 71,416	\$	(38,041)

^{*} 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 teamparticipates 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 25 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 earnings of \$1.25 billion in the second quarter and \$2.16 billion in the first six months of 2023 versus \$715 million in the second quarter and \$882 million in the first six months of 2022. Earnings in 2022 reflect increases of \$134 million in the second quarter and \$254 million in the first six months from the previously reported amounts attributable to the adoption of ASU 2018-12 on January 1, 2023. Earnings from insurance investment income increased \$463 million in the second quarter and \$1.3 billion in the first six months of 2023 compared to 2022. The increases were primarily due to higher short-term interest rates, partly offset by lower dividend income.

Earnings of BNSF declined 24.0% in the second quarter and 17.3% in the first six months of 2023 compared to 2022. The decreases were primarily attributable to lower overall freight volumes and higher non-fuel operating costs, offset by lower fuel costs. After-tax earnings of BHE were essentially unchanged in the second quarter and declined 23.2% in the first six months of 2023 compared to 2022. The earnings decline in the first six months reflected lower earnings from the U.S. regulated utilities, other energy businesses and real estate brokerage businesses.

As disclosed in Note 3 to the accompanying Consolidated Financial Statements, we increased our ownership in Pilot from 38.6% to 80% on January 31, 2023 and we are consolidating Pilot's results beginning February 1, 2023. In 2022 and through January 31, 2023, earnings from Pilot on our 38.6% interest were determined under the equity method and are included in earnings from non-controlled businesses in the preceding table.

Earnings from our manufacturing, service and retailing businesses increased 4.3% in the second quarter and 1.5% in the first six months of 2023 versus 2022. While earnings for certain industrial products manufacturers and services businesses improved versus 2022, earnings of several of our building products, consumer products and retailing businesses deteriorated.

Investment and derivative contract gains (losses) in each period of 2023 and 2022 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 quarterly or annual 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 \$2.4 billion in the first quarter of 2023 related to our previously held 38.6% interest in Pilot through the application of the acquisition accounting method.

Results of Operations (Continued)

Other earnings included after-tax foreign exchange rate gains of \$465 million in the second quarter and \$448 million in the first six months of 2023 and \$1.1 billion in the second quarter and \$1.6 billion in the first six months of 2022. These gains 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 the economic 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 quarterly or annual 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 the first six months of 2023 were a cyclone and floods in New Zealand and floods in Australia in 2022. Each of these events occurred in the first quarter of the year.

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 \$143 billion as of June 30, 2023. Our periodic underwriting results may also include significant 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 operates a property and casualty insurance business through its subsidiaries, RSUI Group Inc. and CapSpecialty, Inc. ("RSUI and CapSpecialty") or "Alleghany Insurance"), and a reinsurance business 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 (premiums earned less insurance losses/benefits incurred and underwriting expenses) over the long term in all business categories, except for BHRG's retroactive reinsurance and periodic payment annuity contracts businesses. Time-value-of-money is an important element in establishing prices for policies written by these businesses. We normally receive all premiums at the contract inception date, which are immediately 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 discounted liability accretion charges.

Underwriting results of our insurance businesses are summarized below (dollars in millions). BHRG's pre-tax underwriting earnings for the second quarter and first six months of 2022 increased \$174 million and \$319 million, respectively, from pre-tax earnings previously reported due to the adoption of ASU 2018-12.

	Second	Quar	ter		First Si	ıths	
	2023		2022	20	023		2022
Pre-tax underwriting earnings (loss):							
GEICO	\$ 514	\$	(487)	\$	1,217	\$	(665)
Berkshire Hathaway Primary Group	272		242		540		334
Berkshire Hathaway Reinsurance Group	827		1,141		1,058		1,442
Pre-tax underwriting earnings	1,613		896		2,815		1,111
Income taxes and noncontrolling interests	366		181		657		229
Net underwriting earnings	\$ 1,247	\$	715	\$	2,158	\$	882
Effective income tax rate	22.6%	Ď	20.1 %		23.4%	Ď	20.6%

Insurance—Underwriting (Continued)

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. A summary of GEICO's underwriting results follows (dollars in millions).

		Second Quarter							First Six Months						
		2023			20	22		20	23		2022				
	A	mount	%	A	mount	%	A	mount		%	A	mount	0	%	
Premiums written	\$	9,449		\$	9,416		\$	19,509			\$	19,681			
Premiums earned	\$	9,714	100.0	\$	9,807	100.0	\$	19,340		100.0	\$	19,361		100.0	
Losses and loss adjustment expenses		8,192	84.3		9,105	92.8		16,184		83.7		17,649		91.2	
Underwriting expenses		1,008	10.4		1,189	12.2		1,939		10.0		2,377		12.2	
Total losses and expenses		9,200	94.7		10,294	105.0		18,123		93.7		20,026		103.4	
Pre-tax underwriting earnings (loss)	\$	514		\$	(487)		\$	1,217			\$	(665)			

GEICO's pre-tax underwriting earnings in the first six months of 2023 reflected higher average premiums per auto policy, a reduction in advertising costs, as well as reductions in prior accident years' claims estimates. Premiums written and earned were substantially unchanged in the second quarter and first six months of 2023 compared to 2022. Premiums in 2023 reflected rate increases during the past 12 months that produced higher average premiums per auto policy (16.3%), as well as a 2.7 million decrease (14.4%) in policies-in-force over that period. GEICO significantly reduced advertising in 2022 and 2023, which contributed to the reduction in policies-in-force

Losses and loss adjustment expenses declined \$913 million (10.0%) in the second quarter and \$1.5 billion (8.3%) in the first six months of 2023 compared to 2022. GEICO's loss ratio (losses and loss adjustment expenses to premiums earned) was 84.3% in the second quarter and 83.7% in the first six months of 2023, decreases of 8.5 percentage points and 7.5 percentage points, respectively, compared to the same periods in 2022. These decreases reflected the impact of higher average premiums per auto policy, additional reductions in prior accident years' claims estimates, the reduction in policies-in-force and lower claims frequencies, partially offset by increases in average claims severities.

Losses and loss adjustment expenses in the first six months of 2023 included reductions in the ultimate loss estimates for prior accident years' claims of \$888 million compared to \$207 million in 2022. The reduction in 2023 reflected decreased estimates across several coverages, while the reductions in 2022 were primarily attributable to bodily and personal injury coverages, partially offset by increases for collision and property damage coverages.

Claims frequencies in the first six months of 2023 were lower for property damage (seven to eight percent range) and collision (seven to eight percent range) coverages, while claims frequencies increased for bodily injury (three to four percent range) and personal injury (one to two percent range) coverages. Average claims severities in the first six months of 2023 were higher for property damage (twenty-one to twenty-three percent range), collision (seven to nine percent range) and bodily injury (seven to nine percent range) coverages.

Underwriting expenses declined \$181 million (15.2%) in the second quarter and \$438 million (18.4%) in the first six months of 2023 compared to 2022. GEICO's expense ratio (underwriting expense to premiums earned) was 10.4% in the second quarter and 10.0% in the first six months of 2023, decreases of 1.8 percentage points and 2.2 percentage points, respectively, compared to the same periods in 2022. These decreases were driven by the reduction in advertising expenses.

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 ("BH Specialty"), Berkshire Hathaway Homestate Companies ("BHHC"), 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 Alleghany Insurance beginning October 19, 2022.

Insurance—Underwriting (Continued)

Berkshire Hathaway Primary Group (Continued)

A summary of BH Primary's underwriting results follows (dollars in millions).

		Second Quarter							First Six Months							
		2023			20:	22		202	23		202	22				
	A	mount	%	A	mount	%	A	mount	%	Aı	mount	%				
Premiums written	\$	4,757		\$	3,504		\$	8,915		\$	6,896					
Premiums earned	\$	4,233	100.0	\$	3,313	100.0	\$	8,194	100.0	\$	6,431	100.0				
Losses and loss adjustment expenses		2,861	67.6		2,243	67.7		5,517	67.3		4,517	70.2				
Underwriting expenses		1,100	26.0		828	25.0		2,137	26.1		1,580	24.6				
Total losses and expenses		3,961	93.6		3,071	92.7		7,654	93.4		6,097	94.8				
Pre-tax underwriting earnings	\$	272		\$	242		\$	540		\$	334					

Premiums written increased \$1.3 billion (35.8%) in the second quarter and \$2.0 billion (29.3%) in the first six months of 2023 compared to 2022. The increases were primarily due to the inclusion of Alleghany Insurance (\$746 million in the second quarter and \$1.3 billion in the first six months), as well as comparative increases from BH Specialty and BH Direct.

