Berkshire Hathaway Inc.

2016
ANNUAL REPORT

BERKSHIRE HATHAWAY INC.

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Berkshire's Performance vs. the S&P 500

Year	Annual Percentage Change in Per-Share Book Value of Berkshire	in Per-Share Market Value of Berkshire	in S&P 500 with Dividends Included
1965	23.8	49.5	10.0
1966	20.3	(3.4)	(11.7)
1967	11.0	13.3	30.9
1968	19.0	77.8	11.0
1969	16.2	19.4	(8.4)
1970	12.0	(4.6)	3.9
1971	16.4	80.5	14.6
1972	21.7	8.1	18.9
1973	4.7	(2.5)	(14.8)
1974	5.5	(48.7)	(26.4)
1975	21.9	2.5	37.2
1976	59.3	129.3	23.6
1977	31.9	46.8	(7.4)
1978	24.0	14.5	6.4
1979	35.7	102.5	18.2
1980	19.3	32.8	32.3
1981	31.4	31.8	(5.0)
1982	40.0	38.4	21.4
1983	32.3	69.0	22.4
1984	13.6	(2.7)	6.1
1985	48.2	93.7	31.6
1986	26.1	14.2	18.6
1987	19.5	4.6	5.1
1988	20.1	59.3	16.6
1989	44.4	84.6	31.7
1990	7.4	(23.1)	(3.1)
1991	39.6	35.6	30.5
1992	20.3	29.8	7.6
1993	14.3	38.9	10.1
1994	13.9	25.0	1.3
1995	43.1	57.4	37.6
1996	31.8	6.2	23.0
1997	34.1	34.9	33.4
1998	48.3	52.2	28.6
1999	0.5	(19.9)	21.0
2000	6.5	26.6	(9.1)
2001	(6.2)	6.5	(11.9)
2002	10.0	(3.8)	(22.1)
2003	21.0	15.8	28.7
2004	10.5	4.3	10.9
2005	6.4	0.8	4.9
2006	18.4	24.1	15.8
2007	11.0	28.7	5.5
2008	(9.6)	(31.8)	(37.0)
2009	19.8	2.7	26.5
2010	13.0	21.4	15.1
2011	4.6	(4.7)	2.1
2012	14.4	16.8	16.0
2013	18.2	32.7	32.4
2014	8.3	27.0	13.7
2015	6.4	(12.5)	1.4
2016	10.7	23.4	12.0
Compounded Annual Gain – 1965-2016	19.0%	20.8%	9.7%
Overall Gain – 1964-2016	884,319%	1,972,595%	12,717%

Notes: Data are for calendar years with these exceptions: 1965 and 1966, year ended 9/30; 1967, 15 months ended 12/31. Starting in 1979, accounting rules required insurance companies to value the equity securities they hold at market rather than at the lower of cost or market, which was previously the requirement. In this table, Berkshire's results through 1978 have been restated to conform to the changed rules. In all other respects, the results are calculated using the numbers originally reported. The S&P 500 numbers are **pre-tax** whereas the Berkshire numbers are **after-tax**. If a corporation such as Berkshire were simply to have owned the S&P 500 and accrued the appropriate taxes, its results would have lagged the S&P 500 in years when that index showed a positive return, but would have exceeded the S&P 500 in years when the index showed a negative return. Over the years, the tax costs would have caused the aggregate lag to be substantial.

BERKSHIRE HATHAWAY INC.

To the Shareholders of Berkshire Hathaway Inc.:

Berkshire's gain in net worth during 2016 was $27.5 billion, which increased the per-share book value of both our Class A and Class B stock by 10.7%. Over the last 52 years (that is, since present management took over), per-share book value has grown from $19 to $172,108, a rate of 19% compounded annually.*

During the first half of those years, Berkshire's net worth was roughly equal to the number that really counts: the intrinsic value of the business. The similarity of the two figures existed then because most of our resources were deployed in marketable securities that were regularly revalued to their quoted prices (less the tax that would be incurred if they were to be sold). In Wall Street parlance, our balance sheet was then in very large part "marked to market."

By the early 1990s, however, our focus was changing to the outright ownership of businesses, a shift that materially diminished the relevance of balance sheet figures. That disconnect occurred because the accounting rules (commonly referred to as "GAAP") that apply to companies we control differ in important ways from those used to value marketable securities. Specifically, the accounting for *businesses* we own requires that the carrying value of "losers" be written down when their failures become apparent. "Winners," conversely, are *never* revalued upwards.

We've experienced both outcomes: As is the case in marriage, business acquisitions often deliver surprises *after* the "I do's." I've made some dumb purchases, paying far too much for the economic goodwill of companies we acquired. That later led to goodwill write-offs and to consequent reductions in Berkshire's book value. We've also had some winners among the businesses we've purchased – a few of the winners very big – but have not written those up by a penny.

We have no quarrel with the asymmetrical accounting that applies here. But, over time, it necessarily widens the gap between Berkshire's intrinsic value and its book value. Today, the large – and growing – unrecorded gains at our winners produce an intrinsic value for Berkshire's shares that *far* exceeds their book value. The overage is truly huge in our property/casualty insurance business and significant also in many other operations.

Over time, stock prices gravitate toward intrinsic value. That's what has happened at Berkshire, a fact explaining why the company's 52-year market-price gain – shown on the facing page – materially exceeds its book-value gain.

* All per-share figures used in this report apply to Berkshire's A shares. Figures for the B shares are 1/1500th of those shown for A.

What We Hope to Accomplish

Charlie Munger, Berkshire's Vice Chairman and my partner, and I expect Berkshire's *normalized* earning power per share to increase every year. *Actual* earnings, of course, will sometimes decline because of periodic weakness in the U.S. economy. In addition, insurance mega-catastrophes or other industry-specific events may occasionally reduce earnings at Berkshire, even when most American businesses are doing well.

It's our job, though, to over time deliver significant growth, bumpy or not. After all, as stewards of *your* capital, Berkshire directors have opted to retain all earnings. Indeed, in both 2015 and 2016 Berkshire ranked first among American businesses in the dollar volume of earnings retained, in each year reinvesting many billions of dollars more than did the runner-up. Those reinvested dollars must earn their keep.

Some years, the gains in underlying earning power we achieve will be minor; very occasionally, the cash register will ring loud. Charlie and I have no magic plan to add earnings except to dream big and to be prepared mentally and financially to act fast when opportunities present themselves. Every decade or so, dark clouds will fill the economic skies, and they will briefly rain gold. When downpours of that sort occur, it's imperative that we rush outdoors carrying washtubs, not teaspoons. And that we will do.

I earlier described our gradual shift from a company obtaining most of its gains from investment activities to one that grows in value by owning businesses. Launching that transition, we took baby steps – making small acquisitions whose impact on Berkshire's profits was dwarfed by our gains from marketable securities. Despite that cautious approach, I made one particularly egregious error, acquiring Dexter Shoe for $434 million in 1993. Dexter's value promptly went to zero. The story gets worse: I used stock for the purchase, giving the sellers 25,203 shares of Berkshire that at yearend 2016 were worth more than $6 billion.

That wreck was followed by three key happenings – two positive, one negative – that set us firmly on our present course. At the beginning of 1996, we acquired the half of GEICO we didn't already own, a cash transaction that changed our holding from a portfolio investment into a wholly-owned operating business. GEICO, with its almost unlimited potential, quickly became the centerpiece around which we built what I believe is now the world's premier property/casualty business.

Unfortunately, I followed the GEICO purchase by foolishly using Berkshire stock – a *boatload* of stock – to buy General Reinsurance in late 1998. After some early problems, General Re has become a fine insurance operation that we prize. It was, nevertheless, a terrible mistake on my part to issue 272,200 shares of Berkshire in buying General Re, an act that increased our outstanding shares by a whopping 21.8%. My error caused Berkshire shareholders to give far more than they received (a practice that – despite the Biblical endorsement – is far from blessed when you are buying businesses).

Early in 2000, I atoned for that folly by buying 76% (since grown to 90%) of MidAmerican Energy, a brilliantly-managed utility business that has delivered us many large opportunities to make profitable and socially-useful investments. The MidAmerican *cash* purchase – I was learning – firmly launched us on our present course of (1) continuing to build our insurance operation; (2) energetically acquiring large and diversified non-insurance businesses and (3) largely making our deals from internally-generated cash. (Today, I would rather prep for a colonoscopy than issue Berkshire shares.)

Our portfolio of bonds and stocks, de-emphasized though it is, has continued in the post-1998 period to grow and to deliver us hefty capital gains, interest, and dividends. Those portfolio earnings have provided us major help in financing the purchase of businesses. Though unconventional, Berkshire's two-pronged approach to capital allocation gives us a real edge.

Here's our financial record since 1999, when the redirection of our business began in earnest. During the 18-year period covered, Berkshire's outstanding shares grew by only 8.3%, with most of the increase occurring when we purchased BNSF. That, I'm happy to say, was one issuance of stock that made good sense.

After-Tax Earnings
(in billions of dollars)

Year	Operations (1)	Capital Gains (2)	Year	Operations (1)	Capital Gains (2)
1999	0.67	0.89	2008	9.64	(4.65)
2000	0.94	2.39	2009	7.57	0.49
2001	(0.13)	0.92	2010	11.09	1.87
2002	3.72	0.57	2011	10.78	(0.52)
2003	5.42	2.73	2012	12.60	2.23
2004	5.05	2.26	2013	15.14	4.34
2005	5.00	3.53	2014	16.55	3.32
2006	9.31	1.71	2015	17.36	6.73
2007	9.63	3.58	2016	17.57	6.50

(1) Including interest and dividends from investments, but *excluding* capital gains or losses.

(2) In very large part, this tabulation includes only *realized* capital gains or losses. Unrealized gains and losses are also included, however, when GAAP requires that treatment.

Our expectation is that investment gains will continue to be substantial – though totally random as to timing – and that these will supply significant funds for business purchases. Concurrently, Berkshire's superb corps of operating CEOs will focus on increasing earnings at the individual businesses they manage, sometimes helping them to grow by making bolt-on acquisitions. By our avoiding the issuance of Berkshire stock, any improvement in earnings will translate into equivalent per-share gains.

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Our efforts to materially increase the normalized earnings of Berkshire will be aided – as they have been throughout our managerial tenure – by America's economic dynamism. One word sums up our country's achievements: miraculous. From a standing start 240 years ago – a span of time less than triple my days on earth – Americans have combined human ingenuity, a market system, a tide of talented and ambitious immigrants, and the rule of law to deliver abundance beyond any dreams of our forefathers.

You need not be an economist to understand how well our system has worked. Just look around you. See the 75 million owner-occupied homes, the bountiful farmland, the 260 million vehicles, the hyper-productive factories, the great medical centers, the talent-filled universities, you name it – they all represent a net gain for Americans from the barren lands, primitive structures and meager output of 1776. Starting from scratch, America has amassed wealth totaling $90 trillion.

It's true, of course, that American owners of homes, autos and other assets have often borrowed heavily to finance their purchases. If an owner defaults, however, his or her asset does not disappear or lose its usefulness. Rather, ownership customarily passes to an American lending institution that then disposes of it to an American buyer. Our *nation's* wealth remains intact. As Gertrude Stein put it, "Money is always there, but the pockets change."

Above all, it's our market system – an economic traffic cop ably directing capital, brains and labor – that has created America's abundance. This system has also been the primary factor in allocating rewards. Governmental redirection, through federal, state and local taxation, has in addition determined the distribution of a significant portion of the bounty.

America has, for example, decided that those citizens in their productive years should help both the old and the young. Such forms of aid – sometimes enshrined as "entitlements" – are generally thought of as applying to the aged. But don't forget that four million American babies are born each year with an entitlement to a public education. That societal commitment, largely financed at the local level, costs about $150,000 per baby. The annual cost totals more than $600 billion, which is about 3 ½% of GDP.

However our wealth may be divided, the mind-boggling amounts you see around you belong almost exclusively to Americans. Foreigners, of course, own or have claims on a modest portion of our wealth. Those holdings, however, are of little importance to our national balance sheet: *Our* citizens own assets abroad that are roughly comparable in value.

Early Americans, we should emphasize, were neither smarter nor more hard working than those people who toiled century after century before them. But those venturesome pioneers crafted a system that unleashed human potential, and their successors built upon it.

This economic creation will deliver increasing wealth to our progeny far into the future. Yes, the build-up of wealth will be interrupted for short periods from time to time. It will not, however, be stopped. I'll repeat what I've both said in the past and expect to say in future years: Babies born in America today are the luckiest crop in history.

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America's economic achievements have led to staggering profits for stockholders. During the 20th century the Dow-Jones Industrials advanced from 66 to 11,497, a 17,320% capital gain that was materially boosted by steadily increasing dividends. The trend continues: By yearend 2016, the index had advanced a further 72%, to 19,763.

American business – and consequently a basket of stocks – is virtually certain to be worth far more in the years ahead. Innovation, productivity gains, entrepreneurial spirit and an abundance of capital will see to that. Ever-present naysayers may prosper by marketing their gloomy forecasts. But heaven help them if they act on the nonsense they peddle.

Many companies, of course, will fall behind, and some will fail. Winnowing of that sort is a product of market dynamism. Moreover, the years ahead will occasionally deliver major market declines – even panics – that will affect virtually all stocks. No one can tell you when these traumas will occur – not me, not Charlie, not economists, not the media. Meg McConnell of the New York Fed aptly described the reality of panics: "We spend a lot of time looking for systemic risk; in truth, however, it tends to find us."

During such scary periods, you should never forget two things: First, widespread fear is your *friend* as an investor, because it serves up bargain purchases. Second, *personal* fear is your enemy. It will also be unwarranted. Investors who avoid high and unnecessary costs and simply sit for an extended period with a collection of large, conservatively-financed American businesses will almost certainly do well.

As for Berkshire, our size precludes a *brilliant* result: Prospective returns fall as assets increase. Nonetheless, Berkshire's collection of good businesses, along with the company's impregnable financial strength and owner-oriented culture, should deliver decent results. We won't be satisfied with less.

Share Repurchases

In the investment world, discussions about share repurchases often become heated. But I'd suggest that participants in this debate take a deep breath: Assessing the desirability of repurchases isn't that complicated.

From the standpoint of exiting shareholders, repurchases are always a plus. Though the day-to-day impact of these purchases is usually minuscule, it's always better for a seller to have an additional buyer in the market.

For continuing shareholders, however, repurchases only make sense if the shares are bought at a price below intrinsic value. When that rule is followed, the remaining shares experience an immediate gain in intrinsic value. Consider a simple analogy: If there are three equal partners in a business worth $3,000 and one is bought out by the partnership for $900, each of the remaining partners realizes an immediate gain of $50. If the exiting partner is paid $1,100, however, the continuing partners each suffer a loss of $50. The same math applies with corporations and their shareholders. Ergo, the question of whether a repurchase action is value-enhancing or value-destroying for continuing shareholders is entirely purchase-price dependent.

It is puzzling, therefore, that corporate repurchase announcements almost never refer to a price above which repurchases will be eschewed. That certainly wouldn't be the case if a management was buying an outside business. There, price would always factor into a buy-or-pass decision.

When CEOs or boards are buying a small part of their own company, though, they all too often seem oblivious to price. Would they behave similarly if they were managing a private company with just a few owners and were evaluating the wisdom of buying out one of them? Of course not.

It is important to remember that there are two occasions in which repurchases should not take place, even if the company's shares are underpriced. One is when a business both needs all its available money to protect or expand its own operations and is also uncomfortable adding further debt. Here, the internal need for funds should take priority. This exception assumes, of course, that the business has a decent future awaiting it after the needed expenditures are made.

The second exception, less common, materializes when a business acquisition (or some other investment opportunity) offers far greater value than do the undervalued shares of the potential repurchaser. Long ago, Berkshire itself often had to choose between these alternatives. At our present size, the issue is far less likely to arise.

My suggestion: Before even discussing repurchases, a CEO and his or her Board should stand, join hands and in unison declare, "What is smart at one price is stupid at another."

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To recap Berkshire's own repurchase policy: I am authorized to buy large amounts of Berkshire shares at 120% or less of book value because our Board has concluded that purchases at that level clearly bring an instant and material benefit to continuing shareholders. By our estimate, a 120%-of-book price is a significant discount to Berkshire's intrinsic value, a spread that is appropriate because calculations of intrinsic value can't be precise.

The authorization given me does not mean that we will "prop" our stock's price at the 120% ratio. If that level is reached, we will instead attempt to blend a desire to make meaningful purchases at a value-creating price with a related goal of not over-influencing the market.

To date, repurchasing our shares has proved hard to do. That may well be because we have been clear in describing our repurchase policy and thereby have signaled our view that Berkshire's intrinsic value is significantly higher than 120% of book value. If so, that's fine. Charlie and I prefer to see Berkshire shares sell in a fairly narrow range around intrinsic value, neither wishing them to sell at an unwarranted high price – it's no fun having owners who are disappointed with their purchases – nor one too low. Furthermore, our buying out "partners" at a discount is not a particularly gratifying way of making money. Still, market circumstances could create a situation in which repurchases would benefit both continuing and exiting shareholders. If so, we will be ready to act.

One final observation for this section: As the subject of repurchases has come to a boil, some people have come close to calling them un-American – characterizing them as corporate misdeeds that divert funds needed for productive endeavors. That simply isn't the case: Both American corporations and private investors are today awash in funds looking to be sensibly deployed. I'm not aware of *any* enticing project that in recent years has died for lack of capital. (Call us if you have a candidate.)

Insurance

Let's now look at Berkshire's various businesses, starting with our most important sector, insurance. The property/casualty ("P/C") branch of that industry has been the engine that has propelled our growth since 1967, the year we acquired National Indemnity and its sister company, National Fire & Marine, for $8.6 million. Today, National Indemnity is the largest property/casualty company in the world as measured by net worth.

One reason we were attracted to the P/C business was its financial characteristics: P/C insurers receive premiums upfront and pay claims later. In extreme cases, such as claims arising from exposure to asbestos, payments can stretch over many decades. This collect-now, pay-later model leaves P/C companies holding large sums – money we call "float" – that will eventually go to others. Meanwhile, insurers get to invest this float for their own benefit. Though individual policies and claims come and go, the amount of float an insurer holds usually remains fairly stable in relation to premium volume. Consequently, as our business grows, so does our float. And *how* it has grown, as the following table shows:

Year	*Float (in millions)*
1970	$ 39
1980	237
1990	1,632
2000	27,871
2010	65,832
2016	91,577

We recently wrote a huge policy that increased float to more than $100 billion. Beyond that one-time boost, float at GEICO and several of our specialized operations is almost certain to grow at a good clip. National Indemnity's reinsurance division, however, is party to a number of large run-off contracts whose float is certain to drift downward.

We may in time experience a decline in float. If so, the decline will be *very* gradual – at the outside no more than 3% in any year. The nature of our insurance contracts is such that we can *never* be subject to immediate or near-term demands for sums that are of significance to our cash resources. This structure is by design and is a key component in the unequaled financial strength of our insurance companies. It will *never* be compromised.

If our premiums exceed the total of our expenses and eventual losses, our insurance operation registers an underwriting profit that adds to the investment income the float produces. When such a profit is earned, we enjoy the use of free money – and, better yet, get *paid* for holding it.

Unfortunately, the wish of all insurers to achieve this happy result creates intense competition, so vigorous indeed that it sometimes causes the P/C industry as a whole to operate at a significant underwriting *loss*. This loss, in effect, is what the industry pays to hold its float. Competitive dynamics almost guarantee that the insurance industry, despite the float income all its companies enjoy, will continue its dismal record of earning subnormal returns on tangible net worth as compared to other American businesses.

This outcome is made more certain by the dramatically lower interest rates that now exist throughout the world. The investment portfolios of almost all P/C companies – though *not* those of Berkshire – are heavily concentrated in bonds. As these high-yielding legacy investments mature and are replaced by bonds yielding a pittance, earnings from float will steadily fall. For that reason, and others as well, it's a good bet that industry results over the next ten years will fall short of those recorded in the past decade, particularly in the case of companies that specialize in reinsurance.

Nevertheless, I very much like our own prospects. Berkshire's unrivaled financial strength allows us far more flexibility in investing than that generally available to P/C companies. The many alternatives available to us are always an advantage; occasionally, they offer us major opportunities. When others are constrained, our choices expand.

Moreover, our P/C companies have an excellent underwriting record. Berkshire has now operated at an underwriting profit for 14 consecutive years, our pre-tax gain for the period having totaled $28 billion. That record is no accident: Disciplined risk evaluation is the daily focus of *all* of our insurance managers, who know that while float is valuable, its benefits can be drowned by poor underwriting results. All insurers give that message lip service. At Berkshire it is a religion, Old Testament style.

So how does our float affect intrinsic value? When Berkshire's *book* value is calculated, the *full* amount of our float is deducted as a *liability*, just as if we had to pay it out tomorrow and could not replenish it. But to think of float as a typical liability is a major mistake. It should instead be viewed as a revolving fund. Daily, we pay old claims and related expenses – a huge $27 billion to more than six million claimants in 2016 – and that reduces float. Just as surely, we each day write new business that will soon generate its own claims, adding to float.

If our revolving float is both costless and long-enduring, which I believe it will be, the true value of this liability is *dramatically* less than the accounting liability. Owing $1 that in effect will never leave the premises – because new business is almost certain to deliver a substitute – is worlds different from owing $1 that will go out the door tomorrow and not be replaced. The two types of liabilities, however, are treated as equals under GAAP.

A partial offset to this overstated liability is a $15.5 billion "goodwill" asset that we incurred in buying our insurance companies and that is included in our book-value figure. In very large part, this goodwill represents the price we paid for the float-generating capabilities of our insurance operations. The cost of the goodwill, however, has *no* bearing on its true value. For example, if an insurance company sustains large and prolonged underwriting losses, *any* goodwill asset carried on the books should be deemed valueless, whatever its original cost.

Fortunately, that does not describe Berkshire. Charlie and I believe the true economic value of our insurance goodwill – what we would happily pay for float *of similar quality* were we to purchase an insurance operation possessing it – to be *far* in excess of its historic carrying value. Indeed, almost the entire $15.5 billion we carry for goodwill in our insurance business was already on our books in 2000 when float was $28 billion. Yet we have subsequently increased our float by $64 billion, a gain that in no way is reflected in our book value. This unrecorded asset is one reason – a huge reason – why we believe Berkshire's intrinsic business value far exceeds its book value.

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Berkshire's attractive insurance economics exist only because we have some terrific managers running disciplined operations that in most cases possess hard-to-replicate business models. Let me tell you about the major units.

First by float size is the Berkshire Hathaway Reinsurance Group, managed by Ajit Jain. Ajit insures risks that no one else has the desire or the capital to take on. His operation combines capacity, speed, decisiveness and, most important, brains in a manner unique in the insurance business. Yet he never exposes Berkshire to risks that are inappropriate in relation to our resources.

Indeed, Berkshire is *far* more conservative in avoiding risk than most large insurers. For example, if the insurance industry should experience a $250 billion loss from some mega-catastrophe – a loss about triple anything it has ever experienced – Berkshire as a whole would likely record a large profit for the year. Our many streams of non-insurance earnings would see to that. Additionally, we would remain awash in cash and be eager to write business in an insurance market that might well be in disarray. Meanwhile, other major insurers and reinsurers would be swimming in red ink, if not facing insolvency.

When Ajit entered Berkshire's office on a Saturday in 1986, he did not have a day's experience in the insurance business. Nevertheless, Mike Goldberg, then our manager of insurance, handed him the keys to our small and struggling reinsurance business. With that move, Mike achieved sainthood: Since then, Ajit has created tens of billions of value for Berkshire shareholders. If there were ever to be another Ajit and you could swap me for him, *don't hesitate*. Make the trade!

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We have another reinsurance powerhouse in General Re, managed until recently by Tad Montross. After 39 years at General Re, Tad retired in 2016. Tad was a class act in every way and we owe him a ton of thanks. Kara Raiguel, who has worked with Ajit for 16 years, is now CEO of General Re.

At bottom, a sound insurance operation needs to adhere to four disciplines. It must (1) understand *all* exposures that might cause a policy to incur losses; (2) conservatively assess the likelihood of any exposure actually causing a loss and the probable cost if it does; (3) set a premium that, on average, will deliver a profit after both prospective loss costs and operating expenses are covered; and (4) be willing to walk away if the appropriate premium can't be obtained.

Many insurers pass the first three tests and flunk the fourth. They simply can't turn their back on business that is being eagerly written by their competitors. That old line, "The other guy is doing it, so we must as well," spells trouble in any business, but in none more so than insurance. Tad never listened to that nonsensical excuse for sloppy underwriting, and neither will Kara.

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Finally, there is GEICO, the company that set my heart afire 66 years ago (and for which the flame still burns). GEICO is managed by Tony Nicely, who joined the company at 18 and completed 55 years of service in 2016.

Tony became CEO of GEICO in 1993, and since then the company has been flying. There is *no* better manager than Tony, who brings his combination of brilliance, dedication *and* soundness to the job. (The latter quality is essential to sustained success. As Charlie says, it's great to have a manager with a 160 IQ – unless he thinks it's 180.) Like Ajit, Tony has created tens of billions of value for Berkshire.

On my initial visit to GEICO in 1951, I was blown away by the huge cost advantage the company enjoyed over the giants of the industry. It was clear to me that GEICO would succeed because it *deserved* to succeed. The company's annual sales were then $8 million; In 2016, GEICO did that much business every three hours of the year.

Auto insurance is a major expenditure for most families. Savings matter to them – and only a low-cost operation can deliver those. In fact, at least 40% of the people reading this letter can save money by insuring with GEICO. So stop reading – right now! – and go to geico.com or call 800-847-7536.

GEICO's low costs create a moat – an *enduring* one – that competitors are unable to cross. As a result, the company gobbles up market share year after year, ending 2016 with about 12% of industry volume. That's up from 2.5% in 1995, the year Berkshire acquired control of GEICO. Employment, meanwhile, grew from 8,575 to 36,085.

GEICO's growth accelerated dramatically during the second half of 2016. Loss costs throughout the auto-insurance industry had been increasing at an unexpected pace and some competitors lost their enthusiasm for taking on new customers. GEICO's reaction to the profit squeeze, however, was to *accelerate* its new-business efforts. We like to make hay while the sun *sets*, knowing that it will surely rise again.

GEICO continues on a roll as I send you this letter. When insurance prices increase, people shop more. And when they shop, GEICO wins.

Have you called yet? (800-847-7536 or go to geico.com)

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In addition to our three major insurance operations, we own a collection of smaller companies that primarily write commercial coverages. In aggregate, these companies are a large, growing and valuable operation that consistently delivers an underwriting profit, usually one much superior to that reported by their competitors. Over the past 14 years, this group has earned $4.7 billion from underwriting – about 13% of its premium volume – while increasing its float from $943 million to $11.6 billion.

Less than three years ago, we formed Berkshire Hathaway Specialty Insurance ("BHSI"), which is included in this grouping. Our first decision was to put Peter Eastwood in charge, a move that proved to be a home run: We expected significant losses in the early years while Peter built the personnel and infrastructure needed for a world-wide operation. Instead, he and his crew delivered significant underwriting profits throughout the start-up period. BHSI's volume increased 40% in 2016, reaching $1.3 billion. It's clear to me that the company is destined to become one of the world's leading P/C insurers.

Here's a recap of pre-tax underwriting earnings and float by division:

	Underwriting Profit		*Yearend Float*	
		(in millions)		
Insurance Operations	*2016*	*2015*	*2016*	*2015*
BH Reinsurance	$ 822	$ 421	$ 45,081	$ 44,108
General Re	190	132	17,699	18,560
GEICO	462	460	17,148	15,148
Other Primary	657	824	11,649	9,906
	$2,131	$1,837	$ 91,577	$ 87,722

Berkshire's great managers, premier financial strength and a range of business models protected by wide moats amount to something unique in the insurance world. This assemblage of strengths is a huge asset for Berkshire shareholders that time will only make more valuable.

Regulated, Capital-Intensive Businesses

Our BNSF railroad and Berkshire Hathaway Energy ("BHE"), our 90%-owned utility business, share important characteristics that distinguish them from Berkshire's other activities. Consequently, we assign them their own section in this letter and split out their combined financial statistics in our GAAP balance sheet and income statement. These two very major companies accounted for 33% of Berkshire's after-tax operating earnings last year.

A key characteristic of both companies is their huge investment in very long-lived, regulated assets, with these partially funded by large amounts of long-term debt that is *not* guaranteed by Berkshire. Our credit is in fact not needed because each company has earning power that even under terrible economic conditions would far exceed its interest requirements. Last year, for example, in a disappointing year for railroads, BNSF's interest coverage was more than 6:1. (Our definition of coverage is the ratio of earnings before interest and taxes to interest, *not* EBITDA/interest, a commonly-used measure we view as seriously flawed.)

At BHE, meanwhile, two factors ensure the company's ability to service its debt under all circumstances. The first is common to all utilities: recession-resistant earnings, which result from these companies offering an essential service for which demand is remarkably steady. The second is enjoyed by few other utilities: an ever-widening diversity of earnings streams, which shield BHE from being seriously harmed by any single regulatory body. These many sources of profit, supplemented by the inherent advantage of the company being owned by a strong parent, have allowed BHE and its utility subsidiaries to significantly lower their cost of debt. That economic fact benefits both us *and* our customers.

All told, BHE and BNSF invested $8.9 billion in plant and equipment last year, a massive commitment to their segments of America's infrastructure. We relish making such investments as long as they promise reasonable returns – and, on that front, we put a large amount of trust in future regulation.

Our confidence is justified both by our past experience and by the knowledge that society will forever need huge investments in both transportation and energy. It is in the self-interest of governments to treat capital providers in a manner that will ensure the continued flow of funds to essential projects. It is concomitantly in our self-interest to conduct our operations in a way that earns the approval of our regulators and the people they represent.

Low prices are a powerful way to keep these constituencies happy. In Iowa, BHE's average retail rate is 7.1¢ per KWH. Alliant, the other major electric utility in the state, averages 9.9¢. Here are the comparable industry figures for adjacent states: Nebraska 9.0¢, Missouri 9.5¢, Illinois 9.2¢, Minnesota 10.0¢. The national average is 10.3¢. We have promised Iowans that our base rates will not increase until 2029 *at the earliest*. Our rock-bottom prices add up to real money for paycheck-strapped customers.

At BNSF, price comparisons between major railroads are far more difficult to make because of significant differences in both their mix of cargo and the average distance the load is carried. To supply a *very* crude measure, however, our revenue per ton-mile was 3¢ last year, while shipping costs for customers of the other four major U.S.-based railroads ranged from 4¢ to 5¢.

Both BHE and BNSF have been leaders in pursuing planet-friendly technology. In wind generation, no state comes close to rivaling Iowa, where last year the megawatt-hours we generated from wind equaled 55% of all megawatt-hours sold to our Iowa retail customers. New wind projects that are underway will take that figure to 89% by 2020.

