

Notes to Consolidated Financial Statements (Continued)

(1) Significant accounting policies and practices (Continued)

(s) Life, annuity and health insurance benefits

Liabilities for future life, annuity and health insurance benefits represent the present value of expected future benefits and non-acquisition variable expenses, less the present value of expected future net premiums (the portion of gross premium required to provide for all expected future benefits and variable expenses). In estimating future cash flows, we consider the timing and amounts of future claims, premiums and expenses, which require estimates concerning future investment yields, expected mortality, morbidity and lapse or withdrawal rates. These assumptions, as applicable, also include a margin for adverse deviation and may vary with the characteristics of the contract's date of issuance, policy duration and country of risk. The interest rate assumptions used for discounting may vary by contract or underlying currency denomination of our reinsurance contracts. Generally, assumptions regarding cash flow and discount rate are fixed at the inception of the contract and changed only under certain adverse circumstances. The effects of changes in estimated cash flows and discount rate assumptions on benefit liabilities are recorded in earnings in the period of the change. Periodic payment and annuity reinsurance contracts are regarded as limited payment contracts under GAAP. We discount annuity liabilities based on the implicit rate as of the inception of the contracts such that the present value of the liabilities equals the premiums received less brokerage expense at the inception date. Discount rates for most contracts range between 3% to 7%.

(t) Regulated utilities and energy businesses

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

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

(u) Foreign currency

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

(v) Income taxes

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

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

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

Notes to Consolidated Financial Statements (Continued)

(1) Significant accounting policies and practices (Continued)

(w) New accounting pronouncements adopted in 2020

We adopted Accounting Standards Codification (“ASC”) 326 “Financial Instruments-Credit Losses” on January 1, 2020, which provides for the measurement of expected credit losses on financial assets that are carried at amortized cost based on the net amounts expected to be collected. Measurements of expected credit losses therefore include provisions for non-collection, whether the risk is probable or remote. Upon adoption of ASC 326, we recorded a charge to retained earnings of \$388 million representing the cumulative after-tax increase in our allowances for credit losses.

(x) New accounting pronouncements to be adopted subsequent to December 31, 2022

In August 2018, the Financial Accounting Standards Board issued Accounting Standards Update 2018-12 “Targeted Improvements to the Accounting for Long-Duration Contracts” (“ASU 2018-12”). ASU 2018-12 requires reassessment of cash flow assumptions at least annually and revision of discount rate assumptions each reporting period in valuing policyholder liabilities of long-duration insurance and reinsurance contracts. Discount rate assumptions are established based upon upper-medium grade corporate bond yields that reflect the duration characteristics of the liabilities. ASU 2018-12 also provides for new disclosures. Under ASU 2018-12, the effects from changes in cash flow assumptions are reflected in earnings and the effects from changes in discount rate assumptions are reflected in other comprehensive income. Prior to ASU 2018-12, the cash flow and discount rate assumptions were set at the contract inception date and not subsequently changed, except under certain adverse circumstances. ASU 2018-12 is to be applied retrospectively to the earliest period presented in the financial statements.

We adopted ASU 2018-12 as of January 1, 2023 using the modified retrospective method. Revised cash flow and discount rate assumptions were applied to contracts in-force between January 1, 2021 (the transition date) and December 31, 2022 with liabilities remeasured, with the cumulative effect from discount rate changes (based on prevailing interest rates) recorded in accumulated other comprehensive income and the cumulative effect from cash flow assumption changes in retained earnings.

The adoption of ASU 2018-12 produced a cumulative after-tax reduction in our originally reported consolidated shareholders’ equity at the end of 2020 of approximately \$6.4 billion (or 1.4%), consisting of reductions to accumulated other comprehensive income of \$5.7 billion and retained earnings of \$700 million. The cumulative decline in shareholders’ equity decreased to approximately \$4.6 billion (or 0.9% of the shareholders’ equity originally reported) at December 31, 2021. The cumulative effect of adopting ASU 2018-12 will increase our shareholders’ equity at December 31, 2022 by approximately \$1.0 billion. These effects reflect the after-tax increases or decreases to our life, health and annuity benefits liabilities and reinsurance recoverables, primarily derived from changes in discount rate assumptions. The effects of adopting ASU 2018-12 will be reflected primarily in other comprehensive income and the impact on our consolidated net earnings for each of the years ending December 31, 2022 and 2021 is not material.

(2) Significant business acquisitions

Our long-held acquisition strategy is to acquire businesses that have consistent earning power, good returns on equity and able and honest management. Financial results attributable to business acquisitions are included in our Consolidated Financial Statements beginning on their respective acquisition dates. Information concerning significant business acquisitions completed in each of the three years ending December 31, 2022 follows.

On October 19, 2022, Berkshire acquired all of the outstanding common stock of Alleghany Corporation (“Alleghany”) for approximately \$11.5 billion, which includes the value of certain Alleghany equity awards, pursuant to a definitive agreement and plan of merger dated as of March 20, 2022. Alleghany operates a group of property and casualty reinsurance and insurance businesses. It also owns a portfolio of non-financial businesses.

Notes to Consolidated Financial Statements (Continued)

(2) Significant business acquisitions (Continued)

The preliminary values of the Alleghany identified assets acquired and liabilities assumed are summarized as follows (in millions). Valuations of certain assets, such as intangible assets and goodwill, and certain liabilities as of the acquisition date have not been finalized at this time and are provisional.

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 and other intangible assets		6,362
Other		3,834
Assets acquired	\$	<u>35,590</u>
Unpaid losses and loss adjustment expenses	\$	15,080
Unearned premiums		3,536
Notes payable		2,169
Other		3,300
Liabilities assumed		<u>24,085</u>
Net assets	\$	<u>11,505</u>

Alleghany's consolidated revenues and net earnings included in Berkshire's Consolidated Financial Statements in 2022 were approximately \$2.4 billion and \$216 million, respectively. The following table sets forth certain unaudited pro forma consolidated earnings data for the years ending December 31, 2022 and 2021, as if the Alleghany acquisition was consummated on the same terms at the beginning of 2021 (in millions, except per share amounts).

	2022	2021
Revenues	\$ 311,184	\$ 287,450
Net earnings (loss) attributable to Berkshire Hathaway shareholders	(24,107)	90,728
Net earnings (loss) per equivalent Class A common share	(16,412)	60,077

Berkshire Hathaway Energy ("BHE") acquired certain businesses of Dominion Energy, Inc. ("Dominion") on November 1, 2020 for cash of approximately \$2.5 billion. The acquired businesses included natural gas transmission, gathering and storage pipelines, natural gas storage capacity and partial ownership of a liquefied natural gas export, import and storage facility ("Cove Point"). As part of the Dominion acquisition, BHE acquired an indirect 25% economic interest in Cove Point, consisting of 100% of the general partnership interest and 25% of the limited partnership interests. We concluded that Cove Point is a VIE and that we have the power to direct the activities that most significantly impact its economic performance as well as the obligation to absorb losses and receive benefits which could be significant to Cove Point. Therefore, we treat Cove Point as a consolidated subsidiary.

(3) Investments in fixed maturity securities

Investments in fixed maturity securities as of December 31, 2022 and 2021 are summarized by type below (in millions).