Losses and loss adjustment expenses increased \$618 million (27.6%) in the second quarter and \$1.0 billion (22.1%) in the first six months of 2023 compared to 2022. The loss ratio decreased 0.1 percentage points in the second quarter and 2.9 percentage points in the first six months of 2023 compared to 2022, reflecting changes in business mix (including the impact of Alleghany Insurance), lower incurred losses from current year catastrophes and increased reductions in loss estimates for prior years' events.

Incurred losses from significant catastrophes occurring in the first six months were \$36 million in 2023 and \$75 million in 2022. Incurred losses and loss adjustment expenses in the first six months reflected net reductions in estimated ultimate liabilities for prior accident years' claims of \$177 million in 2023 and \$106 million in 2022. 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 claims liabilities could be greater than anticipated due to a variety of factors, including from adverse legal and judicial rulings.

Underwriting expenses increased \$272 million (32.9%) in the second quarter and \$557 million (35.3%) in the first six months of 2023 compared to 2022. The expense ratio increased 1.0 percentage points in the second quarter and 1.5 percentage points in the first six months of 2023 compared to 2022. The increases were primarily attributable to changes in business mix, including the effects of the Alleghany Insurance acquisition.

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 October 19, 2022, Trans Re 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 resulted in increases in pre-tax earnings of \$174 million in the second quarter and \$319 million in the first six months of 2022 from the previously reported amounts. These increases derived primarily from reductions in certain variable annuity guarantee liabilities.

	Second Quarter									First Six Months							
	Premiums earned				Pre-tax underwriting earnings (loss)				Premiums earned				Pre-tax underwriting earnings (loss)				
		2023		2022		2023		2022		2023		2022		2023		2022	
Property/casualty	\$	5,325	\$	3,531	\$	1,124	\$	976	\$	10,474	\$	6,930	\$	1,514	\$	1,381	
Life/health		1,289		1,262		47		124		2,349		2,510		184		98	
Retroactive reinsurance		_		_		(263)		(52)		_		_		(458)		(242)	
Periodic payment annuity		_		168		(211)		(54)		_		337		(375)		(173)	
Variable annuity		_		_		130		147		_		_		193		378	
	\$	6,614	\$	4,961	\$	827	\$	1,141	\$	12,823	\$	9,777	\$	1,058	\$	1,442	

Insurance—Underwriting (Continued)

Berkshire Hathaway Reinsurance Group (Continued)

Property/casualty

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

	Second Quarter								First Si	x Months			
	2023		2022				2023	2022					
	A	mount	%	Amount		%	A	mount	%	A	Amount		%
Premiums written	\$	5,866		\$	4,159		\$	12,134		\$	8,545		
Premiums earned	\$	5,325	100.0	\$	3,531	100.0	\$	10,474	100.0	\$	6,930		100.0
Losses and loss adjustment expenses		2,793	52.5		2,067	58.5		6,180	59.0		4,374		63.1
Underwriting expenses		1,408	26.4		488	13.9		2,780	26.5		1,175		17.0
Total losses and expenses		4,201	78.9		2,555	72.4		8,960	85.5		5,549		80.1
Pre-tax underwriting earnings	\$	1,124		\$	976		\$	1,514		\$	1,381		

Premiums written in the second quarter and first six months of 2023 included \$1.2 billion and \$2.6 billion, respectively, by TransRe Group. Otherwise, premiums written in the first six months of 2023 increased \$1.0 billion (11.9%) compared to 2022, primarily due to increases in property business and higher rates. Given the levels of property lines written and that we generally do not retrocede the risks we assume, our periodic underwriting earnings are subject to considerable volatility from significant catastrophe events.

Losses and loss adjustment expenses increased \$726 million (35.1%) in the second quarter and \$1.8 billion (41.3%) in the first six months of 2023 compared to 2022, primarily from the inclusion of TransRe Group (\$785 million in the second quarter and \$1.5 billion in the first six months of 2023). Overall, the loss ratio decreased 4.1 percentage points in the first six months of 2023 compared to 2022. Losses incurred from significant catastrophes in the first six months were \$528 million in 2023 and \$629 million in 2022. Losses and loss adjustment expenses incurred reflected reductions in estimated ultimate liabilities for prior accident years' claims of \$883 million in the first six months of 2023 and \$574 million in the first six months of 2022.

Underwriting expenses in 2023 increased \$920 million in the second quarter and \$1.6 billion in the first six months compared to 2022. The expense ratio increased 12.5 percentage points in the second quarter and 9.5 percentage points in the first six months of 2023 compared to 2022. The increases were primarily attributable to changes in foreign currency exchange rates and changes in business mix, including the impact of TransRe Group. Foreign currency exchange losses were \$118 million in the second quarter and \$192 million in the first six months of 2023 compared to gains of \$308 million in the second quarter and \$389 million in the first six months of 2022 and related to the remeasurement of certain non-U.S. Dollar denominated liabilities of our U.S. subsidiaries. Underwriting expenses included \$385 million in the second quarter and \$770 million in the first six months of 2023 related to TransRe Group.

Life/health

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

			Second (Quar	ter			First Six Months							
		2023			20	022		20	023		022				
	A	mount	%	Amount		%	Amount		%	Amount		%			
Premiums written	\$	1,292		\$	1,249		\$	2,353		\$	2,492				
Premiums earned	\$	1,289	100.0	\$	1,262	100.0	\$	2,349	100.0	\$	2,510	100.0			
Life and health insurance benefits		1,020	79.1		912	72.3		1,698	72.3		1,973	78.6			
Underwriting expenses		222	17.3		226	17.9		467	19.9		439	17.5			
Total benefits and expenses		1,242	96.4		1,138	90.2		2,165	92.2		2,412	96.1			
Pre-tax underwriting earnings	\$	47		\$	124		\$	184		\$	98				

Premiums earned increased \$27 million (2.1%) in the second quarter and decreased \$161 million (6.4%) in the first six months of 2023 compared to 2022. In the first quarter of 2023, several of General Re's life reinsurance contracts were commuted, which reduced premiums earned by \$161 million and life benefits incurred by \$304 million. Excluding these effects, premiums earned increased slightly in the second quarter and were substantially unchanged in the first six months of 2023, and life benefits incurred increased 11.8% in the second quarter and 1.5% in the first six months of 2023 versus 2022. The increase in the expense ratio in the first six months of 2023 versus 2022 was primarily attributable to the impact of the life reinsurance contract commutations and increased underwriting expenses.

Insurance—Underwriting (Continued)

Berkshire Hathaway Reinsurance Group (Continued)

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 include foreign currency exchange gains and losses from the effects of changes in foreign currency exchange rates on non-U.S. Dollar denominated liabilities of our U.S. subsidiaries. Pre-tax foreign currency exchange losses were \$18 million in the second quarter and \$24 million in the first six months of 2023 compared to pre-tax gains of \$152 million in the second quarter and \$157 million in the first six months of 2022. Before foreign currency exchange effects, pre-tax underwriting losses were \$245 million in the second quarter and \$434 million in the first six months of 2023 and \$204 million in the second quarter and \$399 million in the first six months of 2022.

Gross unpaid losses assumed under retroactive reinsurance contracts were \$34.4 billion at June 30, 2023, a decline of \$1.0 billion since December 31, 2022, primarily attributable to claim payments. Unamortized deferred charges related to retroactive reinsurance contracts were \$9.5 billion at June 30, 2023, a decline of \$416 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 have declined to unacceptable levels and we have restricted writing new business.

Our periodic payment annuity contracts normally produce pre-tax underwriting losses from the recurring accretion of time-value discounted liabilities, which includes liabilities for contracts without life contingencies. Underwriting results also include gains or losses from foreign currency exchange rate changes on non-U.S. Dollar denominated liabilities of our U.S. subsidiaries. Pre-tax underwriting results included foreign currency exchange losses of \$64 million in the second quarter and \$83 million in the first six months of 2023 compared to gains of \$86 million in the second quarter and \$109 million in the first six months of 2022.