Bargain-basement electric rates carry second-order benefits with them. Iowa has attracted large high-tech installations, both because of its low prices for electricity (which data centers use in huge quantities) and because most tech CEOs are enthusiastic about using renewable energy. When it comes to wind energy, Iowa is the Saudi Arabia of America.

BNSF, like other Class I railroads, uses only a single gallon of diesel fuel to move a ton of freight almost 500 miles. Those economics make railroads four times as fuel-efficient as trucks! Furthermore, railroads alleviate highway congestion – and the taxpayer-funded maintenance expenditures that come with heavier traffic – in a major way.

All told, BHE and BNSF own assets that are of major importance to our country as well as to shareholders of Berkshire. Here are the key financial figures for both:

BNSF	*Earnings (in millions)*		
	2016	*2015*	*2014*
Revenues	$ 19,829	$ 21,967	$ 23,239
Operating expenses	13,144	14,264	16,237
Operating earnings before interest and taxes	6,685	7,703	7,002
Interest (net)	992	928	833
Income taxes	2,124	2,527	2,300
Net earnings	$ 3,569	$ 4,248	$ 3,869

Berkshire Hathaway Energy (90% owned)	*Earnings (in millions)*		
	2016	*2015*	*2014*
U.K. utilities	$ 367	$ 460	$ 527
Iowa utility	392	292	270
Nevada utilities	559	586	549
PacifiCorp (primarily Oregon and Utah)	1,105	1,026	1,010
Gas pipelines (Northern Natural and Kern River)	413	401	379
Canadian transmission utility	147	170	16
Renewable projects	157	175	194
HomeServices	225	191	139
Other (net)	73	49	54
Operating earnings before corporate interest and taxes	3,438	3,350	3,138
Interest	465	499	427
Income taxes	431	481	616
Net earnings	$ 2,542	$ 2,370	$ 2,095
Earnings applicable to Berkshire	$ 2,287	$ 2,132	$ 1,882

HomeServices may appear out of place in the above table. But it came with our purchase of MidAmerican (now BHE) in 1999 – and we are lucky that it did.

HomeServices owns 38 realty companies with more than 29,000 agents who operate in 28 states. Last year it purchased four realtors, including Houlihan Lawrence, the leader in New York's Westchester County (in a transaction that closed shortly after yearend).

In real estate parlance, representing either a buyer or a seller is called a "side," with the representation of both counting as two sides. Last year, our *owned* realtors participated in 244,000 sides, totaling $86 billion in volume.

HomeServices also *franchises* many operations throughout the country that use our name. We like both aspects of the real estate business and expect to acquire many realtors and franchisees during the next decade.

Manufacturing, Service and Retailing Operations

Our manufacturing, service and retailing operations sell products ranging from lollipops to jet airplanes. Let's look, though, at a summary balance sheet and earnings statement for the entire group.

Balance Sheet 12/31/16 (in millions)

Assets		*Liabilities and Equity*	
Cash and equivalents	$ 8,073	Notes payable	$ 2,054
Accounts and notes receivable	11,183	Other current liabilities	12,464
Inventory	15,727	Total current liabilities	14,518
Other current assets	1,039		
Total current assets	36,022		
		Deferred taxes	12,044
Goodwill and other intangibles	71,473	Term debt and other liabilities	10,943
Fixed assets	18,915	Non-controlling interests	579
Other assets	3,183	Berkshire equity	91,509
	$129,593		$129,593

Earnings Statement (in millions)

	2016	*2015*	*2014*
Revenues	$120,059	$107,825	$97,689
Operating expenses	111,383	100,607	90,788
Interest expense	214	103	109
Pre-tax earnings	8,462	7,115	6,792
Income taxes and non-controlling interests	2,831	2,432	2,324
Net earnings	$ 5,631	$ 4,683	$ 4,468

Included in this financial summary are 44 businesses that report directly to headquarters. But some of these companies, in turn, have many individual operations under their umbrella. For example, Marmon has 175 separate business units, serving widely disparate markets, and Berkshire Hathaway Automotive owns 83 dealerships, operating in nine states.

This collection of businesses is truly a motley crew. Some operations, measured by earnings on unleveraged net *tangible* assets, enjoy terrific returns that, in a couple of instances, exceed 100%. Most are solid businesses generating good returns in the area of 12% to 20%.

A few, however – these are serious blunders I made in my job of capital allocation – produce very poor returns. In most cases, I was wrong when I originally sized up the economic characteristics of these companies or the industries in which they operate, and we are now paying the price for my misjudgments. In a couple of instances, I stumbled in assessing either the fidelity or ability of incumbent managers or ones I later put in place. I will commit more errors; you can count on that. Fortunately, Charlie – never bashful – is around to say "no" to my worst ideas.

Viewed as a single entity, the companies in the manufacturing, service and retailing group are an excellent business. They employed an average of $24 billion of net tangible assets during 2016 and, despite their holding large quantities of excess cash and carrying very little debt, earned 24% after-tax on that capital.

Of course, a business with terrific economics can be a bad investment if it is bought at too high a price. We have paid substantial premiums to net tangible assets for most of our businesses, a cost that is reflected in the large figure we show on our balance sheet for goodwill and other intangibles. Overall, however, we are getting a decent return on the capital we have deployed in this sector. Absent a recession, earnings from the group will likely grow in 2017, in part because Duracell and Precision Castparts (both bought in 2016) will for the first time contribute a full year's earnings to this group. Additionally, Duracell incurred significant transitional costs in 2016 that will not recur.

We have far too many companies in this group to comment on them individually. Moreover, their competitors – both current and potential – read this report. In a few of our businesses, we might be disadvantaged if outsiders knew our numbers. Therefore, in certain of our operations that are not of a size material to an evaluation of Berkshire, we only disclose what is required. You can nevertheless find a good bit of detail about many of our operations on pages 90 - 94. Be aware, though, that it's the growth of the Berkshire forest that counts. It would be foolish to focus over-intently on any single tree.

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For several years I have told you that the income and expense data shown in this section does not conform to GAAP. I have explained that this divergence occurs primarily because of GAAP-ordered rules regarding purchase-accounting adjustments that require the full amortization of certain intangibles over periods averaging about 19 years. In our opinion, most of those amortization "expenses" are not truly an economic cost. Our goal in diverging from GAAP in this section is to present the figures to you in a manner reflecting the way in which Charlie and I view and analyze them.

On page 54 we itemize $15.4 billion of intangibles that are yet to be amortized by annual charges to earnings. (More intangibles to be amortized will be created as we make new acquisitions.) On that page, we show that the 2016 amortization charge to GAAP earnings was $1.5 billion, up $384 million from 2015. My judgment is that about 20% of the 2016 charge is a "real" cost.

Eventually amortization charges fully write off the related asset. When that happens – most often at the 15-year mark – the GAAP earnings we report will increase without any true improvement in the underlying economics of Berkshire's business. (My gift to my successor.)

Now that I've described a GAAP expense that I believe to be overstated, let me move on to a less pleasant distortion produced by accounting rules. The subject this time is GAAP-prescribed depreciation charges, which are necessarily based on historical cost. Yet in certain cases, those charges materially *understate* true economic costs. Countless words were written about this phenomenon in the 1970s and early 1980s, when inflation was rampant. As inflation subsided – thanks to heroic actions by Paul Volcker – the inadequacy of depreciation charges became less of an issue. But the problem still prevails, *big time*, in the railroad industry, where current costs for many depreciable items far outstrip historical costs. The inevitable result is that reported earnings throughout the railroad industry are considerably higher than true economic earnings.

At BNSF, to get down to particulars, our GAAP depreciation charge last year was $2.1 billion. But were we to spend that sum and no more annually, our railroad would soon deteriorate and become less competitive. The reality is that – *simply to hold our own* – we need to spend far more than the cost we show for depreciation. Moreover, a wide disparity will prevail for decades.

All that said, Charlie and I love our railroad, which was one of our better purchases.

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Too many managements – and the number seems to grow every year – are looking for any means to report, *and indeed feature*, "adjusted earnings" that are higher than their company's GAAP earnings. There are many ways for practitioners to perform this legerdemain. Two of their favorites are the omission of "restructuring costs" and "stock-based compensation" as expenses.

Charlie and I *want* managements, *in their commentary*, to describe unusual items – good or bad – that affect the GAAP numbers. After all, the reason we look at these numbers of the past is to make estimates of the future. But a management that regularly attempts to wave away very real costs by highlighting "adjusted per-share earnings" makes us nervous. That's because bad behavior is contagious: CEOs who overtly look for ways to report high numbers tend to foster a culture in which subordinates strive to be "helpful" as well. Goals like that can lead, for example, to insurers underestimating their loss reserves, a practice that has destroyed many industry participants.

Charlie and I cringe when we hear analysts talk admiringly about managements who always "make the numbers." In truth, business is too unpredictable for the numbers always to be met. Inevitably, surprises occur. When they do, a CEO whose focus is centered on Wall Street will be tempted to *make up* the numbers.

Let's get back to the two favorites of "don't-count-this" managers, starting with "restructuring." Berkshire, I would say, has been restructuring from the first day we took over in 1965. Owning only a northern textile business then gave us no other choice. And today a fair amount of restructuring occurs every year at Berkshire. That's because there are always things that need to change in our hundreds of businesses. Last year, as I mentioned earlier, we spent significant sums getting Duracell in shape for the decades ahead.

We have never, however, singled out restructuring charges and told you to ignore them in estimating our normal earning power. If there were to be some truly major expenses in a single year, I would, of course, mention it in my commentary. Indeed, when there is a total rebasing of a business, such as occurred when Kraft and Heinz merged, it is imperative that for several years the huge one-time costs of rationalizing the combined operations be explained clearly to owners. That's precisely what the CEO of Kraft Heinz has done, in a manner approved by the company's directors (who include me). But, to tell owners year after year, "Don't count this," when management is simply making business adjustments that are necessary, is misleading. And too many analysts and journalists fall for this baloney.

To say "stock-based compensation" is not an expense is even more cavalier. CEOs who go down that road are, in effect, saying to shareholders, "If you pay me a bundle in options or restricted stock, don't worry about its effect on earnings. I'll 'adjust' it away."

To explore this maneuver further, join me for a moment in a visit to a make-believe accounting laboratory whose sole mission is to juice Berkshire's *reported* earnings. Imaginative technicians await us, eager to show their stuff.

Listen carefully while I tell these enablers that stock-based compensation usually comprises at least 20% of total compensation for the top three or four executives at most large companies. Pay attention, too, as I explain that Berkshire has several hundred such executives at its subsidiaries and pays them similar amounts, but uses only cash to do so. I further confess that, lacking imagination, I have counted *all* of these payments to Berkshire's executives as an expense.

My accounting minions suppress a giggle and immediately point out that 20% of what is paid these Berkshire managers is tantamount to "cash paid in lieu of stock-based compensation" and is therefore not a "true" expense. So – presto! – Berkshire, too, can have "adjusted" earnings.

Back to reality: If CEOs want to leave out stock-based compensation in reporting earnings, they should be required to affirm *to their owners* one of two propositions: why items of value used to pay employees are not a cost or why a payroll cost should be excluded when calculating earnings.

During the accounting nonsense that flourished during the 1960s, the story was told of a CEO who, as his company revved up to go public, asked prospective auditors, "What is two plus two?" The answer that won the assignment, of course, was, "What number do you have in mind?"

Finance and Financial Products

Our three leasing and rental operations are conducted by CORT (furniture), XTRA (semi-trailers), and Marmon (primarily tank cars but also freight cars, intermodal tank containers and cranes). Each is the leader in its field.

We also include Clayton Homes in this section. This company receives most of its revenue from the sale of manufactured homes, but derives the bulk of its *earnings* from its large mortgage portfolio. Last year, Clayton became America's largest home builder, delivering 42,075 units that accounted for 5% of all new American homes. (In fairness, other large builders do far more *dollar* volume than Clayton because they sell site-built homes that command much higher prices.)

In 2015, Clayton branched out, purchasing its first site-builder. Two similar acquisitions followed in 2016, and more will come. Site-built houses are expected to amount to 3% or so of Clayton's unit sales in 2017 and will likely deliver about 14% of its dollar volume.

Even so, Clayton's focus will always be manufactured homes, which account for about 70% of new American homes costing less than $150,000. Clayton manufactures close to one-half of the total. That is a far cry from Clayton's position in 2003 when Berkshire purchased the company. It then ranked third in the industry in units sold and employed 6,731 people. Now, when its new acquisitions are included, the employee count is 14,677. And that number will increase in the future.

Clayton's earnings in recent years have materially benefited from extraordinarily low interest rates. The company's mortgage loans to home-buyers are at fixed-rates and for long terms (averaging 25 years at inception). But Clayton's own borrowings are short-term credits that re-price frequently. When rates plunge, Clayton's earnings from its portfolio greatly increase. We normally would shun that kind of lend-long, borrow-short approach, which can cause major problems for financial institutions. As a whole, however, Berkshire is always asset-sensitive, meaning that higher short-term rates will benefit our *consolidated* earnings, even as they hurt at Clayton.

Last year Clayton had to foreclose on 8,304 manufactured-housing mortgages, about 2.5% of its total portfolio. Customer demographics help explain that percentage. Clayton's customers are usually lower-income families with mediocre credit scores; many are supported by jobs that will be at risk in any recession; many, similarly, have financial profiles that will be damaged by divorce or death to an extent that would not be typical for a high-income family. Those risks that our customers face are partly mitigated because almost all have a strong desire to own a home and because they enjoy reasonable monthly payments that average only $587, *including* the cost of insurance and property taxes.

Clayton also has long had programs that help borrowers through difficulties. The two most popular are loan extensions and payment forgiveness. Last year about 11,000 borrowers received extensions, and 3,800 had $3.4 million of scheduled payments permanently canceled by Clayton. The company does not earn interest or fees when these loss-mitigation moves are made. Our experience is that 93% of borrowers helped through these programs in the last two years now remain in their homes. Since we lose significant sums on foreclosures – losses last year totaled $150 million – our assistance programs end up helping Clayton as well as its borrowers.

Clayton and Berkshire have been a wonderful partnership. Kevin Clayton came to us with a best-in-class management group and culture. Berkshire, in turn, provided unmatched staying power when the manufactured-home industry fell apart during the Great Recession. (As other lenders to the industry vanished, Clayton supplied credit not only to its own dealers but also to dealers who sold the products of its competitors.) At Berkshire, we never count on synergies when we acquire companies. Truly important ones, however, surfaced after our purchase of Clayton.

Marmon's railcar business experienced a major slowdown in demand last year, which will cause earnings to decline in 2017. Fleet utilization was 91% in December, down from 97% a year earlier, with the drop particularly severe at the large fleet we purchased from General Electric in 2015. Marmon's crane and container rentals have weakened as well.

Big swings in railcar demand have occurred in the past and they will continue. Nevertheless, we very much like this business and expect decent returns on equity capital over the years. Tank cars are Marmon's specialty. People often associate tank cars with the transportation of crude oil; in fact, they are essential to a great variety of shippers.

Over time, we expect to expand our railcar operation. Meanwhile, Marmon is making a number of bolt-on acquisitions whose results are included in the Manufacturing, Service and Retailing section.

Here's the pre-tax earnings recap for our finance-related companies:

	2016	*2015*	*2014*
		(in millions)	
Berkadia (our 50% share)	$ 91	$ 74	$ 122
Clayton	744	706	558
CORT	60	55	49
Marmon – Containers and Cranes	126	192	238
Marmon – Railcars	654	546	442
XTRA	179	172	147
Net financial income*	276	341	283
	$ 2,130	$ 2,086	$ 1,839

* Excludes capital gains or losses

Investments

Below we list our fifteen common stock investments that at yearend had the largest market value. We exclude our Kraft Heinz holding because Berkshire is part of a control group and therefore must account for this investment on the "equity" method. The 325,442,152 shares Berkshire owns of Kraft Heinz are carried on our balance sheet at a GAAP figure of $15.3 billion and had a yearend market value of $28.4 billion. Our cost basis for the shares is $9.8 billion.

			12/31/16	
*Shares**	*Company*	*Percentage of Company Owned*	*Cost***	*Market*
			(in millions)	
151,610,700	American Express Company	16.8	$ 1,287	$ 11,231
61,242,652	Apple Inc.	1.1	6,747	7,093
6,789,054	Charter Communications, Inc.	2.5	1,210	1,955
400,000,000	The Coca-Cola Company	9.3	1,299	16,584
54,934,718	Delta Airlines Inc.	7.5	2,299	2,702
11,390,582	The Goldman Sachs Group, Inc.	2.9	654	2,727
81,232,303	International Business Machines Corp.	8.5	13,815	13,484
24,669,778	Moody's Corporation	12.9	248	2,326
74,587,892	Phillips 66	14.4	5,841	6,445
22,169,930	Sanofi	1.7	1,692	1,791
43,203,775	Southwest Airlines Co.	7.0	1,757	2,153
101,859,335	U.S. Bancorp	6.0	3,239	5,233
26,620,184	United Continental Holdings Inc.	8.4	1,477	1,940
43,387,980	USG Corp.	29.7	836	1,253
500,000,000	Wells Fargo & Company	10.0	12,730	27,555
	Others		10,697	17,560
	Total Common Stocks Carried at Market		$ 65,828	$ 122,032

* Excludes shares held by pension funds of Berkshire subsidiaries.

** This is our actual purchase price and also our tax basis; GAAP "cost" differs in a few cases because of write-downs that have been required under GAAP rules.

Some of the stocks in the table are the responsibility of either Todd Combs or Ted Weschler, who work with me in managing Berkshire's investments. Each, *independently*, manages more than $10 billion; I usually learn about decisions they have made by looking at monthly trade sheets. Included in the $21 billion that the two manage is about $7.6 billion of pension trust assets of certain Berkshire subsidiaries. As noted, pension investments are not included in the preceding tabulation of Berkshire holdings.

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Excluded from the table – *but important* – is our ownership of $5 billion of preferred stock issued by Bank of America. This stock, which pays us $300 million per year, also carries with it a valuable warrant allowing Berkshire to purchase 700 million common shares of Bank of America for $5 billion at any time before September 2, 2021. At yearend, that privilege would have delivered us a profit of $10.5 billion. If it wishes, Berkshire can use its preferred shares to satisfy the $5 billion cost of exercising the warrant.

If the dividend rate on Bank of America common stock – now 30 cents annually – should rise above 44 cents before 2021, we would anticipate making a cashless exchange of our preferred into common. If the common dividend remains below 44 cents, it is highly probable that we will exercise the warrant immediately before it expires.

Many of our investees, including Bank of America, have been repurchasing shares, some quite aggressively. We very much like this behavior because we believe the repurchased shares have in most cases been underpriced. (Undervaluation, after all, is why we own these positions.) When a company grows and outstanding shares shrink, good things happen for shareholders.

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It's important for you to understand that 95% of the $86 billion of "cash and equivalents" (which in my mind includes U.S. Treasury Bills) shown on our balance sheet are held by entities in the United States and, consequently, is not subject to any repatriation tax. Moreover, repatriation of the remaining funds would trigger only minor taxes because much of that money has been earned in countries that themselves impose meaningful corporate taxes. Those payments become an offset to U.S. tax when money is brought home.

These explanations are important because many cash-rich American companies hold a large portion of their funds in jurisdictions imposing very low taxes. Such companies hope – and may well be proved right – that the tax levied for bringing these funds to America will soon be materially reduced. In the meantime, these companies are limited as to how they can use that cash. In other words, off-shore cash is simply not worth as much as cash held at home.

Berkshire has a partial offset to the favorable geographical location of its cash, which is that much of it is held in our insurance subsidiaries. Though we have many alternatives for investing this cash, we do not have the unlimited choices that we would enjoy if the cash were held by the parent company, Berkshire. We *do* have an ability annually to distribute large amounts of cash from our insurers to the parent – though here, too, there are limits. Overall, cash held at our insurers is a very valuable asset, but one slightly less valuable to us than is cash held at the parent level.

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Sometimes the comments of shareholders or media imply that we will own certain stocks "forever." It is true that we own some stocks that I have no intention of selling for as far as the eye can see (and we're talking 20/20 vision). But we have made no *commitment* that Berkshire will hold *any* of its marketable securities forever.

Confusion about this point may have resulted from a too-casual reading of Economic Principle 11 on pages 110 - 111, which has been included in our annual reports since 1983. That principle covers *controlled businesses*, not marketable securities. This year I've added a final sentence to #11 to ensure that our owners understand that we regard any marketable security as available for sale, however unlikely such a sale now seems.

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Before we leave this investment section, a few educational words about dividends and taxes: Berkshire, like most corporations, nets considerably *more* from a dollar of dividends than it reaps from a dollar of capital gains. That will probably surprise those of our shareholders who are accustomed to thinking of capital gains as the route to tax-favored returns.

But here's the *corporate* math. Every $1 of capital gains that a corporation realizes carries with it 35 cents of federal income tax (and often state income tax as well). The tax on dividends received from *domestic* corporations, however, is consistently lower, though rates vary depending on the status of the recipient.

For a non-insurance company – which describes Berkshire Hathaway, the parent – the federal tax rate is effectively 10 ½ cents per $1 of dividends received. Furthermore, a non-insurance company that owns more than 20% of an investee owes taxes of only 7 cents per $1 of dividends. That rate applies, for example, to the substantial dividends we receive from our 27% ownership of Kraft Heinz, all of it held by the parent company. (The rationale for the low corporate taxes on dividends is that the dividend-paying investee has already paid its own corporate tax on the earnings being distributed.)

Berkshire's insurance subsidiaries pay a tax rate on dividends that is somewhat higher than that applying to non-insurance companies, though the rate is still well below the 35% hitting capital gains. Property/casualty companies owe about 14% in taxes on most dividends they receive. Their tax rate falls, though, to about 11% if they own more than 20% of a U.S.-based investee.

And that's our tax lesson for today.

"The Bet" (or how your money finds its way to Wall Street)

In this section, you will encounter, early on, the story of an investment bet I made nine years ago and, next, some strong opinions I have about investing. As a starter, though, I want to briefly describe Long Bets, a unique establishment that played a role in the bet.

Long Bets was seeded by Amazon's Jeff Bezos and operates as a non-profit organization that administers just what you'd guess: long-term bets. To participate, "proposers" post a proposition at Longbets.org that will be proved right or wrong at a distant date. They then wait for a contrary-minded party to take the other side of the bet. When a "doubter" steps forward, each side names a charity that will be the beneficiary if its side wins; parks its wager with Long Bets; and posts a short essay defending its position on the Long Bets website. When the bet is concluded, Long Bets pays off the winning charity.

Here are examples of what you will find on Long Bets' very interesting site:

In 2002, entrepreneur Mitch Kapor asserted that "By 2029 no computer – or 'machine intelligence' – will have passed the Turing Test," which deals with whether a computer can successfully impersonate a human being. Inventor Ray Kurzweil took the opposing view. Each backed up his opinion with $10,000. I don't know who will win this bet, but I will confidently wager that no computer will ever replicate Charlie.

That same year, Craig Mundie of Microsoft asserted that pilotless planes would routinely fly passengers by 2030, while Eric Schmidt of Google argued otherwise. The stakes were $1,000 each. To ease any heartburn Eric might be experiencing from his outsized exposure, I recently offered to take a piece of his action. He promptly laid off $500 with me. (I like his assumption that I'll be around in 2030 to contribute my payment, should we lose.)

Now, to my bet and its history. In Berkshire's 2005 annual report, I argued that active investment management by professionals – in aggregate – would over a period of years underperform the returns achieved by rank amateurs who simply sat still. I explained that the massive fees levied by a variety of "helpers" would leave their clients – *again in aggregate* – worse off than if the amateurs simply invested in an unmanaged low-cost index fund. (See pages 114 - 115 for a reprint of the argument as I originally stated it in the 2005 report.)

Subsequently, I publicly offered to wager $500,000 that no investment pro could select a set of at least five hedge funds – wildly-popular and high-fee investing vehicles – that would over an extended period match the performance of an unmanaged S&P-500 index fund charging only token fees. I suggested a ten-year bet and named a low-cost Vanguard S&P fund as my contender. I then sat back and waited expectantly for a parade of fund managers – who could include their own fund as one of the five – to come forth and defend their occupation. After all, these managers urged *others* to bet billions on their abilities. Why should they fear putting a little of their own money on the line?

What followed was the sound of silence. Though there are thousands of professional investment managers who have amassed staggering fortunes by touting their stock-selecting prowess, only one man – Ted Seides – stepped up to my challenge. Ted was a co-manager of Protégé Partners, an asset manager that had raised money from limited partners to form a fund-of-funds – in other words, a fund that invests in multiple hedge funds.

I hadn't known Ted before our wager, but I like him and admire his willingness to put his money where his mouth was. He has been both straight-forward with me and meticulous in supplying all the data that both he and I have needed to monitor the bet.

For Protégé Partners' side of our ten-year bet, Ted picked five funds-of-funds whose results were to be averaged and compared against my Vanguard S&P index fund. The five he selected had invested their money in more than 100 hedge funds, which meant that the overall performance of the funds-of-funds would not be distorted by the good or poor results of a single manager.

Each fund-of-funds, of course, operated with a layer of fees that sat above the fees charged by the hedge funds in which it had invested. In this doubling-up arrangement, the larger fees were levied by the underlying hedge funds; each of the fund-of-funds imposed an additional fee for its presumed skills in selecting hedge-fund managers.

Here are the results for the first nine years of the bet – figures leaving no doubt that Girls Inc. of Omaha, the charitable beneficiary I designated to get any bet winnings I earned, will be the organization eagerly opening the mail next January.

Year	Fund of Funds A	Fund of Funds B	Fund of Funds C	Fund of Funds D	Fund of Funds E	S&P Index Fund
2008	-16.5%	-22.3%	-21.3%	-29.3%	-30.1%	-37.0%
2009	11.3%	14.5%	21.4%	16.5%	16.8%	26.6%
2010	5.9%	6.8%	13.3%	4.9%	11.9%	15.1%
2011	-6.3%	-1.3%	5.9%	-6.3%	-2.8%	2.1%
2012	3.4%	9.6%	5.7%	6.2%	9.1%	16.0%
2013	10.5%	15.2%	8.8%	14.2%	14.4%	32.3%
2014	4.7%	4.0%	18.9%	0.7%	-2.1%	13.6%
2015	1.6%	2.5%	5.4%	1.4%	-5.0%	1.4%
2016	-2.9%	1.7%	-1.4%	2.5%	4.4%	11.9%
Gain to Date	8.7%	28.3%	62.8%	2.9%	7.5%	85.4%

Footnote: Under my agreement with Protégé Partners, the names of these funds-of-funds have never been publicly disclosed. I, however, see their annual audits.

The compounded annual increase to date for the index fund is 7.1%, which is a return that could easily prove typical for the stock market over time. That's an important fact: A particularly weak nine years for the market over the lifetime of this bet would have probably helped the relative performance of the hedge funds, because many hold large "short" positions. Conversely, nine years of exceptionally high returns from stocks would have provided a tailwind for index funds.

Instead we operated in what I would call a "neutral" environment. In it, the five funds-of-funds delivered, through 2016, an average of only 2.2%, compounded annually. That means $1 million invested in those funds would have gained $220,000. The index fund would meanwhile have gained $854,000.

Bear in mind that every one of the 100-plus managers of the underlying hedge funds had a huge financial incentive to do his or her best. Moreover, the five funds-of-funds managers that Ted selected were similarly incentivized to select the best hedge-fund managers possible because the five were entitled to performance fees based on the results of the underlying funds.

I'm certain that in almost all cases the managers at both levels were honest and intelligent people. But the results for their investors were dismal – *really* dismal. And, alas, the huge fixed fees charged by all of the funds and funds-of-funds involved – fees that were totally unwarranted by performance – were such that their managers were showered with compensation over the nine years that have passed. As Gordon Gekko might have put it: "Fees never sleep."

The underlying hedge-fund managers in our bet received payments from their limited partners that likely averaged a bit under the prevailing hedge-fund standard of "2 and 20," meaning a 2% annual fixed fee, payable even when losses are huge, and 20% of profits with no clawback (if good years were followed by bad ones). Under this lopsided arrangement, a hedge fund operator's ability to simply pile up assets under management has made many of these managers extraordinarily rich, even as their investments have performed poorly.

Still, we're not through with fees. Remember, there were the fund-of-funds managers to be fed as well. These managers received an additional fixed amount that was usually set at 1% of assets. Then, despite the terrible overall record of the five funds-of-funds, some experienced a few good years and collected "performance" fees. Consequently, I estimate that over the nine-year period roughly 60% – gulp! – of *all* gains achieved by the five funds-of-funds were diverted to the two levels of managers. That was their misbegotten reward for accomplishing something far short of what their many hundreds of limited partners could have effortlessly – and with virtually *no* cost – achieved on their own.

In my opinion, the disappointing results for hedge-fund investors that this bet exposed are almost certain to recur in the future. I laid out my reasons for that belief in a statement that was posted on the Long Bets website when the bet commenced (and that is still posted there). Here is what I asserted:

> Over a ten-year period commencing on January 1, 2008, and ending on December 31, 2017, the S&P 500 will outperform a portfolio of funds of hedge funds, when performance is measured on a basis net of fees, costs and expenses.
>
> A lot of very smart people set out to do better than average in securities markets. Call them active investors.
>
> Their opposites, passive investors, will by definition do about average. In aggregate their positions will more or less approximate those of an index fund. Therefore, the balance of the universe—the active investors—must do about average as well. However, these investors will incur far greater costs. So, on balance, their aggregate results after these costs will be worse than those of the passive investors.
>
> Costs skyrocket when large annual fees, large performance fees, and active trading costs are all added to the active investor's equation. Funds of hedge funds accentuate this cost problem because their fees are superimposed on the large fees charged by the hedge funds in which the funds of funds are invested.
>
> A number of smart people are involved in running hedge funds. But to a great extent their efforts are self-neutralizing, and their IQ will not overcome the costs they impose on investors. Investors, on average and over time, will do better with a low-cost index fund than with a group of funds of funds.

So that was my argument – and now let me put it into a simple equation. If Group A (active investors) and Group B (do-nothing investors) comprise the total investing universe, and B is destined to achieve average results before costs, so, too, must A. Whichever group has the lower costs will win. (The academic in me requires me to mention that there is a very minor point – not worth detailing – that *slightly* modifies this formulation.) And if Group A has exorbitant costs, its shortfall will be substantial.

There are, of course, some skilled individuals who are highly likely to out-perform the S&P over long stretches. In my lifetime, though, I've identified – *early on* – only ten or so professionals that I expected would accomplish this feat.