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
<u>December 31, 2022</u>				
U.S. Treasury, U.S. government corporations and agencies	\$ 10,039	\$ 12	\$ (249)	\$ 9,802
Foreign governments	10,454	50	(177)	10,327
Corporate bonds	1,945	256	(6)	2,195
Other	2,735	77	(8)	2,804
	<u>\$ 25,173</u>	<u>\$ 395</u>	<u>\$ (440)</u>	<u>\$ 25,128</u>
<u>December 31, 2021</u>				
U.S. Treasury, U.S. government corporations and agencies	\$ 3,286	\$ 22	\$ (5)	\$ 3,303
Foreign governments	10,998	29	(33)	10,994
Corporate bonds	1,363	412	(1)	1,774
Other	317	47	(1)	363
	<u>\$ 15,964</u>	<u>\$ 510</u>	<u>\$ (40)</u>	<u>\$ 16,434</u>

Notes to Consolidated Financial Statements (Continued)

(3) Investments in fixed maturity securities (Continued)

The fair value of investments in U.S. Treasury securities as of December 31, 2022 included approximately \$9.1 billion of securities that mature in 2023 and 2024. Investments in foreign governments include securities issued by national and provincial government entities as well as instruments that are unconditionally guaranteed by such entities. As of December 31, 2022, approximately 93% 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 December 31, 2022 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.

	Due in one year or less	Due after one year through five years	Due after five years through ten years	Due after ten years	Mortgage- backed securities	Total
Amortized cost	\$ 7,720	\$ 13,413	\$ 1,393	\$ 842	\$ 1,805	\$ 25,173
Fair value	7,660	13,122	1,627	864	1,855	25,128

(4) Investments in equity securities

Investments in equity securities as of December 31, 2022 and 2021 are summarized based on the primary industry of the investee in the table below (in millions).

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

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

	Cost Basis	Net Unrealized Gains	Fair Value
December 31, 2021 *			
Banks, insurance and finance	\$ 26,822	\$ 62,236	\$ 89,058
Consumer products	36,076	154,945	191,021
Commercial, industrial and other	41,707	28,933	70,640
	<u>\$ 104,605</u>	<u>\$ 246,114</u>	<u>\$ 350,719</u>

* Approximately 73% of the aggregate fair value was concentrated in four companies (American Express Company – \$24.8 billion; Apple Inc. – \$161.2 billion; Bank of America Corporation – \$46.0 billion and The Coca-Cola Company – \$23.7 billion).

During 2022, we began acquiring common stock of Occidental Petroleum Corporation (“Occidental”) and our aggregate voting interest exceeded 20% on August 4, 2022. We adopted the equity method with respect to our investment in Occidental common stock as of that date and included this investment in equity method investments at December 31, 2022. See Note 5. We continue to report our investments in Occidental Cumulative Perpetual Preferred Stock and Occidental common stock warrants at fair value as equity securities, as such interests are not in-substance common stock under GAAP and are not eligible for the equity method.

Notes to Consolidated Financial Statements (Continued)

(4) Investments in equity securities (Continued)

Our investment in Occidental preferred stock has an aggregate liquidation value of \$10 billion and 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 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 preference plus any accumulated and unpaid dividends and is mandatorily redeemable at 110% of the liquidation preference plus accrued dividends under specified events. The warrants are exercisable in whole or in part until one year after the redemption of the preferred stock.

As of December 31, 2022, we owned 20.4% of the outstanding common stock of the American Express Company (“American Express”). Since 1995, we have been party to an agreement with American Express whereby we agreed to vote a significant portion of our shares in accordance with the recommendations of the American Express Board of Directors. We have also agreed to passivity commitments as requested by the Board of Governors of the Federal Reserve System, which collectively, in our judgment, restrict our ability to exercise significant influence over the operating and financial policies of American Express. Accordingly, we do not use the equity method with respect to our investment in American Express common stock and we continue to record our investment at fair value.

(5) Equity method investments

Berkshire and its subsidiaries hold investments in certain businesses that are accounted for pursuant to the equity method. Currently, the most significant of these are our investments in the common stock of The Kraft Heinz Company (“Kraft Heinz”) and, as of August 4, 2022, Occidental. We own 26.6% of Kraft Heinz common stock and 21.4% of Occidental common stock, which excludes the potential effect of the exercise of Occidental common stock warrants. See Note 4.

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 chemical manufacturing businesses. Occidental’s midstream businesses purchase, market, gather, process, transport and store various oil, natural gas, carbon dioxide and other products. Occidental’s financial information is not available in time for concurrent reporting in our consolidated financial statements. Therefore, we report the equity method effects for Occidental on a one-quarter lag. Our earnings in the fourth quarter of 2022 included our equity method share of Occidental’s third quarter earnings.

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

	Carrying Value		Fair Value	
	December 31,		December 31,	
	2022	2021	2022	2021
Kraft Heinz	\$ 12,937	\$ 13,112	\$ 13,249	\$ 11,683
Occidental	11,484	—	12,242	—
Other	3,629	2,933		
	<u>\$ 28,050</u>	<u>\$ 16,045</u>		

Our earnings and distributions received from significant equity method investments are summarized in the table below (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 2022 below do not reflect Occidental’s results for its fourth quarter.

	Equity in Earnings			Distributions Received		
	Year ended December 31,			Year ended December 31,		
	2022	2021	2020	2022	2021	2020
Kraft Heinz	\$ 628	\$ 269	\$ 95	\$ 521	\$ 521	\$ 521
Occidental	323	—	—	24	—	—
Other	912	617	562	284	1,057	383
	<u>\$ 1,863</u>	<u>\$ 886</u>	<u>\$ 657</u>	<u>\$ 829</u>	<u>\$ 1,578</u>	<u>\$ 904</u>

Notes to Consolidated Financial Statements (Continued)

(5) Equity method investments (Continued)

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

	December 31, 2022	December 25, 2021
Assets	\$ 90,513	\$ 93,394
Liabilities	41,643	43,942

	Year ending		
	December 31, 2022	December 25, 2021	December 26, 2020
Sales	\$ 26,485	\$ 26,042	\$ 26,185
Net earnings attributable to Kraft Heinz common shareholders	2,363	1,012	356

Summarized consolidated financial information of Occidental, reported on a one quarter lag follows (in millions).

	September 30, 2022
Assets	\$ 72,144
Liabilities	43,424

	Third Quarter 2022	First Nine Months 2022
Total revenues and other income	\$ 9,501	\$ 28,769
Net earnings attributable to Occidental common shareholders	2,546	10,777

Other significant investments accounted for pursuant to the equity method as of December 31, 2022 included our investments in Pilot Travel Centers, LLC (“Pilot”) and Berkadia Commercial Mortgage LLC (“Berkadia”). Since 2017, we have owned a 38.6% interest in Pilot. We acquired an additional 41.4% interest on January 31, 2023 and became the majority owner of Pilot at that date. As a result, we discontinued the use of the equity method during the first quarter of 2023. See Note 26. We own a 50% interest in 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.

(6) Investment and derivative contract gains (losses)

Investment and derivative contract gains (losses) for each of the three years ending December 31, 2022 are summarized as follows (in millions).

	2022	2021	2020
Investment gains (losses):			
Equity securities:			
Change in unrealized investment gains (losses) during the year on securities held at the end of the year	\$ (63,120)	\$ 76,375	\$ 54,951
Investment gains (losses) during the year on securities sold	(3,927)	997	(14,036)
	<u>(67,047)</u>	<u>77,372</u>	<u>40,915</u>
Fixed maturity securities:			
Gross realized gains	134	85	56
Gross realized losses	(684)	(29)	(27)
Other	(26)	148	(39)
Investment gains (losses)	(67,623)	77,576	40,905
Derivative contract gains (losses)	(276)	966	(159)
	<u>\$ (67,899)</u>	<u>\$ 78,542</u>	<u>\$ 40,746</u>

Notes to Consolidated Financial Statements (Continued)

(6) Investment and derivative contract gains (losses) (Continued)

Equity securities gains and losses include unrealized gains and losses from changes in fair values during the year on equity securities we still own, as well as gains and losses on securities we sold during the year. As reflected in the Consolidated Statements of Cash Flows, we received proceeds of approximately \$33.7 billion in 2022, \$15.8 billion in 2021 and \$38.8 billion in 2020 from sales of equity securities. In the preceding table, investment gains and losses on equity securities sold during the year represent the difference between the sales proceeds and the fair value of the equity securities sold at the beginning of the applicable year or, if later, the purchase date. Our taxable gains and losses on equity securities sold are generally the difference between the proceeds from sales and original cost. Equity securities sold produced taxable gains of \$769 million in 2022, \$3.6 billion in 2021 and \$6.2 billion in 2020.