Pre-tax underwriting losses before foreign currency exchange effects were \$147 million in the second quarter and \$292 million in the first six months of 2023 and \$140 million in the second quarter and \$282 million in the first six months of 2022. Discounted liabilities were \$14.8 billion at June 30, 2023, which included \$4.0 billion for contracts without life contingencies. We adopted ASU 2018-12 on January 1, 2023, which requires that the discount rates on contracts with life-contingent liabilities be adjusted quarterly 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 gains of \$130 million in the second quarter and \$193 million in the first six months of 2023 and \$147 million in the second quarter and \$378 million in the first six months of 2022. The results from these contracts are affected by changes in securities markets, interest rates and foreign currency exchange rates, which can be volatile. Our estimated liabilities associated with these contracts, which are in run-off, were approximately \$1.0 billion as of June 30, 2023.

Insurance—Investment Income

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

	Second Quarter				First Six	Mo1	nths	Percentage		
	2023		2022		2023		2022	Second Quarter	First Six Months	
Dividend income	\$ 1,522	\$	2,055	\$	2,766	\$	3,252	(25.9)%	(14.9)%	
Interest and other investment income	1,390		228		2,531		392	509.6	545.7	
Pre-tax net investment income	2,912		2,283		5,297		3,644	27.6	45.4	
Income taxes and noncontrolling interests	543		377		959		568			
Net investment income	\$ 2,369	\$	1,906	\$	4,338	\$	3,076			
Effective income tax rate	18.6%		16.5 %		18.1 %		15.6%			

Insurance—Investment Income (Continued)

Dividend income declined 25.9% in the second quarter and 14.9% in the first six months of 2023 compared to 2022. These reductions reflected net dispositions of investments since the end of the second quarter of 2022. Income in the first six months included \$17 million in 2023 and \$29 million in 2022 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 \$1.2 billion in the second quarter and \$2.1 billion in the first six months of 2023 compared to the same periods in 2022. The increases were primarily due to increases in short-term interest rates. We continue to hold substantial balances of cash, cash equivalents and short-term 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 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, unearmed 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. Float approximated \$166 billion at June 30, 2023 and \$164 billion at December 31, 2022. Our combined insurance operations generated pre-tax underwriting gains in the first six months of 2023 and, consequently, the average cost of float was negative. A summary of cash and investments held in our insurance businesses as of June 30, 2023 and December 31, 2022 follows (in millions).

	J	June 30, 2023	D	December 31, 2022
Cash, cash equivalents and U.S. Treasury Bills	\$	105,747	\$	86,816
Equity securities		344,821		298,934
Fixed maturity securities		22,223		24,998
Other		2,214		3,417
	\$	475,005	\$	414,165

Fixed maturity securities as of June 30, 2023 were as follows (in millions).

	A	mortized Cost	realized s (Losses)	Carrying Value
U.S. Treasury, U.S. government corporations and agencies	\$	9,233	\$ (190)	\$ 9,043
Foreign governments		11,495	(91)	11,404
Corporate bonds		1,322	222	1,544
Other		218	14	232
	\$	22,268	\$ (45)	\$ 22,223

U.S. government obligations are rated AA+ or Aaa by the major rating agencies. Approximately 94% of all foreign government obligations were rated AA or higher by at least one of the major rating agencies as of June 30, 2023.

RNSF

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).

	Second	Quarter		ıs			
	2023		2022		2023		2022
Railroad operating revenues	\$ 5,704	\$	6,454	\$	11,592	\$	12,231
Railroad operating expenses:							
Compensation and benefits	1,378		1,213		2,691		2,437
Fuel	833		1,276		1,797		2,137
Purchased services	489		509		1,000		1,008
Depreciation and amortization	650		618		1,295		1,242
Equipment rents, materials and other	540		460		1,133		986
Total	3,890		4,076		7,916		7,810
Railroad operating earnings	1,814		2,378		3,676		4,421
Other revenues (expenses):							
Other revenues	124		186		255		377
Other expenses, net	(67)		(159)		(154)		(329)
Interest expense	(256)		(254)		(513)		(509)
Pre-tax earnings	1,615		2,151		3,264		3,960
Income taxes	351		487		753		925
Net earnings	\$ 1,264	\$	1,664	\$	2,511	\$	3,035
Effective income tax rate	21.7%		22.6%		23.1 %		23.4%

The following table summarizes BNSF's railroad freight volumes by business group (cars/units in thousands).

		Cars/Un	nits		Percentage C	Change
	Second Quar	ter	First Six M	lonths	Second	First Six
	2023	2022	2023	2022	Quarter	Months
Consumer products	1,157	1,379	2,223	2,654	(16.1)%	(16.2)%
Industrial products	407	421	796	824	(3.3)	(3.4)
Agricultural products	278	303	578	608	(8.3)	(4.9)
Coal	360	373	729	759	(3.5)	(4.0)
	2,202	2,476	4,326	4,845	(11.1)	(10.7)

Railroad operating revenues declined 11.6% in the second quarter and 5.2% in the first six months of 2023 compared to 2022, reflecting lower volumes of 11.1% in the second quarter and 10.7% in the first six months of 2023 compared to 2022. Average revenue per car/unit decreased slightly in the second quarter, while average revenue per car/unit increased 6.4% in the first six months of 2023 resulting from higher yield. BNSF's pre-tax earnings were \$1.6 billion in the second quarter and \$3.3 billion the first six months of 2023, declines of 24.9% and 17.6%, respectively, compared to 2022.

Operating revenues from consumer products were \$1.9 billion in the second quarter and \$3.8 billion in the first six months of 2023, decreases of 22.7% and 17.0%, respectively, from 2022. The revenue declines were attributable to volume decreases of 16.1% in the second quarter and 16.2% in the first six months of 2023 compared to 2022 and lower average revenue per car/unit. The volume decreases were primarily due to lower intermodal shipments resulting from lower 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 decreases were partially offset by an increase in automotive volume from higher vehicle production.

Operating revenues from industrial products were \$1.4 billion in the second quarter and \$2.8 billion in the first six months of 2023, a decrease of 0.8% and an increase of 2.6%, respectively, from 2022. The decline in the second quarter was primarily due to a volume decrease of 3.3%, partially offset by higher average revenue per car/unit. The increase in the first six months was primarily due to higher average revenue per car/unit, partially offset by a 3.4% volume decline. The volume declines were primarily due to lower demand for chemicals, plastics and lumber, as well as lower shipments of petroleum products resulting from refinery outages.

BNSF (Continued)

Operating revenues from agricultural products were \$1.3 billion in the second quarter and \$2.8 billion in the first six months of 2023, a decrease of 6.9% in the second quarter and an increase of 0.8% in the first six months compared to 2022. The second quarter revenue change was attributable to an 8.3% decline in volume, partially offset by higher average revenue per car/unit. The revenue increase in the first six months was primarily due to higher average revenue per car/unit, partially offset by a volume decrease of 4.9%. The volume decreases were mainly due to lower grain exports, partially offset by higher volumes of domestic grains, renewable diesel and feedstocks.

Operating revenues from coal were \$936 million in the second quarter and \$2.0 billion in the first six months of 2023, a decrease of 6.3% in the second quarter and an increase of 4.1% in the first six months versus 2022. The revenue decline in the second quarter was attributable to lower volumes of 3.5% and lower average revenue per car/unit. The revenue increase in the first six months was driven by higher average revenue per car/unit, partially offset by a volume decrease of 4.0%. The volume decreases derived from moderating demand attributable to lower natural gas prices and weather related impacts.

Railroad operating expenses were \$3.9 billion in the second quarter and \$7.9 billion in the first six months of 2023, a decrease of \$186 million (4.6%) in the second quarter and an increase of \$106 million (1.4%) in the first six months compared to 2022. The decline in the second quarter of 2023 reflected lower fuel costs, partially offset by higher compensation and benefits expenses and general inflation. The increase during the first six months of 2023 reflected increases in all operating expenses, with the exception of fuel costs and purchased services. The ratio of railroad operating expenses to railroad operating revenues increased 5.0 percentage points to 68.2% in the second quarter and 4.4 percentage points to 68.3% in the first six months of 2023 versus the comparable 2022 periods.

Compensation and benefits expenses increased \$165 million (13.6%) in the second quarter and \$254 million (10.4%) in the first six months of 2023 compared to 2022, primarily due to increased headcount, wage inflation and lower productivity. Fuel expenses decreased \$443 million (34.7%) in the second quarter and \$340 million (15.9%) in the first six months of 2023 compared to 2022, primarily due to lower average fuel prices and lower volumes, as well as improved efficiency. Depreciation expense increased \$32 million (5.2%) in the second quarter and \$53 million (4.3%) in the first six months of 2023 compared to 2022, primarily due to higher capital expenditures. Equipment rents, materials and other expenses increased \$80 million (17.4%) in the second quarter and \$147 million (14.9%) in the first six months of 2023 compared to 2022. The increases were primarily due to general inflation, increased casualty and litigation costs, higher property and other taxes and lower gains from land and easement sales.