There are no doubt many hundreds of people – perhaps thousands – whom I have never met and whose abilities would equal those of the people I've identified. The job, after all, is not impossible. The problem simply is that the great majority of managers who attempt to over-perform will fail. The probability is also very high that the person soliciting your funds will not be the exception who does well. Bill Ruane – a truly wonderful human being and a man whom I identified 60 years ago as almost certain to deliver superior investment returns over the long haul – said it well: "In investment management, the progression is from the innovators to the imitators to the swarming incompetents."

Further complicating the search for the rare high-fee manager who is worth his or her pay is the fact that some investment professionals, just as some amateurs, will be lucky over short periods. If 1,000 managers make a market prediction at the beginning of a year, it's very likely that the calls of at least one will be correct for nine consecutive years. Of course, 1,000 monkeys would be just as likely to produce a seemingly all-wise prophet. But there *would* remain a difference: The lucky monkey would not find people standing in line to invest with him.

Finally, there are three connected realities that cause investing success to breed failure. First, a good record quickly attracts a torrent of money. Second, huge sums invariably act as an anchor on investment performance: What is easy with millions, struggles with billions (sob!). Third, most managers will nevertheless seek new money because of their *personal* equation – namely, the more funds they have under management, the more their fees.

These three points are hardly new ground for me: In January 1966, when I was managing $44 *million*, I wrote my limited partners: "I feel substantially greater size is more likely to harm future results than to help them. This might not be true for my own personal results, but it is likely to be true for your results. Therefore, . . . I intend to admit no additional partners to BPL. I have notified Susie that if we have any more children, it is up to her to find some other partnership for them."

The bottom line: When trillions of dollars are managed by Wall Streeters charging high fees, it will usually be the managers who reap outsized profits, not the clients. Both large and small investors should stick with low-cost index funds.

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If a statue is ever erected to honor the person who has done the most for American investors, the hands-down choice should be Jack Bogle. For decades, Jack has urged investors to invest in ultra-low-cost index funds. In his crusade, he amassed only a tiny percentage of the wealth that has typically flowed to managers who have promised their investors large rewards while delivering them nothing – or, as in our bet, *less* than nothing – of added value.

In his early years, Jack was frequently mocked by the investment-management industry. Today, however, he has the satisfaction of knowing that he helped millions of investors realize far better returns on their savings than they otherwise would have earned. He is a hero to them and to me.

****

Over the years, I've often been asked for investment advice, and in the process of answering I've learned a good deal about human behavior. My regular recommendation has been a low-cost S&P 500 index fund. To their credit, my friends who possess only modest means have usually followed my suggestion.

I believe, however, that *none* of the mega-rich individuals, institutions or pension funds has followed that same advice when I've given it to them. Instead, these investors politely thank me for my thoughts and depart to listen to the siren song of a high-fee manager or, in the case of many institutions, to seek out another breed of hyper-helper called a consultant.

That professional, however, faces a problem. Can you imagine an investment consultant telling clients, year after year, to keep adding to an index fund replicating the S&P 500? That would be career suicide. Large fees flow to these hyper-helpers, however, if they recommend small managerial shifts every year or so. That advice is often delivered in esoteric gibberish that explains why fashionable investment "styles" or current economic trends make the shift appropriate.

The wealthy are accustomed to feeling that it is their lot in life to get the best food, schooling, entertainment, housing, plastic surgery, sports ticket, you name it. Their money, they feel, should buy them something superior compared to what the masses receive.

In many aspects of life, indeed, wealth does command top-grade products or services. For that reason, the financial "elites" – wealthy individuals, pension funds, college endowments and the like – have great trouble meekly signing up for a financial product or service that is available as well to people investing only a few thousand dollars. This reluctance of the rich normally prevails even though the product at issue is –on an expectancy basis – clearly the best choice. My calculation, admittedly very rough, is that the search by the elite for superior investment advice has caused it, in aggregate, to waste more than $100 billion over the past decade. Figure it out: Even a 1% fee on a few trillion dollars adds up. Of course, not every investor who put money in hedge funds ten years ago lagged S&P returns. But I believe my calculation of the aggregate shortfall is conservative.

Much of the financial damage befell pension funds for public employees. Many of these funds are woefully underfunded, in part because they have suffered a double whammy: poor investment performance accompanied by huge fees. The resulting shortfalls in their assets will for decades have to be made up by local taxpayers.

Human behavior won't change. Wealthy individuals, pension funds, endowments and the like will continue to feel they deserve something "extra" in investment advice. Those advisors who cleverly play to this expectation will get very rich. This year the magic potion may be hedge funds, next year something else. The likely result from this parade of promises is predicted in an adage: "When a person with money meets a person with experience, the one with experience ends up with the money and the one with money leaves with experience."

Long ago, a brother-in-law of mine, Homer Rogers, was a commission agent working in the Omaha stockyards. I asked him how he induced a farmer or rancher to hire him to handle the sale of their hogs or cattle to the buyers from the big four packers (Swift, Cudahy, Wilson and Armour). After all, hogs were hogs and the buyers were experts who knew to the penny how much any animal was worth. How then, I asked Homer, could any sales agent get a better result than any other?

Homer gave me a pitying look and said: "Warren, it's not how you sell 'em, it's how you tell 'em." What worked in the stockyards continues to work in Wall Street.

* * * * * * * * * * * *

And, finally, let me offer an olive branch to Wall Streeters, many of them good friends of mine. Berkshire *love*s to pay fees – even outrageous fees – to investment bankers who bring us acquisitions. Moreover, we have paid substantial sums for over-performance to our two in-house investment managers – and we hope to make even larger payments to them in the future.

To get biblical (Ephesians 3:18), I know the height and the depth and the length and the breadth of the energy flowing from that simple four-letter word – fees – when it is spoken to Wall Street. And when that energy delivers value to Berkshire, I will cheerfully write a big check.

The Annual Meeting

Last year we partnered with Yahoo to air the first-ever webcast of our annual meeting. Thanks to Andy Serwer and his Yahoo crew, the production was a success in all respects, registering 1.1 million unique visits in real-time viewing and 11.5 million more in replays (many of those, to be sure, called up by viewers interested in only certain segments of the webcast).

Berkshire's thank-you mail for initiating the webcast included many notes from three constituencies: the elderly who find travel difficult; the thrifty who find it expensive to travel to Omaha; and those who cannot attend a Saturday meeting for religious reasons.

The webcast cut attendance at last year's meeting to about 37,000 people (we can't get a precise count), which was down about 10%. Nevertheless, both Berkshire's subsidiaries and Omaha hotels and restaurants racked up huge sales. Nebraska Furniture Mart's sales broke their 2015 record volume by 3%, with the Omaha store recording one-week volume of $45.5 million.

Our Berkshire exhibitors at CenturyLink were open from noon until 5 p.m. on Friday and drew a crowd of 12,000 bargain-hunting shareholders. We will repeat those Friday shopping hours this year on May 5th. Bring money.

The annual meeting falls on May 6th and will again be webcast by Yahoo, whose web address is https://finance.yahoo.com/brklivestream. The webcast will go live at 9 a.m. Central Daylight Time. Yahoo will interview directors, managers, stockholders and celebrities before the meeting and during the lunch break. Both those interviews and meeting will be translated simultaneously into Mandarin.

For those attending the meeting in person, the doors at the CenturyLink will open at 7:00 a.m. on Saturday to facilitate shopping prior to our shareholder movie, which begins at 8:30. The question-and-answer period will start at 9:30 and run until 3:30, with a one-hour lunch break at noon. Finally, at 3:45 we will begin the formal shareholder meeting. It will run an hour or so. That is somewhat longer than usual because three proxy items are to be presented by their proponents, who will be given a reasonable amount of time to state their case.

On Saturday morning, we will have our sixth International Newspaper Tossing Challenge. Our target will again be the porch of a Clayton Home, located precisely 35 feet from the throwing line. When I was a teenager – in my one brief flirtation with honest labor – I delivered about 500,000 papers. So I think I'm pretty good at this game. Challenge me! Humiliate me! Knock me down a peg! The papers will run 36 to 42 pages, and you must fold them yourself (no rubber bands allowed). The competition will begin about 7:45, and I'll take on ten or so competitors selected a few minutes earlier by my assistant, Deb Bosanek.

Your venue for shopping will be the 194,300-square-foot hall that adjoins the meeting and in which products from dozens of our subsidiaries will be for sale. Say hello to the many Berkshire managers who will be captaining their exhibits. And be sure to view the terrific BNSF railroad layout that salutes all of our companies. Your children (and you!) will be enchanted with it.

Brooks, our running-shoe company, will again have a special commemorative shoe to offer at the meeting. After you purchase a pair, wear them on Sunday at our fourth annual "Berkshire 5K," an 8 a.m. race starting at the CenturyLink. Full details for participating will be included in the Visitor's Guide that will be sent to you with your meeting credentials. Entrants in the race will find themselves running alongside many of Berkshire's managers, directors and associates. (Charlie and I, however, will sleep in; the fudge and peanut brittle we eat throughout the Saturday meeting takes its toll.) Participation in the 5K grows every year. Help us set another record.

A GEICO booth in the shopping area will be staffed by a number of the company's top counselors from around the country. At last year's meeting, we set a record for policy sales, up 21% from 2015. I predict we will be up again this year.

So stop by for a quote. In most cases, GEICO will be able to give you a shareholder discount (usually 8%). This special offer is permitted by 44 of the 51 jurisdictions in which we operate. (One supplemental point: The discount is not additive if you qualify for another discount, such as that available to certain groups.) Bring the details of your existing insurance and check out our price. We can save many of you real money. Spend the savings on other Berkshire products.

Be sure to visit the Bookworm. This Omaha-based retailer will carry about 35 books and DVDs, among them a couple of new titles. The best book I read last year was *Shoe Dog*, by Nike's Phil Knight. Phil is a very wise, intelligent and competitive fellow who is also a gifted storyteller. The Bookworm will have piles of *Shoe Dog* as well as several investment classics by Jack Bogle.

The Bookworm will once again offer our history of the highlights (and lowlights) of Berkshire's first 50 years. Non-attendees of the meeting can find the book on eBay. Just type in: *Berkshire Hathaway Inc. Celebrating 50 years of a Profitable Partnership* (2^{nd} Edition).

An attachment to the proxy material that is enclosed with this report explains how you can obtain the credential you will need for admission to both the meeting and other events. Keep in mind that airlines have sometimes jacked up prices for the Berkshire weekend – though I must admit I have developed some tolerance, bordering on enthusiasm, for that practice now that Berkshire has made large investments in America's four major carriers. Nevertheless, if you are coming from far away, compare the cost of flying to Kansas City vs. Omaha. The drive between the two cities is about $2^1/_2$ hours, and it may be that Kansas City can save you significant money. The savings for a couple could run to $1,000 or more. Spend that money with us.

At Nebraska Furniture Mart, located on a 77-acre site on 72^{nd} Street between Dodge and Pacific, we will again be having "Berkshire Weekend" discount pricing. To obtain the Berkshire discount at NFM, you must make your purchases between Tuesday, May 2^{nd} and Monday, May 8^{th} inclusive, and must also present your meeting credential. The period's special pricing will even apply to the products of several prestigious manufacturers that normally have ironclad rules against discounting but which, in the spirit of our shareholder weekend, have made an exception for you. We appreciate their cooperation. During "Berkshire Weekend," NFM will be open from 10 a.m. to 9 p.m. Monday through Friday, 10 a.m. to 9:30 p.m. on Saturday and 10 a.m. to 8 p.m. on Sunday. From 5:30 p.m. to 8 p.m. on Saturday, NFM is hosting a picnic to which you are all invited.

This year we have good news for shareholders in the Kansas City and Dallas metro markets who can't attend the meeting or perhaps prefer the webcast. From May 2^{nd} through May 8^{th}, shareholders who present meeting credentials or other evidence of their Berkshire ownership (such as brokerage statements) to their local NFM store will receive the same discounts enjoyed by those visiting the Omaha store.

At Borsheims, we will again have two shareholder-only events. The first will be a cocktail reception from 6 p.m. to 9 p.m. on Friday, May 5^{th}. The second, the main gala, will be held on Sunday, May 7^{th}, from 9 a.m. to 4 p.m. On Saturday, we will remain open until 6 p.m. Remember, the more you buy, the more you save (or so my daughter tells me when we visit the store).

We will have huge crowds at Borsheims throughout the weekend. For your convenience, therefore, shareholder prices will be available from Monday, May 1st through Saturday, May 13th. During that period, please identify yourself as a shareholder either by presenting your meeting credential or a brokerage statement showing you own our stock.

On Sunday, in the mall outside of Borsheims, Norman Beck, a remarkable magician and motivational speaker from Dallas, will bewilder onlookers. On the upper level, we will have Bob Hamman and Sharon Osberg, two of the world's top bridge experts, available to play with our shareholders on Sunday afternoon. If they suggest wagering on the game, change the subject. I will join them at some point and hope Ajit, Charlie and Bill Gates will do so also.

My friend, Ariel Hsing, will be in the mall as well on Sunday, taking on challengers at table tennis. I met Ariel when she was nine, and even then I was unable to score a point against her. Ariel represented the United States in the 2012 Olympics. Now, she's a senior at Princeton (after interning last summer at JPMorgan Chase). If you don't mind embarrassing yourself, test your skills against her, beginning at 1 p.m. Bill Gates did pretty well playing Ariel last year, so he may be ready to again challenge her. (My advice: Bet on Ariel.)

Gorat's will be open exclusively for Berkshire shareholders on Sunday, May 7th, serving from 1 p.m. until 10 p.m. To make a reservation at Gorat's, call 402-551-3733 on April 3rd (*but not before*). Show you are a sophisticated diner by ordering the T-bone with hash browns.

We will have the same three financial journalists lead the question-and-answer period at the meeting, asking Charlie and me questions that shareholders have submitted to them by e-mail. The journalists and their e-mail addresses are: Carol Loomis, the preeminent business journalist of her time, who may be e-mailed at loomisbrk@gmail.com; Becky Quick, of CNBC, at BerkshireQuestions@cnbc.com; and Andrew Ross Sorkin, of the New York Times, at arsorkin@nytimes.com.

From the questions submitted, each journalist will choose the six he or she decides are the most interesting and important to shareholders. The journalists have told me your question has the best chance of being selected if you keep it concise, avoid sending it in at the last moment, make it Berkshire-related and include no more than two questions in any e-mail you send them. (In your e-mail, let the journalist know if you would like your name mentioned if your question is asked.)

An accompanying set of questions will be asked by three analysts who follow Berkshire. This year the insurance specialist will be Jay Gelb of Barclays. Questions that deal with our non-insurance operations will come from Jonathan Brandt of Ruane, Cunniff & Goldfarb and Gregg Warren of Morningstar. Since what we will be conducting is a *shareholders'* meeting, our hope is that the analysts and journalists will ask questions that add to our owners' understanding and knowledge of their investment.

Neither Charlie nor I will get so much as a clue about the questions headed our way. Some will be tough, for sure, and that's the way we like it. Multi-part questions aren't allowed; we want to give as many questioners as possible a shot at us. Our goal is for you to leave the meeting knowing more about Berkshire than when you came and for you to have a good time while in Omaha.

All told, we expect at least 54 questions, which will allow for six from each analyst and journalist and for 18 from the audience. The questioners from the audience will be chosen by means of 11 drawings that will take place at 8:15 a.m. on the morning of the annual meeting. Each of the 11 microphones installed in the arena and main overflow room will host, so to speak, a drawing.

While I'm on the subject of our owners' gaining knowledge, let me remind you that Charlie and I believe all shareholders should simultaneously have access to new information that Berkshire releases and, if possible, should also have adequate time to digest and analyze it before any trading takes place. That's why we try to issue financial data late on Fridays or early on Saturdays and why our annual meeting is always held on a Saturday (a day that also eases traffic and parking problems).

We do not follow the common practice of talking one-on-one with large institutional investors or analysts, treating them instead as we do all other shareholders. There is no one more important to us than the shareholder of limited means who trusts us with a substantial portion of his or her savings. As I run the company day-to-day – and as I write this letter – that is the shareholder whose image is in my mind.

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For good reason, I regularly extol the accomplishments of our operating managers. They are truly All-Stars who run their businesses as if they were the only asset owned by their families. I also believe the mindset of our managers to be as shareholder-oriented as can be found in the universe of large publicly-owned companies. Most of our managers have no financial need to work. The joy of hitting business "home runs" means as much to them as their paycheck.

Equally important, however, are the men and women who work with me at our corporate office. This team efficiently deals with a multitude of SEC and other regulatory requirements, files a 30,450-page Federal income tax return, oversees the filing of 3,580 state tax returns, responds to countless shareholder and media inquiries, gets out the annual report, prepares for the country's largest annual meeting, coordinates the Board's activities, fact-checks this letter – and the list goes on and on.

They handle all of these business tasks cheerfully and with unbelievable efficiency, making my life easy and pleasant. Their efforts go beyond activities strictly related to Berkshire: Last year, for example, they dealt with the 40 universities (selected from 200 applicants) who sent students to Omaha for a Q&A day with me. They also handle all kinds of requests that I receive, arrange my travel, and even get me hamburgers and French fries (smothered in Heinz ketchup, of course) for lunch. In addition, they cheerfully pitch in to help Carrie Sova – our talented ringmaster at the annual meeting – deliver an interesting and entertaining weekend for our shareholders. They are proud to work for Berkshire, and I am proud of them.

I'm a lucky guy, very fortunate in being surrounded by this excellent staff, a team of highly-talented operating managers and a boardroom of very wise and experienced directors. Come to Omaha – the cradle of capitalism – on May 6th and meet the Berkshire Bunch. All of us look forward to seeing you.

February 25, 2017

Warren E. Buffett
Chairman of the Board

BERKSHIRE HATHAWAY INC.
ACQUISITION CRITERIA

We are eager to hear *from principals or their representatives* about businesses that meet all of the following criteria:

(1) Large purchases (at least $75 million of pre-tax earnings unless the business will fit into one of our existing units),
(2) Demonstrated consistent earning power (future projections are of no interest to us, nor are "turnaround" situations),
(3) Businesses earning good returns on equity while employing little or no debt,
(4) Management in place (we can't supply it),
(5) Simple businesses (if there's lots of technology, we won't understand it),
(6) An offering price (we don't want to waste our time or that of the seller by talking, even preliminarily, about a transaction when price is unknown).

The larger the company, the greater will be our interest: We would like to make an acquisition in the $5-20 billion range. *We are not interested, however, in receiving suggestions about purchases we might make in the general stock market.*

We will not engage in unfriendly takeovers. We can promise complete confidentiality and a very fast answer – customarily within five minutes – as to whether we're interested. We prefer to buy for cash, but will consider issuing stock when we receive as much in intrinsic business value as we give. *We don't participate in auctions*.

Charlie and I frequently get approached about acquisitions that don't come close to meeting our tests: We've found that if you advertise an interest in buying collies, a lot of people will call hoping to sell you their cocker spaniels. A line from a country song expresses our feeling about new ventures, turnarounds, or auction-like sales: "When the phone don't ring, you'll know it's me."

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, 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, 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.

BERKSHIRE HATHAWAY INC.

BUSINESS ACTIVITIES

Berkshire Hathaway Inc. is a holding company owning subsidiaries that engage in a number of diverse business activities including insurance and reinsurance, freight rail transportation, utilities and energy, finance, manufacturing, services and retailing. Included in the group of subsidiaries that underwrite insurance and reinsurance is GEICO, the second largest private passenger auto insurer in the United States and two of the largest reinsurers in the world, General Re and the Berkshire Hathaway Reinsurance Group. Other subsidiaries that underwrite insurance include National Indemnity Company, National Fire & Marine Insurance Company, National Liability and Fire Insurance Company, Berkshire Hathaway Homestate Companies, Berkshire Hathaway Specialty Insurance Company, Medical Protective Company, the Berkshire Hathaway GUARD Insurance Companies, Applied Underwriters, U.S. Liability Insurance Company, Central States Indemnity Company, and Berkshire Hathaway Life Insurance Company of Nebraska. Our finance and financial products businesses primarily engage in consumer lending (Clayton Homes, Inc.), transportation equipment and furniture leasing (UTLX, XTRA and CORT) and proprietary investing strategies.

Burlington Northern Santa Fe, LLC ("BNSF") is a holding company that, through its subsidiaries, is engaged primarily in the freight rail transportation business. BNSF's rail operations make up one of the largest railroad systems in North America. Berkshire Hathaway Energy Company ("BHE") is an international energy holding company owning a wide variety of operating companies engaged in the generation, transmission and distribution of energy. Among BHE's operating energy businesses are Northern Powergrid, MidAmerican Energy Company, PacifiCorp, NV Energy, BHE Pipeline Group, BHE Renewables and AltaLink. In addition, BHE owns HomeServices of America, a real estate brokerage firm. McLane Company is a wholesale distributor of groceries and nonfood items to discount retailers, convenience stores, restaurants and others. The Marmon Group is an international association of approximately 175 manufacturing businesses, including UTLX, that operate independently within diverse business sectors. The Lubrizol Corporation is a specialty chemical company that produces and supplies chemical products for transportation, industrial and consumer markets. IMC International Metalworking Companies is an industry leader in the metal cutting tools business. Precision Castparts is a worldwide diversified manufacturer of complex metal components and products serving the aerospace, power and general industrial markets.

Numerous business activities are conducted through our other manufacturing, services and retailing subsidiaries. Shaw Industries is the world's largest manufacturer of tufted broadloom carpet. Benjamin Moore is a formulator, manufacturer and retailer of architectural and industrial coatings. Johns Manville is a leading manufacturer of insulation and building products. Acme Building Brands is a manufacturer of face brick and concrete masonry products. MiTek is a diversified global supplier of software, engineered products and services to the residential and commercial construction sectors. Fruit of the Loom, Russell Athletic, Vanity Fair, Garan, Fechheimer, H.H. Brown Shoe Group, Justin Brands, and Brooks manufacture, license and distribute apparel and footwear under a variety of brand names. FlightSafety International provides training to aircraft operators. NetJets provides fractional ownership programs for general aviation aircraft. Nebraska Furniture Mart, R.C. Willey Home Furnishings, Star Furniture and Jordan's Furniture are retailers of home furnishings. Borsheims, Helzberg Diamond Shops and Ben Bridge Jeweler are retailers of fine jewelry.

In addition, other manufacturing, service and retail businesses include: Buffalo News and the BH Media Group, publishers of daily and Sunday newspapers; See's Candies, a manufacturer and seller of boxed chocolates and other confectionery products; Scott Fetzer, a diversified manufacturer and distributor of commercial and industrial products; Larson-Juhl, a designer, manufacturer and distributor of high-quality picture framing products; CTB International, a manufacturer of equipment for the livestock and agricultural industries; International Dairy Queen, a licensor and service provider to about 6,800 stores that offer prepared dairy treats and food; Pampered Chef, a leading direct seller of kitchen tools in the United States; Forest River, a leading manufacturer of leisure vehicles in the United States; Business Wire, a leading global distributor of corporate news, multimedia and regulatory filings; TTI, Inc., a leading distributor of electronic components; Richline Group, a leading jewelry manufacturer; Oriental Trading Company, a direct retailer of party supplies and novelties; Charter Brokerage, a leading global trade services company; Berkshire Hathaway Automotive, which includes 83 automobile dealerships located in nine states; Detlev Louis Motorrad, a retailer of motorcycle accessories based in Germany; and Duracell Company, a leading manufacturer of high performance alkaline batteries.

Operating decisions for our various businesses are made by managers of the business units. Investment decisions and all other capital allocation decisions are made for us and our subsidiaries by our senior management team which is led by Warren E. Buffett, in consultation with Charles T. Munger. Mr. Buffett is Chairman and Mr. Munger is Vice Chairman of Berkshire's Board of Directors.

BERKSHIRE HATHAWAY INC.
and Subsidiaries
Selected Financial Data for the Past Five Years
(dollars in millions except per-share data)

	2016	2015	2014	2013	2012
Revenues:					
Insurance premiums earned	$ 45,881	$ 41,294	$ 41,253	$ 36,684	$ 34,545
Sales and service revenues	119,489	107,001	97,097	92,993	81,447
Railroad, utilities and energy revenues	37,542	40,004	40,690	34,757	32,582
Interest, dividend and other investment income	4,725	5,357	5,052	5,196	4,532
Finance and financial products sales and service revenues and interest and dividend income	7,663	6,940	6,526	6,109	5,932
Investment and derivative gains/losses	8,304	10,347	4,081	6,673	3,425
Total revenues	$223,604	$210,943	$194,699	$182,412	$162,463
Earnings:					
Net earnings attributable to Berkshire Hathaway [(1)]	$ 24,074	$ 24,083	$ 19,872	$ 19,476	$ 14,824
Net earnings per share attributable to Berkshire Hathaway shareholders [(2)]	$ 14,645	$ 14,656	$ 12,092	$ 11,850	$ 8,977
Year-end data:					
Total assets	$620,854	$552,257	$525,867	$484,624	$427,252
Notes payable and other borrowings:					
Insurance and other	27,175	14,599	11,854	12,396	12,970
Railroad, utilities and energy	59,085	57,739	55,306	46,399	35,979
Finance and financial products	15,384	11,951	12,730	13,122	13,587
Berkshire Hathaway shareholders' equity	283,001	255,550	240,170	221,890	187,647
Class A equivalent common shares outstanding, in thousands	1,644	1,643	1,643	1,644	1,643
Berkshire Hathaway shareholders' equity per outstanding Class A equivalent common share	$172,108	$155,501	$146,186	$134,973	$114,214

(1) *Includes after-tax investment and derivative gains/losses of $6.5 billion in 2016, $6.7 billion in 2015, $3.3 billion in 2014, $4.3 billion in 2013 and $2.2 billion in 2012.*

(2) *Represents net earnings per equivalent Class A common share. Net earnings per Class B common share is equal to 1/1,500 of such amount.*

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management of Berkshire Hathaway Inc. is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Securities Exchange Act of 1934 Rule 13a-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the Company's internal control over financial reporting as of December 31, 2016 as required by the Securities Exchange Act of 1934 Rule 13a-15(c). In making this assessment, we used the criteria set forth in the framework in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under the framework in *Internal Control – Integrated Framework* (2013), our management concluded that our internal control over financial reporting was effective as of December 31, 2016.

The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which appears on page 33.

Berkshire Hathaway Inc.
February 24, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of
Berkshire Hathaway Inc.
Omaha, Nebraska

We have audited the accompanying consolidated balance sheets of Berkshire Hathaway Inc. and subsidiaries (the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of earnings, comprehensive income, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2016. We also have audited the Company's internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company's internal control over financial reporting based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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

Because of the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Berkshire Hathaway Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

/s/ Deloitte & Touche LLP

Omaha, Nebraska
February 24, 2017

BERKSHIRE HATHAWAY INC.
and Subsidiaries

CONSOLIDATED BALANCE SHEETS
(dollars in millions)

	December 31, 2016	December 31, 2015
ASSETS		
Insurance and Other:		
Cash and cash equivalents and U.S. Treasury Bills:		
Cash and cash equivalents	$ 23,581	$ 56,612
U.S. Treasury Bills	47,338	4,569
Total cash, cash equivalents and U.S. Treasury Bills	70,919	61,181
Investments:		
Fixed maturity securities	23,432	25,988
Equity securities	120,471	110,527
Other	14,364	15,683
Investments in The Kraft Heinz Company (Fair Value: 2016 – $28,418, 2015 – $32,042)	15,345	23,424
Receivables	27,097	23,303
Inventories	15,727	11,916
Property, plant and equipment	19,325	15,540
Goodwill	53,994	37,188
Other intangible assets	33,481	9,148
Deferred charges reinsurance assumed	8,047	7,687
Other	7,126	6,697
	409,328	348,282
Railroad, Utilities and Energy:		
Cash and cash equivalents	3,939	3,437
Property, plant and equipment	123,759	120,279
Goodwill	24,111	24,178
Regulatory assets	4,457	4,285
Other	13,550	12,833
	169,816	165,012
Finance and Financial Products:		
Cash and cash equivalents and U.S. Treasury Bills:		
Cash and cash equivalents	528	7,112
U.S. Treasury Bills	10,984	—
Total cash, cash equivalents and U.S. Treasury Bills	11,512	7,112
Investments in equity and fixed maturity securities	408	411
Other investments	2,892	5,719
Loans and finance receivables	13,300	12,772
Property, plant and equipment and assets held for lease	9,689	9,347
Goodwill	1,381	1,342
Other	2,528	2,260
	41,710	38,963
	$620,854	$552,257

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries

CONSOLIDATED BALANCE SHEETS
(dollars in millions)

	December 31, 2016	December 31, 2015
LIABILITIES AND SHAREHOLDERS' EQUITY		
Insurance and Other:		
Losses and loss adjustment expenses	$ 76,918	$ 73,144
Unearned premiums	14,245	13,311
Life, annuity and health insurance benefits	15,977	14,497
Other policyholder liabilities	6,714	7,123
Accounts payable, accruals and other liabilities	22,164	17,879
Notes payable and other borrowings	27,175	14,599
	163,193	140,553
Railroad, Utilities and Energy:		
Accounts payable, accruals and other liabilities	11,434	11,994
Regulatory liabilities	3,121	3,033
Notes payable and other borrowings	59,085	57,739
	73,640	72,766
Finance and Financial Products:		
Accounts payable, accruals and other liabilities	1,444	1,398
Derivative contract liabilities	2,890	3,836
Notes payable and other borrowings	15,384	11,951
	19,718	17,185
Income taxes, principally deferred	77,944	63,126
Total liabilities	334,495	293,630
Shareholders' equity:		
Common stock	8	8
Capital in excess of par value	35,681	35,620
Accumulated other comprehensive income	37,298	33,982
Retained earnings	211,777	187,703
Treasury stock, at cost	(1,763)	(1,763)
Berkshire Hathaway shareholders' equity	283,001	255,550
Noncontrolling interests	3,358	3,077
Total shareholders' equity	286,359	258,627
	$620,854	$552,257

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries

CONSOLIDATED STATEMENTS OF EARNINGS
(dollars in millions except per-share amounts)