Our derivative contract gains and losses derived from equity index put option contracts. As of December 31, 2022, we had three open contracts, one of which has since expired. Our exposure to losses in the future is insignificant.

(7) Loans and finance receivables

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

	December 31,	
	2022	2021
Loans and finance receivables before allowances and discounts	\$ 24,664	\$ 22,065
Allowances for credit losses	(856)	(765)
Unamortized acquisition discounts and points	(600)	(549)
	<u>\$ 23,208</u>	<u>\$ 20,751</u>

Loans and finance receivables are principally manufactured home loans, and to a lesser extent, commercial loans and site-built home loans. Reconciliations of the allowance for credit losses on loans and finance receivables for the three years ending December 31, 2022 follow (in millions).

	2022	2021	2020
Balance at beginning of year	\$ 765	\$ 712	\$ 167
Adoption of ASC 326	—	—	486
Provision for credit losses	124	88	177
Charge-offs, net of recoveries	(33)	(35)	(118)
Balance at December 31	<u>\$ 856</u>	<u>\$ 765</u>	<u>\$ 712</u>

At December 31, 2022, substantially all manufactured and site-built home loan balances were evaluated collectively for impairment. At December 31, 2022, we considered approximately 96% of the loan balances to be current as to payment status. A summary of performing and non-performing home loans before discounts and allowances by year of loan origination as of December 31, 2022 follows (in millions).

	Origination Year						Total
	2022	2021	2020	2019	2018	Prior	
Performing	\$ 5,743	\$ 3,630	\$ 2,830	\$ 1,992	\$ 1,509	\$ 6,959	\$ 22,663
Non-performing	4	9	9	8	6	46	82
	<u>\$ 5,747</u>	<u>\$ 3,639</u>	<u>\$ 2,839</u>	<u>\$ 2,000</u>	<u>\$ 1,515</u>	<u>\$ 7,005</u>	<u>\$ 22,745</u>

We are the lender under several commercial loan agreements which had a principal value of approximately \$1.9 billion at December 31, 2022 and December 31, 2021. The balance at December 31, 2022 included \$450 million acquired in connection with the Alleghany acquisition. Our largest commercial loan is with Seritage Growth Properties (“Seritage”) with an unpaid principal balance of \$1.0 billion as of December 31, 2022 and \$1.4 billion as of December 31, 2021. Our commercial loans are generally secured by mortgages on real estate properties or by other assets and substantially all of these loans are current as to payment status.

Notes to Consolidated Financial Statements (Continued)

(8) Other receivables

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

	December 31,	
	2022	2021
Insurance and other:		
Insurance premiums receivable	\$ 18,398	\$ 15,050
Reinsurance recoverables	7,119	4,900
Trade receivables	14,510	12,971
Other	4,154	3,146
Allowances for credit losses	(675)	(679)
	<u>\$ 43,506</u>	<u>\$ 35,388</u>
Railroad, utilities and energy:		
Trade receivables	\$ 4,182	\$ 3,678
Other	754	650
Allowances for credit losses	(141)	(151)
	<u>\$ 4,795</u>	<u>\$ 4,177</u>

Provisions for credit losses with respect to receivables summarized above were \$409 million in 2022, \$441 million in 2021 and \$564 million in 2020. Charge-offs, net of recoveries, were \$432 million in 2022, \$420 million in 2021 and \$401 million in 2020.

(9) Inventories

Inventories are comprised of the following (in millions).

	December 31,	
	2022	2021
Raw materials	\$ 6,381	\$ 5,743
Work in process and other	3,464	3,192
Finished manufactured goods	5,739	4,530
Goods acquired for resale	9,782	7,489
	<u>\$ 25,366</u>	<u>\$ 20,954</u>

(10) Property, plant and equipment

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

	December 31,	
	2022	2021
Land, buildings and improvements	\$ 14,761	\$ 14,070
Machinery and equipment	26,690	26,063
Furniture, fixtures and other	4,847	4,640
	46,298	44,773
Accumulated depreciation	(25,185)	(23,939)
	<u>\$ 21,113</u>	<u>\$ 20,834</u>

Notes to Consolidated Financial Statements (Continued)

(10) Property, plant and equipment (Continued)

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.

	December 31,	
	2022	2021
Railroad:		
Land, track structure and other roadway	\$ 67,350	\$ 65,843
Locomotives, freight cars and other equipment	16,031	13,822
Construction in progress	1,743	1,027
	<u>85,124</u>	<u>80,692</u>
Accumulated depreciation	(17,899)	(14,978)
	<u>67,225</u>	<u>65,714</u>
Utilities and energy:		
Utility generation, transmission and distribution systems	92,759	90,223
Interstate natural gas pipeline assets	18,328	17,423
Independent power plants and other assets	14,650	13,695
Construction in progress	5,357	4,196
	<u>131,094</u>	<u>125,537</u>
Accumulated depreciation	(38,051)	(35,721)
	<u>93,043</u>	<u>89,816</u>
	<u>\$ 160,268</u>	<u>\$ 155,530</u>

Depreciation expense for each of the three years ending December 31, 2022 is summarized below (in millions).

	2022	2021	2020
Insurance and other	\$ 2,276	\$ 2,318	\$ 2,320
Railroad, utilities and energy	6,181	5,990	5,799
	<u>\$ 8,457</u>	<u>\$ 8,308</u>	<u>\$ 8,119</u>

(11) Equipment held for lease

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

	December 31,	
	2022	2021
Railcars	\$ 9,612	\$ 9,448
Aircraft	10,667	9,234
Other	5,212	5,053
	<u>25,491</u>	<u>23,735</u>
Accumulated depreciation	(9,907)	(8,817)
	<u>\$ 15,584</u>	<u>\$ 14,918</u>

Notes to Consolidated Financial Statements (Continued)

(11) Equipment held for lease (Continued)

Depreciation expense for equipment held for lease was \$1,209 million in 2022, \$1,158 million in 2021 and \$1,200 million in 2020. Fixed and variable operating lease revenues for each of the three years ending December 31, 2022 are summarized below (in millions).

	2022	2021	2020
Fixed lease revenue	\$ 5,184	\$ 4,482	\$ 4,262
Variable lease revenue	2,330	1,506	947
	<u>\$ 7,514</u>	<u>\$ 5,988</u>	<u>\$ 5,209</u>

A summary of future operating lease receipts as of December 31, 2022 follows (in millions).

2023	2024	2025	2026	2027	Thereafter	Total
\$ 3,365	\$ 2,687	\$ 1,992	\$ 1,373	\$ 673	\$ 299	\$ 10,389

(12) Leases

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

	Right-of-use assets	Lease liabilities	Weighted average remaining term in years	Weighted average discount rate used to measure liabilities
December 31, 2022	\$ 4,975	\$ 4,939	7.0	3.7%
December 31, 2021	5,091	4,991	7.2	3.5%

A summary of our remaining future operating lease payments reconciled to lease liabilities as of December 31, 2022 and December 31, 2021 follows (in millions).

	Year 1	Year 2	Year 3	Year 4	Year 5	Thereafter	Total lease payments	Amount representing interest	Lease liabilities
December 31:									
2022	\$ 1,283	\$ 1,073	\$ 822	\$ 560	\$ 449	\$ 1,464	\$ 5,651	\$ (712)	\$ 4,939
2021	1,238	1,038	835	631	418	1,571	5,731	(740)	4,991

Components of operating lease costs for the three years ending December 31, 2022, by type, are summarized in the following table (in millions).