ВНЕ

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 25% interest in a liquefied natural gas export, import and storage facility ("LNG interest"), which BHE consolidates for financial reporting purposes. Other energy businesses include two regulated electricity distribution businesses operated by BHE subsidiaries (referred to as Northern Powergrid) in Great Britain, a regulated electricity transmission-only business in Alberta, Canada ("AltaLink, L.P."), 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.

BHE (Continued)

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).

	Second Quarter				First Si	ıths	
	2023		2022		2023		2022
Revenues:							
Energy operating revenue	\$ 4,933	\$	4,940	\$	10,404	\$	9,763
Real estate operating revenue	1,296		1,672		2,171		2,879
Other income (loss)	133		(67)		238		(77)
Total revenue	6,362		6,545		12,813		12,565
Costs and expenses:							
Energy cost of sales	1,566		1,525		3,521		2,985
Energy operating expenses	2,357		2,343		5,147		4,496
Real estate operating costs and expenses	1,250		1,555		2,170		2,734
Interest expense	565		531		1,128		1,046
Total costs and expenses	5,738		5,954		11,966		11,261
Pre-tax earnings	624		591		847		1,304
Income tax expense (benefit)*	(379)		(420)		(742)		(693)
Net earnings after income taxes	1,003		1,011		1,589		1,997
Noncontrolling interests of BHE subsidiaries	130		120		244		229
Net earnings attributable to BHE	873		891		1,345		1,768
Noncontrolling interests and preferred stock dividends	88		102		144		204
Net earnings attributable to Berkshire Hathaway shareholders	\$ 785	\$	789	\$	1,201	\$	1,564
Effective income tax rate	(60.7)%	6	(71.1)%		(87.6)%		(53.1)%

^{*} 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).

	Second	er	First Six	Mon	ths	Percentage Change		
	2023		2022	2023		2022	Second Quarter	First Six Months
U.S. utilities	\$ 430	\$	380	\$ 593	\$	780	13.2%	(24.0)%
Natural gas pipelines	187		199	556		521	(6.0)	6.7
Other energy businesses	389		411	572		750	(5.4)	(23.7)
Real estate brokerage	34		84	_		105	(59.5)	(100.0)
Corporate interest and other	(167)		(183)	(376)		(388)	(8.7)	(3.1)
	\$ 873	\$	891	\$ 1,345	\$	1,768	(2.0)	(23.9)

Our U.S. utilities operate in several states, including Utah, Oregon and Wyoming (PacifiCorp), Iowa and Illinois (MEC) and Nevada (NV Energy). After-tax earnings increased \$50 million (13.2%) in the second quarter and declined \$187 million (24.0%) in the first six months of 2023 compared to 2022. The earnings increase for the second quarter was primarily attributable to higher interest and other income, lower depreciation and amortization expense and increased income tax benefits, partly offset by increases in operations and maintenance expense and interest expense. The earnings decrease in the first six months reflected an increase in operations and maintenance expense of \$519 million, including a pre-tax increase in loss accruals, net of expected insurance recoveries, of \$344 million associated with the 2020 wildfires, and an increase in interest expense. These items were partially offset by increases in interest and other income, lower depreciation and amortization expense and higher electric utility margin (operating revenue less cost of sales), as well as higher income tax benefits.

The U.S. utilities' electric utility margin was \$1.8 billion in the second quarter of 2023, relatively unchanged from 2022. Electric utility margin was \$3.5 billion in the first six months of 2023, an increase of \$60 million (1.7%) versus 2022. The year-to-date increase reflected a variety of changes in operating revenues attributable to rates and volumes and in power generation and purchased costs. Electric retail customer volumes increased 0.1% (up 0.6% at PacifiCorp and 1.3% at MEC and down 1.7% at NV Energy) in the first six months of 2023 compared to 2022, primarily due to an overall increase in customer usage and in the average number of customers, partially offset by the unfavorable impact of weather at MEC and NV Energy.

BHE (Continued)

After-tax earnings of natural gas pipelines decreased \$12 million (6.0%) in the second quarter and increased \$35 million (6.7%) in the first six months of 2023 compared to 2022. The increase in earnings for the first six months reflected higher regulated transportation and storage services revenues from certain general rate cases and favorable interest and other income, partially offset by higher operations and maintenance expenses and the impact of state income tax reductions in the second quarter of 2022.

After-tax earnings of other energy businesses decreased \$22 million (5.4%) in the second quarter and \$178 million (23.7%) in the first six months of 2023 compared to 2022. The declines in earnings reflected lower earnings from renewable energy and retail services businesses, primarily attributable to lower income tax benefits and higher operating expenses and the impact of unfavorable changes in valuations of derivatives contracts, partially offset by debt extinguishment gains. Earnings in the first six months of 2023 also included a deferred income tax charge of \$82 million recognized in the first quarter related to the enactment of the new Energy Profits Levy income tax in the United Kingdom.

After-tax earnings of real estate brokerage decreased \$50 million in the second quarter and \$105 million in the first six months of 2023 compared to 2022. The decreases reflected lower brokerage services revenues and margins, primarily due to a 26% year-to-date reduction in closed brokerage transaction volumes, as well as lower mortgage services revenues and margins from a 38% year-to-date decrease in closed transaction volumes. These declines were attributable to the impact of rising interest rates, including lower existing home sales and mortgage refinancing demand.

Corporate interest and other after-tax losses decreased \$16 million in the second quarter and \$12 million in the first six months of 2023 compared to 2022, reflecting higher other income, partially offset by lower federal income tax credits recognized and higher BHE corporate interest expense from an April 2022 debt issuance.

Pilot

Pilot is headquartered in Knoxville, Tennessee and operates travel centers in North America (primarily under the names Pilot or Flying J) with more than 650 travel center locations across the U.S. and in six Canadian provinces. Pilot also has over 150 retail locations in the U.S. and Canada where it sells diesel fuel through various arrangements with third party travel centers. A substantial portion of Pilot'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 Pilot, which we accounted for under the equity method. Our proportionate share of Pilot's net earnings for the month ending January 31, 2023 and first six months of 2022 are included in equity method earnings in the accompanying Consolidated Statements of Earnings. On January 31, 2023, we acquired an additional 41.4% interest in Pilot, and we currently own an 80% controlling interest. Thus, we began consolidating Pilot's results of operations in our Consolidated Statements of Earnings on February 1, 2023. Pilot's earnings for the second quarter of 2023 and the five months ending June 30, 2023 are summarized below (in millions).

	Sec	ond Quarter	Five Months Ending	
		2023	June 30, 2023	
Revenues	\$	14,754	\$ 24,262	
Cost of sales		13,600	22,405	
Operating and other expenses		855	1,351	
Interest expense		113	184	
Pre-tax earnings		186	322	
Income taxes and noncontrolling interests		72	125	
Net earnings attributable to Berkshire Hathaway shareholders	\$	114	\$ 197	

Pilot (Continued)

Pilot's revenues and earnings are highly dependent on fuel volumes, prices and margins. Revenues for the second quarter of 2023 and the five months ending June 30, 2023 were \$14.8 billion and \$24.3 billion, respectively.

Pilot's pre-tax earnings for the second quarter of 2023 and the five months ending June 30, 2023 were \$186 million and \$322 million, respectively. Operating and other expenses include depreciation and amortization expense of \$243 million in the second quarter of 2023 and \$411 million in the five months ending June 30, 2023, a significant portion of which derives from property, plant and equipment and finite-lived intangible asset fair value remeasurements in connection with our application of the acquisition accounting method in 2023.

Pilot's consolidated pre-tax earnings for the second quarter and the first six months of 2023 and 2022 are summarized below. Revenues, costs and expenses for the first six months of 2022 and first month of 2023 are based on Pilot's historical accounting and are not included in our Consolidated Financial Statements, whereas such information for the five months ending June 30, 2023 was included in our Consolidated Financial Statements (dollars in millions).