	Year Ended December 31, 2016	2015	2014
Revenues:			
Insurance and Other:			
Insurance premiums earned	$ 45,881	$ 41,294	$ 41,253
Sales and service revenues	119,489	107,001	97,097
Interest, dividend and other investment income	4,725	5,357	5,052
Investment gains/losses	5,128	9,363	3,503
	175,223	163,015	146,905
Railroad, Utilities and Energy:			
Revenues	37,542	40,004	40,690
Finance and Financial Products:			
Sales and service revenues	6,208	5,430	5,094
Interest, dividend and other investment income	1,455	1,510	1,432
Investment gains/losses	2,425	10	72
Derivative gains/losses	751	974	506
	10,839	7,924	7,104
Total revenues	223,604	210,943	194,699
Costs and expenses:			
Insurance and Other:			
Insurance losses and loss adjustment expenses	30,906	26,527	26,406
Life, annuity and health insurance benefits	5,131	5,413	5,181
Insurance underwriting expenses	7,713	7,517	6,998
Cost of sales and services	95,754	87,029	78,873
Selling, general and administrative expenses	16,478	13,723	12,198
Interest expense	445	460	419
	156,427	140,669	130,075
Railroad, Utilities and Energy:			
Cost of sales and operating expenses	26,194	27,650	29,378
Interest expense	2,642	2,653	2,378
	28,836	30,303	31,756
Finance and Financial Products:			
Cost of sales and services	3,448	2,915	2,758
Selling, general and administrative expenses	1,739	1,586	1,523
Interest expense	410	402	456
	5,597	4,903	4,737
Total costs and expenses	190,860	175,875	166,568
Earnings before income taxes and equity in earnings of Kraft Heinz Company	32,744	35,068	28,131
Equity in earnings (losses) of Kraft Heinz Company	923	(122)	(26)
Earnings before income taxes	33,667	34,946	28,105
Income tax expense	9,240	10,532	7,935
Net earnings	24,427	24,414	20,170
Less: Earnings attributable to noncontrolling interests	353	331	298
Net earnings attributable to Berkshire Hathaway shareholders	$ 24,074	$ 24,083	$ 19,872
Net earnings per equivalent Class A share outstanding*	$ 14,645	$ 14,656	$ 12,092
Average equivalent Class A shares outstanding*	1,643,826	1,643,183	1,643,456

**Equivalent Class B shares outstanding are 1,500 times the equivalent Class A amount. Net earnings per equivalent Class B share outstanding are one-fifteen-hundredth of the equivalent Class A amount or $9.76 for 2016, $9.77 for 2015 and $8.06 for 2014.*

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(dollars in millions)

	Year Ended December 31,		
	2016	2015	2014
Net earnings	$ 24,427	$ 24,414	$ 20,170
Other comprehensive income:			
Net change in unrealized appreciation of investments	13,858	(8,520)	5,831
Applicable income taxes	(4,846)	3,014	(2,062)
Reclassification of investment appreciation in net earnings	(6,820)	(2,332)	(3,360)
Applicable income taxes	2,387	816	1,176
Foreign currency translation	(1,541)	(1,931)	(2,032)
Applicable income taxes	66	(43)	183
Prior service cost and actuarial gains/losses of defined benefit pension plans	354	424	(1,703)
Applicable income taxes	(187)	(140)	624
Other, net	(17)	(94)	8
Other comprehensive income, net	3,254	(8,806)	(1,335)
Comprehensive income	27,681	15,608	18,835
Comprehensive income attributable to noncontrolling interests	291	275	256
Comprehensive income attributable to Berkshire Hathaway shareholders	$ 27,390	$ 15,333	$ 18,579

CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

(dollars in millions)

	Berkshire Hathaway shareholders' equity					
	Common stock and capital in excess of par value	Accumulated other comprehensive income	Retained earnings	Treasury stock	Non-controlling interests	Total
Balance December 31, 2013	$35,480	$44,025	$ 143,748	$(1,363)	$ 2,595	$224,485
Net earnings	—	—	19,872	—	298	20,170
Other comprehensive income, net	—	(1,293)	—	—	(42)	(1,335)
Issuance (acquisition) of common stock	118	—	—	(400)	—	(282)
Transactions with noncontrolling interests	(17)	—	—	—	6	(11)
Balance December 31, 2014	35,581	42,732	163,620	(1,763)	2,857	243,027
Net earnings	—	—	24,083	—	331	24,414
Other comprehensive income, net	—	(8,750)	—	—	(56)	(8,806)
Issuance of common stock	53	—	—	—	—	53
Transactions with noncontrolling interests	(6)	—	—	—	(55)	(61)
Balance December 31, 2015	35,628	33,982	187,703	(1,763)	3,077	258,627
Net earnings	—	—	24,074	—	353	24,427
Other comprehensive income, net	—	3,316	—	—	(62)	3,254
Issuance of common stock	119	—	—	—	—	119
Transactions with noncontrolling interests	(58)	—	—	—	(10)	(68)
Balance December 31, 2016	$35,689	$37,298	$ 211,777	$(1,763)	$ 3,358	$286,359

See accompanying Notes to Consolidated Financial Statements

BERKSHIRE HATHAWAY INC.
and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS
(dollars in millions)

	Year Ended December 31,		
	2016	2015	2014
Cash flows from operating activities:			
Net earnings	$ 24,427	$ 24,414	$ 20,170
Adjustments to reconcile net earnings to operating cash flows:			
Investment gains/losses	(7,553)	(9,373)	(3,575)
Depreciation and amortization	8,901	7,779	7,370
Other	(161)	751	(341)
Changes in operating assets and liabilities:			
Losses and loss adjustment expenses	4,372	2,262	7,404
Deferred charges reinsurance assumed	(360)	84	(3,413)
Unearned premiums	968	1,392	1,159
Receivables and originated loans	(3,302)	(1,650)	(1,890)
Derivative contract assets and liabilities	(946)	(974)	(520)
Income taxes	4,044	5,718	4,905
Other	2,145	1,088	741
Net cash flows from operating activities	32,535	31,491	32,010
Cash flows from investing activities:			
Purchases of U.S. Treasury Bills and fixed maturity securities	(96,568)	(17,891)	(12,562)
Purchases of equity securities	(16,508)	(10,220)	(10,014)
Purchase of Kraft Heinz common stock	—	(5,258)	—
Sales of U.S. Treasury Bills and fixed maturity securities	18,757	2,471	2,038
Redemptions and maturities of U.S. Treasury Bills and fixed maturity securities	26,177	14,656	10,285
Sales and redemptions of equity securities	28,464	8,747	8,896
Purchases of loans and finance receivables	(307)	(179)	(181)
Collections of loans and finance receivables	490	492	885
Acquisitions of businesses, net of cash acquired	(31,399)	(4,902)	(4,824)
Purchases of property, plant and equipment	(12,954)	(16,082)	(15,185)
Other	(419)	165	336
Net cash flows from investing activities	(84,267)	(28,001)	(20,326)
Cash flows from financing activities:			
Proceeds from borrowings of insurance and other businesses	9,431	3,358	845
Proceeds from borrowings of railroad, utilities and energy businesses	3,077	5,479	5,765
Proceeds from borrowings of finance businesses	4,741	1,045	1,148
Repayments of borrowings of insurance and other businesses	(1,264)	(1,916)	(1,289)
Repayments of borrowings of railroad, utilities and energy businesses	(2,123)	(1,725)	(1,862)
Repayments of borrowings of finance businesses	(1,313)	(1,827)	(1,543)
Changes in short term borrowings, net	130	(378)	932
Acquisitions of noncontrolling interests and other	112	(233)	(1,265)
Net cash flows from financing activities	12,791	3,803	2,731
Effects of foreign currency exchange rate changes	(172)	(165)	(289)
Increase (decrease) in cash and cash equivalents	(39,113)	7,128	14,126
Cash and cash equivalents at beginning of year	67,161	60,033	45,907
Cash and cash equivalents at end of year *	$ 28,048	$ 67,161	$ 60,033
** Cash and cash equivalents at end of year are comprised of the following:*			
Insurance and Other	*$ 23,581*	*$ 56,612*	*$ 54,738*
Railroad, Utilities and Energy	*3,939*	*3,437*	*3,001*
Finance and Financial Products	*528*	*7,112*	*2,294*
	$ 28,048	*$ 67,161*	*$ 60,033*

See accompanying Notes to Consolidated Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
December 31, 2016

(1) Significant accounting policies and practices

(a) Nature of operations and basis of consolidation

Berkshire Hathaway Inc. ("Berkshire") is a holding company owning subsidiaries engaged in a number of diverse business activities, including insurance and reinsurance, freight rail transportation, utilities and energy, manufacturing, service, retailing and finance. In these notes the terms "us," "we," or "our" refer to Berkshire and its consolidated subsidiaries. Further information regarding our reportable business segments is contained in Note 23. Significant business acquisitions completed over the past three years are discussed in Note 2.

The accompanying Consolidated Financial Statements include the accounts of Berkshire consolidated with the accounts of all subsidiaries and affiliates in which we hold a controlling financial interest as of the financial statement date. Normally a controlling financial interest reflects ownership of a majority of the voting interests. We consolidate a variable interest entity ("VIE") when we possess both the power to direct the activities of the VIE that most significantly impact its economic performance and we are either obligated to absorb the losses that could potentially be significant to the VIE or we hold the right to receive benefits from the VIE that could potentially be significant to the VIE.

Intercompany accounts and transactions have been eliminated.

(b) Use of estimates in preparation of financial statements

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

(c) Cash and cash equivalents and U.S Treasury Bills

Cash equivalents consist of demand deposit and money market accounts, U.S. Treasury Bills with a maturity of three months or less when purchased and other investments with a maturity of three months or less when purchased. During 2016, we acquired significant amounts of U.S. Treasury Bills with maturity dates more than three months from their purchase dates. In prior years, such investments were not material and were classified as cash equivalents. We believe that in substance these U.S. Treasury Bills are like cash as they are readily convertible to known amounts of cash and present an insignificant risk of change in value because of changes in interest rates. In determining the appropriate accounting classification under GAAP, we considered the relevant accounting literature. We also consulted with our independent auditors who shared with us certain insights into commonly applied practice today. We have concluded that, notwithstanding our view of the substance of such instruments, these U.S. Treasury Bills technically do not meet a "bright line" definition of cash equivalents under GAAP. Accordingly, we are now presenting all U.S. Treasury Bills with maturity dates greater than three months from their purchase dates separately in the accompanying Consolidated Balance Sheets. Additionally, we have revised the 2014 and 2015 Consolidated Statements of Cash Flows to reflect this change. We believe that these changes have no effect whatsoever on our financial condition.

(d) Investments

We determine the appropriate classification of investments in fixed maturity and equity securities at the acquisition date and re-evaluate the classification at each balance sheet date. Held-to-maturity investments are carried at amortized cost, reflecting the ability and intent to hold the securities to maturity. Trading investments are securities acquired with the intent to sell in the near term and are carried at fair value. All other securities are classified as available-for-sale and are carried at fair value with net unrealized gains or losses reported as a component of accumulated other comprehensive income. Substantially all of our investments in equity and fixed maturity securities are classified as available-for-sale.

We utilize the equity method to account for investments when we possess the ability to exercise significant influence, but not control, over the operating and financial policies of the investee. The ability to exercise significant influence is presumed when an investor possesses more than 20% of the voting interests of the investee. This presumption may be

(1) Significant accounting policies and practices *(Continued)*

(d) Investments (Continued)

overcome based on specific facts and circumstances that demonstrate that the ability to exercise significant influence is restricted. We apply the equity method to investments in common stock and to other investments when such other investments possess substantially identical subordinated interests to common stock.

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

Investment gains and losses arise when investments are sold (as determined on a specific identification basis) or are other-than-temporarily impaired. If a decline in the value of an investment below cost is deemed other than temporary, the cost of the investment is written down to fair value, with a corresponding charge to earnings. Factors considered in determining whether an impairment is other than temporary include: the financial condition, business prospects and creditworthiness of the issuer, the relative amount of the decline, our ability and intent to hold the investment until the fair value recovers and the length of time that fair value has been less than cost. With respect to an investment in a fixed maturity security, we recognize an other-than-temporary impairment if we (a) intend to sell or expect to be required to sell the security before its amortized cost is recovered or (b) do not expect to ultimately recover the amortized cost basis even if we do not intend to sell the security. Under scenario (a), we recognize losses in earnings and under scenario (b), we recognize the credit loss component in earnings and the difference between fair value and the amortized cost basis net of the credit loss in other comprehensive income.

(e) Receivables, loans and finance receivables

Receivables of the insurance and other businesses are stated net of estimated allowances for uncollectible balances. Allowances for uncollectible balances are provided when it is probable counterparties or customers will be unable to pay all amounts due based on the contractual terms. Receivables are generally written off against allowances after all reasonable collection efforts are exhausted.

Loans and finance receivables of the finance and financial products businesses are predominantly manufactured housing installment loans. These loans are stated at amortized cost based on our ability and intent to hold such loans to maturity and are stated net of allowances for uncollectible accounts. The carrying value of acquired loans represents acquisition costs, plus or minus origination and commitment costs paid or fees received, which together with acquisition premiums or discounts, are deferred and amortized as yield adjustments over the life of the loans. Substantially all loans are secured by real or personal property or other assets of the borrower.

Allowances for credit losses on loans include estimates of losses on loans currently in foreclosure and losses on loans not currently in foreclosure. Estimates of losses on loans in foreclosure are based on historical experience and collateral recovery rates. Estimates of losses on loans not currently in foreclosure consider historical default rates, collateral recovery rates and prevailing economic conditions. Allowances for credit losses also incorporate the historical average time elapsed from the last payment until foreclosure.

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

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

(1) Significant accounting policies and practices *(Continued)*

(f) Derivatives

We carry derivative contracts in our Consolidated Balance Sheets at fair value, net of reductions permitted under master netting agreements with counterparties. The changes in fair value of derivative contracts that do not qualify as hedging instruments for financial reporting purposes are recorded in earnings or by our regulated utilities businesses as regulatory assets or liabilities when recovery through regulated rates is probable.

(g) Fair value measurements

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

(h) Inventories

Inventories consist of manufactured goods and goods acquired for resale. Manufactured inventory costs include raw materials, direct and indirect labor and factory overhead. Inventories are stated at the lower of cost or market. As of December 31, 2016, approximately 55% of our consolidated inventory cost was determined using the last-in-first-out ("LIFO") method, 28% using the first-in-first-out ("FIFO") method, and the remainder primarily using the average cost method. The difference between costs determined under LIFO and current costs was not significant as of December 31, 2016.

(i) Property, plant and equipment and leased assets

Additions to property, plant and equipment used in operations and leased assets are recorded at cost and consist of major additions, improvements and betterments. With respect to constructed assets, all construction related material, direct labor and contract services as well as certain indirect costs are capitalized. Indirect costs include interest over the construction period. With respect to constructed assets of our regulated utility and energy subsidiaries that are subject to authoritative guidance for regulated operations, capitalized costs also include an equity allowance for funds used during construction, which represents the cost of equity funds used to finance the construction of the regulated facilities. Also see Note 1(q).

Normal repairs and maintenance and other costs that do not improve the property, extend the useful life or otherwise do not meet capitalization criteria are charged to expense as incurred. Rail grinding costs related to our railroad properties are expensed as incurred.

Property, plant and equipment and leased assets are depreciated to estimated salvage value primarily using the straight-line method over estimated useful lives or mandated recovery periods as prescribed by regulatory authorities. Depreciation of assets of our regulated utilities and railroad is generally determined using group depreciation methods where rates are based on periodic depreciation studies approved by the applicable regulator. Under group depreciation, a single depreciation rate is applied to the gross investment in a particular class of property, despite differences in the service life or salvage value of individual property units within the same class. When our regulated utilities or railroad retires or sells a component of the assets accounted for using group depreciation methods, no gain or loss is recognized. Gains or losses on disposals of all other assets are recorded through earnings.

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

(1) Significant accounting policies and practices *(Continued)*

(j) Goodwill and other intangible assets

Goodwill represents the excess of the acquisition price of a business over the fair value of identified net assets of that business. We evaluate goodwill for impairment at least annually. When evaluating goodwill for impairment, we estimate the fair value of the reporting unit. There are several methods that may be used to estimate a reporting unit's fair value, including market quotations, asset and liability fair values and other valuation techniques, including, but not limited to, discounted projected future net earnings or net cash flows and multiples of earnings. If the carrying amount of a reporting unit, including goodwill, exceeds the estimated fair value, then the identifiable assets and liabilities of the reporting unit are estimated at fair value as of the current testing date. The excess of the estimated fair value of the reporting unit over the current estimated fair value of net assets establishes the implied value of goodwill. The excess of the recorded goodwill over the implied goodwill value is charged to earnings as an impairment loss. Significant judgment is required in estimating the fair value of the reporting unit and performing goodwill impairment tests.

Intangible assets with finite lives are amortized based on the estimated pattern in which the economic benefits are expected to be consumed or on a straight-line basis over their estimated economic lives. Intangible assets with finite lives are reviewed for impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable. Intangible assets with indefinite lives are tested for impairment at least annually and when events or changes in circumstances indicate that it is more likely than not that the asset is impaired.

(k) Revenue recognition

Insurance premiums for prospective property/casualty insurance and reinsurance are earned over the loss exposure or coverage period in proportion to the level of protection provided. In most cases, premiums are recognized as revenues ratably over the term of the contract with unearned premiums computed on a monthly or daily pro-rata basis. Premiums for retroactive property/casualty reinsurance policies are earned at the inception of the contracts, as all of the underlying loss events covered by these policies occurred in the past. Premiums for life reinsurance and annuity contracts are earned when due. Premiums earned are stated net of amounts ceded to reinsurers. For contracts containing experience rating provisions, premiums earned reflect estimated loss experience under contracts.

Sales revenues derive from the sales of manufactured products and goods acquired for resale. Revenues from sales are recognized upon passage of title to the customer, which generally coincides with customer pickup, product delivery or acceptance, depending on terms of the sales arrangement.

Service revenues are recognized as the services are performed. Services provided pursuant to a contract are either recognized over the contract period or upon completion of the elements specified in the contract depending on the terms of the contract. Revenues related to the sales of fractional ownership interests in aircraft are recognized ratably over the term of the related management services agreement, as the transfer of ownership interest in the aircraft is inseparable from the management services agreement.

Leasing revenue is generally recognized ratably over the term of the lease. A substantial portion of our leases are classified as operating leases.

Operating revenues from the distribution and sale of electricity and natural gas to customers are recognized when the services are rendered or the energy is delivered. Revenues include unbilled as well as billed amounts. Rates charged are generally subject to federal and state regulation or established under contractual arrangements. When preliminary rates are permitted to be billed prior to final approval by the applicable regulator, certain revenue collected may be subject to refund and a liability for estimated refunds is recorded.

Railroad transportation revenues are recognized based upon the proportion of service provided as of the balance sheet date. Customer incentives, which are primarily provided for shipping a specified cumulative volume or shipping to/from specific locations, are recorded as pro-rata reductions to revenue based on actual or projected future customer shipments. When using projected shipments, we rely on historic trends as well as economic and other indicators to estimate the recorded liability for customer incentives.

(l) Losses and loss adjustment expenses

Liabilities for losses and loss adjustment expenses are established under property/casualty insurance and reinsurance contracts issued by our insurance subsidiaries for loss events that have occurred as of the balance sheet date. The liabilities for losses and loss adjustment expenses are recorded at the estimated ultimate payment amounts, except that amounts arising from certain workers' compensation reinsurance contracts are discounted. Estimated ultimate payment

(1) Significant accounting policies and practices *(Continued)*

(l) Losses and loss adjustment expenses (Continued)

amounts are based upon (1) reports of losses from policyholders, (2) individual case estimates and (3) estimates of incurred but not reported losses.

Provisions for losses and loss adjustment expenses are charged to earnings after deducting amounts recovered and estimates of recoverable amounts under ceded reinsurance contracts. Reinsurance contracts do not relieve the ceding company of its obligations to indemnify policyholders with respect to the underlying insurance and reinsurance contracts.

The estimated liabilities of workers' compensation claims assumed under certain reinsurance contracts are discounted based upon an annual discount rate of 4.5% for claims arising prior to January 1, 2003 and 1% for claims arising thereafter, consistent with insurance statutory accounting principles. The change in such discounts, including the periodic discount accretion is included in earnings as a component of losses and loss adjustment expenses.

(m) Deferred charges reinsurance assumed

The excess, if any, of the estimated ultimate liabilities for claims and claim settlement costs over the premiums earned with respect to retroactive property/casualty reinsurance contracts is recorded as a deferred charge at inception of the contract. Deferred charges are subsequently amortized using the interest method over the expected claim settlement periods. Changes to the estimated timing or amount of future loss payments also produce changes in unamortized deferred charges. Changes in such estimates are applied retrospectively and the resulting changes in deferred charge balances are included in insurance losses and loss adjustment expenses in the period of the change.

(n) Insurance policy acquisition costs

Incremental costs that are directly related to the successful acquisition of insurance contracts are capitalized, subject to ultimate recoverability, and are subsequently amortized to underwriting expenses as the related premiums are earned. Direct incremental acquisition costs include commissions, premium taxes, and certain other costs associated with successful efforts. All other underwriting costs are expensed as incurred. The recoverability of capitalized insurance policy acquisition costs generally reflects anticipation of investment income. The unamortized balances are included in other assets and were $1,991 million and $1,920 million at December 31, 2016 and 2015, respectively.

(p) Life and annuity insurance benefits

Liabilities for insurance benefits under life contracts are computed based upon estimated future investment yields, expected mortality, morbidity, and lapse or withdrawal rates and reflect estimates for future premiums and expenses under the contracts. 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 may vary by contract or jurisdiction. Periodic payment annuity liabilities are discounted based on the implicit rate as of the inception of the contracts such that the present value of the liabilities equals the premiums. Discount rates range from less than 1% to 7%.

(q) 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.

(r) 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 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. Gains or losses from 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 reporting entity, including gains and losses from the remeasurement of assets and liabilities due to changes in exchange rates, are included in earnings.

(1) Significant accounting policies and practices *(Continued)*

(s) Income taxes

Berkshire files a consolidated federal income tax return in the United States, which includes eligible subsidiaries. In addition, we file income tax returns in state, local and foreign jurisdictions as applicable. 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 that are 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 tax assets when realization is not likely.

Assets and 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.

(t) New accounting pronouncements to be adopted subsequent to December 31, 2016

In May 2014, the FASB issued ASU 2014-09 "Revenue from Contracts with Customers." ASU 2014-09 applies to contracts with customers, excluding, most notably, insurance and leasing contracts. ASU 2014-09 prescribes a framework in accounting for revenues from contracts within its scope, including (a) identifying the contract, (b) identifying the performance obligations under the contract, (c) determining the transaction price, (d) allocating the transaction price to the identified performance obligations and (e) recognizing revenues as the identified performance obligations are satisfied. ASU 2014-09 also prescribes additional financial statement presentations and disclosures. We currently expect to adopt ASU 2014-09 as of January 1, 2018, under the modified retrospective method where the cumulative effect is recognized at the date of initial application. Our evaluation of ASU 2014-09 is ongoing and not complete. The FASB has issued and may issue in the future, interpretative guidance, which may cause our evaluation to change. While we anticipate some changes to revenue recognition for certain customer contracts, we do not currently believe the adoption of ASU 2014-09 will have a material effect on our Consolidated Financial Statements.

In January 2016, the FASB issued ASU 2016-01 "Financial Instruments—Recognition and Measurement of Financial Assets and Financial Liabilities." ASU 2016-01 generally requires that equity investments (excluding equity method investments) be measured at fair value with changes in fair value recognized in net income. Under existing GAAP, changes in fair value of available-for-sale equity investments are recorded in other comprehensive income. Given the current magnitude of our equity investments, the adoption of ASU 2016-01 will likely have a significant impact on the periodic net earnings reported in our Consolidated Statement of Earnings, although it will not significantly impact our comprehensive income or shareholders' equity. ASU 2016-01 is effective for reporting periods beginning after December 15, 2017, with the cumulative effect of the adoption made to the balance sheet as of the date of adoption. Thus, the adoption will result in a reclassification of the related accumulated unrealized appreciation currently included in accumulated other comprehensive income to retained earnings, with no impact on Berkshire's shareholders' equity.

In February 2016, the FASB issued ASU 2016-02 "Leases." ASU 2016-02 requires a lessee to recognize in the statement of financial position a liability to make lease payments and a right-of-use asset representing its right to use the underlying asset for the lease term, along with additional qualitative and quantitative disclosures. ASU 2016-02 is effective for reporting periods beginning after December 15, 2018, with early adoption permitted. We are currently evaluating the effect this standard will have on our Consolidated Financial Statements.

In June 2016, the FASB issued ASU 2016-13 "Financial Instruments—Credit Losses," which provides for the recognition and measurement at the reporting date of all expected credit losses for financial assets held at amortized cost and available-for-sale debt securities. Currently credit losses are recognized and measured when such losses become probable based on the prevailing facts and circumstances. ASU 2016-13 is effective for reporting periods beginning after December 15, 2019. We are currently evaluating the effect this standard will have on our Consolidated Financial Statements.

(1) Significant accounting policies and practices *(Continued)*

(t) New accounting pronouncements to be adopted subsequent to December 31, 2016 (Continued)

In January 2017, the FASB issued ASU 2017-04 "Simplifying the Test for Goodwill Impairment." ASU 2017-04 eliminates the requirement to determine implied goodwill in measuring an impairment loss. Upon adoption, a goodwill impairment will be measured as the excess of the reporting unit's carrying value over fair value, limited to the amount of goodwill. ASU 2017-04 is effective for goodwill impairment tests in fiscal years beginning after December 15, 2019 and early adoption is permitted. We are currently evaluating the effect this standard will have on our Consolidated Financial Statements.

(2) Significant business acquisitions

Our long-held acquisition strategy is to acquire businesses at sensible prices 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 29, 2016, Berkshire acquired all outstanding common stock of Precision Castparts Corp. ("PCC") for $235 per share in cash pursuant to a definitive merger agreement dated August 8, 2015. The aggregate consideration paid was approximately $32.7 billion, which included the value of PCC shares we already owned. We funded the acquisition with a combination of existing cash balances and proceeds from a short-term credit facility. PCC is a worldwide, diversified manufacturer of complex metal components and products. It serves the aerospace, power and general industrial markets. PCC is a market leader in manufacturing complex structural investment castings and forged components for aerospace markets, machined airframe components and highly engineered critical fasteners for aerospace applications, and in manufacturing airfoil castings for the aerospace and industrial gas turbine markets. PCC also is a leading producer of titanium and nickel superalloy melted and mill products for the aerospace, chemical processing, oil and gas and pollution control industries, and manufactures extruded seamless pipe, fittings and forgings for power generation and oil and gas applications.

On February 29, 2016, we acquired the Duracell business from The Procter & Gamble Company ("P&G") pursuant to a definitive agreement entered into in November 2014. Duracell is a leading manufacturer of high-performance alkaline batteries and is an innovator in wireless charging technologies. Pursuant to the agreement, we received a recapitalized Duracell Company in exchange for shares of P&G common stock held by Berkshire subsidiaries, which had a fair value of approximately $4.2 billion.

During the fourth quarter of 2016, we revised the previously reported acquisition date fair values of certain identified assets and liabilities of PCC and Duracell, which primarily resulted in decreases in the amounts of identified intangible assets and deferred income tax liabilities, offset by increases in the amounts of goodwill. These revisions were immaterial to our Consolidated Financial Statements. Goodwill from these acquisitions is not amortizable for income tax purposes. The fair values of identified assets acquired and liabilities assumed and residual goodwill of PCC and Duracell at their respective acquisition dates are summarized as follows (in millions).

	PCC	Duracell
Cash and cash equivalents	$ 250	$ 1,807
Inventories	3,430	319
Property, plant and equipment	2,765	359
Goodwill	16,011	866
Other intangible assets	23,527	1,550
Other assets	1,916	242
Assets acquired	$47,899	$ 5,143
Accounts payable, accruals and other liabilities	$ 2,442	$ 410
Notes payable and other borrowings	5,251	—
Income taxes, principally deferred	7,548	494
Liabilities assumed	$15,241	$ 904
Net assets	$32,658	$ 4,239

(2) Significant business acquisitions *(Continued)*

The following table sets forth certain unaudited pro forma consolidated earnings data for the year ending December 31, 2015 as if the PCC and Duracell acquisitions were consummated on the same terms at the beginning of 2015 (in millions, except per share amount). Pro forma data for 2016 was not materially different from the amounts reflected in the accompanying Consolidated Financial Statements.

	2015
Revenues	$221,897
Net earnings attributable to Berkshire Hathaway shareholders	24,575
Net earnings per equivalent Class A common share	14,956

In the first quarter of 2015, we acquired the Van Tuyl Group (now named Berkshire Hathaway Automotive), which included 81 automotive dealerships and two related insurance businesses, two auto auctions and a distributor of automotive fluid maintenance products. In addition to selling new and pre-owned automobiles, the Berkshire Hathaway Automotive group offers repair and other services and products, including extended warranty services and other automotive protection plans. Consideration paid for the acquisition was $4.1 billion. On December 1, 2014, we acquired AltaLink, L.P. (“AltaLink”) for a cash purchase price of C$3.1 billion (approximately $2.7 billion). AltaLink is a regulated electric transmission-only business, headquartered in Calgary, Alberta. The goodwill related to the AltaLink acquisition is not amortizable for income tax purposes, while substantially all of the goodwill related to Berkshire Hathaway Automotive is amortizable for income tax purposes.

The fair values of identified assets acquired and liabilities assumed and residual goodwill of Berkshire Hathaway Automotive and AltaLink at their respective acquisition dates are summarized as follows (in millions).

	Berkshire Hathaway Automotive	AltaLink
Cash and investments	$1,274	$ 15
Property, plant and equipment	1,045	5,610
Goodwill	1,833	1,744
Other assets	2,488	300
Assets acquired	$6,640	$7,669
Accounts payable, accruals and other liabilities	$1,399	$1,090
Notes payable and other borrowings	1,129	3,851
Liabilities assumed	$2,528	$4,941
Net assets	$4,112	$2,728

On January 1, 2014, we acquired the beverage dispensing equipment manufacturing and merchandising business of British engineering company, IMI plc for approximately $1.12 billion. On February 25, 2014, we acquired 100% of the outstanding common stock of Phillips Specialty Products Inc. (“PSPI”), a company providing oil flow improvement products to customers worldwide, from Phillips 66 (“PSX”) in exchange for 17,422,615 shares of PSX common stock with an aggregate fair value of $1.35 billion. On June 30, 2014, we acquired WPLG, Inc. (“WPLG”) from Graham Holding Company (“GHC”) in exchange for 1,620,190 shares of GHC common stock with an aggregate fair value of $1.13 billion. WPLG operates a Miami, Florida, ABC affiliated television station. At their respective acquisition dates, assets of PSPI and WPLG included cash of $778 million. WPLG assets also included 2,107 shares of Berkshire Hathaway Class A and 1,278 shares of Class B common stock. The aggregate fair value of the identified net assets related to these acquisitions was approximately $2.2 billion and the residual goodwill was approximately $1.4 billion.

During the last three years, we also completed several smaller-sized business acquisitions, primarily “bolt-on” acquisitions by our existing business operations. Aggregate consideration paid for these other business acquisitions was approximately $1.4 billion in 2016, $1.1 billion in 2015 and $1.8 billion in 2014. We do not believe that these acquisitions were material to our Consolidated Financial Statements.

(3) Investments in fixed maturity securities

Investments in securities with fixed maturities as of December 31, 2016 and 2015 are summarized by type below (in millions).