	2022	2021	2020
Operating lease cost	\$ 1,361	\$ 1,426	\$ 1,413
Short-term lease cost	233	154	145
Variable lease cost	217	223	228
Sublease income	(12)	(10)	(10)
Total lease cost	<u>\$ 1,799</u>	<u>\$ 1,793</u>	<u>\$ 1,776</u>

Notes to Consolidated Financial Statements (Continued)

(13) Goodwill and other intangible assets

Reconciliations of the changes in the carrying value of goodwill during 2022 and 2021 follow (in millions).

	December 31,	
	2022	2021
Balance at beginning of year	\$ 73,875	\$ 73,734
Business acquisitions	4,657	353
Other, including foreign currency translation	(413)	(212)
Balance at end of year*	<u>\$ 78,119</u>	<u>\$ 73,875</u>

* Net of accumulated goodwill impairments of \$11.0 billion as of December 31, 2022 and 2021

The gross carrying amounts and related accumulated amortization of other intangible assets are summarized as follows (in millions).

	December 31, 2022			December 31, 2021		
	Gross carrying amount	Accumulated amortization	Net carrying value	Gross carrying amount	Accumulated amortization	Net carrying value
Insurance and other:						
Customer relationships	\$ 27,765	\$ 7,174	\$ 20,591	\$ 27,335	\$ 6,450	\$ 20,885
Trademarks and trade names	5,603	822	4,781	5,176	802	4,374
Patents and technology	4,943	3,748	1,195	4,763	3,484	1,279
Other	4,150	1,530	2,620	3,390	1,442	1,948
	<u>\$ 42,461</u>	<u>\$ 13,274</u>	<u>\$ 29,187</u>	<u>\$ 40,664</u>	<u>\$ 12,178</u>	<u>\$ 28,486</u>
Railroad, utilities and energy:						
Customer relationships and contracts and other	<u>\$ 1,914</u>	<u>\$ 622</u>	<u>\$ 1,292</u>	<u>\$ 1,693</u>	<u>\$ 542</u>	<u>\$ 1,151</u>

Intangible asset amortization expense was \$1,233 million in 2022, \$1,252 million in 2021 and \$1,277 million in 2020. Estimated amortization expense over the next five years is as follows (in millions): 2023 – \$1,253; 2024 – \$1,128; 2025 – \$1,081; 2026 – \$1,000 and 2027 – \$877. Intangible assets with indefinite lives were \$18.3 billion as of December 31, 2022 and \$18.5 billion as of December 31, 2021 and primarily related to certain customer relationships and trademarks and trade names.

(14) Supplemental cash flow information

A summary of supplemental cash flow information for each of the three years ending December 31, 2022 is presented in the following table (in millions).

	2022	2021	2020
Cash paid during the year for:			
Income taxes	\$ 4,236	\$ 5,412	\$ 5,001
Interest:			
Insurance and other	1,150	1,227	1,001
Railroad, utilities and energy	3,195	3,162	3,006
Other adjustments to reconcile net earnings to operating cash flows:			
Foreign currency exchange (gains) losses	(2,148)	(1,433)	1,074
Goodwill and intangible asset impairment charges	—	—	10,671
Other	(2,176)	(1,964)	(482)
Non-cash investing and financing activities:			
Liabilities assumed in connection with business acquisitions	24,186	102	6,981
Operating lease liabilities arising from obtaining right-of-use assets	1,118	687	729

Notes to Consolidated Financial Statements (Continued)

(15) Dividend restrictions – Insurance subsidiaries

Payments of dividends by our insurance subsidiaries are restricted by insurance statutes and regulations. Without prior regulatory approval, our principal insurance subsidiaries may declare up to approximately \$35 billion as ordinary dividends during 2023. Investments in fixed maturity and equity securities and short-term investments on deposit with U.S. state insurance authorities in accordance with state insurance regulations were approximately \$4.9 billion at December 31, 2022 and \$6.4 billion at December 31, 2021.

Combined shareholders' equity of U.S.-based insurance subsidiaries determined pursuant to statutory accounting rules (Surplus as Regards Policyholders) was approximately \$272 billion at December 31, 2022 and \$301 billion at December 31, 2021. Statutory surplus differs from the corresponding amount based on GAAP due to differences in accounting for certain assets and liabilities. For instance, deferred charges reinsurance assumed, deferred policy acquisition costs, unrealized gains on certain investments and related deferred income taxes are recognized for GAAP but not for statutory reporting purposes. In addition, the carrying values of certain assets, such as goodwill and non-insurance entities owned by our insurance subsidiaries, are not fully recognized for statutory reporting purposes.

(16) Unpaid losses and loss adjustment expenses

Our liabilities for unpaid losses and loss adjustment expenses (also referred to as “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. A reconciliation of the changes in claim liabilities, excluding liabilities under retroactive reinsurance contracts (see Note 17), for each of the three years ending December 31, 2022 follows (in millions). The changes in claim liabilities in 2022 within this table include Alleghany’s property and casualty claim liabilities beginning as of the October 19, 2022 acquisition date.

	2022	2021	2020
Balances at beginning of year:			
Gross liabilities	\$ 86,664	\$ 79,854	\$ 73,019
Reinsurance recoverable on unpaid losses	(2,960)	(2,912)	(2,855)
Net liabilities	83,704	76,942	70,164
Incurred losses and loss adjustment expenses:			
Current accident year	59,463	52,099	43,400
Prior accident years	(2,672)	(3,116)	(356)
Total	56,791	48,983	43,044
Paid losses and loss adjustment expenses:			
Current accident year	(27,236)	(22,897)	(17,884)
Prior accident years	(23,083)	(18,904)	(18,862)
Total	(50,319)	(41,801)	(36,746)
Foreign currency effect	(508)	(420)	480
Net liabilities of acquired businesses (see Note 2)	12,779	—	—
Balances at December 31:			
Net liabilities	102,447	83,704	76,942
Reinsurance recoverable on unpaid losses	5,025	2,960	2,912
Gross liabilities	<u>\$ 107,472</u>	<u>\$ 86,664</u>	<u>\$ 79,854</u>

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. Current accident year incurred losses from significant catastrophe events (losses in excess of \$150 million per event) were approximately \$3.1 billion in 2022 (\$2.5 billion from Hurricane Ian), \$2.9 billion in 2021 and \$950 million in 2020. Significant catastrophe events in 2021 included Hurricane Ida (\$1.5 billion), Winter Storm Uri and floods in Europe, while significant catastrophe events in 2020 included losses from Hurricanes Laura and Sally (about \$600 million in the aggregate) and U.S. wildfires. Current accident year incurred losses for private passenger auto insurance increased significantly in 2022 and 2021, attributable to increases in claims frequencies and severities.

Notes to Consolidated Financial Statements (Continued)

(16) Unpaid losses and loss adjustment expenses (Continued)

We recorded net reductions of estimated ultimate liabilities for prior accident years of \$2.7 billion in 2022, \$3.1 billion in 2021 and \$356 million in 2020, which produced corresponding reductions in incurred losses and loss adjustment expenses in those periods. These reductions, as percentages of the net liabilities at the beginning of each year, were 3.2% in 2022, 4.0% in 2021 and 0.5% in 2020.

We reduced estimated ultimate liabilities for prior accident years of primary insurance businesses by \$1.1 billion in 2022, \$2.4 billion in 2021 and \$518 million in 2020. The reductions in each year derived primarily from private passenger auto, medical professional liability and workers' compensation claims, partly offset by increases with respect to other casualty claims. Estimated ultimate liabilities for prior accident years of property and casualty reinsurance businesses were reduced \$1.6 billion in 2022 and \$718 million in 2021 and increased \$162 million in 2020. The reductions in 2022 and 2021 reflected reduced estimates for both property and casualty claims. In 2020, increases in casualty claims estimates were partly offset by reductions in property estimates.