	Second Quarter				First Six	Mon	ths	Percentage Change		
	2023 2022		2022		2023		2022	Second Quarter	First Six Months	
Revenues	\$ 14,754	\$	21,534	\$	29,282	\$	36,001	(31.5)%	(18.7)%	
Cost of sales	13,600		20,609		27,099		34,128	(34.0)	(20.6)	
Operating and other expenses	855		633		1,564		1,238	35.1	26.3	
Interest expense	113		51		208		93	121.6	123.7	
Pre-tax earnings	\$ 186	\$	241	\$	411	\$	542	(22.8)	(24.2)	

Revenues for the first six months of 2023 and 2022 were approximately \$29.3 billion and \$36.0 billion, respectively. For the first six months of 2023, Pilot sold approximately 9.25 billion gallons of diesel fuel, gasoline and other fuel-related products. Revenues during the first six months of 2023 have been lower than in the corresponding 2022 periods, primarily due to significantly lower fuel prices, as well as from lower fuel sales volumes. Cost of sales in 2022 included significantly higher LIFO inventory charges than in 2023, attributable to the significant increases in fuel prices during the first half of 2022. Interest expense increased \$62 million in the second quarter and \$115 million in the first six months of 2023 compared to 2022, 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).

		Second (ter	First Siz	x Mo	onths		tage Change		
		2023		2022	2023		2022	Second Quarter	First Six	Months
Revenues										
Manufacturing	\$	19,102	\$	19,772	\$ 37,391	\$	38,193	(3.4))%	(2.1)%
Service and retailing		23,024		22,879	46,014		44,509	0.6		3.4
	\$	42,126	\$	42,651	\$ 83,405	\$	82,702			
Pre-tax earnings										
Manufacturing	\$	3,103	\$	3,028	\$ 5,714	\$	5,852	2.5	%	(2.4)%
Service and retailing		1,391		1,275	2,725		2,492	9.1		9.3
		4,494		4,303	8,439		8,344			
Income taxes and noncontrolling interests		1,105		1,054	2,068		2,070			
Net earnings*	\$	3,389	\$	3,249	\$ 6,371	\$	6,274			
Effective income tax rate		23.9%	ó	24.0%	23.8 %	6	24.3 %			
Pre-tax earnings as a percentage of revenues	_	10.7%	Ó	10.1 %	10.1 %	6	10.1 %			

^{*} Excludes certain acquisition accounting expenses, primarily related to the amortization of identifiable intangible assets recorded in connection with our business acquisitions. The after-tax acquisition accounting expenses excluded from earnings were \$174 million in the second quarter and \$352 million in the first six months of 2023 and \$162 million in the second quarter and \$323 million in the first six months of 2022. These expenses are included in "Other" in the summary of earnings on page 31 and in the "Other" earnings section on page 48.

Manufacturing, Service and Retailing (Continued)

Manufacturing

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

	Second	Quar	ter		First Si	x Moi	ıths
	2023		2022		2023		2022
Revenues							
Industrial products	\$ 8,876	\$	7,714	\$	17,739	\$	15,189
Building products	6,693		7,710		12,703		14,422
Consumer products	3,533		4,348		6,949		8,582
	\$ 19,102	\$	19,772	\$	37,391	\$	38,193
Pre-tax earnings	_						
Industrial products	\$ 1,520	\$	1,270	\$	2,961	\$	2,486
Building products	1,227		1,307		2,122		2,451
Consumer products	356		451		631		915
	\$ 3,103	\$	3,028	\$	5,714	\$	5,852
Pre-tax earnings as a percentage of revenues	 _						_
Industrial products	17.1%		16.5%		16.7%	,	16.4%
Building products	18.3 %		17.0%		16.7%		17.0%
Consumer products	10.1%		10.4%		9.1%	,	10.7%

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 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 also includes certain of Alleghany's businesses consisting of W&W|AFCO Steel, a structural steel fabrication products business, as well as other businesses that were combined into Marmon.

Revenues of the industrial products group increased \$1.2 billion (15.1%) in the second quarter and \$2.6 billion (16.8%) in the first six months of 2023 compared to 2022. Pre-tax earnings increased \$250 million (19.7%) in the second quarter and \$475 million (19.1%) in the first six months of 2023. Pre-tax earnings as a percentage of revenues for the group were 16.7% for the first six months of 2023, an increase of 0.3% compared to the first six months of 2022. Operating results of the group in the first six months of 2023 reflected the impact of business acquisitions and overall improved operating results at our pre-existing businesses. Operating results in 2022 were negatively affected by a combination of higher materials and energy costs, manufacturing inefficiencies attributable to supply chain disruptions and labor shortages and asset impairment charges, which largely offset the impacts of increased average selling prices and increased demand for certain product categories.

PCC's revenues were \$2.3 billion in the second quarter and \$4.6 billion in the first six months of 2023, increases of 28.7% in the second quarter and 28.4% in the first six months compared to 2022. PCC derives significant revenues and earnings from sales of aerospace products. The revenue increases in 2023 were primarily attributable to higher demand for aerospace products, while power/energy and general and industrial products also contributed to the overall revenue increases. Long-term industry forecasts continue to show growth and strong demand for air travel and aerospace products.

PCC's pre-tax earnings increased 31.5% in the second quarter and 27.3% in the first six months of 2023 compared to 2022. The improved results in 2023 reflect the increases in sales and improving manufacturing and operating efficiencies. We continue to strive to improve manufacturing efficiencies, maintain safety and prepare for increasing demand for PCC's 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 products demand.

Lubrizol's revenues were \$1.6 billion in the second quarter and \$3.4 billion in the first six months of 2023, a decrease of 5.5% in the second quarter and unchanged in the first six months compared to 2022. Revenues in the first six months of 2023 reflected lower volumes and unfavorable foreign currency translation effects from the stronger U.S. Dollar, offset by higher average selling prices. Lower sales volumes in 2023 were attributable to general market weakness in the global economy, resulting in lower demand in certain product lines. Sales volumes through the first half of 2022 were restricted by raw material supply constraints and unplanned temporary maintenance shutdowns, which limited Lubrizol's production capabilities.

Manufacturing, Service and Retailing (Continued)

Industrial products (Continued)

Lubrizol's pre-tax earnings declined 24.6% in the second quarter and 2.8% in the first six months of 2023 compared to 2022. Earnings in the second quarter and first six months of 2023 reflect lower insurance recoveries (\$89 million) in connection with fires at certain production facilities in 2021 and 2020. Excluding insurance recoveries, earnings were higher due to the favorable impacts of higher selling prices and changes in product mix, partially offset by lower sales volumes, higher raw material costs (primarily in the first quarter), higher operating expenses and unfavorable foreign currency translation effects.

Marmon's revenues were \$3.1 billion in the second quarter and \$6.2 billion in the first six months of 2023, increases of 12.2% in the second quarter and 14.3% in the first six months 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 \$301 million and \$595 million of comparative revenue increases in the second quarter and first six months of 2023, respectively. In addition, the Rail & Leasing and Crane Services groups generated higher revenues in 2023, due to higher volumes and pricing improvements. The Electrical, Metal Services and Plumbing & Refrigeration group revenues in 2023 were negatively impacted by lower steel and copper prices.

Marmon's pre-tax earnings increased 30.6% in the second quarter and 21.8% in the first six months of 2023 compared to 2022. Earnings increases attributable to business acquisitions were \$26 million in the second quarter and \$42 million in the first six months of 2023. Earnings in the second quarter of 2022 included losses of approximately \$90 million in the Rail & Leasing group related to the shutdown of its business in Russia. Otherwise, comparative earnings from Marmon's other business groups in 2023 were mixed, reflecting earnings increases in the Transportation, Water Technologies, and Crane Services groups, which were primarily attributable to revenue growth, and lower earnings in the Electrical group, driven by lower margins in the building wire business.

IMC's revenues were \$1.0 billion in the second quarter and \$2.0 billion in the first six months of 2023, increases of 10.2% in the second quarter and 7.7% in the first six months compared to 2022. The revenue increases in 2023 reflect increased organic sales in North America, the impact of business acquisitions and higher interest income, partially offset by lower revenues in Asia, unfavorable foreign currency translation from a stronger U.S. Dollar and the impact of the Russia-Ukraine conflict. IMC's pre-tax earnings increased 15.1% in the second quarter and 9.0% in the first six months of 2023 compared to 2022. In 2023, the impact of revenue increases was partially offset by higher raw material costs, changes in sales mix and the adverse effects of the Russia-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).

Revenues of the building products group decreased \$1.0 billion (13.2%) in the second quarter and \$1.7 billion (11.9%) in the first six months of 2023 compared to 2022. Pre-tax earnings decreased \$80 million (6.1%) in the second quarter and \$329 million (13.4%) in the first six months of 2023 compared to 2022. Our building products businesses have 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. We continue to anticipate some of our businesses will experience comparative declines in revenues and earnings over the remainder of 2023.