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
December 31, 2016				
U.S. Treasury, U.S. government corporations and agencies	$ 4,519	$ 16	$ (8)	$ 4,527
States, municipalities and political subdivisions	1,159	58	(1)	1,216
Foreign governments	8,860	207	(66)	9,001
Corporate bonds	6,899	714	(9)	7,604
Mortgage-backed securities	997	126	(6)	1,117
	$22,434	$1,121	$ (90)	$23,465
December 31, 2015				
U.S. Treasury, U.S. government corporations and agencies	$ 3,425	$ 10	$ (8)	$ 3,427
States, municipalities and political subdivisions	1,695	71	(2)	1,764
Foreign governments	11,327	226	(85)	11,468
Corporate bonds	7,323	632	(29)	7,926
Mortgage-backed securities	1,279	168	(5)	1,442
	$25,049	$1,107	$(129)	$26,027

Investments in fixed maturity securities are reflected in our Consolidated Balance Sheets as follows (in millions).

	December 31, 2016	December 31, 2015
Insurance and other	$23,432	$25,988
Finance and financial products	33	39
	$23,465	$26,027

Investments in foreign government securities include securities issued by national and provincial government entities as well as instruments that are unconditionally guaranteed by such entities. As of December 31, 2016, approximately 92% of foreign government holdings were rated AA or higher by at least one of the major rating agencies. Approximately 81% of foreign government holdings were issued or guaranteed by the United Kingdom, Germany, Australia or Canada.

The amortized cost and estimated fair value of securities with fixed maturities at December 31, 2016 are summarized below by contractual maturity dates. Actual maturities may differ from contractual maturities due to early call or prepayment rights held by issuers. Amounts are in millions.

	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	$8,508	$ 9,886	$ 805	$2,238	$ 997	$22,434
Fair value	8,573	10,219	872	2,684	1,117	23,465

(4) Investments in equity securities

Investments in equity securities as of December 31, 2016 and 2015 are summarized based on the primary industry of the investee in the table below (in millions).

	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
*December 31, 2016 **				
Banks, insurance and finance	$19,852	$30,572	$ —	$ 50,424
Consumer products	10,657	16,760	(9)	27,408
Commercial, industrial and other	35,868	9,033	(701)	44,200
	$66,377	$56,365	$ (710)	$122,032

* *Approximately 56% of the aggregate fair value was concentrated in the equity securities of four companies (American Express Company – $11.2 billion; Wells Fargo & Company – $27.6 billion; International Business Machines Corporation ("IBM") – $13.5 billion; and The Coca-Cola Company – $16.6 billion).*

	Cost Basis	Unrealized Gains	Unrealized Losses	Fair Value
*December 31, 2015 **				
Banks, insurance and finance	$20,026	$27,965	$ (21)	$ 47,970
Consumer products	7,147	18,057	(1)	25,203
Commercial, industrial and other	35,417	6,785	(3,238)	38,964
	$62,590	$52,807	$(3,260)	$112,137

* *Approximately 59% of the aggregate fair value was concentrated in the equity securities of four companies (American Express Company – $10.5 billion; Wells Fargo & Company – $27.2 billion; IBM – $11.2 billion; and The Coca-Cola Company – $17.2 billion).*

As of December 31, 2016 and 2015, we concluded that the unrealized losses shown in the tables above were temporary. Our conclusions were based on: (a) our ability and intent to hold the securities to recovery; (b) our assessment that the underlying business and financial condition of each of these issuers was favorable; (c) our opinion that the relative price declines were not significant; and (d) our belief that market prices will increase to and exceed our cost. As of December 31, 2016 and 2015, unrealized losses on equity securities in a continuous unrealized loss position for more than twelve consecutive months were $551 million and $989 million, respectively.

Investments in equity securities are reflected in our Consolidated Balance Sheets as follows (in millions).

	December 31, 2016	December 31, 2015
Insurance and other	$120,471	$110,527
Railroad, utilities and energy *	1,186	1,238
Finance and financial products	375	372
	$122,032	$112,137

* *Included in other assets.*

(5) Other investments

Other investments include preferred stock of Bank of America Corporation ("BAC"), warrants to purchase common stock of BAC and preferred stock of Restaurant Brands International, Inc. ("RBI") and in 2015 also included preferred stock of Wm. Wrigley Jr. Company ("Wrigley") and The Dow Chemical Company ("Dow"). Other investments are classified as available-for-sale and carried at fair value and are shown in our Consolidated Balance Sheets as follows (in millions).

	Cost		Fair Value	
	December 31,		December 31,	
	2016	2015	2016	2015
Insurance and other	$ 6,720	$ 9,690	$14,364	$15,683
Finance and financial products	1,000	3,052	2,892	5,719
	$ 7,720	$12,742	$17,256	$21,402

In 2008, we purchased $2.1 billion of Wrigley preferred stock pursuant to a shareholder agreement in conjunction with Mars Incorporated's ("Mars") acquisition of Wrigley. Pursuant to certain put and call provisions in the shareholder agreement, up to 50% of our original investment was redeemable over a 90-day period scheduled to begin on October 6, 2016. In September 2016, pursuant to an agreement entered into in August 2016, Mars acquired all of our Wrigley preferred stock for approximately $4.56 billion, which included a prorated dividend that would have otherwise been payable in October 2016.

In 2009, we acquired 3,000,000 shares of Series A Cumulative Convertible Perpetual Preferred Stock of Dow ("Dow Preferred") for approximately $3 billion. In December 2016, Dow exercised its option to convert the Dow Preferred into 72.6 million shares of common stock. As of December 31, 2016, all shares of common stock received upon the conversion had been sold. The Dow Preferred was entitled to dividends at a rate of 8.5% per annum.

We currently own 50,000 shares of 6% Non-Cumulative Perpetual Preferred Stock of BAC ("BAC Preferred") with a liquidation value of $100,000 per share and warrants to purchase 700,000,000 shares of common stock of BAC ("BAC Warrants"). The BAC Preferred is redeemable at the option of BAC beginning on May 7, 2019 at a redemption price of $105,000 per share (or $5.25 billion in aggregate). The BAC Warrants expire in 2021 and are exercisable for an additional aggregate cost of $5 billion ($7.142857/share).

We currently own Class A 9% Cumulative Compounding Perpetual Preferred Shares of RBI ("RBI Preferred") having a stated value of $3 billion. RBI, domiciled in Canada, is the ultimate parent company of Burger King and Tim Hortons. The RBI Preferred is entitled to dividends on a cumulative basis of 9% per annum plus an additional amount, if necessary, to produce an after-tax yield to Berkshire as if the dividends were paid by a U.S.-based company. The RBI Preferred is redeemable at the option of RBI beginning on December 12, 2017. If not redeemed prior to December 12, 2024, we can cause RBI to redeem the RBI Preferred. In either case, the redemption price will be 109.9% of the stated value of such shares.

(6) Investments in The Kraft Heinz Company

On June 7, 2013, Berkshire and an affiliate of the global investment firm 3G Capital (such affiliate, "3G"), each made equity investments in H.J. Heinz Holding Corporation ("Heinz Holding"), which, together with debt financing obtained by Heinz Holding, was used to acquire H. J. Heinz Company ("Heinz"). Berkshire's initial investments consisted of 425 million shares of Heinz Holding common stock; warrants, which we exercised in June 2015, to acquire approximately 46 million additional shares of common stock at one cent per share; and cumulative compounding preferred stock ("Preferred Stock") with a liquidation preference of $8 billion. The aggregate cost of our investments was $12.25 billion. 3G also acquired 425 million shares of Heinz Holding common stock for $4.25 billion. On June 7, 2016, our Preferred Stock investment was redeemed for cash of $8.32 billion. Prior to its redemption, the Preferred Stock was entitled to dividends at 9% per annum. Dividends earned on the Preferred Stock were $180 million in 2016, $852 million in 2015 and $720 million in 2014 and are included in interest, dividends and other investment income.

On July 1, 2015, Berkshire acquired 262.9 million shares of newly issued common stock of Heinz Holding for $5.26 billion and 3G acquired 237.1 million shares of newly issued common stock of Heinz Holding for $4.74 billion. Immediately thereafter, Heinz Holding executed a reverse stock split at a rate of 0.443332 of a share for each share. As of that date, Berkshire owned 52.5% of Heinz Holding's outstanding common stock.

(6) Investments in The Kraft Heinz Company *(Continued)*

On July 2, 2015, Heinz Holding acquired Kraft Foods Group, Inc. ("Kraft"). Upon completion of the acquisition, Heinz Holding was renamed The Kraft Heinz Company ("Kraft Heinz"). Kraft Heinz is one of the world's largest manufacturers and marketers of food and beverage products, including condiments and sauces, cheese and dairy products, meats, refreshment beverages, coffee, and other grocery products. Kraft Heinz's leading brands include *Kraft, Heinz, ABC, Capri Sun, Classico, Jell-O, Kool-Aid, Lunchables, Maxwell House, Ore-Ida, Oscar Mayer, Philadelphia, Planters, Plasmon, Quero, Weight Watchers Smart Ones and Velveeta.*

In connection with the acquisition of Kraft, its shareholders received one share of newly issued Kraft Heinz common stock for each share of Kraft common stock and a special cash dividend of $16.50 per share. Following the issuance of these additional shares, Berkshire and 3G together owned approximately 51% of the outstanding Kraft Heinz common stock, with Berkshire owning approximately 26.8% and 3G owning 24.2%. We accounted for our investment in Heinz Holding common stock and continue to account for our investment in Kraft Heinz common stock on the equity method. In applying the equity method, the investor treats an investee's issuance of shares as if the investor had sold a proportionate share of its investment. As a result, we recorded a non-cash pre-tax holding gain of approximately $6.8 billion in 2015, representing the excess of the fair value of Kraft Heinz common stock at the date of the merger over the carrying value associated with the reduction in our ownership.

A summary of our investments in Kraft Heinz follows (in millions).

	Carrying Value	
	December 31, 2016	December 31, 2015
Common stock	$15,345	$15,714
Preferred Stock	—	7,710
	$15,345	$23,424

Our equity method earnings (losses) on the common stock were $923 million in 2016, $(122) million in 2015 and $(26) million in 2014. Common stock dividends received were $952 million in 2016 and $366 million in 2015.

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

	December 31, 2016	January 3, 2016
Assets	$120,480	$122,973
Liabilities	62,906	56,737

	Year ending December 31, 2016	Year ending January 3, 2016	Year ending December 28, 2014
Sales	$26,487	$ 18,338	$10,922
Net earnings	$ 3,632	$ 634	$ 657
Net earnings (loss) attributable to common shareholders	$ 3,452	$ (266)	$ (63)

(7) Investment gains/losses

Investment gains/losses, including other-than-temporary impairment ("OTTI") losses, for each of the three years ending December 31, 2016 are summarized below (in millions).

	2016	2015	2014
Fixed maturity securities—			
Gross gains from sales and other disposals	$ 58	$ 104	$ 360
Gross losses from sales and other disposals	(50)	(171)	(89)
Equity securities—			
Gross gains from sales and redemptions	7,853	9,526	4,016
Gross losses from sales and redemptions	(334)	(103)	(125)
OTTI losses	(82)	(26)	(697)
Other	108	43	110
	$ 7,553	$ 9,373	$ 3,575

Gains from sales and redemptions of equity securities in 2016 included approximately $2.4 billion from the disposition of our investment in Wrigley preferred stock, $610 million from the redemption of our investment in Kraft Heinz Preferred Stock, $1.2 billion upon the conversion of our investment in Dow Preferred and a non-cash holding gain of approximately $1.1 billion from the exchange of our P&G common stock in the acquisition of Duracell. The non-cash gain from the P&G/Duracell exchange represented the excess of the fair value of net assets of Duracell over the cost basis of the P&G stock exchanged.

Gains from sales and redemptions of equity securities in 2015 included a non-cash holding gain of approximately $6.8 billion in connection with our investment in Kraft Heinz common stock (see Note 6). Gains from sales and redemptions of equity securities during 2014 included non-cash holding gains of approximately $2.1 billion from the exchange of Phillips 66 ("PSX") common stock in connection with the acquisition of Phillips Specialty Products Inc. (currently named LiquidPower Specialty Products Inc. ("LSPI")) and the exchange of Graham Holding Company ("GHC") common stock for WPLG, Inc. ("WPLG"). These holding gains represented the excess of the respective fair value of the net assets of LSPI and WPLG received over the respective cost basis of the PSX and GHC shares exchanged.

We record investments in equity and fixed maturity securities classified as available-for-sale at fair value and record the difference between fair value and cost in other comprehensive income. OTTI losses recognized in earnings represent reductions in the cost basis of the investment, but not the fair value. Accordingly, such losses that are included in earnings are generally offset by a credit to other comprehensive income, producing no net effect on shareholders' equity as of the balance sheet date. In 2014, we recorded an OTTI charge of $678 million related to our investment in equity securities of Tesco PLC.

(8) Inventories

Inventories are comprised of the following (in millions).

	December 31,	
	2016	2015
Raw materials	$ 2,789	$ 1,852
Work in process and other	2,506	778
Finished manufactured goods	4,033	3,369
Goods acquired for resale	6,399	5,917
	$15,727	$11,916

Inventories at December 31, 2016 included approximately $3.5 billion related to PCC and Duracell.

(9) Receivables

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

	December 31, 2016	December 31, 2015
Insurance premiums receivable	$10,462	$ 8,843
Reinsurance recoverable on unpaid losses	3,338	3,307
Trade and other receivables	13,630	11,521
Allowances for uncollectible accounts	(333)	(368)
	$27,097	$23,303

Trade and other receivables at December 31, 2016 included approximately $1.8 billion related to PCC and Duracell.

Loans and finance receivables of finance and financial products businesses are summarized as follows (in millions).

	December 31, 2016	December 31, 2015
Loans and finance receivables before allowances and discounts	$13,728	$13,186
Allowances for uncollectible loans	(182)	(182)
Unamortized acquisition discounts	(246)	(232)
	$13,300	$12,772

Loans and finance receivables are predominantly installment loans originated or acquired by our manufactured housing business. Provisions for loan losses for 2016 and 2015 were $144 million and $148 million, respectively. Loan charge-offs, net of recoveries, were $144 million in 2016 and $177 million in 2015. At December 31, 2016, approximately 98% of the loan balances were evaluated collectively for impairment. As part of the evaluation process, credit quality indicators are reviewed and loans are designated as performing or non-performing. At December 31, 2016, approximately 98% of the loan balances were determined to be performing and approximately 94% of the loan balances were current as to payment status.

(10) Property, plant and equipment and assets held for lease

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

	Ranges of estimated useful life	December 31, 2016	December 31, 2015
Land	—	$ 2,108	$ 1,689
Buildings and improvements	5 – 40 years	8,360	7,329
Machinery and equipment	3 – 25 years	20,463	17,054
Furniture, fixtures and other	2 – 15 years	4,080	3,545
		35,011	29,617
Accumulated depreciation		(15,686)	(14,077)
		$ 19,325	$ 15,540

Property, plant and equipment at December 31, 2016 included approximately $3.3 billion related to PCC and Duracell.

(10) Property, plant and equipment and assets held for lease *(Continued)*

A summary of property, plant and equipment of our railroad and our utilities and energy businesses follows (in millions).

	Ranges of estimated useful life	December 31, 2016	December 31, 2015
Railroad:			
Land	—	$ 6,063	$ 6,037
Track structure and other roadway	7 – 100 years	48,277	45,967
Locomotives, freight cars and other equipment	6 – 40 years	12,075	11,320
Construction in progress	—	965	1,031
		67,380	64,355
Accumulated depreciation		(6,130)	(4,845)
		61,250	59,510
Utilities and energy:			
Utility generation, transmission and distribution systems	5 – 80 years	71,536	69,248
Interstate natural gas pipeline assets	3 – 80 years	6,942	6,755
Independent power plants and other assets	3 – 30 years	6,596	5,626
Construction in progress	—	2,098	2,627
		87,172	84,256
Accumulated depreciation		(24,663)	(23,487)
		62,509	60,769
		$ 123,759	$ 120,279

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 held for lease and property, plant and equipment of our finance and financial products businesses are summarized below (in millions).

	Ranges of estimated useful life	December 31, 2016	December 31, 2015
Assets held for lease	5 – 35 years	$11,902	$11,317
Land	—	224	220
Buildings, machinery and other	3 – 50 years	1,302	1,207
		13,428	12,744
Accumulated depreciation		(3,739)	(3,397)
		$ 9,689	$ 9,347

Assets held for lease includes railcars, intermodal tank containers, cranes, over-the-road trailers, storage units and furniture. As of December 31, 2016, the minimum future lease rentals to be received on assets held for lease (including rail cars leased from others) were as follows (in millions): 2017 – $1,251; 2018 – $992; 2019 – $744; 2020 – $543; 2021 – $358; and thereafter – $525.

Depreciation expense for each of the three years ending December 31, 2016 is summarized below (in millions).

	2016	2015	2014
Insurance and other	$2,148	$1,680	$1,632
Railroad, utilities and energy	4,639	4,383	3,981
Finance and financial products	624	610	602
	$7,411	$6,673	$6,215

(11) Goodwill and other intangible assets

A reconciliation of the change in the carrying value of goodwill is as follows (in millions).

	December 31, 2016	December 31, 2015
Balance at beginning of year	$62,708	$60,714
Acquisitions of businesses	17,650	2,563
Other, including foreign currency translation	(872)	(569)
Balance at end of year	$79,486	$62,708

Other intangible assets are summarized as follows (in millions).

	December 31, 2016		December 31, 2015	
	Gross carrying amount	Accumulated amortization	Gross carrying amount	Accumulated amortization
Insurance and other	$39,976	$6,495	$14,610	$5,462
Railroad, utilities and energy	898	293	888	239
	$40,874	$6,788	$15,498	$5,701
Trademarks and trade names	$ 5,175	$ 616	$ 3,041	$ 765
Patents and technology	4,341	2,328	4,252	2,050
Customer relationships	28,243	2,879	5,474	2,131
Other	3,115	965	2,731	755
	$40,874	$6,788	$15,498	$5,701

Amortization expense was $1,490 million in 2016, $1,106 million in 2015 and $1,155 million in 2014. Estimated amortization expense over the next five years is as follows (in millions): 2017 – $1,383; 2018 – $1,349; 2019 – $1,229; 2020 – $1,131 and 2021 – $1,042. Intangible assets with indefinite lives as of December 31, 2016 and 2015 were $18,705 million and $2,964 million, respectively. Other intangible assets at December 31, 2016 included assets of PCC and Duracell of approximately $24.8 billion, which included approximately $13.6 billion in customer relationships and $2.3 billion in trade names that were determined to have indefinite lives.

(12) Derivative contracts

Derivative contracts have been entered into primarily through our finance and financial products and our utilities and energy businesses. A summary of the liabilities and related notional values of derivative contracts of our finance and financial products businesses follows (in millions).

	December 31, 2016		December 31, 2015	
	Liabilities	Notional Value	Liabilities	Notional Value
Equity index put options	$2,890	$ 26,497[1]	$3,552	$ 27,722[1]
Credit default[2]	—	—	284	7,792
	$2,890		$3,836	

(1) Represents the aggregate undiscounted amounts payable assuming that the value of each index is zero at each contract's expiration date. Certain of these contracts are denominated in foreign currencies. Notional amounts are based on the foreign currency exchange rates as of each balance sheet date.

(2) In July 2016, our remaining credit default contract was terminated by mutual agreement with the counterparty. We no longer have any exposure to losses under credit default contracts.

(12) Derivative contracts *(Continued)*

The derivative contract liabilities of our finance and financial products businesses are recorded at fair value and the changes in the fair values of such contracts are reported in earnings as derivative gains/losses. We entered into these contracts with the expectation that the premiums received would exceed the amounts ultimately paid to counterparties. A summary of the derivative gains/losses included in our Consolidated Statements of Earnings in each of the three years ending December 31, 2016 follows (in millions).

	2016	2015	2014
Equity index put options	$ 662	$1,008	$ 108
Credit default and other	89	(34)	398
	$ 751	$ 974	$ 506

The equity index put option contracts are European style options written between 2004 and 2008 on four major equity indexes. These contracts expire between June 2018 and January 2026. Future payments, if any, under any given contract will be required if the prevailing index value is below the contract strike price at the expiration date. We received the premiums on these contracts at the inception dates and therefore we have no counterparty credit risk.

The aggregate intrinsic value (the undiscounted liability assuming the contracts are settled based on the index values and foreign currency exchange rates as of the balance sheet date) of our equity index put option contracts was approximately $1.0 billion at December 31, 2016 and $1.1 billion at December 31, 2015. However, these contracts may not be unilaterally terminated or fully settled before the expiration dates. Therefore, the ultimate amount of cash basis gains or losses on these contracts will not be determined for several years. The remaining weighted average life of all contracts was approximately four years at December 31, 2016.

A limited number of our equity index put option contracts contain collateral posting requirements with respect to changes in the fair value or intrinsic value of the contracts and/or a downgrade of Berkshire's credit ratings. As of December 31, 2016, we did not have any collateral posting requirements. If Berkshire's credit ratings (currently AA from Standard & Poor's and Aa2 from Moody's) are downgraded below either A- by Standard & Poor's or A3 by Moody's, collateral of up to $1.1 billion could be required to be posted.

Our regulated utility subsidiaries are exposed to variations in the prices of fuel required to generate electricity, wholesale electricity purchased and sold and natural gas supplied for customers. Derivative instruments, including forward purchases and sales, futures, swaps and options, are used to manage a portion of these price risks. Derivative contract assets are included in other assets and were $142 million as of December 31, 2016 and $103 million as of December 31, 2015. Derivative contract liabilities are included in accounts payable, accruals and other liabilities and were $145 million as of December 31, 2016 and $237 million as of December 31, 2015. Net derivative contract assets or liabilities of our regulated utilities that are probable of recovery through rates, are offset by regulatory liabilities or assets. Unrealized gains or losses on contracts accounted for as cash flow or fair value hedges are recorded in other comprehensive income or in net earnings, as appropriate.

(13) Supplemental cash flow information

A summary of supplemental cash flow information for each of the three years ending December 31, 2016 is presented in the following table (in millions).

	2016	2015	2014
Cash paid during the period for:			
Income taxes	$4,719	$4,535	$4,014
Interest:			
Insurance and other businesses	555	346	360
Railroad, utilities and energy businesses	2,788	2,717	2,487
Finance and financial products businesses	389	403	465
Non-cash investing and financing activities:			
Liabilities assumed in connection with business acquisitions	16,555	2,812	6,334
Equity securities exchanged in connection with business acquisitions	4,239	—	2,478
Treasury stock acquired in connection with business acquisition	—	—	400
Conversions and other exchanges of investments	4,154	1,597	—

(14) Unpaid losses and loss adjustment expenses

The liabilities for unpaid losses and loss adjustment expenses (also referred to as "claim liabilities") under our short duration 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 for each of the three years ending December 31, 2016 is as follows (in millions).

	2016	2015	2014
Unpaid losses and loss adjustment expenses – beginning of year:			
Gross liabilities	$73,144	$71,477	$64,866
Reinsurance recoverable and deferred charges	(10,994)	(10,888)	(7,414)
Net balance	62,150	60,589	57,452
Incurred losses and loss adjustment expenses recorded during the year:			
Current accident year events	30,636	27,829	24,335
Prior accident years' events	(1,512)	(2,014)	(2,280)
Retroactive reinsurance and discount accretion	1,782	712	4,351
Total incurred losses and loss adjustment expenses	30,906	26,527	26,406
Paid losses and loss adjustment expenses during the year with respect to:			
Current accident year events	(14,898)	(13,070)	(11,291)
Prior accident years' events	(10,958)	(10,268)	(10,297)
Retroactive reinsurance	(1,130)	(1,151)	(1,082)
Total payments	(26,986)	(24,489)	(22,670)
Foreign currency translation adjustment	(537)	(545)	(666)
Business acquisitions	—	68	67
Unpaid losses and loss adjustment expenses – end of year:			
Net balance	65,533	62,150	60,589
Reinsurance recoverable and deferred charges	11,385	10,994	10,888
Gross liabilities	$76,918	$73,144	$71,477

Incurred losses and loss adjustment expenses in the preceding table reflect the losses and loss adjustment expenses recorded in earnings in each year related to insured events occurring in the current year and in prior years. We present incurred and paid losses under retroactive reinsurance contracts and discount accretion separately. Such amounts relate to prior years' underlying loss events. Additionally, we discount unpaid losses from certain workers' compensation reinsurance contracts. Discounted workers' compensation liabilities at December 31, 2016 and 2015 were approximately $1.9 billion and $2.0 billion, respectively, reflecting net discounts of $1.4 billion and $1.6 billion.

Incurred losses and loss adjustment expenses reflected reductions for prior years' insured events of approximately $1.5 billion in 2016, $2.0 billion in 2015 and $2.3 billion in 2014. In each year, these reductions derived from our direct insurance business (including private passenger automobile and medical malpractice and workers' compensation coverages), as well as from reinsurance business. The reductions for our reinsurance business were primarily attributable to lower than expected reported losses from ceding companies with respect to property coverages.

(14) Unpaid losses and loss adjustment expenses *(Continued)*

Estimated claim liabilities for environmental, asbestos and other latent injury exposures, net of reinsurance recoverables, were approximately \$15.3 billion at December 31, 2016 and \$14.0 billion at December 31, 2015, and included approximately \$13.7 billion at December 31, 2016 and \$12.4 billion at December 31, 2015 from retroactive reinsurance contracts. 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 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. Such development 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.

A reconciliation of certain net unpaid losses and allocated loss adjustment expenses (the latter referred to as "ALAE") of GEICO, General Re, Berkshire Hathaway Reinsurance Group ("BHRG") and Berkshire Hathaway Primary Group ("BH Primary") to our consolidated unpaid losses and loss adjustment expenses as of December 31, 2016, along with a discussion regarding each group's liability estimation processes, follows.

	December 31, 2016	
	(in millions)	
Unpaid losses and ALAE, net of reinsurance recoverable:		
GEICO	\$12,981	
General Re	13,973	
BHRG	10,172	
BH Primary	10,173	\$47,299
Reinsurance recoverable:		
GEICO	1,084	
General Re	611	
BHRG	121	
BH Primary	1,099	2,915
Retroactive reinsurance, unpaid losses and loss adjustment expenses		24,675
Other short-duration contracts, unpaid losses and loss adjustment expenses		1,390
Discount on workers' compensation reinsurance liabilities		(1,433)
Unpaid unallocated loss adjustment expenses		2,072
Unpaid losses and loss adjustment expenses		\$76,918

GEICO

For GEICO, 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.

We establish average liabilities based on expected severities for newly reported physical damage and liability claims prior to establishing an individual case reserve when we have insufficient time and information to make specific claim estimates and for a large number of minor physical damage claims that are paid shortly after being reported. We establish liability case loss estimates, which includes loss adjustment expenses, once the facts and merits of the claim are evaluated.

Estimates for liability coverages are more uncertain primarily due to the longer claim-tails, the greater chance of protracted litigation and the incompleteness of facts at the time the case estimate is first established. The "claim-tail" is the time period between the claim occurrence date and settlement date. As a result, 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.

GEICO's claims are counted 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" in the table which follows includes the combined number of reported claims for all policy coverages and excludes projected IBNR claims.

(14) Unpaid losses and loss adjustment expenses *(Continued)*

GEICO's claim liabilities predominantly relate to various types of private passenger auto liability and physical damage claims. Aggregate incurred and paid loss and ALAE data by accident year for these claims, net of reinsurance, follows. IBNR and case development liabilities are as of December 31, 2016. Dollars are in millions.

Accident Year	Incurred Losses and ALAE through December 31, 2012*	2013*	2014*	2015*	2016	IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
2012	$12,034	$11,904	$11,893	$11,906	$11,900	$ 79	6,459
2013		12,990	12,815	12,859	12,837	184	7,102
2014			14,597	14,488	14,477	539	7,965
2015				16,807	16,798	1,394	8,891
2016					18,982	3,132	9,336
				Incurred losses and ALAE	$74,994		

Accident Year	Cumulative Paid Losses and ALAE through December 31, 2012*	2013*	2014*	2015*	2016
2012	$7,550	$9,832	$10,744	$11,311	$11,609
2013		7,944	10,494	11,569	12,174
2014			9,133	11,956	13,060
2015				10,543	13,785
2016					11,927
				Paid losses and ALAE	62,555
	Net unpaid losses and ALAE for 2012 – 2016 accident years				12,439
	Net unpaid losses and ALAE for accident years before 2012*				542
				Net unpaid losses and ALAE	$12,981

* *Unaudited supplemental information*

General Re

General Re's liabilities for unpaid losses and loss adjustment expenses include case and IBNR estimates and primarily relate to casualty and workers' compensation coverages. Case losses are reported under reinsurance contracts either individually or in bulk as provided under the terms of the contracts. We independently evaluate reported loss amounts and if deemed appropriate, we establish case liabilities based on our estimates.

We primarily use Bornhuetter–Ferguson methods to estimate IBNR amounts for claims liabilities. The expected case loss emergence patterns and expected loss ratios are the critical assumptions applicable to these estimates. Once the annual IBNR liabilities are determined, we estimate the expected case loss emergence for the next calendar year based on the prior year-end expected loss emergence patterns and expected loss ratios. Liability estimates also include estimates of the impact of major catastrophe events as they become known, which rely more on a per-policy assessment of the ultimate cost associated with the individual loss event. Claim count data is excluded, as such information is not provided consistently by ceding companies under our contracts or is otherwise considered unreliable.

(14) Unpaid losses and loss adjustment expenses *(Continued)*

General Re's incurred and paid loss and ALAE data by accident year, net of reinsurance, is presented in the following tables. IBNR and case development liabilities are as of December 31, 2016. Dollars are in millions.