Estimated net claim liabilities for environmental, asbestos and other latent injury exposures were approximately \$2.1 billion at December 31, 2022 and 2021. These liabilities are subject to change due to changes in the legal and regulatory environment. We are unable to reliably estimate additional losses or a range of losses that are reasonably possible for these claims.

Disaggregated information concerning our claims liabilities is provided below and in the pages that follow. The accident year data for Alleghany's primary insurance business is included in Berkshire Hathaway Primary Group ("BH Primary") and for its reinsurance business is included in Berkshire Hathaway Reinsurance Group ("BHRG") on a retrospective basis. A reconciliation of the disaggregated net unpaid losses and allocated loss adjustment expenses (the latter referred to as "ALAE") of GEICO, BH Primary and BHRG to our consolidated unpaid losses and loss adjustment expenses as of December 31, 2022 follows (in millions).

	GEICO		BH Primary		BHRG		Total
	Physical Damage	Auto Liability	Medical Professional Liability	Workers' Compensation/ Other Casualty	Property	Casualty	
Unpaid losses and ALAE, net	\$ 884	\$ 20,930	\$ 8,980	\$ 18,491	\$ 16,552	\$ 31,366	\$ 97,203
Reinsurance recoverable	5	867	28	1,543	787	1,439	4,669
Unallocated loss adjustment expenses							2,232
Other losses and loss adjustment expenses							3,368
Unpaid losses and loss adjustment expenses							<u>\$ 107,472</u>

GEICO

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

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

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

Notes to Consolidated Financial Statements (Continued)

(16) Unpaid losses and loss adjustment expenses (Continued)

GEICO's net incurred and paid auto physical damage and liability losses and ALAE are summarized by accident year below. IBNR and case development liabilities are as of December 31, 2022. Claim counts are established when accidents that may result in a liability are reported and are based on policy coverage. Each claim event may generate claims under multiple coverages, and thus may result in multiple counts. The "Cumulative Number of Reported Claims" includes the combined number of reported claims for all auto policy coverages. Dollars are in millions.

Physical Damage

Accident Year	Incurred Losses and ALAE through December 31,			IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
	2021*	2022			
2021	\$ 12,135	\$ 11,968		\$ 70	9,141
2022		14,138		610	8,986
		<u>\$ 26,106</u>			

Accident Year	Cumulative Paid Losses and ALAE through December 31,	
	2021*	2022
2021	\$ 11,427	\$ 11,978
2022		13,251
		<u>25,229</u>
	Net unpaid losses and ALAE for 2021 – 2022 accident years	877
	Net unpaid losses and ALAE for accident years before 2021	7
	Net unpaid losses and ALAE	<u>\$ 884</u>

Auto Liability

Accident Year	Incurred Losses and ALAE through December 31,					IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
	2018*	2019*	2020*	2021*	2022		
2018	\$ 15,383	\$ 15,226	\$ 14,985	\$ 14,838	\$ 14,854	\$ 259	2,720
2019		16,901	16,678	16,191	16,151	566	2,790
2020			14,637	14,024	13,697	1,182	2,111
2021				17,481	17,457	2,994	2,413
2022					19,645	6,275	2,166
					<u>\$ 81,804</u>		

Accident Year	Cumulative Paid Losses and ALAE through December 31,					
	2018*	2019*	2020*	2021*	2022	
2018	\$ 6,218	\$ 10,772	\$ 12,658	\$ 13,757	\$ 14,337	
2019		6,742	11,671	13,851	15,084	
2020			5,395	9,839	11,794	
2021				6,450	12,681	
2022					7,614	
					<u>61,510</u>	
					Net unpaid losses and ALAE for 2018 – 2022 accident years	20,294
					Net unpaid losses and ALAE for accident years before 2018	636
					Net unpaid losses and ALAE	<u>\$ 20,930</u>

* Unaudited required supplemental information

Notes to Consolidated Financial Statements (Continued)

(16) Unpaid losses and loss adjustment expenses (Continued)

BH Primary

BH Primary's liabilities for unpaid losses and loss adjustment expenses primarily derive from medical professional liability and workers' compensation and other casualty insurance, which includes commercial auto and general liability insurance. Net incurred and paid losses and ALAE are summarized by accident year in the following tables, disaggregated by medical professional liability coverages and workers' compensation and other casualty coverages. IBNR and case development liabilities are as of December 31, 2022. The cumulative number of reported claims reflects the number of individual claimants and includes claims that ultimately resulted in no liability or payment. Dollars are in millions.

Medical Professional Liability

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

Incurred Losses and ALAE through December 31,											IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022		
2013	\$ 1,328	\$ 1,296	\$ 1,261	\$ 1,195	\$ 1,127	\$ 1,086	\$ 1,019	\$ 985	\$ 978	\$ 979	\$ 37	11
2014		1,370	1,375	1,305	1,246	1,218	1,127	1,061	1,033	1,029	74	11
2015			1,374	1,342	1,269	1,290	1,218	1,157	1,093	1,033	84	12
2016				1,392	1,416	1,414	1,394	1,341	1,288	1,216	141	15
2017					1,466	1,499	1,495	1,474	1,382	1,349	228	21
2018						1,602	1,650	1,659	1,580	1,616	289	24
2019							1,670	1,691	1,663	1,614	584	21
2020								1,704	1,751	1,698	959	30
2021									1,852	1,855	1,444	20
2022										1,927	1,749	12
										Incurred losses and ALAE	<u>\$14,316</u>	

Cumulative Paid Losses and ALAE through December 31,											
Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	
2013	\$ 15	\$ 90	\$ 219	\$ 368	\$ 518	\$ 635	\$ 743	\$ 793	\$ 821	\$ 853	
2014		21	106	238	396	540	671	752	788	840	
2015			23	108	218	382	543	663	719	799	
2016				22	115	274	461	620	712	822	
2017					27	128	300	457	582	739	
2018						35	166	367	543	728	
2019							39	160	314	536	
2020								34	148	321	
2021									36	136	
2022										38	
										Paid losses and ALAE	<u>5,812</u>
										Net unpaid losses and ALAE for 2013 – 2022 accident years	8,504
										Net unpaid losses and ALAE for accident years before 2013	476
										Net unpaid losses and ALAE	<u>\$ 8,980</u>

* Unaudited required supplemental information

Notes to Consolidated Financial Statements (Continued)

(16) Unpaid losses and loss adjustment expenses (Continued)

Workers' Compensation and Other Casualty

We periodically evaluate ultimate loss and loss adjustment expense estimates for the workers' compensation and other casualty claims using a combination of commonly accepted actuarial methodologies such as the Bornhuetter-Ferguson and chain-ladder approaches using paid and incurred loss data. Paid and incurred loss data is segregated and analyzed by state due to the different state regulatory frameworks that may impact certain factors, including the duration and amount of loss payments. We also separately study the various components of liabilities, such as employee lost wages, medical expenses and the costs of claims investigations and administration. We establish case liabilities for reported claims based upon the facts and circumstances of the claim. The excess of the ultimate projected losses, including the expected development of case estimates, and the case-basis liabilities is included in IBNR liabilities. As previously noted, Alleghany was acquired on October 19, 2022. Alleghany's incurred and paid losses and ALAE are included for all years presented retrospectively.