Clayton Homes' revenues declined 16.3% to \$2.9 billion in the second quarter and 13.8% to \$5.4 billion in the first six months of 2023 compared to 2022. Revenues from home sales decreased \$971 million (19.0%) in the first six months of 2023, reflecting lower unit sales, partially offset by slightly higher average selling prices. New home unit sales declined 19.5% in the first six months of 2023, reflecting lower unit sales for factory-built homes (19.2%) and site-built homes (21.1%). We expect unit sales over the remainder of 2023 to be below 2022 levels. Financial services revenues, which include mortgage origination and services, insurance and interest income from lending activities, increased 9.9% in the first six months of 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 \$22.5 billion as of June 30, 2023, an increase of 12.4% since June 30, 2022.

Manufacturing, Service and Retailing (Continued)

Building products (Continued)

Pre-tax earnings of Clayton Homes declined \$72 million (11.5%) in the second quarter and \$150 million (13.5%) in the first six months of 2023 compared to 2022, primarily attributable to lower earnings from the home building businesses. Earnings from financial services also declined in the first six months of 2023 versus 2022, which were negatively affected by increased expected loan loss provisions and higher insurance claims, partially offset by higher net interest income.

Aggregate revenues of our other building products businesses were approximately \$3.8 billion in the second quarter and \$7.3 billion in the first six months of 2023, decreases of \$459 million (10.7%) in the second quarter and \$860 million (10.5%) in the first six months versus 2022. Comparative revenues were lower at all of our other building products businesses, generally due to lower sales volumes and changes in product mix, partly offset by higher average selling prices.

Pre-tax earnings of our other building products businesses declined slightly (1.2%) in the second quarter and \$179 million (13.3%) in the first six months of 2023 compared to 2022. Earnings as a percentage of revenues in the second quarter increased 1.7 percentage points and in the first six months of 2023 decreased 0.5 percentage points versus 2022. The earnings of our other building products businesses in 2023 were negatively impacted by lower sales volumes and reduced manufacturing efficiencies and benefited from lower average prices for certain raw materials and energy, as well as reduced freight and shipping expenses. The earnings in 2022 benefited from higher selling prices and strong demand in certain product categories and an increase in the gains from a business divestiture and asset sales of \$111 million.

Consumer products

The consumer products group includes recreational vehicles (Forest River), several apparel and footwear operations (including Fruit of the Loom, Garan, Fechheimer, H.H. Brown Shoe Group and Brooks Sports) and high-performance 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.

Consumer products group revenues decreased \$815 million (18.7%) in the second quarter and \$1.6 billion (19.0%) in the first six months of 2023 compared to 2022. The declines reflected lower revenues at Forest River and nearly all of our other consumer products operations, partially offset by the impact of the Jazwares acquisition, which contributed revenues of \$378 million in the first six months of 2023.

Forest River's revenues declined 34.2% in the second quarter and 36.4% in the first six months of 2023 compared to 2022, reflecting an overall 40.1% decline in unit sales in the first six months and changes in sales mix. Forest River experienced strong recreational vehicle unit sales in recent years and through the first half of 2022. Since then, volumes have declined significantly, attributable in part to the impact of rising interest rates, inflation and other macroeconomic conditions. The sales volume declines for recreational vehicles in 2023 were partially offset by increased bus and commercial business.

Revenues of our apparel and footwear businesses declined \$155 million (12.8%) in the second quarter and \$222 million (9.2%) in the first six months of 2023 compared to 2022. Revenues from apparel for the first six months of 2023 declined 13.5% from 2022, while revenues from footwear declined 1.8%. The decline in apparel revenue was attributable to continuing sluggish customer demand, partially offset by higher average selling prices and sales mix changes. Duracell's revenues in first six months of 2023 declined 7.8% versus 2022, primarily due to lower sales volume and unfavorable foreign currency translation effects of the stronger U.S. Dollar.

Pre-tax earnings of our consumer products group declined \$95 million (21.1%) in the second quarter and \$284 million (31.0%) in the first six months of 2023 versus 2022, primarily attributable to lower earnings from Forest River and Duracell. Pre-tax earnings as a percentage of revenues for the group decreased 1.6 percentage points in the first six months of 2023 compared to 2022.

Earnings from Forest River declined 39.2% in the first six months of 2023 compared to 2022, primarily due to the decrease in unit sales, which reduced manufacturing efficiencies, partially offset by lower selling, general and administrative expenses. Apparel and footwear earnings declined 10.7% in the first six months of 2023 compared to 2022. Our apparel businesses were negatively affected by lower sales volumes and reduced manufacturing efficiencies. Earnings from Duracell declined in the second quarter and first six months of 2023 compared to 2022, due to reduced consumer consumption and market share losses in North America to lower priced brands and to the non-recurring cost and expense reductions in the second quarter of 2022.

Manufacturing, Service and Retailing (Continued)

Service and retailing

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

	Second	Quai	rter				
	2023		2022		2023		2022
Revenues							
Service	\$ 5,181	\$	4,737	\$	10,500	\$	9,260
Retailing	4,960		4,880		9,572		9,472
McLane	12,883		13,262		25,942		25,777
	\$ 23,024	\$	22,879	\$	46,014	\$	44,509
Pre-tax earnings							
Service	\$ 824	\$	756	\$	1,661	\$	1,480
Retailing	438		443		822		854
McLane	129		76		242		158
	\$ 1,391	\$	1,275	\$	2,725	\$	2,492
Pre-tax earnings as a percentage of revenues			_				
Service	15.99	6	16.0%		15.8%	o	16.0%
Retailing	8.80	6	9.1%		8.6%	6	9.0%
McLane	1.0 %	6	0.6%		0.9%	6	0.6%

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 services and products 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 services in facilities construction management.

Service group revenues increased \$444 million (9.4%) in the second quarter and \$1.2 billion (13.4%) in the first six months of 2023 compared to 2022. IPS had revenues of \$302 million in the second quarter and \$604 million in the first six months of 2023. Revenues from aviation services increased 8.2% in the second quarter and 13.2% in the first six months of 2023 compared to 2022. The revenue increases were primarily due to increases in the number of aircraft in shared aircraft ownership programs and in-flight hours across NetJets' various programs, as well as higher average rates.

Revenues from TTI declined 1.0% in the second quarter and increased 2.4% in the first six months of 2023 compared to 2022. Excluding the effects of business acquisitions in 2022 and 2023 and the unfavorable foreign currency translation effects, year-to-date revenues increased 1.0% in 2023 versus 2022. TTI experienced significant revenue growth in 2021 and much of 2022. Since the third quarter of 2022, new orders have slowed in several regions and markets, in part attributable to elevated customer inventory levels. These conditions are expected to continue and TTI may experience comparative revenue declines over the remainder of 2023.

Pre-tax earnings of the service group increased \$68 million (9.0%) in the second quarter and \$181 million (12.2%) in the first six months of 2023 compared to 2022. Pre-tax earnings as a percentage of revenues declined 0.2 percentage points in the first six months of 2023 compared to 2022. The earnings increases were primarily attributable to higher overall margin rates in aviation services businesses, primarily due to a 17% year-to-date increase in average aircraft in the NetJets programs, changes in business mix and the impact of the IPS acquisition. These increases were partially offset by lower earnings from TTI (6.4% year-to-date), attributable to lower gross margin rates, higher operating expenses and unfavorable foreign currency effects.

Retailing

Our largest retailing business is Berkshire Hathaway Automotive, Inc. ("BHA"), representing 67.6% of our combined retailing revenue in the first six months of 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 vehicle service contracts and operates two insurance businesses. Our retailing businesses also include four home furnishings retailing businesses (Nebraska Furniture Mart, R.C. Willey, Star Furniture and Jordan's), which sell furniture, appliances, flooring and electronics. The home furnishings group represented 18.3% of the combined retailing revenues in the first six months of 2023.

Manufacturing, Service and Retailing (Continued)

Retailing (Continued)

Other retailing businesses include three jewelry retailers (Borsheims, Helzberg and Ben Bridge), See's Candies (confectionery 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.