	Incurred Losses and ALAE through December 31,										
Accident Year	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*	2016	IBNR and Case Development Liabilities
2007	$1,857	$1,915	$1,852	$1,746	$1,673	$1,619	$1,574	$1,559	$1,535	$ 1,512	$ 73
2008		1,920	2,011	1,903	1,818	1,746	1,713	1,669	1,648	1,635	93
2009			1,703	1,790	1,704	1,601	1,523	1,490	1,471	1,431	125
2010				1,881	2,055	1,939	1,845	1,757	1,712	1,674	156
2011					2,102	2,126	1,897	1,792	1,744	1,669	208
2012						1,810	1,850	1,707	1,603	1,535	335
2013							1,945	2,095	1,994	1,854	417
2014								1,740	1,843	1,794	578
2015									1,811	1,999	777
2016										1,715	1,173
									Incurred losses and ALAE	$16,818	

	Cumulative Paid Losses and ALAE through December 31,									
Accident Year	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*	2016
2007	$282	$821	$1,020	$1,132	$1,195	$1,238	$1,291	$1,309	$1,322	$ 1,335
2008		330	894	1,074	1,187	1,246	1,289	1,315	1,330	1,354
2009			264	734	897	994	1,065	1,115	1,145	1,161
2010				247	782	997	1,147	1,243	1,304	1,359
2011					302	841	1,086	1,190	1,259	1,317
2012						199	664	829	916	991
2013							275	829	1,060	1,162
2014								171	666	864
2015									207	693
2016										171
									Paid losses and ALAE	10,407
									Net unpaid losses and ALAE for 2007 – 2016 accident years	6,411
									Net unpaid losses and ALAE for accident years before 2007*	7,562
									Net unpaid losses and ALAE	$13,973

* *Unaudited supplemental information*

BHRG

BHRG's liabilities for losses and ALAE are principally a function of reported losses from ceding companies and IBNR and case development liability estimates which are based on expected loss ratios established on a portfolio basis. Liability estimates also include estimates of the impact of major catastrophe events, as they become known, which rely more on a per-policy assessment of the ultimate cost associated with the individual loss event. The expected loss ratios are based upon management's judgment considering the type of business covered, analysis of each ceding company's loss history and evaluation of the portion of the underlying contracts that we reinsure. Claim count data is excluded, as such information is not provided consistently by ceding companies under our contracts or is otherwise considered unreliable.

(14) Unpaid losses and loss adjustment expenses *(Continued)*

BHRG's incurred and paid loss and ALAE data by accident year, net of reinsurance, is presented in the following tables. IBNR and case development liabilities are as of December 31, 2016. Dollars are in millions.

	Incurred Losses and ALAE through December 31,**										IBNR and Case Development Liabilities
Accident Year	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*	2016	
2007	$1,810	$1,756	$1,659	$1,658	$1,652	$1,590	$1,583	$1,560	$1,500	$ 1,471	$ 133
2008		3,388	3,130	2,988	2,903	2,835	2,748	2,683	2,605	2,578	244
2009			2,974	2,858	2,989	2,926	2,847	2,759	2,691	2,668	215
2010				2,876	2,974	2,883	2,771	2,610	2,575	2,551	238
2011					4,418	4,544	4,358	4,440	4,389	4,365	452
2012						4,054	3,878	3,648	3,583	3,531	694
2013							3,326	3,144	2,935	2,832	733
2014								2,688	2,585	2,492	736
2015									3,207	3,070	1,113
2016										3,390	1,907
									Incurred losses and ALAE	$28,948	

	Cumulative Paid Losses and ALAE through December 31,**									
Accident Year	2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*	2016
2007	$171	$677	$ 891	$ 993	$1,055	$1,120	$1,170	$1,196	$1,211	$ 1,221
2008		364	1,146	1,617	1,836	1,976	2,056	2,131	2,205	2,228
2009			372	1,182	1,605	1,937	2,147	2,306	2,336	2,363
2010				193	889	1,414	1,736	2,041	2,119	2,177
2011					552	2,130	2,872	3,315	3,475	3,600
2012						360	1,279	2,080	2,350	2,519
2013							516	1,070	1,555	1,774
2014								437	1,031	1,319
2015									550	1,354
2016										778
									Paid losses and ALAE	19,333
									Net unpaid losses and ALAE for 2007 – 2016 accident years	9,615
									Net unpaid losses and ALAE for accident years before 2007*	557
									Net unpaid losses and ALAE	$10,172

* *Unaudited supplemental information*

*** Excludes retroactive reinsurance losses and ALAE*

BH Primary

BH Primary's liabilities for unpaid losses and ALAE primarily derive from workers' compensation, medical professional and other liability insurance. Other liability insurance includes commercial auto and general liability policies. We periodically evaluate ultimate unpaid loss and ALAE estimates for the workers' compensation and general liability lines 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 into groups such as coverages, territories or other characteristics. 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. For medical professional liabilities, we use a combination of the aforementioned methods, as well as other loss severity based methods. From these estimates, we determine our best estimate. Periodically, we study developments in older accident years and adjust initial loss estimates to reflect recent development based upon claim age, coverage and litigation experience. The cumulative number of reported claims reflects the number of individual claimants, and includes claim that ultimately result in no liability or payment.

(14) Unpaid losses and loss adjustment expenses *(Continued)*

BH Primary's incurred and paid loss and ALAE data by accident year, net of reinsurance, is presented in the following tables. IBNR and case development liabilities are as of December 31, 2016. Dollars are in millions.

Accident Year	Incurred Losses and ALAE through December 31, 2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*	2016	IBNR and Case Development Liabilities	Cumulative Number of Reported Claims (in thousands)
2007	$1,328	$1,233	$1,174	$1,090	$ 955	$ 901	$ 852	$ 817	$ 788	$ 775	$ 46	137
2008		1,349	1,273	1,228	1,168	1,081	1,015	979	948	920	80	136
2009			1,298	1,211	1,180	1,159	1,068	1,020	966	936	99	117
2010				1,268	1,186	1,191	1,129	1,062	994	956	150	111
2011					1,888	1,633	1,605	1,452	1,375	1,297	223	109
2012						2,129	2,079	2,017	1,944	1,903	453	135
2013							2,294	2,213	2,133	2,060	595	150
2014								2,967	2,780	2,730	1,027	177
2015									3,575	3,458	1,631	188
2016										4,149	2,682	135
									Incurred losses and ALAE	$19,184		

Accident Year	Cumulative Paid Losses and ALAE through December 31, 2007*	2008*	2009*	2010*	2011*	2012*	2013*	2014*	2015*	2016
2007	$128	$284	$409	$510	$578	$628	$660	$679	$ 696	$ 705
2008		174	333	464	578	662	728	772	795	810
2009			147	305	445	569	655	726	771	798
2010				146	313	458	570	657	722	758
2011					163	396	602	753	898	973
2012						211	598	844	1,053	1,208
2013							350	706	985	1,197
2014								453	896	1,247
2015									502	1,078
2016										634
									Paid losses and ALAE	9,408
									Net unpaid losses and ALAE for 2007 – 2016 accident years	9,776
									Net unpaid losses and ALAE for accident years before 2007*	397
									Net unpaid losses and ALAE	$10,173

* *Unaudited supplemental information*

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 Years	1	2	3	4	5	6	7	8	9	10
GEICO	62.2%	19.6%	8.0%	4.8%	2.7%					
Gen Re	14.8%	31.0%	12.2%	6.8%	4.6%	3.2%	2.6%	1.1%	1.2%	0.9%
BHRG	14.7%	28.2%	17.2%	9.4%	6.3%	3.9%	2.4%	1.9%	1.0%	0.7%
BH Primary	15.4%	17.8%	14.5%	11.9%	9.2%	6.8%	4.3%	2.6%	1.9%	1.2%

Retroactive Reinsurance

BHRG's retroactive reinsurance contracts cover underlying loss events that occurred prior to the contract inception date, which are paid immediately after the contract date or once a contractual retention amount has been reached. As of December 31, 2016 approximately 83% of gross unpaid losses pertained to underlying loss events that occurred prior to January 2007. We do not believe that analysis of losses incurred and paid by accident year of the underlying event is relevant or meaningful given that our exposure to losses incepts when the contract incepts. Further, we believe the classifications of reported claims and case development liabilities has no practical analytical value.

(14) Unpaid losses and loss adjustment expenses *(Continued)*

In establishing retroactive reinsurance liabilities, we often analyze historical aggregate loss payment patterns and project losses into the future under various scenarios. We expect the claim-tail to be very long for many contracts, with some lasting several decades. We assign judgmental probability factors to these aggregate loss payment scenarios and an expectancy outcome is determined. We monitor claim payment activity and review ceding company reports and other information concerning the underlying losses. Since the expected claim-tails are often very long, 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.

Incurred losses and loss adjustment expenses attributable to retroactive reinsurance contracts included $1.26 billion in 2016 and $3.43 billion in 2014 from new contracts written in those years. Incurred losses related to retroactive reinsurance contracts written in prior years were $440 million in 2016, $631 million in 2015 and $831 million in 2014, which included recurring amortization of deferred charges and the effect of changes in the timing and amount of expected future loss payments.

(15) Notes payable and other borrowings

Notes payable and other borrowings are 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, 2016.

	Weighted Average Interest Rate	December 31, 2016	December 31, 2015
Insurance and other:			
Issued by Berkshire due 2017-2047	2.2%	$17,703	$ 9,799
Short-term subsidiary borrowings	2.5%	2,094	1,989
Other subsidiary borrowings due 2017-2045	4.0%	7,378	2,811
		$27,175	$14,599

In January 2016, Berkshire entered into a $10 billion 364-day revolving credit agreement and, in connection with the PCC acquisition, borrowed $10 billion. In March 2016, Berkshire issued €2.75 billion and $5.5 billion in senior unsecured notes. The notes consisted of €1.0 billion of 0.50% notes due in 2020, €1.0 billion of 1.30% notes due in 2024, €750 million of 2.15% notes due in 2028, $1.0 billion of 2.20% notes due in 2021, $2.0 billion of 2.75% notes due in 2023 and $2.5 billion of 3.125% notes due in 2026. The proceeds from these debt issues were used in the repayment of all outstanding borrowings under the aforementioned credit agreement, which was subsequently terminated. In August 2016, Berkshire issued $750 million in senior unsecured notes consisting of $500 million of 1.15% notes due in 2018 and $250 million of floating rate notes due in 2018, to replace $750 million of maturing debt. Other subsidiary borrowings at December 31, 2016 included $4.5 billion attributable to PCC.

	Weighted Average Interest Rate	December 31, 2016	December 31, 2015
Railroad, utilities and energy:			
Issued by Berkshire Hathaway Energy Company ("BHE") and its subsidiaries:			
BHE senior unsecured debt due 2017-2045	5.1%	$ 7,818	$ 7,814
Subsidiary and other debt due 2017-2064	4.7%	29,223	28,188
Issued by BNSF due 2017-2097	4.8%	22,044	21,737
		$59,085	$57,739

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, but not limited to, leverage ratios, interest coverage ratios and debt service coverage ratios. In 2016, BHE subsidiaries issued approximately $1.8 billion of debt with maturity dates ranging from 2025 to 2046 and a weighted average interest rate of 3.0%.

(15) Notes payable and other borrowings *(Continued)*

BNSF's borrowings are primarily senior unsecured debentures. In 2016, BNSF issued $750 million of senior unsecured 3.9% debentures due in 2046. As of December 31, 2016, 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.

	Weighted Average Interest Rate	December 31, 2016	December 31, 2015
Finance and financial products:			
Issued by Berkshire Hathaway Finance Corporation ("BHFC") due 2017-2043	2.5%	$14,423	$10,679
Issued by other subsidiaries due 2017-2036	4.9%	961	1,272
		$15,384	$11,951

In March 2016, BHFC issued $3.5 billion of senior notes consisting of $750 million of 1.45% notes due in 2018, $1.0 billion of floating rate notes due in 2018, $1.25 billion of 1.70% notes due in 2019 and $500 million of floating rate notes due in 2019. In August 2016, BHFC issued $1.25 billion of senior notes consisting of $1 billion of 1.30% notes due in 2019 and $250 million of floating rate notes due in 2019, primarily to replace $1 billion of maturing debt. The borrowings of BHFC, a wholly owned finance subsidiary of Berkshire, are fully and unconditionally guaranteed by Berkshire.

As of December 31, 2016, our subsidiaries had unused lines of credit and commercial paper capacity aggregating approximately $7.6 billion to support short-term borrowing programs and provide additional liquidity. Such unused lines of credit included about $4.0 billion related to BHE and its subsidiaries. In addition to BHFC's borrowings, at December 31, 2016, Berkshire guaranteed approximately $3.3 billion of other subsidiary borrowings. 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.

Principal repayments expected during each of the next five years are as follows (in millions).

	2017	2018	2019	2020	2021
Insurance and other	$ 3,329	$ 3,022	$1,362	$1,650	$1,824
Railroad, utilities and energy	3,610	4,283	2,935	2,123	1,741
Finance and financial products	3,317	4,706	3,099	616	777
	$ 10,256	$ 12,011	$7,396	$4,389	$4,342

(16) Income taxes

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

	December 31, 2016	December 31, 2015
Currently payable (receivable)	$ 500	$ (643)
Deferred	76,959	63,199
Other	485	570
	$77,944	$63,126

(16) Income taxes *(Continued)*

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

	December 31, 2016	December 31, 2015
Deferred tax liabilities:		
Investments – unrealized appreciation and cost basis differences	$ 27,669	$ 25,117
Deferred charges reinsurance assumed	2,876	2,798
Property, plant and equipment	39,345	36,770
Goodwill and other intangible assets	11,344	2,770
Other	5,550	4,555
	86,784	72,010
Deferred tax assets:		
Unpaid losses and loss adjustment expenses	(861)	(887)
Unearned premiums	(1,021)	(927)
Accrued liabilities	(3,821)	(3,487)
Other	(4,122)	(3,510)
	(9,825)	(8,811)
Net deferred tax liability	$ 76,959	$ 63,199

We have not established deferred income taxes on accumulated undistributed earnings of certain foreign subsidiaries. Such earnings were approximately $12.4 billion as of December 31, 2016 and are expected to remain reinvested indefinitely. Upon distribution as dividends or otherwise, such amounts would be subject to taxation in the U.S. and potentially in other countries. However, U.S. income tax liabilities would be offset, in whole or in part, by allowable tax credits deriving from income taxes previously paid to foreign jurisdictions. Further, repatriation of all accumulated earnings of foreign subsidiaries would be impracticable to the extent that such earnings represent capital needed to support normal business operations. As a result, we currently believe that any incremental U.S. income tax liabilities arising from the repatriation of distributable earnings of foreign subsidiaries would not be material.

Income tax expense reflected in our Consolidated Statements of Earnings for each of the three years ending December 31, 2016 is as follows (in millions).

	2016	2015	2014
Federal	$ 7,796	$ 9,253	$6,447
State	556	578	560
Foreign	888	701	928
	$ 9,240	$ 10,532	$7,935
Current	$ 6,565	$ 5,426	$3,302
Deferred	2,675	5,106	4,633
	$ 9,240	$ 10,532	$7,935

(16) Income taxes *(Continued)*

Income tax expense is reconciled to hypothetical amounts computed at the U.S. federal statutory rate for each of the three years ending December 31, 2016 in the table below (in millions).

	2016	2015	2014
Earnings before income taxes	$33,667	$34,946	$28,105
Hypothetical income tax expense computed at the U.S. federal statutory rate	$11,783	$12,231	$ 9,837
Dividends received deduction and tax exempt interest	(789)	(1,146)	(820)
State income taxes, less U.S. federal income tax benefit	361	374	364
Foreign tax rate differences	(421)	(459)	(252)
U.S. income tax credits	(518)	(461)	(333)
Non-taxable exchange of investments	(1,143)	—	(679)
Other differences, net	(33)	(7)	(182)
	$ 9,240	$10,532	$ 7,935

We file income tax returns in the United States and in state, local and foreign jurisdictions. We are under examination by the taxing authorities in many of these jurisdictions. We have settled income tax liabilities with U.S. federal taxing authorities for years before 2010. The IRS continues to audit Berkshire's consolidated U.S. federal income tax returns for the 2010 through 2013 tax years. We are also under audit or subject to audit with respect to income taxes in many state and foreign jurisdictions. It is reasonably possible that certain income tax examinations will be settled within the next twelve months. We currently do not believe that the outcome of unresolved issues or claims will be material to our Consolidated Financial Statements.

At December 31, 2016 and 2015, net unrecognized tax benefits were $485 million and $570 million, respectively. Included in the balance at December 31, 2016, were $369 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 such recognition. Because of the impact of deferred tax accounting, the differences in recognition periods would not affect the annual effective tax rate but would accelerate the payment of cash to the taxing authority to an earlier period. As of December 31, 2016, we do not expect any material changes to the estimated amount of unrecognized tax benefits in the next twelve months.

(17) 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 $13 billion as ordinary dividends during 2017.

Combined shareholders' equity of U.S. based insurance subsidiaries determined pursuant to statutory accounting rules (Surplus as Regards Policyholders) was approximately $136 billion at December 31, 2016 and $124 billion at December 31, 2015. 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 the values of non-insurance entities owned by our insurance subsidiaries, are not fully recognized for statutory reporting purposes.

(18) Fair value measurements

Our financial assets and liabilities are summarized below as of December 31, 2016 and December 31, 2015 with fair values shown according to the fair value hierarchy (in millions). The carrying values of cash and cash equivalents, U.S. Treasury Bills, receivables and accounts payable, accruals and other liabilities are considered to be reasonable estimates of their fair values.

	Carrying Value	Fair Value	Quoted Prices (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
December 31, 2016					
Investments in fixed maturity securities:					
U.S. Treasury, U.S. government corporations and agencies	$ 4,527	$ 4,527	$ 3,099	$ 1,428	$ —
States, municipalities and political subdivisions	1,216	1,216	—	1,216	—
Foreign governments	9,001	9,001	7,237	1,764	—
Corporate bonds	7,604	7,604	—	7,540	64
Mortgage-backed securities	1,117	1,117	—	1,117	—
Investments in equity securities	122,032	122,032	122,031	—	1
Investment in Kraft Heinz common stock	15,345	28,418	28,418	—	—
Other investments	17,256	17,256	—	—	17,256
Loans and finance receivables	13,300	13,717	—	13	13,704
Derivative contract assets (1)	142	142	5	43	94
Derivative contract liabilities:					
Railroad, utilities and energy (1)	145	145	3	114	28
Equity index put options	2,890	2,890	—	—	2,890
Notes payable and other borrowings:					
Insurance and other	27,175	27,712	—	27,712	—
Railroad, utilities and energy	59,085	65,774	—	65,774	—
Finance and financial products	15,384	15,825	—	15,469	356
December 31, 2015					
Investments in fixed maturity securities:					
U.S. Treasury, U.S. government corporations and agencies	$ 3,427	$ 3,427	$ 2,485	$ 942	$ —
States, municipalities and political subdivisions	1,764	1,764	—	1,764	—
Foreign governments	11,468	11,468	9,188	2,280	—
Corporate bonds	7,926	7,926	—	7,826	100
Mortgage-backed securities	1,442	1,442	—	1,442	—
Investments in equity securities	112,137	112,137	112,101	35	1
Investment in Kraft Heinz common stock	15,714	23,679	23,679	—	—
Investment in Kraft Heinz Preferred Stock	7,710	8,363	—	—	8,363
Other investments	21,402	21,402	—	—	21,402
Loans and finance receivables	12,772	13,112	—	16	13,096
Derivative contract assets (1)	103	103	—	5	98
Derivative contract liabilities:					
Railroad, utilities and energy (1)	237	237	13	177	47
Finance and financial products:					
Equity index put options	3,552	3,552	—	—	3,552
Credit default	284	284	—	—	284
Notes payable and other borrowings:					
Insurance and other	14,599	14,773	—	14,773	—
Railroad, utilities and energy	57,739	62,471	—	62,471	—
Finance and financial products	11,951	12,363	—	11,887	476

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

(18) Fair value measurements *(Continued)*

The fair values of substantially all of our financial instruments were measured using market or income approaches. Considerable judgment may be required in interpreting market data used to develop the estimates of fair value. Accordingly, the fair values presented are not necessarily indicative of the amounts that could be realized in an actual current market exchange. The use of alternative market assumptions and/or estimation methodologies may have a material effect on the estimated fair value. 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 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, 2016 follow (in millions).

	Investments in fixed maturity securities	Investments in equity securities and other investments	Net derivative contract liabilities
Balance December 31, 2013	$ 372	$17,958	$(5,255)
Gains (losses) included in:			
Earnings	—	—	524
Other comprehensive income	13	1,373	—
Regulatory assets and liabilities	—	—	5
Acquisitions	—	3,000	1
Dispositions and settlements	(2)	—	1
Transfers into/out of Level 3	(375)	(335)	(35)
Balance December 31, 2014	8	21,996	(4,759)
Gains (losses) included in:			
Earnings	—	—	1,080
Other comprehensive income	(2)	(593)	(7)
Regulatory assets and liabilities	—	—	(19)
Acquisitions	101	—	—
Dispositions and settlements	(7)	—	(83)
Transfers into/out of Level 3	—	—	3
Balance December 31, 2015	100	21,403	(3,785)
Gains (losses) included in:			
Earnings	—	3,593	880
Other comprehensive income	(4)	876	(2)
Regulatory assets and liabilities	—	—	(11)
Acquisitions	10	—	—
Dispositions and settlements	(41)	(8,615)	(101)
Transfers into/out of Level 3	(1)	—	195
Balance December 31, 2016	$ 64	$17,257	$(2,824)

(18) Fair value measurements *(Continued)*

Gains and losses included in earnings are included as components of investment gains/losses, derivative gains/losses and other revenues, as appropriate and are primarily related to changes in the values of derivative contracts and settlement transactions. Gains and losses included in other comprehensive income are primarily the net change in unrealized appreciation of investments and the reclassification of investment appreciation in net earnings, as appropriate in our Consolidated Statements of Comprehensive Income. In 2016, our Wrigley preferred stock investment was disposed and our Dow preferred stock investment was converted into Dow common stock.

Quantitative information as of December 31, 2016, with respect to assets and liabilities 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
Other investments:				
Preferred stocks	$ 7,659	Discounted cash flow	Expected duration	7 years
			Discount for transferability restrictions and subordination	145 basis points
Common stock warrants	9,597	Warrant pricing model	Discount for transferability and hedging restrictions	5%
Derivative liabilities:				
Equity index put options	2,890	Option pricing model	Volatility	20%

Our other investments currently include preferred stocks and common stock warrants that we acquired in private placement transactions. These investments are subject to contractual restrictions on transferability and may contain provisions that prevent us from economically hedging our investments. In applying discounted estimated cash flow techniques in valuing the preferred stocks, we made assumptions regarding the expected durations of the investments, as the issuers may have redemption rights. We also made estimates regarding the impact of subordination, as the preferred stocks have a lower priority in liquidation than debt instruments of the issuers. In valuing the common stock warrants, we used a warrant valuation model. While most of the inputs to the model are observable, we are subject to the aforementioned contractual restrictions and we have applied discounts with respect to such restrictions. Increases or decreases to these inputs would result in decreases or increases to the fair values of the investments.

Our equity index put option contracts are illiquid and contain contract terms that are not standard in derivatives markets. For example, we are not required to post collateral under most of our contracts and certain of the contracts have relatively long durations. For these and other reasons, we classified these contracts as Level 3. The methods we use to value these contracts are those that we believe market participants would use in determining exchange prices with respect to our contracts.

We value equity index put option contracts based on the Black-Scholes option valuation model. Inputs to this model include index price, contract duration and dividend and interest rate inputs (including a Berkshire non-performance input) which are observable. However, we believe that the valuation of long-duration options using any model is inherently subjective and, given the lack of observable transactions and prices, acceptable values may be subject to wide ranges. Volatility inputs represent our expectations, which consider the remaining duration of each contract and assume that the contracts will remain outstanding until the expiration dates. Increases or decreases in the volatility inputs will produce increases or decreases in the fair values of the liabilities.

(19) Common stock

Changes in Berkshire's issued, treasury and outstanding common stock during the three years ending December 31, 2016 are shown in the table below.

	Class A, $5 Par Value (1,650,000 shares authorized)			Class B, $0.0033 Par Value (3,225,000,000 shares authorized)		
	Issued	Treasury	Outstanding	Issued	Treasury	Outstanding
Balance December 31, 2013	868,616	(9,573)	859,043	1,178,775,092	(1,408,484)	1,177,366,608
Conversions of Class A common stock to Class B common stock and exercises of replacement stock options issued in a business acquisition	(30,597)	—	(30,597)	47,490,158	—	47,490,158
Treasury shares acquired	—	(2,107)	(2,107)	—	(1,278)	(1,278)
Balance December 31, 2014	838,019	(11,680)	826,339	1,226,265,250	(1,409,762)	1,224,855,488
Conversions of Class A common stock to Class B common stock and exercises of replacement stock options issued in a business acquisition	(17,917)	—	(17,917)	27,601,348	—	27,601,348
Balance December 31, 2015	820,102	(11,680)	808,422	1,253,866,598	(1,409,762)	1,252,456,836
Conversions of Class A common stock to Class B common stock and exercises of replacement stock options issued in a business acquisition	(32,044)	—	(32,044)	49,457,329	—	49,457,329
Balance December 31, 2016	788,058	(11,680)	776,378	1,303,323,927	(1,409,762)	1,301,914,165

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 equivalent 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 1,644,321 shares outstanding as of December 31, 2016 and 1,643,393 shares outstanding as of December 31, 2015. In addition to our common stock, 1,000,000 shares of preferred stock are authorized, but none are issued.

Berkshire's Board of Directors ("Berkshire's Board") has approved a common stock repurchase program under which Berkshire may repurchase its Class A and Class B shares at prices no higher than a 20% premium over the book value of the shares. Berkshire may repurchase shares in the open market or through privately negotiated transactions. Berkshire's Board authorization 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 Bills holdings below $20 billion. The repurchase program does not obligate Berkshire to repurchase any dollar amount or number of Class A or Class B shares and there is no expiration date to the program. There were no share repurchases under the program over the last three years. In 2014, we acquired WPLG, whose assets included 2,107 shares of Berkshire Hathaway Class A Common Stock and 1,278 shares of Class B Common Stock, which are included in treasury stock.

Notes to Consolidated Financial Statements *(Continued)*

(20) Accumulated other comprehensive income

A summary of the net changes in after-tax accumulated other comprehensive income attributable to Berkshire Hathaway shareholders and significant amounts reclassified out of accumulated other comprehensive income for each of the three years ending December 31, 2016 follows (in millions).

	Unrealized appreciation of investments, net	Foreign currency translation	Prior service and actuarial gains/losses of defined benefit pension plans	Other	Accumulated other comprehensive income
Balance December 31, 2013	$ 44,042	$ (146)	$ 46	$ 83	$ 44,025
Other comprehensive income, net before reclassifications	3,778	(1,877)	(1,130)	31	802
Reclassifications from accumulated other comprehensive income	(2,184)	66	45	(22)	(2,095)
Balance December 31, 2014	45,636	(1,957)	(1,039)	92	42,732
Other comprehensive income, net before reclassifications	(5,522)	(2,027)	191	(112)	(7,470)
Reclassifications from accumulated other comprehensive income	(1,516)	128	86	22	(1,280)
Balance December 31, 2015	38,598	(3,856)	(762)	2	33,982
Other comprehensive income, net before reclassifications	9,011	(1,412)	94	(48)	7,645
Reclassifications from accumulated other comprehensive income	(4,433)	—	75	29	(4,329)
Balance December 31, 2016	$43,176	$(5,268)	$ (593)	$ (17)	$37,298
Reclassifications from other comprehensive income into net earnings:					
Year ending December 31, 2014:					
Investment gains/losses	$ (3,360)	$ —	$ —	$ —	$ (3,360)
Other	—	75	58	(39)	94
Reclassifications before income taxes	(3,360)	75	58	(39)	(3,266)
Applicable income taxes	(1,176)	9	13	(17)	(1,171)
	$ (2,184)	$ 66	$ 45	$ (22)	$ (2,095)
Year ending December 31, 2015:					
Investment gains/losses	$ (2,332)	$ 197	$ —	$ —	$ (2,135)
Other	—	—	129	35	164
Reclassifications before income taxes	(2,332)	197	129	35	(1,971)
Applicable income taxes	(816)	69	43	13	(691)
	$ (1,516)	$ 128	$ 86	$ 22	$ (1,280)
Year ending December 31, 2016:					
Investment gains/losses	$ (6,820)	$ —	$ —	$ —	$ (6,820)
Other	—	—	104	51	155
Reclassifications before income taxes	(6,820)	—	104	51	(6,665)
Applicable income taxes	(2,387)	—	29	22	(2,336)
	$ (4,433)	$ —	$ 75	$ 29	$ (4,329)

(21) Pension plans

Several of our subsidiaries sponsor defined benefit pension plans covering certain employees. Benefits under the plans are generally based on years of service and compensation, although benefits under certain plans are based on years of service and fixed benefit rates. Our subsidiaries may make contributions to the plans to meet regulatory requirements and may also make discretionary contributions.

The components of net periodic pension expense for each of the three years ending December 31, 2016 are as follows (in millions).

	2016	2015	2014
Service cost	$ 282	$ 266	$ 230
Interest cost	691	591	629
Expected return on plan assets	(908)	(782)	(772)
Amortization of actuarial losses and other	148	179	102
Net periodic pension expense	$ 213	$ 254	$ 189

The accumulated benefit obligation is the actuarial present value of benefits earned based on service and compensation prior to the valuation date. The projected benefit obligation ("PBO") is the actuarial present value of benefits earned based upon service and compensation prior to the valuation date and, if applicable, includes assumptions regarding future compensation levels. Benefit obligations under qualified U.S. defined benefit pension plans are funded through assets held in trusts. Pension obligations under certain non-U.S. plans and non-qualified U.S. plans are unfunded and the aggregate PBO of such plans was approximately $1.2 billion as of December 31, 2016 and 2015.

Reconciliations of the changes in plan assets and PBOs related to BHE's pension plans and all other pension plans for each of the two years ending December 31, 2016 are in the following tables (in millions). The costs of pension plans covering employees of certain regulated subsidiaries of BHE are generally recoverable through the regulated rate making process.

	2016			2015		
	BHE	All other	Consolidated	BHE	All other	Consolidated
Benefit obligations						
Accumulated benefit obligation end of year	$4,787	$11,912	$16,699	$4,797	$ 9,264	$14,061
PBO beginning of year	$5,076	$10,183	$15,259	$5,398	$10,489	$15,887
Service cost	49	233	282	57	209	266
Interest cost	198	493	691	200	391	591
Benefits paid	(309)	(705)	(1,014)	(316)	(518)	(834)
Business acquisitions	—	2,684	2,684	—	165	165
Actuarial (gains) or losses and other	63	(215)	(152)	(263)	(553)	(816)
PBO end of year	$5,077	$12,673	$17,750	$5,076	$10,183	$15,259
Plan assets						
Plan assets beginning of year	$4,765	$ 8,066	$12,831	$5,086	$ 8,280	$13,366
Employer contributions	133	214	347	90	116	206
Benefits paid	(309)	(705)	(1,014)	(316)	(518)	(834)
Actual return on plan assets	512	1,083	1,595	31	80	111
Business acquisitions	—	2,314	2,314	—	167	167
Other	(407)	(269)	(676)	(126)	(59)	(185)
Plan assets end of year	$4,694	$10,703	$15,397	$4,765	$ 8,066	$12,831
Funded status – net liability	$ 383	$ 1,970	$ 2,353	$ 311	$ 2,117	$ 2,428

The funded status of our defined benefit pension plans at December 31, 2016 was reflected in other assets ($644 million) and liabilities ($2,997 million). At December 31, 2015, the funded status was included in other assets ($456 million) and liabilities ($2,884 million).