Incurred Losses and ALAE through December 31,

Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
2013	\$ 1,602	\$ 1,574	\$ 1,541	\$ 1,491	\$ 1,462	\$ 1,435	\$ 1,407	\$ 1,376	\$ 1,360	\$ 1,340	\$ 101	78
2014		2,138	2,064	2,036	1,970	1,901	1,906	1,875	1,861	1,829	153	103
2015			2,580	2,539	2,455	2,426	2,428	2,402	2,408	2,393	249	121
2016				2,931	2,848	2,793	2,772	2,815	2,825	2,864	409	125
2017					3,473	3,337	3,299	3,310	3,322	3,320	477	144
2018						3,998	3,886	3,967	4,030	4,091	841	164
2019							4,584	4,623	4,692	4,763	1,057	185
2020								5,030	4,881	4,775	1,858	155
2021									5,899	5,856	3,105	311
2022										6,796	4,889	285
										Incurred losses and ALAE	\$38,027	

Cumulative Paid Losses and ALAE through December 31,

Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	
2013	\$ 210	\$ 520	\$ 774	\$ 941	\$ 1,049	\$ 1,111	\$ 1,147	\$ 1,173	\$ 1,194	\$ 1,209	
2014		286	683	1,002	1,269	1,407	1,504	1,557	1,600	1,617	
2015			329	804	1,187	1,507	1,766	1,873	1,966	2,041	
2016				373	908	1,359	1,765	1,998	2,140	2,303	
2017					480	1,133	1,645	2,050	2,279	2,492	
2018						583	1,340	1,902	2,324	2,746	
2019							725	1,598	2,214	2,898	
2020								736	1,498	2,066	
2021									869	1,751	
2022										962	
										Paid losses and ALAE	20,085
										Net unpaid losses and ALAE for 2013 – 2022 accident years	17,942
										Net unpaid losses and ALAE for accident years before 2013	549
										Net unpaid losses and ALAE	\$18,491

* Unaudited required supplemental information

BHRG

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

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

Notes to Consolidated Financial Statements (Continued)

(16) Unpaid losses and loss adjustment expenses (Continued)

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

Net incurred and paid losses and ALAE of BHRG are disaggregated based on losses that are expected to have shorter claim-tails (property) and losses expected to have longer claim-tails (casualty). Under certain contracts, the coverage can apply to multiple lines of business written by the ceding company, whether property, casualty or combined, and the ceding company may not report loss data by such lines consistently, if at all. In those instances, we allocated losses to property and casualty coverages based on internal estimates. BHRG's disaggregated incurred and paid losses and ALAE are summarized by accident year. IBNR and case development liabilities are as of December 31, 2022. As previously noted, Alleghany was acquired on October 19, 2022. Alleghany's incurred and paid losses and ALAE are included for all years presented retrospectively in the tables that follow. Dollars are in millions.

Property

Incurred Losses and ALAE through December 31,

Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	IBNR and Case Development Liabilities
2013	\$ 3,654	\$ 3,460	\$ 3,092	\$ 2,980	\$ 2,946	\$ 2,885	\$ 2,828	\$ 2,811	\$ 2,808	\$ 2,796	\$ 31
2014		3,088	2,847	2,724	2,566	2,509	2,433	2,399	2,393	2,373	31
2015			3,595	3,405	2,838	3,229	3,225	3,244	3,246	3,240	116
2016				3,917	4,508	4,186	4,149	4,144	4,133	4,111	47
2017					6,390	6,093	5,916	5,790	5,711	5,630	100
2018						5,478	5,574	5,433	5,289	5,296	372
2019							4,991	5,116	4,907	4,592	245
2020								6,937	7,217	6,857	1,025
2021									8,080	7,951	1,757
2022										8,870	4,663
										<u>\$ 51,716</u>	

Cumulative Paid Losses and ALAE through December 31,

Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	
2013	\$ 621	\$ 1,674	\$ 2,190	\$ 2,414	\$ 2,540	\$ 2,623	\$ 2,663	\$ 2,694	\$ 2,718	\$ 2,710	
2014		571	1,518	1,899	2,059	2,135	2,187	2,218	2,242	2,272	
2015			669	1,799	2,204	2,422	2,531	2,713	2,799	2,852	
2016				914	2,211	2,673	3,162	3,431	3,626	3,736	
2017					1,347	3,508	4,583	4,936	5,171	5,364	
2018						1,208	3,089	3,733	4,019	4,265	
2019							1,010	2,852	3,578	3,905	
2020								1,253	3,583	4,632	
2021									1,622	4,083	
2022										1,815	
										<u>35,634</u>	
											Net unpaid losses and ALAE for 2013 – 2022 accident years
											16,082
											Net unpaid losses and ALAE for accident years before 2013
											470
											<u>Net unpaid losses and ALAE</u>
											<u>\$ 16,552</u>

* Unaudited required supplemental information

Notes to Consolidated Financial Statements (Continued)

(16) Unpaid losses and loss adjustment expenses (Continued)

Casualty

Incurred Losses and ALAE through December 31,

Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	IBNR and Case Development Liabilities
2013	\$ 3,752	\$ 3,897	\$ 3,894	\$ 3,703	\$ 3,634	\$ 3,571	\$ 3,453	\$ 3,345	\$ 3,301	\$ 3,235	\$ 337
2014		3,492	3,653	3,596	3,535	3,436	3,451	3,427	3,315	3,280	480
2015			3,408	3,607	3,647	3,561	3,420	3,383	3,346	3,291	426
2016				3,775	3,980	3,884	3,854	3,803	3,760	3,731	491
2017					4,026	4,453	4,332	4,226	4,158	4,147	639
2018						4,871	5,515	5,457	5,328	5,257	942
2019							5,555	6,019	5,890	5,727	1,548
2020								6,216	6,228	6,045	2,294
2021									6,287	6,256	3,139
2022										6,063	4,726
										Incurred losses and ALAE	\$ 47,032

Cumulative Paid Losses and ALAE through December 31,

Accident Year	2013*	2014*	2015*	2016*	2017*	2018*	2019*	2020*	2021*	2022	
2013	\$ 576	\$ 1,120	\$ 1,585	\$ 1,881	\$ 2,088	\$ 2,284	\$ 2,396	\$ 2,492	\$ 2,563	\$ 2,598	
2014		428	997	1,385	1,657	1,911	2,096	2,303	2,396	2,484	
2015			445	991	1,426	1,725	1,997	2,190	2,338	2,473	
2016				653	1,356	1,796	2,144	2,414	2,607	2,782	
2017					606	1,307	1,824	2,472	2,720	2,937	
2018						693	1,736	2,785	3,251	3,629	
2019							840	1,865	2,415	3,182	
2020								867	1,901	2,710	
2021									765	1,780	
2022										621	
										Paid losses and ALAE	25,196
										Net unpaid losses and ALAE for 2013 – 2022 accident years	21,836
										Net unpaid losses and ALAE for accident years before 2013	9,530
										Net unpaid losses and ALAE	\$ 31,366

* Unaudited required supplemental information

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

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

In Year	1	2	3	4	5	6	7	8	9	10
GEICO Physical Damage	97%	3%								
GEICO Auto Liability	41%	31%	13%	8%	4%					
BH Primary Medical Professional Liability	2%	7%	12%	14%	13%	11%	8%	6%	4%	3%
BH Primary Workers' Compensation and Other Casualty	15%	19%	15%	13%	9%	5%	4%	3%	1%	1%
BHRG Property	22%	36%	15%	8%	4%	4%	2%	1%	1%	0%
BHRG Casualty	14%	18%	13%	11%	7%	6%	5%	3%	2%	1%

Notes to Consolidated Financial Statements (Continued)

(17) Retroactive reinsurance contracts

Retroactive reinsurance policies provide indemnification of losses and loss adjustment expenses of short-duration insurance contracts with respect to underlying loss events that occurred prior to the contract inception date. Claims payments may commence immediately after the contract date or, when applicable, after a contractual retention amount has been reached. Reconciliations of the changes in estimated liabilities for retroactive reinsurance unpaid losses and loss adjustment expenses (“claim liabilities”) and reconciliations of incurred losses and loss adjustment expenses to the amounts recorded in the Consolidated Statements of Earnings for each of the three years ended December 31, 2022 follow (in millions).