Retailing group revenues increased 1.6% in the second quarter and 1.1% in the first six months of 2023 compared to 2022, reflecting increases at BHA, partially offset by lower revenues from our other retailers. BHA's revenues in the second quarter and first six months of 2023 increased 5.3% and 4.5%, respectively, compared to the same periods in 2022. Revenues from new vehicle sales increased 12.8% in the first six months of 2023 compared to 2022 while revenues from pre-owned vehicle retail sales declined 8.4%. Unit sales in the first six months of 2023 increased 1.5%, reflecting an 8.9% increase in new vehicle sales, partly offset by lower pre-owned vehicles sold. While new vehicle inventory levels remain well below historical levels, vehicle supply continues to gradually rise. Revenues from BHA's parts/service/repair operations in the first six months of 2023 increased 8.8% versus 2022. Other retailing revenues in the aggregate declined 5.4% in the first six months of 2023 versus 2022, primarily due to lower sales at our home furnishings businesses.

Retailing group pre-tax earnings declined \$5 million (1.1%) in the second quarter and \$32 million (3.7%) in the first six months of 2023 compared to 2022. BHA's pre-tax earnings increased 12.7% in the second quarter and 21.1% in the first six months of 2023 compared to 2022. BHA's earnings increase reflects higher earnings from parts/service/repair and finance/service contract operations and lower operating expenses, partially offset by lower vehicle sales margins and higher floor plan interest expense. BHA's comparative vehicle gross profit margin rates, before the effects of LIFO, peaked in the first half of 2022 and have since been reverting to historical levels. Aggregate pre-tax earnings for the remainder of our retailing group declined \$36 million (18.2%) in the second quarter and \$127 million (31.8%) in the first six months of 2023 compared to 2022, primarily due to a 33.8% decrease in the first six months earnings from the home furnishings businesses, and the impact of a gain in the first quarter of 2022 related to the divestiture of certain jewelry stores.

McLane Company

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 wholesale distributors of distilled spirits, wine and beer ("beverage"). The grocery and foodservice distribution businesses generate high sales and very low profit margins and operate in a highly competitive environment. These businesses have several significant customers, including Walmart, 7-Eleven, Yum! Brands and others. A curtailment of purchasing by any of its significant customers could have an adverse impact on McLane's periodic revenues and earnings.

Revenues declined 2.9% in the second quarter and increased 0.6% in the first six months of 2023 compared to 2022. Revenues in 2023 of the grocery and the foodservice businesses were negatively affected by lower unit volumes. Grocery sales comprised 61% of McLane's consolidated sales in the first six months of 2023, with foodservice representing most of the remainder. Pre-tax earnings increased \$53 million (69.7%) in the second quarter and \$84 million (53.2%) in the first six months of 2023 compared to 2022. The increases in earnings reflects increases in the gross margin rates and lower fuel expenses, partly offset by higher personnel expenses.

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, Pilot (through January 31, 2023) and Berkadia. After-tax earnings attributable to these businesses increased \$353 million in the second quarter and \$639 million in the first six months of 2023 versus 2022, primarily due to earnings from Occidental Petroleum and increases in earnings attributable to Kraft Heinz. We adopted the equity method of accounting for our investment in Occidental Petroleum common stock as of August 4, 2022. As of January 31, 2023, Berkshire acquired a controlling interest in Pilot. We applied the equity method through the end of January 2023 on our pre-existing 38.6% interest and began consolidating Pilot's financial statements in our Consolidated Financial Statements on February 1, 2023. See Notes 3 and 6 to the Consolidated Financial Statements.

Investment and Derivative Contract Gains (Losses)

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

	Second Quarter			First Six Months				
		2023		2022		2023		2022
Investment gains (losses)	\$	33,061	\$	(66,854)	\$	67,819	\$	(68,589)
Derivative contract gains (losses)		_		(65)		_		(308)
Gains (losses) before income taxes and noncontrolling interests		33,061		(66,919)		67,819		(68,897)
Income taxes and noncontrolling interests		7,192		(13,881)		14,511		(14,279)
Net earnings (loss)	\$	25,869	\$	(53,038)	\$	53,308	\$	(54,618)
Effective income tax rate		21.7%		21.0%		21.3 %		20.8 %

Unrealized gains and losses arising from changes in market prices of 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 recorded in earnings also include the effects of changes in foreign currency exchange rates on investments in equity securities of non-U.S. issuers held by our U.S.-based subsidiaries.

Pre-tax investment gains and losses included net unrealized gains of \$33.0 billion in the second quarter and \$63.8 billion in the first six months of 2023 and net unrealized losses of \$66.9 billion in the second quarter and \$68.5 billion in the first six months of 2022 on securities we held at the end of the applicable period. Taxable gains and losses on equity securities sold generally represents the difference between sales proceeds and the original cost of the securities sold. Sales of equity securities produced taxable gains of \$2.4 billion in the second quarter and \$4.6 billion in the first six months of 2023 compared to taxable gains of \$76 million in the second quarter and losses of \$663 million in the first six months of 2022. Pre-tax investment gains in the first six months of 2023 included a non-cash gain of approximately \$3 billion related to the remeasurement of our pre-existing interest in Pilot to fair value through the application of acquisition accounting upon attaining control of Pilot for financial reporting purposes on January 31.

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 also continue to believe the investment gains and losses recorded in earnings in any given period has little analytical or predictive value.

Other

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

	Second Quarter			First Six Months				
	2	2023		2022		2023		2022
Acquisition accounting expenses	\$	(200)	\$	(162)	\$	(402)	\$	(323)
Corporate interest expense, before foreign currency effects		(54)		(67)		(118)		(137)
Foreign currency exchange rate gains on Berkshire								
and BHFC non-U.S. Dollar senior notes		465		1,061		448		1,583
Other earnings		129		80		301		159
	\$	340	\$	912	\$	229	\$	1,282

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 2023 and 2022, 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 and corporate expenses, other intercompany interest income where the interest expense is included in earnings of the operating businesses and unallocated income taxes.

Financial Condition

Our Consolidated Balance Sheet continues to reflect significant liquidity and a very strong capital base. Our Consolidated shareholders' equity at June 30, 2023 was \$539.9 billion, an increase of \$66.5 billion since December 31, 2022. Net earnings attributable to Berkshire shareholders was \$71.4 billion in the first six months of 2023, which included after-tax gains on our investments of \$53.3 billion. Investment gains and losses from changes in the market prices of our investments in equity securities will produce 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 and Chief Executive Officer, and Charlie Munger, Vice 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 Berkshire's consolidated cash, cash equivalents and U.S. Treasury Bills holdings below \$30 billion. Financial strength and redundant liquidity will always be of paramount importance at Berkshire. Berkshire paid \$5.8 billion in the first six months of 2023 to repurchase shares of its Class A and B common stock.

At June 30, 2023, our insurance and other businesses held cash, cash equivalents and U.S. Treasury Bills of \$141.9 billion, which included \$120.4 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 \$375.8 billion. During the first six months of 2023, we paid cash of \$7.4 billion to acquire equity securities and we received proceeds of \$25.8 billion from sales of equity securities. On January 31, 2023, we acquired an additional 41.4% interest in Pilot for approximately \$8.2 billion.

Our consolidated borrowings at June 30, 2023 were \$125.3 billion, of which over 95% were by the Berkshire parent company, BHFC, BNSF, BHE and its subsidiaries and Pilot. During the first six months of 2023, we issued new term debt of approximately \$4.0 billion and repaid \$7.6 billion on maturing term debt.

Berkshire parent company outstanding debt at June 30, 2023 was \$17.7 billion, a decrease of \$3.7 billion since December 31, 2022. Berkshire repaid \$4.3 billion of maturing debt in the first six months of 2023. In April 2023, Berkshire issued ¥164.4 billion (approximately \$1.2 billion) of senior notes.

Senior note borrowings of BHFC, a wholly-owned financing subsidiary, were approximately \$18.0 billion at June 30, 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 \$24.3 billion as of June 30, 2023, an increase of \$854 million from December 31, 2022. In June 2023, BNSF issued \$1.6 billion of 5.2% debentures due in 2054. During the first six months of 2023, BNSF repaid approximately \$700 million of term debt. Outstanding borrowings of BHE and its subsidiaries were \$53.9 billion at June 30, 2023, an increase of \$1.1 billion from December 31, 2022. In May 2023, a BHE subsidiary issued \$1.2 billion of 5.5% first mortgage bonds due in 2054. During the first six months of 2023, BHE and its subsidiaries repaid approximately \$1.4 billion of term debt. Aggregate debt maturities for BHE and BNSF over the next twelve months approximate \$4.5 billion. Borrowings of Pilot were \$5.9 billion as of the January 31, 2023 acquisition date and were \$5.8 billion at June 30, 2023. Berkshire does not guarantee the repayment of debt or other borrowings issued by BNSF, BHE, Pilot or any of their subsidiaries or affiliates.