(21) Pension plans *(Continued)*

Weighted average interest rate assumptions used in determining PBOs and net periodic pension expense were as follows.

	2016	2015	2014
Applicable to pension benefit obligations:			
Discount rate	3.8%	4.1%	3.8%
Expected long-term rate of return on plan assets	6.1	6.5	6.7
Rate of compensation increase	3.0	3.4	3.4
Discount rate applicable to net periodic pension expense	4.2	3.8	4.6

Benefits payments expected over the next ten years are as follows (in millions): 2017 – $992; 2018 – $1,007; 2019 – $987; 2020 – $1,003; 2021 – $994; and 2022 to 2026 – $5,043. Sponsoring subsidiaries expect to contribute $224 million to defined benefit pension plans in 2017.

Fair value measurements of plan assets as of December 31, 2016 and 2015 follow (in millions).

	Fair Value				Investment funds and partnerships at net asset value
	Total	Level 1	Level 2	Level 3	
December 31, 2016					
Cash and equivalents	$ 847	$ 637	$ 210	$—	$ —
Equity securities	8,645	8,476	27	142	—
Government obligations	1,291	1,076	215	—	—
Other fixed maturity securities	770	144	595	31	—
Investment funds and other	3,844	233	1,434	153	2,024
	$15,397	$10,566	$2,481	$326	$2,024
December 31, 2015					
Cash and equivalents	$ 839	$ 544	$ 295	$—	$ —
Equity securities	7,319	7,305	14	—	—
Government obligations	786	726	60	—	—
Other fixed maturity securities	990	87	903	—	—
Investment funds and other	2,897	272	1,446	228	951
	$12,831	$ 8,934	$2,718	$228	$ 951

Refer to Note 18 for a discussion of the three levels in the hierarchy of fair values. Plan assets are generally invested with the long-term objective of producing earnings to adequately cover expected benefit obligations, while assuming a prudent level of risk. Allocations may change as a result of changing market conditions and investment opportunities. The expected rates of return on plan assets reflect subjective assessments of expected invested asset returns over a period of several years. Generally, past investment returns are not given significant consideration when establishing assumptions for expected long-term rates of return on plan assets. Actual experience will differ from the assumed rates.

A reconciliation of the pre-tax accumulated other comprehensive income (loss) related to defined benefit pension plans for each of the two years ending December 31, 2016 follows (in millions).

	2016	2015
Balance beginning of year	$(1,193)	$(1,617)
Amount included in net periodic pension expense	101	129
Actuarial gains and other	253	295
Balance end of year	$ (839)	$(1,193)

(21) Pension plans *(Continued)*

Several of our subsidiaries also sponsor defined contribution retirement plans, such as 401(k) or profit sharing plans. Employee contributions are subject to regulatory limitations and the specific plan provisions. Several plans provide for employer matching contributions up to levels specified in the plans and provide for additional discretionary contributions as determined by management. Employer contributions expensed with respect to our defined contribution plans were $944 million in 2016, $739 million in 2015 and $737 million in 2014.

(22) Contingencies and Commitments

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

We lease certain manufacturing, warehouse, retail and office facilities as well as certain equipment. Rent expense under operating leases was $1,573 million in 2016, $1,516 million in 2015 and $1,484 million in 2014. Future minimum rental payments for operating leases having non-cancellable terms in excess of one year are as follows (in millions).

2017	2018	2019	2020	2021	After 2021	Total
$1,337	$1,162	$1,005	$885	$725	$3,171	$8,285

Our subsidiaries regularly make commitments in the ordinary course of business to purchase goods and services used in their businesses. The most significant of these relate to our railroad, utilities and energy businesses and our fractional aircraft ownership business. As of December 31, 2016, estimated future payments under such arrangements are as follows: $11.1 billion in 2017, $4.1 billion in 2018, $3.5 billion in 2019, $2.9 billion in 2020, $2.0 billion in 2021 and $14.6 billion after 2021.

We own a 50% interest in a joint venture, Berkadia Commercial Mortgage LLC (“Berkadia”), with Leucadia National Corporation (“Leucadia”) owning the other 50% interest. Berkadia is a servicer of commercial real estate loans in the U.S., performing primary, master and special servicing functions for U.S. government agency programs, commercial mortgage-backed securities transactions, banks, insurance companies and other financial institutions. A significant source of funding for Berkadia’s operations is through the issuance of commercial paper, which is supported by a surety policy issued by a Berkshire insurance subsidiary. Leucadia is obligated to indemnify us for one-half of any losses incurred under the policy. Berkadia’s maximum outstanding balance of commercial paper borrowings is currently limited to $1.5 billion. On December 31, 2016, Berkadia’s commercial paper outstanding was $1.47 billion.

In the third quarter of 2016, our wholly-owned subsidiary, National Indemnity Company (“NICO”) entered into a definitive agreement to acquire Medical Liability Mutual Insurance Company (“MLMIC”), a writer of medical professional liability insurance domiciled in New York. MLMIC’s assets and policyholders’ surplus determined under statutory accounting principles as of June 30, 2016 were approximately $5.5 billion and $1.9 billion, respectively. The acquisition price will be an amount equal to the sum of: (i) the tangible book value of MLMIC at the closing date (determined under U.S. GAAP); plus (ii) $100 million. The acquisition will involve the conversion of MLMIC from a mutual company to a stock company. The closing of the transaction is subject to various regulatory approvals, customary closing conditions and the approval of the MLMIC policyholders eligible to vote on the proposed demutualization and sale. The transaction is expected to be completed in late 2017.

(22) Contingencies and Commitments *(Continued)*

Pursuant to the terms of agreements with noncontrolling shareholders in our less than wholly-owned subsidiaries, we may be obligated to acquire their equity ownership interests. If we had acquired all outstanding noncontrolling interests as of December 31, 2016, we estimate the cost would have been approximately $5.0 billion. However, the timing and the amount of any such future payments that might be required are contingent on future actions of the noncontrolling owners.

(23) Business segment data

Our operating businesses include a large and diverse group of insurance, finance, manufacturing, service and retailing businesses. Our reportable business segments are organized in a manner that reflects how management views those business activities. Certain businesses have been grouped together for segment reporting based upon similar products or product lines, marketing, selling and distribution characteristics, even though those business units are operated under separate local management.

The tabular information that follows shows data of reportable segments reconciled to amounts reflected in our Consolidated Financial Statements. Intersegment transactions are not eliminated from segment results when management considers those transactions in assessing the results of the respective segments. Furthermore, our management does not consider investment and derivative gains/losses or amortization of certain purchase accounting adjustments related to Berkshire's business acquisitions in assessing the performance of reporting units. Collectively, these items are included in reconciliations of segment amounts to consolidated amounts.

Business Identity	Business Activity
Insurance:	
GEICO	Underwriting private passenger automobile insurance mainly by direct response methods
Berkshire Hathaway Primary Group	Underwriting multiple lines of property and casualty insurance policies for primarily commercial accounts
General Re	Underwriting excess-of-loss, quota-share and facultative reinsurance worldwide
Berkshire Hathaway Reinsurance Group	Underwriting excess-of-loss and quota-share reinsurance for insurers and reinsurers worldwide
BNSF	Operation of one of the largest railroad systems in North America
Berkshire Hathaway Energy	Regulated electric and gas utility, including power generation and distribution activities and real estate brokerage activities
Manufacturing	Manufacturers of numerous products including industrial, consumer and building products
McLane Company	Wholesale distribution of groceries and non-food items
Service and retailing	Providers of numerous services including fractional aircraft ownership programs, aviation pilot training, electronic components distribution and various retailing businesses, including automotive dealerships
Finance and financial products	Manufactured housing and related consumer financing, transportation equipment, manufacturing and leasing and furniture leasing

Notes to Consolidated Financial Statements *(Continued)*

(23) Business segment data *(Continued)*

A disaggregation of our consolidated data for each of the three most recent years is presented in the tables which follow (in millions).

	Revenues			Earnings before income taxes		
	2016	2015	2014	2016	2015	2014
Operating Businesses:						
Insurance:						
Underwriting:						
GEICO	$ 25,483	$ 22,718	$ 20,496	$ 462	$ 460	$ 1,159
BH Primary	6,257	5,394	4,377	657	824	626
General Re	5,637	5,975	6,264	190	132	277
BHRG	8,504	7,207	10,116	822	421	606
Total underwriting	45,881	41,294	41,253	2,131	1,837	2,668
Investment income	4,522	4,562	4,370	4,482	4,550	4,357
Total insurance	50,403	45,856	45,623	6,613	6,387	7,025
BNSF	19,829	21,967	23,239	5,693	6,775	6,169
Berkshire Hathaway Energy	17,859	18,231	17,614	2,973	2,851	2,711
Manufacturing	46,506	36,136	36,773	6,211	4,893	4,811
McLane Company	48,075	48,223	46,640	431	502	435
Service and retailing	25,478	23,466	14,276	1,820	1,720	1,546
Finance and financial products	7,675	6,964	6,526	2,130	2,086	1,839
	215,825	200,843	190,691	25,871	25,214	24,536
Reconciliation to consolidated amount:						
Investment and derivative gains/losses	8,304	10,347	4,081	8,304	10,347	4,081
Interest expense, not allocated to segments	—	—	—	(230)	(374)	(313)
Investments in Kraft Heinz	180	852	720	1,103	730	694
Corporate, eliminations and other	(705)	(1,099)	(793)	(1,381)	(971)	(893)
	$223,604	$210,943	$194,699	$33,667	$34,946	$28,105

	Interest expense			Income tax expense		
	2016	2015	2014	2016	2015	2014
Operating Businesses:						
Insurance	$ —	$ —	$ —	$1,585	$ 1,475	$1,768
BNSF	992	928	833	2,124	2,527	2,300
Berkshire Hathaway Energy	1,715	1,830	1,623	403	450	589
Manufacturing	164	50	69	1,945	1,548	1,544
McLane Company	—	13	14	169	195	169
Service and retailing	50	40	11	669	651	576
Finance and financial products	411	384	463	702	708	597
	3,332	3,245	3,013	7,597	7,554	7,543
Reconciliation to consolidated amount:						
Investment and derivative gains/losses	—	—	—	1,807	3,622	760
Interest expense, not allocated to segments	230	374	313	(81)	(131)	(110)
Investments in Kraft Heinz	—	—	—	397	(111)	41
Corporate, eliminations and other	(65)	(104)	(73)	(480)	(402)	(299)
	$3,497	$3,515	$3,253	$9,240	$10,532	$7,935

Notes to Consolidated Financial Statements *(Continued)*

(23) Business segment data *(Continued)*

	Capital expenditures			Depreciation of tangible assets		
	2016	2015	2014	2016	2015	2014
Operating Businesses:						
Insurance	$ 128	$ 115	$ 94	$ 85	$ 77	$ 69
BNSF	3,819	5,651	5,243	2,079	1,932	1,804
Berkshire Hathaway Energy	5,090	5,875	6,555	2,560	2,451	2,177
Manufacturing	1,813	1,292	1,324	1,287	938	943
McLane Company	258	338	241	165	161	159
Service and retailing	804	574	591	611	504	461
Finance and financial products	1,042	2,237	1,137	624	610	602
	$12,954	$16,082	$15,185	$7,411	$6,673	$6,215

	Goodwill at year-end		Identifiable assets at year-end		
	2016	2015	2016	2015	2014
Operating Businesses:					
Insurance:					
GEICO	$ 1,471	$ 1,471	$ 55,041	$ 48,291	$ 45,439
General Re	13,494	13,527	30,321	26,478	28,692
BHRG and BH Primary	509	538	148,675	144,682	151,301
Total insurance	15,474	15,536	234,037	219,451	225,432
BNSF	14,845	14,845	69,277	66,613	62,840
Berkshire Hathaway Energy	9,266	9,333	76,428	74,221	71,285
Manufacturing	32,041	14,833	69,900	34,141	34,509
McLane Company	734	656	5,896	5,871	5,419
Service and retailing	5,745	6,163	17,450	16,299	11,303
Finance and financial products	1,381	1,342	40,329	37,621	32,158
	$79,486	$62,708	513,317	454,217	442,946
Reconciliation to consolidated amount:					
Corporate and other			28,051	35,332	22,207
Goodwill			79,486	62,708	60,714
			$620,854	$552,257	$525,867

Premiums written and earned by the property/casualty and life/health insurance businesses are summarized below (in millions).

	Property/Casualty			Life/Health		
	2016	2015	2014	2016	2015	2014
Premiums Written:						
Direct	$34,001	$30,544	$27,541	$1,060	$ 821	$ 879
Assumed	8,037	7,049	9,889	4,672	5,187	5,030
Ceded	(798)	(877)	(839)	(62)	(57)	(67)
	$41,240	$36,716	$36,591	$5,670	$5,951	$5,842
Premiums Earned:						
Direct	$33,207	$29,608	$26,389	$1,060	$ 821	$ 879
Assumed	7,848	6,584	9,872	4,671	5,192	5,030
Ceded	(843)	(854)	(850)	(62)	(57)	(67)
	$40,212	$35,338	$35,411	$5,669	$5,956	$5,842

(23) Business segment data *(Continued)*

Insurance premiums written by geographic region (based upon the domicile of the insured or reinsured) are summarized below. Dollars are in millions.

	Property/Casualty			Life/Health		
	2016	2015	2014	2016	2015	2014
United States	$35,878	$31,171	$31,362	$3,473	$3,247	$3,402
Asia Pacific	3,616	3,472	1,953	715	673	651
Western Europe	1,406	1,638	2,424	822	1,263	1,135
All other	340	435	852	660	768	654
	$41,240	$36,716	$36,591	$5,670	$5,951	$5,842

Consolidated sales and service revenues were $125.7 billion in 2016, $112.4 billion in 2015 and $102.2 billion in 2014. In 2016, 85% of such revenues were attributable to the United States compared to 87% in 2015 and 85% in 2014. The remainder of sales and service revenues were primarily in Europe, Canada and the Asia Pacific. Consolidated sales and service revenues included sales to Wal-Mart Stores, Inc. of approximately $14 billion in 2016 and $13 billion in 2015 and 2014. Approximately 95% of our revenues for each of the last three years from railroad, utilities and energy businesses were in the United States. At December 31, 2016, approximately 89% of our consolidated net property, plant and equipment was located in the United States with the remainder primarily in Canada and Europe.

(24) Quarterly data

A summary of revenues and earnings by quarter for each of the last two years is presented in the following table. This information is unaudited. Dollars are in millions, except per share amounts.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
2016				
Revenues	$52,163	$54,254	$58,843	$58,344
Net earnings attributable to Berkshire shareholders *	5,589	5,001	7,198	6,286
Net earnings attributable to Berkshire shareholders per equivalent Class A common share	3,401	3,042	4,379	3,823
2015				
Revenues	$48,593	$51,549	$59,070	$51,731
Net earnings attributable to Berkshire shareholders *	5,164	4,013	9,428	5,478
Net earnings attributable to Berkshire shareholders per equivalent Class A common share	3,143	2,442	5,737	3,333

* *Includes investment and derivative gains/losses. After-tax investment and derivative gains/losses for the periods presented above are as follows (in millions):*

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Investment and derivative gains/losses – 2016	$1,852	$394	$2,347	$1,904
Investment and derivative gains/losses – 2015	920	123	4,877	805

(25) Subsequent event

In January 2017, NICO entered into a retroactive reinsurance agreement with various subsidiaries of American International Group, Inc. (collectively, "AIG"). Under the agreement, NICO agreed to indemnify AIG for 80% of up to $25 billion, excess of $25 billion retained by AIG, of losses and allocated loss adjustment expenses with respect to certain commercial insurance loss events occurring in years prior to 2016 for a premium of about $10 billion. Berkshire has agreed to guarantee all amounts due to AIG under the agreement.

Results of Operations

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

	2016	2015	2014
Insurance – underwriting	$ 1,370	$ 1,162	$ 1,692
Insurance – investment income	3,636	3,725	3,542
Railroad	3,569	4,248	3,869
Utilities and energy	2,287	2,132	1,882
Manufacturing, service and retailing	5,631	4,683	4,468
Finance and financial products	1,427	1,378	1,243
Investment and derivative gains/losses	6,497	6,725	3,321
Other	(343)	30	(145)
Net earnings attributable to Berkshire Hathaway shareholders	$ 24,074	$ 24,083	$ 19,872

Through our subsidiaries, we engage in a number of diverse business activities. We manage our operating businesses on an unusually decentralized basis. There are essentially no centralized or integrated business functions (such as sales, marketing, purchasing, legal or human resources) and there is minimal involvement by our corporate headquarters in the day-to-day business activities of the operating businesses. Our senior corporate management team participates in and is ultimately responsible for significant capital allocation decisions, investment activities and the selection of the Chief Executive to head each of the operating businesses. It also is responsible for establishing and monitoring Berkshire's corporate governance practices, including, but not limited to, communicating the appropriate "tone at the top" messages to employees and associates, monitoring governance efforts, including those at the operating businesses, and participating in the resolution of governance-related issues as needed. The business segment data (Note 23 to the accompanying Consolidated Financial Statements) should be read in conjunction with this discussion.

Our insurance businesses generated after-tax earnings from underwriting of $1.4 billion in 2016, an increase of $208 million from 2015, primarily due to increased earnings from Berkshire Hathaway Reinsurance Group and General Re, partly offset by lower net underwriting gains from primary insurance. Our railroad business generated lower net earnings in 2016, primarily due to a 5.0% decline in unit volume. Earnings of our utilities and energy businesses increased in 2016, attributable to increased pre-tax earnings and a lower effective income tax rate. The increase in after-tax earnings in 2016 as compared to 2015 of our manufacturing, service and retailing businesses was primarily due to earnings from PCC, partly offset by comparatively lower overall earnings from the other businesses within this group.

Our insurance businesses generated after-tax earnings from underwriting of $1.2 billion in 2015, a decline of $530 million from 2014, which reflected rising claim costs at GEICO and lower earnings from our reinsurers, partially offset by increased earnings from our other primary insurance operations. Our railroad business generated a 9.8% increase in after-tax earnings in 2015 compared to 2014, reflecting improved service levels and lower fuel costs. After-tax earnings of our utilities and energy businesses in 2015 increased 13.3% over 2014, attributable to the acquisition of AltaLink in December 2014 and higher earnings from several of our other energy businesses. After-tax earnings of our manufacturing, service and retailing businesses in 2015 increased 4.8% over 2014. The positive impacts of business acquisitions and higher earnings from our building products businesses were partly offset by lower earnings from certain of our industrial products and service businesses.

After-tax investment and derivative gains were approximately $6.5 billion in 2016, $6.7 billion in 2015 and $3.3 billion in 2014. After-tax investment gains in 2016 included approximately $2.7 billion from the disposition or conversion of our Wrigley, Kraft Heinz and Dow preferred stock investments and non-cash gains of approximately $1.9 billion related to the exchange of P&G common stock for 100% of the common stock of Duracell. After-tax investment and derivative gains in 2015 included non-cash holding gains of approximately $4.4 billion in connection with our investment in Kraft Heinz common stock. In 2014, after-tax gains included approximately $2.0 billion related to the exchanges of Phillips 66 common stock and Graham Holdings Company common stock for a specified subsidiary of each of those companies. Derivative contracts contributed after-tax gains of $488 million in 2016, $633 million in 2015 and $329 million in 2014. We believe that investment and derivative gains/losses are often meaningless in terms of understanding our reported results or evaluating our economic performance. Investment and derivative gains and losses have caused and will likely continue to cause significant volatility in our periodic earnings.

Results of Operations *(Continued)*

Insurance—Underwriting

We engage in both primary insurance and reinsurance of property/casualty, life and health risks. In primary insurance activities, we assume defined portions of the risks of loss from persons or organizations that are directly subject to the risks. In reinsurance activities, we assume defined portions of similar or dissimilar risks that other insurers or reinsurers have subjected themselves to in their own insuring activities. Our insurance and reinsurance businesses are GEICO, General Re, Berkshire Hathaway Reinsurance Group ("BHRG") and Berkshire Hathaway Primary Group.

Our management views insurance businesses as possessing two distinct operations – underwriting and investing. Underwriting decisions are the responsibility of the unit managers; investing decisions, with limited exceptions, are the responsibility of Berkshire's Chairman and CEO, Warren E. Buffett. Accordingly, we evaluate performance of underwriting operations without any allocation of investment income or investment gains/losses.

The timing and amount of catastrophe losses can produce significant volatility in our periodic underwriting results, particularly with respect to BHRG and General Re. Our periodic underwriting results may be affected significantly by changes in estimates for unpaid losses and loss adjustment expenses, including amounts established for occurrences in prior years. Actual claim settlements and revised loss estimates will develop over time, which will likely differ from the liabilities recorded as of year-end 2016 of approximately $76.9 billion. Accordingly, the unpaid loss estimates recorded as of December 31, 2016 will develop upward or downward in future periods, producing a corresponding decrease or increase to pre-tax earnings.

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 reinsurance liabilities of our U.S. based insurance subsidiaries as a result of foreign currency exchange rate fluctuations. Foreign currency exchange rates can be volatile and the resulting impact on our underwriting earnings can be relatively significant.

Underwriting results of our insurance businesses are summarized below (in millions).

	2016	2015	2014
Underwriting gain attributable to:			
GEICO	$ 462	$ 460	$ 1,159
General Re	190	132	277
Berkshire Hathaway Reinsurance Group	822	421	606
Berkshire Hathaway Primary Group	657	824	626
Pre-tax underwriting gain	2,131	1,837	2,668
Income taxes and noncontrolling interests	761	675	976
Net underwriting gain	$ 1,370	$ 1,162	$ 1,692

GEICO

GEICO writes private passenger automobile insurance, offering coverages to insureds in all 50 states and the District of Columbia. GEICO's policies are marketed mainly by direct response methods in which most customers apply for coverage directly to the company via the Internet or over the telephone. GEICO's underwriting results are summarized below (in millions).

	2016		2015		2014	
	Amount	%	Amount	%	Amount	%
Premiums written	$ 26,309		$ 23,378		$ 20,962	
Premiums earned	$ 25,483	100.0	$ 22,718	100.0	$ 20,496	100.0
Losses and loss adjustment expenses	21,044	82.6	18,647	82.1	15,924	77.7
Underwriting expenses	3,977	15.6	3,611	15.9	3,413	16.6
Total losses and expenses	25,021	98.2	22,258	98.0	19,337	94.3
Pre-tax underwriting gain	$ 462		$ 460		$ 1,159	

Insurance—Underwriting *(Continued)*

Premiums written in 2016 increased 12.5% to $26.3 billion and premiums earned increased approximately $2.8 billion (12.2%) compared to 2015. These increases reflected voluntary auto policy-in-force growth of 7% and increased average premiums per auto policy resulting from rate increases, changes in coverage and state and risk mix. Voluntary auto new business sales in 2016 increased 10.9% compared to the prior year. The growth in voluntary auto new business accelerated over the last half of 2016 and, for the year, voluntary auto policies-in-force increased 974,000.

Losses and loss adjustment expenses incurred in 2016 increased $2.4 billion (12.9%) to $21.0 billion. In 2016, our loss ratio (the ratio of losses and loss adjustment expenses to earned premiums) increased 0.5 percentage points, reflecting increased storm losses and claims severity, partly offset by the aforementioned premium rate increases. Claims frequencies (claim counts per exposure unit) in 2016 for property damage, collision, bodily injury and personal injury protection (PIP) coverages were relatively unchanged from 2015. Average claims severities were higher in 2016 for bodily injury, physical damage and collision coverages (four to six percent range). In addition, storm-related losses (primarily from hail and flooding) in 2016 were approximately $423 million compared to $162 million in 2015.

Underwriting expenses in 2016 were $4.0 billion, an increase of $366 million (10.1%) over 2015. Our expense ratio (underwriting expenses to premiums earned) in 2016 decreased 0.3 percentage points compared to 2015. The largest components of underwriting expenses are employee-related expenses (salaries and benefits) and advertising costs. The increase in underwriting expenses reflected the increase in policies-in-force.

Premiums written and earned in 2015 increased 11.5% and 10.8% over 2014. The increases in premiums reflected growth in voluntary auto policies-in-force (5.4%) and rate increases. Voluntary auto new business sales in 2015 exceeded 2014 by about 1%. In 2015, our voluntary auto policies-in-force grew by 707,000 policies.

Losses and loss adjustment expenses incurred in 2015 increased $2.7 billion (17.1%) over 2014. Our loss ratio was 82.1% in 2015 compared to 77.7% in 2014. Claims frequencies in 2015 increased in all major coverages over 2014, including property damage and collision coverages (three to five percent range), bodily injury coverage (four to six percent range) and PIP (one to two percent range). Average claims severities were also higher in 2015 for property damage and collision coverages (four to five percent range), bodily injury coverage (six to seven percent range) and PIP coverage (two to four percent range). We attributed these increases to miles driven, repair costs (parts and labor) and medical costs, as well as to weather conditions.

Underwriting expenses in 2015 increased 5.8% to $3.6 billion. During 2015, advertising and employee-related costs grew at a slower rate than premiums. As a result, our expense ratio in 2015 declined 0.7 percentage points compared to 2014.

General Re

General Re conducts a reinsurance business offering property and casualty coverages to clients worldwide through General Reinsurance Corporation, Germany-based General Reinsurance AG, Faraday Holdings in London and other wholly-owned affiliates. We write property and casualty reinsurance primarily on a direct basis, but is also written through brokers and intermediaries. We write life and health reinsurance primarily on a direct basis through General Re Life Corporation and General Reinsurance AG. We strive to generate underwriting profits in essentially all of our product lines. Our management does not evaluate underwriting performance based upon market share and our underwriters are instructed to reject inadequately priced risks. General Re's underwriting results are summarized in the following table (in millions).

	Premiums written			Premiums earned			Pre-tax underwriting gain (loss)		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Property/casualty	$ 2,560	$ 2,725	$ 3,257	$ 2,569	$ 2,805	$ 3,103	$117	$150	$204
Life/health	3,069	3,165	3,161	3,068	3,170	3,161	73	(18)	73
	$ 5,629	$ 5,890	$ 6,418	$ 5,637	$ 5,975	$ 6,264	$190	$132	$277

Insurance—Underwriting *(Continued)*

Property/casualty

In 2016, property/casualty premiums written declined $165 million (6%) and premiums earned declined $236 million (8%) compared to 2015, primarily due to lower volume in direct and broker market business, and to a lesser degree, unfavorable foreign currency exchange rate changes. Insurance industry capacity remains high and price competition in most property/casualty reinsurance markets persists. We continue to decline business when we believe prices are inadequate. However, we remain prepared to write substantially more business when appropriate prices can be attained.

Our property/casualty business produced pre-tax underwriting gains of $117 million in 2016 and $150 million in 2015. Results included pre-tax underwriting gains from property business of $211 million in 2016, a decline of $78 million compared to 2015. The decline was primarily due to lower gains from reductions of estimated losses on prior years' property business. There were no significant catastrophe or large property losses in each of the past three years.

Our casualty/workers' compensation business produced pre-tax underwriting losses of $94 million in 2016 and $139 million in 2015. Underwriting results in each year included net losses on current year business and charges for recurring discount accretion on workers' compensation liabilities and deferred charge amortization on retroactive reinsurance contracts, partially offset by gains from reductions of estimated losses on prior years' business. Discount accretion and deferred charge amortization produced pre-tax underwriting losses of $89 million in 2016 and $94 million in 2015. Casualty losses tend to be long-tailed and the favorable loss experience is not a guarantee that the current ultimate liability estimates will develop favorably in the future.

In 2015, property/casualty premiums written declined $532 million (16%), while premiums earned decreased $298 million (10%) compared to 2014. Adjusting for changes in foreign currency exchange rates, premiums written and earned in 2015 declined 9% and 2% compared to 2014. Our premium volume declined in both the direct and broker markets worldwide.

Our property/casualty business produced pre-tax underwriting gains of $150 million in 2015 and $204 million in 2014. In 2015, our property business generated pre-tax underwriting gains of $289 million compared to $445 million in 2014. The comparative decrease in underwriting gains reflected an increase in the current accident year loss ratio, primarily attributable to a relative increase in reported losses. Our casualty/workers' compensation business produced pre-tax underwriting losses of $139 million in 2015 and $241 million in 2014. Underwriting results in each year included net losses on current year business, partly offset by gains from reductions of estimated losses on prior years' business. The reductions of prior years' losses were net of recurring charges for discount accretion on workers' compensation liabilities and deferred charge amortization on retroactive reinsurance contracts of $94 million in 2015 and $97 million in 2014.

Life/health

Life/health premiums earned in 2016 decreased 3% compared to 2015. Adjusting for changes in foreign currency exchange rates, premiums earned in 2016 were relatively unchanged from 2015, as growth in the United Kingdom and Asia markets was offset by a decline in Canada. Our life/health business produced pre-tax underwriting gains of $73 million in 2016 compared to losses of $18 million in 2015. In 2016, underwriting results reflected increased underwriting gains from our international life business, lower claim severity in North America, and lower losses from changes in actuarial assumptions related to long-term care business.

Life/health premiums written and earned in 2015 were relatively unchanged from 2014. However, adjusting for changes in foreign currency exchange rates, premiums earned in 2015 increased $266 million (8%) as compared to 2014. In 2015, life business increased across a number of non-U.S. markets, particularly in Canada and Asia. Our life/health business produced aggregate pre-tax underwriting losses in 2015 of $18 million compared to gains of $73 million in 2014. Our North American long-term care business generated increased underwriting losses of $77 million in 2015 compared to 2014 due primarily to increased reserves from estimated premium deficiencies. We also experienced higher frequency and severity of losses in North American individual life business in 2015, partially offset by increased underwriting gains from international life business.

Insurance—Underwriting *(Continued)*

Berkshire Hathaway Reinsurance Group

BHRG underwrites excess-of-loss reinsurance and quota-share coverages on property and casualty risks for insurers and reinsurers worldwide, including property catastrophe insurance and reinsurance. BHRG also writes retroactive reinsurance on property/casualty exposures as well as life reinsurance and periodic payment annuity business. A summary of BHRG's underwriting results follows (in millions).

	Premiums written			Premiums earned			Pre-tax underwriting gain (loss)		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Property/casualty	$4,433	$4,702	$ 4,097	$4,649	$ 4,416	$ 4,064	$767	$944	$ 1,411
Retroactive reinsurance	1,254	5	3,371	1,254	5	3,371	(49)	(469)	(632)
Life and annuity	2,601	2,786	2,681	2,601	2,786	2,681	104	(54)	(173)
	$8,288	$7,493	$ 10,149	$8,504	$ 7,207	$ 10,116	$822	$421	$ 606

Property/casualty

Premiums earned in 2016 increased $233 million (5.3%) reflecting an increase from the 10-year, 20% quota-share contract with Insurance Australia Group Ltd. ("IAG"), which became effective on July 1, 2015, partly offset by declines from property catastrophe and other quota-share business. The IAG quota-share contract represented 37% of our property/casualty earned premiums in 2016. Our premium volume is generally constrained for most property/casualty reinsurance coverages as rates, in our view, are generally inadequate. Consistent with General Re, we have the capacity and desire to write more business when appropriate pricing can be attained.