	2022	2021	2020
Balances at beginning of year	\$ 37,855	\$ 40,623	\$ 41,927
Incurred losses and loss adjustment expenses:			
Current year contracts	—	153	—
Prior years’ contracts	86	(974)	(399)
Total	86	(821)	(399)
Paid losses and loss adjustment expenses	(2,358)	(1,889)	(1,076)
Foreign currency effect	(168)	(58)	171
Balances at December 31	\$ 35,415	\$ 37,855	\$ 40,623
Incurred losses and loss adjustment expenses above	\$ 86	\$ (821)	\$ (399)
Deferred charge amortization and adjustments	769	1,802	1,306
Incurred losses and loss adjustment expenses included in the Consolidated Statements of Earnings	\$ 855	\$ 981	\$ 907

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 exposures to losses began. We believe that analysis of losses incurred and paid by accident year of the underlying event is irrelevant given that our exposure to losses incepts when the contract incepts and that the classification of reported claims and case development liabilities has little or no practical analytical value. 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 \$9.9 billion at December 31, 2022 and \$10.6 billion at December 31, 2021.

Paid losses and loss adjustment expenses include claim payments attributable to a contract between our subsidiary, National Indemnity Company, and certain subsidiaries of American International Group, Inc. (collectively, “AIG”). Claim payments under the AIG contract commenced in 2021 and were \$1.5 billion in 2022 and \$1.2 billion in 2021. Our estimated unpaid claim liabilities with regard to the AIG contract were approximately \$13.9 billion at December 31, 2022 and \$15.8 billion at December 31, 2021.

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

Estimated claim liabilities for retroactive reinsurance included estimates for environmental, asbestos and other latent injury exposures of approximately \$12.1 billion at December 31, 2022 and \$12.3 billion at December 31, 2021. Retroactive reinsurance contracts are generally subject to aggregate policy limits and thus, our exposure to such claims under these contracts is likewise limited. We monitor evolving case law and its effect on environmental and other latent injury claims. Changing laws or government regulations, newly identified toxins, newly reported claims, new theories of liability, new contract interpretations and other factors could result in increases in these liabilities, which could be material to our results of operations. We are unable to reliably estimate the amount of additional net loss or the range of net loss that is reasonably possible.

Notes to Consolidated Financial Statements (Continued)

(18) Notes payable and other borrowings

The carrying value of notes payable and other borrowings is summarized below (in millions). The weighted average interest rates and maturity date ranges shown in the following tables are based on borrowings as of December 31, 2022.

	Weighted Average Interest Rate	December 31,	
		2022	2021
Insurance and other:			
Berkshire Hathaway Inc. (“Berkshire”):			
U.S. Dollar denominated due 2023-2047	3.2%	\$ 6,231	\$ 6,820
Euro denominated due 2023-2041	1.0%	7,344	7,792
Japanese Yen denominated due 2023-2060	0.7%	7,818	6,797
Berkshire Hathaway Finance Corporation (“BHFC”):			
U.S. Dollar denominated due 2027-2052	3.6%	14,458	10,758
Great Britain Pound denominated due 2039-2059	2.5%	2,078	2,325
Euro denominated due 2030-2034	1.8%	1,332	—
Other subsidiary borrowings due 2023-2051	4.3%	5,967	4,438
Short-term subsidiary borrowings	5.8%	1,310	342
		<u>\$ 46,538</u>	<u>\$ 39,272</u>

In January 2022, Berkshire issued ¥128.5 billion (approximately \$1.1 billion) of senior notes with maturity dates ranging from 2027 to 2052 and a weighted average interest rate of 0.5%. In December 2022, Berkshire issued ¥115.0 billion (approximately \$840 million) of senior notes with maturity dates ranging from 2025 to 2052 and a weighted average interest rate of 1.1%. In the first two months of 2023, Berkshire repaid \$1.1 billion of maturing senior notes. An additional \$3.2 billion of Berkshire senior notes mature in March and April of 2023.

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. In March 2022, BHFC issued \$4.5 billion of senior notes with maturity dates ranging from 2027 to 2052 with a weighted average interest rate of 3.4% and €1.25 billion (approximately \$1.4 billion) of senior notes maturing in 2030 and 2034 with a weighted average interest rate of 1.8%. Berkshire also guarantees certain debt of other subsidiaries, aggregating approximately \$3.7 billion at December 31, 2022, of which \$1.0 billion matured in January 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. Other subsidiary and short-term subsidiary borrowings as of December 31, 2022 includes approximately \$2.3 billion attributable to Alleghany Corporation and its subsidiaries.

The carrying values of Berkshire and BHFC non-U.S. Dollar denominated senior notes (€8.15 billion, £1.75 billion and ¥1,029 billion par at December 31, 2022) 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 resulted in pre-tax gains of \$1.7 billion in 2022, \$1.3 billion in 2021 and pre-tax losses of \$1.0 billion in 2020.

	Weighted Average Interest Rate	December 31,	
		2022	2021
Railroad, utilities and energy:			
Berkshire Hathaway Energy Company (“BHE”) and subsidiaries:			
BHE senior unsecured debt due 2023-2053	4.3%	\$ 13,996	\$ 13,003
Subsidiary and other debt due 2023-2064	4.3%	37,639	36,759
Short-term borrowings	5.2%	1,119	2,009
Burlington Northern Santa Fe (“BNSF”) and subsidiaries due 2023-2097	4.5%	23,452	23,219
		<u>\$ 76,206</u>	<u>\$ 74,990</u>

Notes to Consolidated Financial Statements (Continued)

(18) Notes payable and other borrowings (Continued)

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 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 2022, BHE issued \$1.0 billion of 4.6% senior notes due in 2053. During 2022, BHE subsidiaries issued approximately \$3.0 billion of term debt with a weighted average interest rate of 5.2% as of December 31 and maturity dates ranging from 2024 to 2053.

BNSF's borrowings are primarily senior unsecured debentures. In June 2022, BNSF issued \$1.0 billion of 4.45% debentures due in 2053. As of December 31, 2022, BNSF, BHE and their subsidiaries were in compliance with all applicable debt covenants. Berkshire does not guarantee any debt, borrowings or lines of credit of BNSF, BHE or their subsidiaries.

Our subsidiaries had unused lines of credit and commercial paper capacity to support short-term borrowing programs and provide additional liquidity. Unused lines of credit were approximately \$11.1 billion at December 31, 2022, which included approximately \$9.1 billion related to BHE and its subsidiaries.

Debt principal repayments expected during each of the next five years are as follows (in millions). Amounts in 2023 include short-term borrowings.

	2023	2024	2025	2026	2027
Insurance and other	\$ 7,080	\$ 1,975	\$ 3,122	\$ 3,454	\$ 2,870
Railroad, utilities and energy	5,882	4,281	3,919	1,498	1,686
	<u>\$ 12,962</u>	<u>\$ 6,256</u>	<u>\$ 7,041</u>	<u>\$ 4,952</u>	<u>\$ 4,556</u>

(19) Income taxes

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

	December 31,	
	2022	2021
Currently payable (receivable)	\$ 511	\$ (482)
Deferred	76,069	89,679
Other	440	1,046
	<u>\$ 77,020</u>	<u>\$ 90,243</u>

The tax effects of temporary differences that give rise to significant portions of deferred income tax assets and liabilities are shown below (in millions).

	December 31,	
	2022	2021
Deferred income tax liabilities:		
Investments – unrealized appreciation	\$ 41,150	\$ 55,437
Deferred charges reinsurance assumed	2,073	2,234
Property, plant and equipment and equipment held for lease	32,080	31,323
Goodwill and other intangible assets	7,010	6,748
Other	4,695	4,094
	<u>87,008</u>	<u>99,836</u>
Deferred income tax assets:		
Unpaid losses and loss adjustment expenses	(1,290)	(1,091)
Unearned premiums	(1,196)	(990)
Accrued liabilities	(1,790)	(1,868)
Regulatory liabilities	(1,323)	(1,349)
Other	(5,340)	(4,859)
	<u>(10,939)</u>	<u>(10,157)</u>
Net deferred income tax liability	<u>\$ 76,069</u>	<u>\$ 89,679</u>

Notes to Consolidated Financial Statements (Continued)

(19) Income taxes (Continued)

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

Income tax expense (benefit) reflected in our Consolidated Statements of Earnings for each of the three years ending December 31, 2022 was as follows (in millions).