In the first six months of 2023, our diverse group of businesses generated net operating cash flows of \$21.1 billion. Our consolidated capital expenditures for property, plant and equipment and equipment held for lease were \$8.4 billion in the first six months of 2023, which included capital expenditures by BNSF and BHE of \$5.7 billion. BNSF and BHE maintain very large investments in capital assets (property, plant and equipment) and will regularly make significant capital expenditures in the normal course of business. We forecast capital expenditures for BHE and BNSF over the remainder of 2023 will approximate \$8.3 billion.

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 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. On December 27, 2022, the IRS and Department of Treasury issued initial guidance for taxpayers subject to the corporate alternative minimum tax addressing certain, but not all, issues that need clarification. The IRS and 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. We currently do not expect that compliance with the provisions of the 2022 act will have a material impact on our Consolidated Financial Statements.

Financial Condition (Continued)

On July 10, 2023, BHE announced that it had executed an agreement to acquire an additional 50% interest in Cove Point LNG, LP, which would increase its ownership interest to 75%. The transaction is valued at \$3.3 billion and is subject to applicable regulatory approvals. BHE expects to fund the acquisition with cash on hand.

Contractual Obligations

We are party to other contracts associated with ongoing business activities, which will result in cash payments to counterparties in future periods. Certain obligations are included in our Consolidated Balance Sheets, such as operating lease liabilities and shared aircraft repurchase liabilities of NetJets.

We are also obligated to pay claims arising from property and casualty insurance companies. Such liabilities, including amounts from retroactive reinsurance, were \$143.5 billion at June 30, 2023. However, the timing and amount of the payments under insurance and reinsurance contracts are contingent upon the outcome of future events. Actual payments will likely vary, perhaps materially, from any forecasted payments, as well as from the liabilities currently recorded in our Consolidated Balance Sheet. 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 June 30, 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 raw materials purchase commitments.

Except as otherwise disclosed in this Quarterly Report, our contractual obligations as of June 30, 2023 were, in the aggregate, not materially different from those disclosed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" contained in Berkshire's Annual Report on Form 10-K for the year ended December 31, 2022.

Critical Accounting Policies

Certain accounting policies require us to make estimates and judgments that affect the amounts reflected in the Consolidated Financial Statements. Such estimates and judgments necessarily involve varying, and possibly significant, degrees of uncertainty. Accordingly, certain amounts recorded in the financial statements will likely be adjusted in the future based on new available information and changes in other facts and circumstances. Reference is made to "Critical Accounting Policies" discussed in "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Berkshire's Annual Report on Form 10-K for the year ended December 31, 2022.

Our Consolidated Balance Sheet as of June 30, 2023 includes estimated liabilities of \$143.5 billion for unpaid losses and loss adjustment expenses from property and casualty insurance and reinsurance contracts. Due to the inherent uncertainties in the processes of establishing these liabilities, the actual ultimate claim amounts will likely differ from the currently recorded amounts. A very small percentage change in estimates of this magnitude can result in a material effect on periodic earnings. The effects from changes in these estimates are recorded as a component of insurance losses and loss adjustment expenses in the period of the change.

Our Consolidated Balance Sheet as of June 30, 2023 included goodwill of acquired businesses of approximately \$85.9 billion, which included \$10.6 billion of goodwill associated with the Alleghany and Pilot acquisitions, and indefinite-lived intangible assets of \$20.5 billion. We evaluate these assets for impairment at least annually and we conducted our most recent annual review during the fourth quarter of 2022. In connection with the annual goodwill impairment review in the fourth quarter of 2022, the estimated fair values of six reporting units did not exceed our carrying values by at least 20%. The most significant of these reporting units was Precision Castparts Corp. ("PCC"). Our estimated fair value of PCC was approximately \$31.5 billion, exceeding our carrying value of approximately \$30.3 billion by 4.0%. Our carrying value of PCC included goodwill of approximately \$4.5 billion. For the five other reporting units, our aggregate estimated fair value was approximately \$4.5 billion, which exceeded our aggregate carrying value of approximately \$4.1 billion by 9.9%. Our carrying value of these units included goodwill of approximately \$1.4 billion.

Critical Accounting Policies (Continued)

Goodwill and indefinite-lived intangible asset impairment reviews include determining the estimated fair values of our reporting units and assets. 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 tests. Due to the inherent subjectivity and uncertainty in forecasting future cash flows and earnings over long periods of time, actual results may vary materially from the forecasts.

As of June 30, 2023, we concluded it is more likely than not that goodwill recorded in our Consolidated Balance Sheet was not impaired. The long-term adverse consequences of the COVID-19 pandemic, geopolitical conflicts and general changes in business conditions, as well as other unanticipated events, on certain of our reporting units may prove to be worse than we currently anticipate, and we may need to record goodwill or indefinite-lived intangible asset impairment charges in future periods. Making estimates of the fair value of reporting units are inherently subjective and will likely continue to be significantly affected by assumptions on the severity, duration or long-term effects of adverse events on a reporting unit's business, which we cannot reliably predict. Consequently, any fair value estimates can be subject to wide variations.

Information concerning new accounting pronouncements is included in Note 2 to the accompanying Consolidated Financial Statements.

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, 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.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Reference is made to Berkshire's Annual Report on Form 10-K for the year ended December 31, 2022 and in particular the "Market Risk Disclosures" included in "Management's Discussion and Analysis of Financial Condition and Results of Operations." As of June 30, 2023, there were no material changes in the market risks described in Berkshire's Annual Report.

Item 4. Controls and Procedures

As of the end of the period covered by this Quarterly Report on Form 10-Q, the Company carried out an evaluation, under the supervision and with the participation of the Company'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 Company'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 Company's disclosure controls and procedures are effective in timely alerting them to material information relating to the Company (including its consolidated subsidiaries) required to be included in the Company's periodic SEC filings. During the quarter, there have been no significant changes in the Company's internal control over financial reporting or in other factors that could significantly affect internal control over financial reporting.

Part II Other Information

Item 1. 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. 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 1A. Risk Factors

Our significant business risks are described in Item 1A to Form 10-K for the year ended December 31, 2022, to which reference is made herein. The risks and uncertainties we describe are not the only ones facing us. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business or operations. Any adverse effect on our business, financial condition or operating results could result in a decline in the value of our securities and the loss of all or part of your investment.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds and Issuer Repurchases of Equity Securities

Berkshire's common stock repurchase program permits Berkshire to repurchase its Class A and Class B shares any time that Warren Buffett, Berkshire's Chairman of the Board and Chief Executive Officer, and Charlie Munger, Vice Chairman of the Board, believe 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 second quarter of 2023 follows.

<u>Period</u>	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced program	Maximum number or value of shares that yet may be repurchased under the program
April				
Class A common stock	177	\$ 472,004.70	177	*
Class B common stock	220,351	\$ 308.57	220,351	*
May				
Class A common stock	238	\$ 493,507.36	238	*
Class B common stock	_	\$ _	_	*
June				
Class A common stock	627	\$ 506,476.84	627	*
Class B common stock	2,134,093	\$ 335.55	2,134,093	*

^{*} 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.

Item 3. Defaults Upon Senior Securities

None

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-Q.

Item 5. Other Information

Berkshire has never adopted a Rule 10b5-1 trading arrangement (as that term is defined in Item 408(a)(1)(i) of Regulation S-K). None of our 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 second quarter of 2023.

Item 6. Exhibits

a. Exhibits 3(i) Restated Certificate of Incorporation Incorporated by reference to Exhibit 3(i) to Form 10-K filed on March 2, 2015. 3(ii) Amended and Restated By-Laws Incorporated by reference to Exhibit 3(ii) to Form 8-K filed on May 10, 2023. 31.1 Rule 13a-14(a)/15d-14(a) Certifications 31.2 Rule 13a-14(a)/15d-14(a) Certifications Section 1350 Certifications 32.1 32.2 Section 1350 Certifications 95 Mine Safety Disclosures

101 The following financial information from Berkshire Hathaway Inc.'s Quarterly Report on Form 10-Q for the quarter ended June 30, 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, tagged in summary and detail.

Cover Page Interactive Data File (formatted as iXBRL and contained in Exhibit 101)

SIGNATURE

Pursuant to the requirement 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 HATHAWAYINC. (Registrant)

> > /S/ MARC D. HAMBURG

Date: August 5, 2023

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(Signature) Marc D. Hamburg, Senior Vice President and **Principal Financial Officer**