	2022	2021	2020
Federal	\$ (10,360)	\$ 20,345	\$ 10,596
State	762	(527)	1,086
Foreign	1,080	1,061	758
	<u>\$ (8,518)</u>	<u>\$ 20,879</u>	<u>\$ 12,440</u>
Current	\$ 4,815	\$ 5,326	\$ 5,052
Deferred	(13,333)	15,553	7,388
	<u>\$ (8,518)</u>	<u>\$ 20,879</u>	<u>\$ 12,440</u>

Income tax expense (benefit) is reconciled to hypothetical amounts computed at the U.S. federal statutory rate for each of the three years ending December 31, 2022 in the table below (in millions).

	2022	2021	2020
Earnings (loss) before income taxes	<u>\$ (30,576)</u>	<u>\$ 111,686</u>	<u>\$ 55,693</u>
Hypothetical income tax expense (benefit) at the U.S. federal statutory rate	\$ (6,421)	\$ 23,454	\$ 11,696
Dividends received deduction and tax-exempt interest	(512)	(457)	(448)
State income taxes, less U.S. federal income tax effect	602	(417)	858
U.S. income tax credits*	(2,187)	(1,860)	(1,519)
Goodwill impairments	—	—	1,977
Other differences, net	—	159	(124)
	<u>\$ (8,518)</u>	<u>\$ 20,879</u>	<u>\$ 12,440</u>
Effective income tax rate	<u>27.9%</u>	<u>18.7%</u>	<u>22.3%</u>

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

We file income tax returns in the United States and in state, local and foreign jurisdictions. We have settled income tax liabilities with the U.S. federal taxing authority (“IRS”) for tax years through 2011. The 2012 and 2013 tax years are under review by the IRS’s Independent Office of Appeals, and the IRS is currently auditing tax years 2014 through 2019. We are also under audit or subject to audit with respect to income taxes in state and foreign jurisdictions. It is reasonably possible that certain of these income tax examinations will be settled in 2023. We currently do not believe that the outcome of unresolved issues or claims will be material to our Consolidated Financial Statements.

At December 31, 2022 and 2021, net unrecognized tax benefits were \$440 million and \$1,046 million, respectively. Included in the balance at December 31, 2022, were \$383 million of tax positions that, if recognized, would impact the effective tax rate. The remaining balance in net unrecognized tax benefits principally relates to tax positions where the ultimate recognition is highly certain but there is uncertainty about the timing of recognition. Because of the impact of deferred income tax accounting, these positions, when recognized, would not affect the annual effective income tax rate. We do not expect material increases to the estimated amount of unrecognized tax benefits during 2023.

Notes to Consolidated Financial Statements (Continued)

(20) Fair value measurements

Our financial assets and liabilities are summarized below as of December 31, 2022 and December 31, 2021, with fair values shown according to the fair value hierarchy (in millions). The carrying values of cash and cash equivalents, U.S. Treasury Bills, other receivables and accounts payable, accruals and other liabilities are considered to be reasonable estimates of or otherwise approximate the fair values.

	Carrying Value	Fair Value	Quoted Prices (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2022					
Investments in fixed maturity securities:					
U.S. Treasury, U.S. government corporations and agencies	\$ 9,802	\$ 9,802	\$ 9,733	\$ 69	\$ —
Foreign governments	10,327	10,327	9,854	473	—
Corporate bonds	2,195	2,195	—	1,546	649
Other	2,804	2,804	—	2,804	—
Investments in equity securities	308,793	308,793	296,610	9	12,174
Investments in Kraft Heinz & Occidental common stock	24,421	25,491	25,491	—	—
Loans and finance receivables	23,208	23,428	—	1,513	21,915
Derivative contract assets ⁽¹⁾	589	589	56	474	59
Derivative contract liabilities ⁽¹⁾	242	242	8	122	112
Notes payable and other borrowings:					
Insurance and other	46,538	41,961	—	41,061	900
Railroad, utilities and energy	76,206	67,651	—	67,651	—
December 31, 2021					
Investments in fixed maturity securities:					
U.S. Treasury, U.S. government corporations and agencies	\$ 3,303	\$ 3,303	\$ 3,261	\$ 42	\$ —
Foreign governments	10,994	10,994	10,286	708	—
Corporate bonds	1,774	1,774	—	1,774	—
Other	363	363	—	363	—
Investments in equity securities	350,719	350,719	339,225	8	11,486
Investment in Kraft Heinz common stock	13,112	11,683	11,683	—	—
Loans and finance receivables	20,751	22,174	—	2,178	19,996
Derivative contract assets ⁽¹⁾	329	329	6	230	93
Derivative contract liabilities ⁽¹⁾	376	376	2	150	224
Notes payable and other borrowings:					
Insurance and other	39,272	42,339	—	42,292	47
Railroad, utilities and energy	74,990	87,065	—	87,065	—

⁽¹⁾ Assets are included in other assets, and liabilities are included in accounts payable, accruals and other liabilities.

Notes to Consolidated Financial Statements (Continued)

(20) 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.

Level 1 – Inputs represent unadjusted quoted prices for identical assets or liabilities exchanged in active markets.

Level 2 – Inputs include directly or indirectly observable inputs (other than Level 1 inputs) such as quoted prices for similar assets or liabilities exchanged in active or inactive markets; quoted prices for identical assets or liabilities exchanged in inactive markets; other inputs that may be considered in fair value determinations of the assets or liabilities, such as interest rates and yield curves, volatilities, prepayment speeds, loss severities, credit risks and default rates; and inputs that are derived principally from or corroborated by observable market data by correlation or other means. Pricing evaluations generally reflect discounted expected future cash flows, which incorporate yield curves for instruments with similar characteristics, such as credit ratings, estimated durations and yields for other instruments of the issuer or entities in the same industry sector.

Level 3 – Inputs include unobservable inputs used in the measurement of assets and liabilities. Management is required to use its own assumptions regarding unobservable inputs because there is little, if any, market activity in the assets or liabilities and it may be unable to corroborate the related observable inputs. Unobservable inputs require management to make certain projections and assumptions about the information that would be used by market participants in valuing assets or liabilities.

Reconciliations of significant assets and liabilities measured and carried at fair value on a recurring basis with the use of significant unobservable inputs (Level 3) for each of the three years ending December 31, 2022 follow (in millions).

	Balance at beginning of year	Gains (losses) included in earnings	Acquisitions, dispositions and settlements	Transfers out of Level 3	Balance at December 31,
Investments in equity securities:					
2022	\$ 11,480	\$ 689	\$ —	\$ —	\$ 12,169
2021	8,978	1,902	1,100	(500)	11,480
2020	10,405	(1,426)	—	(1)	8,978
Equity index put option contract liabilities:					
2021	(1,065)	966	—	99	—
2020	(968)	(159)	62	—	(1,065)

Quantitative information as of December 31, 2022 for the significant assets measured and carried at fair value on a recurring basis with the use of significant unobservable inputs (Level 3) follows (in millions).

	Fair Value	Principal Valuation Techniques	Unobservable Inputs	Weighted Average
Investments in equity securities:				
Preferred stock	\$ 9,964	Discounted cash flow	Expected duration	6 years
			Discount for transferability restrictions and subordination	372 bps
Common stock warrants	2,205	Warrant pricing model	Expected duration	6 years
			Volatility	39%