Our property/casualty business generated pre-tax underwriting gains of $767 million in 2016 and $944 million in 2015. The decline in pre-tax underwriting gains in 2016 was primarily due to a comparative decline in gains from reductions of estimated prior years' loss reserves. We experienced no significant catastrophe loss events during the last three years.

Premiums written and earned in 2015 increased $605 million (15%) and $352 million (9%), respectively, compared to 2014. These increases were primarily attributable to the IAG quota-share contract, partially offset by lower property catastrophe, property quota-share and London facilities volume. The property/casualty business generated pre-tax underwriting gains in 2015 of $944 million compared to $1.4 billion in 2014. Underwriting results in 2015 included comparatively lower gains from property catastrophe reinsurance and comparatively lower gains from reductions of estimated prior years' loss reserves.

Retroactive reinsurance

We periodically write retroactive reinsurance contracts, which provide indemnification of losses and loss adjustment expenses with respect to past loss events. Retroactive reinsurance premiums earned in 2016 primarily derived from three new contracts, including $670 million from a contract with Hartford Fire Insurance Company covering the adverse development of certain asbestos and pollution claims losses, subject to an aggregate limit of $1.5 billion. Premiums earned in 2014 included $3 billion from a contract with Liberty Mutual Insurance Company ("LMIC"), which covers claim liabilities from specified asbestos and environmental exposures under policies incepting before 2005, and workers' compensation occurrences arising before 2014.

Pre-tax underwriting results from certain retroactive reinsurance contracts include gains/losses associated with the re-measurement of foreign currency denominated liabilities due to changes in exchange rates. Such gains were $392 million in 2016, $150 million in 2015 and $273 million in 2014 and primarily related to strengthening of the U.S. Dollar versus the Great Britain Pound ("GBP") and the Euro. Before such gains, retroactive reinsurance contracts produced pre-tax losses of $441 million in 2016, $619 million in 2015 and $905 million in 2014, attributable to deferred charge amortization and changes in the timing and amount of ultimate losses.

The underwriting results of retroactive reinsurance include the periodic amortization of deferred charge assets established in connection with these contracts. At the inception of a contract, we recognize deferred charge assets for the excess, if any, of the estimated ultimate losses payable over the premiums earned. We subsequently amortize the deferred charges over the estimated claims payment period based on estimates of the timing and amount of future loss payments. Amortization charges and deferred charge adjustments resulting from changes to the estimated timing and amount of future loss payments are included in earnings.

Retroactive reinsurance (Continued)

Changes in estimated ultimate liabilities for contracts written in prior years were relatively insignificant in 2016, whereas during each of the prior two years, we increased estimated ultimate liabilities approximately $550 million in 2015 and $825 million in 2014 for contracts written in prior years. We also reevaluated the timing of future payments of remaining liabilities, which produced changes to unamortized deferred charges. These increases in estimated ultimate liabilities, net of related deferred charge adjustments, produced incremental pre-tax underwriting losses of approximately $90 million in 2015 and $450 million in 2014.

As discussed in Note 25 to the accompanying Consolidated Financial Statements, we entered into a retroactive reinsurance agreement with affiliates of American International Group, Inc. (collectively, "AIG") in January 2017. Our premiums with respect to this contract are about $10 billion and our net aggregate limit is $20 billion.

Gross unpaid losses assumed under retroactive reinsurance contracts were approximately $24.7 billion at December 31, 2016 and $23.7 billion at December 31, 2015. Unamortized deferred charges related to such reinsurance contracts were approximately $8.0 billion at December 31, 2016 and $7.6 billion at December 31, 2015. We currently estimate pre-tax losses in 2017 from deferred charge amortization of approximately $950 million, including approximately $375 million related to the new AIG agreement.

Life and annuity

A summary BHRG's life and annuity underwriting results follows (in millions).

	Premiums earned			Pre-tax underwriting gain (loss)		
	2016	2015	2014	2016	2015	2014
Periodic payment annuity	$ 1,082	$ 1,286	$1,105	$(128)	$(202)	$(197)
Life reinsurance	1,502	1,481	1,555	1	(45)	(23)
Variable annuity	17	19	21	231	193	47
	$ 2,601	$ 2,786	$2,681	$ 104	$ (54)	$(173)

Premiums earned in 2016 from periodic payment annuity contracts decreased $204 million (15.9%) compared to 2015. The decrease reflected the effect of a large reinsurance contract in 2015 that generated premiums of $425 million, which more than offset a comparative increase in direct business. There were no periodic payment annuity reinsurance contracts in 2016.

Generally, we receive premiums under periodic payment annuity contracts in full at inception and we make annuity payments over time, often extending for decades. At inception, we discount annuity liabilities for time value and recognize no gains or losses in earnings. Pre-tax underwriting losses are recognized over the annuity payment period from the recurring accretion of discounted annuity liabilities.

Periodic payment annuity contracts generated pre-tax underwriting losses of $128 million in 2016, $202 million in 2015 and $197 million in 2014. Liabilities under certain contracts of a U.S. subsidiary are denominated in foreign currencies, most significantly the GBP. Changes in the exchange rates produce changes in the values of related liabilities, which are reflected in underwriting results. Exchange rate changes resulted in pre-tax gains of $313 million in 2016, $103 million in 2015 and $102 million in 2014.

Before foreign currency exchange rate changes, pre-tax underwriting losses from annuity contracts were $441 million in 2016, $305 million in 2015 and $299 million in 2014. The increase in underwriting losses in 2016 reflected increased liabilities from new business and the impact of lower interest rates, which increased expected future loss payments under reinsurance contracts. Discounted annuity liabilities were approximately $9.8 billion at December 31, 2016 and $8.7 billion at December 31, 2015. The weighted average interest rate of these contracts was approximately 4.1% as of December 31, 2016.

Insurance—Underwriting *(Continued)*

Berkshire Hathaway Reinsurance Group (Continued)

Life and annuity (Continued)

Life reinsurance premiums increased 1.4% in 2016 compared to 2015, which declined 4.8% compared to 2014. The life reinsurance business produced near break-even results in 2016 and a pre-tax loss of $45 million in 2015. Underwriting losses in 2015 included losses of $53 million incurred in connection with certain terminated business.

Our variable annuity business primarily consists of reinsurance contracts that provide guarantees on closed blocks of variable annuity business written by other insurers. Our pre-tax underwriting gains in each period of the past three years reflected changes in liabilities for guaranteed benefits, which were affected by changes in securities markets and interest rates, as well as from the periodic amortization of expected profit margins included in our liability estimates.

Berkshire Hathaway Primary Group

The Berkshire Hathaway Primary Group ("BH Primary") consists of a wide variety of independently managed insurance underwriting businesses that primarily provide a variety of commercial insurance solutions, including healthcare malpractice, workers' compensation, automobile, general liability, property and various specialty coverages for small, medium and large clients. The largest of these insurers include the MedPro Group, National Indemnity Company ("NICO Primary"), Berkshire Hathaway Homestate Companies ("BHHC"), Berkshire Hathaway Specialty Insurance ("BH Specialty") and Berkshire Hathaway GUARD Insurance Companies ("GUARD"). Other BH Primary insurers include U.S. Liability Insurance Company, Applied Underwriters and Central States Indemnity Company.

	2016		2015		2014	
	Amount	%	Amount	%	Amount	%
Premiums written	$ 6,684		$ 5,906		$ 4,904	
Premiums earned	$ 6,257	100.0	$ 5,394	100.0	$ 4,377	100.0
Losses and loss adjustment expenses	3,864	61.8	3,070	56.9	2,608	59.6
Underwriting expenses	1,736	27.7	1,500	27.8	1,143	26.1
Total losses and expenses	5,600	89.5	4,570	84.7	3,751	85.7
Pre-tax underwriting gain	$ 657		$ 824		$ 626	

BH Primary premiums written and earned in 2016 increased 13.2% and 16.0%, respectively, compared to 2015. The increases were primarily attributable to volume increases from BH Specialty, MedPro Group, BHHC and GUARD. Premiums written and earned in 2015 increased 20.4% and 23.2%, respectively, over the prior year. The increases were primarily attributable to volume increases from BH Specialty, NICO Primary, BHHC and GUARD. BH Primary's combined loss ratios were 61.8% in 2016, 56.9% in 2015 and 59.6% in 2014. The comparative increase in the loss ratio in 2016 reflected comparative declines in favorable loss development of prior years' loss events and higher loss ratios on current year business. While our claims development has been favorable in recent years, our primary insurers write considerable amounts of healthcare malpractice, general liability and workers' compensation business, which can have extended claim-tails. It should not be assumed that the current claim experience or underwriting results will continue into the future.

Insurance—Investment Income

A summary of net investment income generated from investments held by our insurance operations follows (in millions).

	2016	2015	2014
Interest income	$ 930	$ 888	$1,009
Dividend income	3,552	3,662	3,348
Investment income before taxes and noncontrolling interests	4,482	4,550	4,357
Income taxes and noncontrolling interests	846	825	815
Net investment income	$ 3,636	$ 3,725	$3,542

Insurance—Investment Income *(Continued)*

Pre-tax investment income declined $68 million (1.5%) in 2016 compared to 2015, reflecting lower dividend income attributable to portfolio changes, partly offset by an increase in interest income. We continue to hold significant cash, cash equivalents and U.S. Treasury Bills earning very low yields, although such yields in 2016 were higher than in 2015. We believe that maintaining ample liquidity is paramount and we insist on safety over yield with respect to such balances. In December 2016, Dow exercised its option to convert our $3 billion Dow preferred stock investment into common stock. Prior to its conversion, we received dividends of $255 million per annum.

Interest earned declined $121 million (12%) in 2015 versus 2014. The reduction reflected the maturities and dispositions of fixed maturity securities with higher interest rates. Dividend income increased $314 million (9%) in 2015 versus 2014. Dividend income in 2015 included income from our investment in Restaurant Brands International, Inc. 9% Preferred Stock ($3 billion stated value), which was acquired in December 2014.

Invested assets of our insurance businesses derive from shareholder capital, including reinvested earnings, and from net liabilities under insurance contracts or "float." The major components of float are unpaid losses, life, annuity and health benefit liabilities, unearned premiums and other liabilities to policyholders less premium and reinsurance receivables, deferred charges assumed under retroactive reinsurance contracts and deferred policy acquisition costs. Float approximated $91 billion at December 31, 2016, $88 billion at December 31, 2015 and $84 billion at December 31, 2014. The cost of float was negative over the last three years as our insurance business generated pre-tax underwriting gains in each year.

A summary of cash and investments held in our insurance businesses as of December 31, 2016 and 2015 follows (in millions).

	December 31,	
	2016	**2015**
Cash, cash equivalents and U.S. Treasury Bills	$ 48,888	$ 43,762
Equity securities	119,780	109,922
Fixed maturity securities	22,778	23,621
Other investments	14,364	15,683
	$205,810	$192,988

Fixed maturity investments as of December 31, 2016 were as follows (in millions).

	Amortized cost	**Unrealized gains/losses**	**Carrying value**
U.S. Treasury, U.S. government corporations and agencies	$ 4,243	$ 8	$ 4,251
States, municipalities and political subdivisions	1,129	57	1,186
Foreign governments	8,813	140	8,953
Corporate bonds, investment grade	5,457	459	5,916
Corporate bonds, non-investment grade	1,220	248	1,468
Mortgage-backed securities	886	118	1,004
	$ 21,748	$1,030	$22,778

U.S. government obligations are rated AA+ or Aaa by the major rating agencies and approximately 87% of all state, municipal and political subdivisions, foreign government obligations and mortgage-backed securities were rated AA or higher. Non-investment grade securities represent securities rated below BBB- or Baa3. Foreign government securities include obligations issued or unconditionally guaranteed by national or provincial government entities.

Railroad ("Burlington Northern Santa Fe")

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

	2016	2015	2014
Revenues	$ 19,829	$ 21,967	$ 23,239
Operating expenses:			
Compensation and benefits	4,769	5,043	5,023
Fuel	1,934	2,656	4,478
Purchased services	2,418	2,546	2,592
Depreciation and amortization	2,128	2,001	2,123
Equipment rents, materials and other	1,895	2,018	2,021
Total operating expenses	13,144	14,264	16,237
Interest expense	992	928	833
	14,136	15,192	17,070
Pre-tax earnings	5,693	6,775	6,169
Income taxes	2,124	2,527	2,300
Net earnings	$ 3,569	$ 4,248	$ 3,869

Consolidated revenues were approximately $19.8 billion in 2016, a decrease of $2.1 billion (9.7%) compared to 2015. Pre-tax earnings were $5.7 billion in 2016, a decrease of $1.1 billion (16.0%) compared to 2015. Our total volume was approximately 9.8 million cars/units in 2016 compared to approximately 10.3 million in 2015. In 2016, we experienced declining demand, especially in our coal and crude oil categories. Coal had the largest decline, driven by structural changes in that business as well as competition from low natural gas prices. While natural gas prices and the amount of electricity burn will affect the demand for coal in 2017, our long-term demand outlook for U.S. and global coal consumption is lower.

Freight revenues reflected comparative declines in 2016 in average revenue per car/unit (5.2%) and volumes (5.0%). The decrease in average revenue per car/unit was primarily attributable to lower fuel surcharge revenue driven by lower fuel prices and to business mix changes. The fuel price impact on fuel surcharges generally lags its impact on fuel costs.

Freight revenues from consumer products were $6.5 billion in 2016, a decline of 0.9% from 2015. The revenue decline reflected lower average revenue per car/unit, partially offset by volume increases of 1%. Consumer products volumes increased primarily due to higher domestic intermodal volumes and the addition of a new automotive customer. Lower international intermodal volumes attributable to soft economic activity and excess retail inventories partially offset these increases.

Freight revenues from industrial products were $4.8 billion in 2016, a decline of 14.2% compared with 2015. The decrease reflects lower volumes, primarily for petroleum products, reflecting pipeline displacement of U.S. crude rail traffic and lower U.S. oil production. In addition, there was lower demand for steel and taconite, partially offset by increased plastics products volume. We expect low oil production and pipeline displacement will continue to negatively impact the demand for crude oil shipments in 2017.

Freight revenues from agricultural products remained relatively flat at $4.2 billion. Agricultural product volume increased by 6.3% in 2016, primarily due to higher corn, soybean and wheat exports, offsetting a decrease in average revenue per car/unit.

Freight revenues from coal decreased 26.9% to $3.4 billion in 2016 compared to 2015, reflecting a 21.1% decline in volumes and lower average rate per car/unit. Demand for coal has declined due to reduced energy consumption, coal unit retirements, high coal stockpiles and low natural gas prices.

Railroad ("Burlington Northern Santa Fe") *(Continued)*

Operating expenses were $13.1 billion in 2016, a decrease of $1.1 billion (7.9%) compared to 2015, and our ratio of operating expenses to revenues increased 1.4 percentage points to 66.3%. Compensation and benefits expenses decreased $274 million (5.4%) compared to 2015. The decline was primarily due to lower employment levels resulting from lower freight volumes and productivity improvements, partially offset by inflation. Fuel expenses declined $722 million (27.2%) compared to 2015, due to lower average fuel prices and lower volumes. Purchased services declined $128 million (5.0%) due to lower volumes and cost reductions. Depreciation and amortization expense increased $127 million (6.3%) compared to 2015 due to increased assets in service reflecting our ongoing capital additions and improvement programs. Equipment rents, materials and other expense declined $123 million (6.1%) compared to 2015, primarily due to lower freight volumes and productivity improvements.

Interest expense was $992 million in 2016, an increase of $64 million (6.9%) compared to 2015. Interest expense in 2015 was $928 million, an increase of $95 million (11%) compared to 2014. BNSF funds its capital expenditures with cash flow from operations and new debt issuances. The comparative increases in each period resulted from higher average outstanding debt.

Consolidated revenues were approximately $22.0 billion in 2015, a decrease of $1.3 billion (5%) compared to 2014. Pre-tax earnings were $6.8 billion in 2015, an increase of $606 million (10%) over 2014. Results in 2015 benefitted from significantly improved operating performance compared to substandard service during 2014. The operational improvements in 2015 reflected the capacity added in 2014 and 2015 through capital investments for line expansion, system improvement projects, other operational initiatives and more favorable winter weather conditions. Our total volume was approximately 10.3 million cars/units in 2015. During the second half of 2015 and particularly in the fourth quarter, we experienced declining demand, especially in coal and certain industrial products categories.

The decrease in consolidated revenues in 2015 reflected a 6% decline in average revenue per car/unit and a 0.1% decrease in volume. The decrease in average revenue per car/unit was attributable to a 55% decline in fuel surcharges ($1.6 billion) versus 2014, primarily due to lower fuel prices. The impact of lower fuel surcharge revenues affected revenues of all product lines.

Freight revenues from industrial products decreased 11% in 2015 compared to 2014 to $5.6 billion. The decrease reflected lower volumes for petroleum products, frac sand and steel products and lower average revenue per car/unit. Freight revenues from agricultural products increased 2% in 2015 to approximately $4.2 billion as compared to revenues in 2014. The increase in 2015 was attributable to higher domestic grain shipments and milo exports.

Freight revenues from coal decreased 7% to $4.6 billion in 2015 compared to 2014. The revenue decline was primarily due to lower average rates per car. Coal volume increased 1% primarily due to higher demand in the early part of the year as customers restocked coal inventories.

Freight revenues from consumer products were $6.6 billion in 2015, a decline of 6% from 2014. The revenue decline reflected lower average rates per car/unit, partially offset by volume increases of 1%. In the first quarter of 2015, we experienced a decline in international intermodal volume attributable to diversions of freight from U.S. West Coast ports to other import gateways as a result of the port productivity slow-down from port labor disruptions. Over the remainder of 2015, we experienced increased volume, as port productivity improvements allowed the backlog to clear, as well as from higher demand.

Operating expenses were $14.3 billion in 2015, a decrease of $2 billion (12%) compared to 2014. The ratio of operating expenses to revenues declined 4.9 percentage points to 64.9% as compared to 2014. Compensation and benefits expenses were relatively flat versus 2014. In response to weakening customer demand in the latter half of 2015, employment levels were reduced. Fuel expenses declined $1.8 billion (41%) compared to 2014, reflecting significantly lower average fuel prices, improved efficiency and lower gross ton miles volume. Depreciation and amortization expense decreased $122 million (6%) compared to 2014 as a result of lower capitalized software amortization expenses, partially offset by increased depreciation expense attributable to increased levels of railroad assets in service.

Utilities and Energy ("Berkshire Hathaway Energy Company")

We hold a 90% ownership interest in Berkshire Hathaway Energy Company ("BHE"), which operates a global energy business. BHE's domestic regulated utility interests are comprised of PacifiCorp, MidAmerican Energy Company ("MEC") and NV Energy. In Great Britain, BHE subsidiaries operate two regulated electricity distribution businesses referred to as Northern Powergrid. BHE also owns two domestic regulated interstate natural gas pipeline companies. Other energy businesses include AltaLink, L.P. ("AltaLink"), a regulated electricity transmission-only business in Alberta, Canada and a diversified portfolio of independent power projects. In addition, BHE also operates the second-largest residential real estate brokerage firm and one of the largest residential real estate brokerage franchise networks in the United States.

Utilities and Energy ("Berkshire Hathaway Energy Company") *(Continued)*

The rates our regulated businesses charge customers for energy and services are based, in large part, on the costs of business operations, including a return on capital, and are subject to regulatory approval. To the extent these operations are not allowed to include such costs in the approved rates, operating results will be adversely affected. Revenues and earnings of BHE are summarized below (in millions).

	Revenues			Earnings		
	2016	2015	2014	2016	2015	2014
PacifiCorp	$ 5,245	$ 5,279	$ 5,315	$1,105	$1,026	$1,010
MidAmerican Energy Company	2,668	2,554	2,900	392	292	270
NV Energy	2,925	3,382	3,279	559	586	549
Northern Powergrid	997	1,141	1,284	367	460	527
Natural gas pipelines	986	1,018	1,093	413	401	379
Other energy businesses	2,223	2,321	1,582	377	394	264
Real estate brokerage	2,815	2,536	2,161	225	191	139
	$17,859	$18,231	$17,614			
Earnings before corporate interest and income taxes ("EBIT")				3,438	3,350	3,138
Corporate interest				465	499	427
Income taxes and noncontrolling interests				686	719	829
Net earnings attributable to Berkshire Hathaway shareholders				$2,287	$2,132	$1,882

PacifiCorp

PacifiCorp operates a regulated electric utility in portions of several Western states, including Utah, Oregon and Wyoming. PacifiCorp's revenues were $5.25 billion in 2016, slightly lower than 2015. Revenues reflected increased retail revenues and lower wholesale and other operating revenues. The increase in retail revenues was primarily due to higher retail rates as volumes were relatively unchanged. The declines in wholesale revenues were attributable to lower volumes and average prices. EBIT in 2016 increased $79 million (7.7%) from 2015, primarily due to increased gross margins (operating revenues less cost of sales), reflecting lower fuel prices and changes in fuel mix.

Revenues declined $36 million (1%) in 2015 compared to 2014. Wholesale and other revenues declined $129 million, principally due to lower wholesale prices and volumes and lower renewable energy credit revenue, while retail revenues increased compared to 2014, reflecting higher average rates partially offset by slightly lower volumes. EBIT increased $16 million (2%) in 2015 compared to 2014. Gross margins increased $109 million versus 2014, as energy costs declined more than revenues. The increase in gross margins substantially offset an increase in depreciation and amortization expense ($35 million) due to increased plant-in-service, lower allowances for equity funds used during construction ($18 million) and the impact of the recognition in 2014 of expected insurance recoveries on fire losses.

MidAmerican Energy Company

MEC operates a regulated electric and natural gas utility primarily in Iowa and Illinois. Revenues increased $114 million (4.5%) in 2016 compared to 2015. Revenues in 2016 included increased electric revenues ($148 million), which were somewhat offset by lower natural gas revenues ($24 million). The increase in electric revenues resulted primarily from a 3.8% increase in customer volumes and higher rates. Wholesale and other revenues increased primarily due to increased average wholesale prices and higher transmission revenue. The decline in natural gas revenues was primarily due to lower average per-unit costs of gas sold ($42 million), which is offset in cost of sales, partly offset by higher wholesale volumes. EBIT increased $100 million (34.2%) in 2016 from 2015. The increase in EBIT was primarily due to increased gross margins from electric revenues and lower operations and maintenance expenses, partially offset by higher depreciation and amortization from additional assets placed in service, and higher interest expense.

MEC's revenues declined $346 million (12%) in 2015 from 2014. Regulated natural gas revenues declined $335 million, which was primarily attributable to lower average per-unit cost of gas sold, which is substantially offset in lower cost of sales. Regulated electric revenues increased slightly, due primarily to higher retail rates in Iowa and higher volumes, partially offset by lower average wholesale prices. The increases in regulated electric rates in Iowa are attributable to higher retail rates and changes in rate structure approved in August 2014, which results in a greater differential between higher rates from June to September and lower rates in the remaining months.

MidAmerican Energy Company (Continued)

EBIT increased $22 million (8%) in 2015 compared to 2014, reflecting an increase in gross margins ($107 million), partially offset by increases in depreciation expense from new wind generation and other plant-in-service ($56 million), interest expense ($17 million) and lower allowances for equity funds used during construction ($19 million). The increase in gross margins derived primarily from the regulated electric business, which benefitted from the aforementioned changes in Iowa rates and rate structure and lower fuel and purchased power costs. In addition, EBIT included a gain of $13 million in 2015 from the sale of a generating facility lease.

NV Energy

NV Energy operates regulated electric and natural gas utilities in Nevada. Revenues were approximately $2.9 billion in 2016, a decrease of $457 million (13.5%) versus 2015. The decline was primarily attributable to lower electric retail rates resulting from lower energy costs. Electric retail volumes in 2016 were flat compared to 2015. EBIT fell $27 million (4.6%) compared to 2015. The decline in revenues was substantially offset by a decline in energy costs. Operating expenses increased $39 million (4%) and interest expense decreased $17 million (6.6%). The increase in operating expenses reflected higher depreciation and amortization and reductions in certain accrued liabilities in 2015.

Revenues and EBIT were $3.4 billion and $586 million in 2015, representing increases of $103 million (3%) and $37 million (7%) over 2014. The increase in revenues was due primarily to higher retail electric revenues reflecting increased customers and higher volumes. The increase in EBIT was attributable to an increase in gross margins ($82 million) and lower interest expense ($22 million), partially offset by increased depreciation and amortization ($31 million) and higher other operating expenses, including increased energy efficiency costs.

Northern Powergrid

Revenues declined $144 million (12.6%) to $997 million in 2016, primarily due to the impact of a stronger U.S. Dollar ($127 million) and lower distribution revenues. EBIT declined $93 million (20.2%) to $367 million. The decline was due to lower distribution revenues and the stronger U.S. Dollar, as well as increases in depreciation expense from increased assets in service and higher asset impairment charges.

Revenues declined $143 million (11%) in 2015 versus 2014, reflecting the adverse impact of the stronger U.S. Dollar ($90 million) and comparatively lower distribution revenues. The decline in distribution revenues reflected lower rates due mainly to the new price control period effective April 1, 2015. EBIT declined $67 million (13%) compared to 2014, reflecting the adverse effects of the stronger U.S. Dollar and lower distribution revenues partially offset by lower interest expense ($13 million).

Natural Gas Pipelines

Revenues declined $32 million (3.1%) in 2016 as compared to 2015, primarily due to the impact of lower gas sales from balancing activities and lower transportation revenues from lower volumes and rates, in part due to comparatively milder temperatures in the first quarter of 2016. EBIT increased $12 million (3.0%) versus 2015, reflecting lower interest expense, resulting from lower average debt balances and lower operating expenses, partly offset by the lower transportation revenues.

Revenues declined $75 million (7%) in 2015 versus 2014, which was primarily due to lower gas sales as a result of reduced system and operational balancing activities, partially offset by higher transportation revenues. EBIT increased $22 million (6%) as compared to 2014, as decreased costs of gas sold and lower operating expenses more than offset the decline in revenues.

Other energy businesses

Revenues declined $98 million (4.2%) in 2016 compared to 2015. The decline in comparative revenues was principally attributable to lower revenues from AltaLink and from our unregulated retail services business. AltaLink's year-to-date revenue decline reflected the impact of a regulatory decision in the second quarter of 2016 that resulted in one-time net reductions in revenue, which more than offset increased revenues from additional assets placed in service. The regulatory decision changed the timing of when construction-in-progress expenditures included in the rate base are billable to customers and earned in revenues, but had no impact on net earnings, as one-time reductions in expenses offset the one-time revenue reduction. EBIT declined $17 million (4.3%) compared to 2015, primarily due to lower earnings from our renewable energy businesses, primarily due to higher depreciation expense from additional assets placed in service.

Utilities and Energy ("Berkshire Hathaway Energy Company") *(Continued)*

Other energy businesses (Continued)

Revenues of other energy businesses increased $739 million (46.7%) in 2015 over revenues in 2014, while EBIT increased $130 million (49%) versus 2014. Revenues and EBIT in 2015 reflect the acquisition of AltaLink on December 1, 2014. AltaLink's revenues and EBIT in 2015 were $621 million and $170 million, respectively. The remaining increase in revenues was primarily due to an increase in solar capacity placed in service. Excluding the acquisition of AltaLink, the impact of higher revenues in 2015 was more than offset by higher operating, depreciation and interest expenses.

Real estate brokerage

Revenues increased 11.0% to $2.8 billion in 2016 compared to 2015. The increase was primarily attributable to increased closed brokerage transactions (primarily resulting from business acquisitions) and a 2% increase in average home sales prices, as well as higher mortgage revenues. EBIT increased $34 million (17.8%) in 2016 compared to 2015, primarily due to the increases in mortgage revenues.

Real estate brokerage revenues and EBIT increased 17% and 37%, respectively, in 2015 compared to 2014. The revenue increase reflected comparative increases in closed transactions and average home prices and the impact of business acquisitions. The increase in EBIT was primarily due to the increased revenues, net of commission expense, as well as a lower operating expense to revenue ratio as compared to 2014.

Corporate interest and income taxes

Corporate interest includes interest on unsecured debt issued by BHE and borrowings from certain Berkshire insurance subsidiaries in connection with BHE's acquisitions of NV Energy and AltaLink. The decline in corporate interest in 2016 was primarily due to lower average borrowings from Berkshire insurance subsidiaries. In 2015, corporate interest expense increased over the prior year due to new borrowings in connection with the AltaLink acquisition.

BHE's consolidated effective income tax rates were approximately 14% in 2016, 16% in 2015, and 23% in 2014. BHE's effective income tax rates regularly reflect significant production tax credits from wind-powered electricity generation placed in service. In addition, pre-tax earnings of Northern Powergrid and AltaLink are taxed at lower statutory rates in the United Kingdom and Canada compared to the U.S. statutory tax rate. BHE's effective rates in 2016 and 2015 also included reductions in deferred income tax liabilities resulting from enacted statutory income tax rate decreases in the United Kingdom and deferred state income tax benefits.

Manufacturing, Service and Retailing

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

	Revenues			Earnings *		
	2016	2015	2014	2016	2015	2014
Manufacturing	$ 46,506	$ 36,136	$ 36,773	$ 6,211	$ 4,893	$ 4,811
Service and retailing	73,553	71,689	60,916	2,251	2,222	1,981
	$120,059	$ 107,825	$ 97,689			
Pre-tax earnings				8,462	7,115	6,792
Income taxes and noncontrolling interests				2,831	2,432	2,324
				$ 5,631	$ 4,683	$ 4,468

* *Excludes certain acquisition accounting expenses, which were primarily from the amortization of identified intangible assets recorded in connection with our business acquisitions. The after-tax acquisition accounting expenses excluded from earnings above were $771 million in 2016, $476 million in 2015 and $496 million in 2014. These expenses are included in "other" in the summary of earnings on page 78 and in the "other" earnings section on page 97.*

Manufacturing, Service and Retailing *(Continued)*

Manufacturing

Our manufacturing group includes a variety of businesses that produce industrial, building and consumer products. Industrial products businesses include specialty chemicals (The Lubrizol Corporation ("Lubrizol")), metal cutting tools/systems (IMC International Metalworking Companies ("IMC")), equipment and systems for the livestock and agricultural industries (CTB International), and a variety of industrial products for diverse markets (Marmon and Scott Fetzer). Beginning on January 29, 2016, our industrial products group also includes Precision Castparts Corp. ("PCC"), a leading manufacturer of complex metal products for aerospace, power and general industrial markets.

Our building products businesses include 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). Our consumer products businesses include leisure vehicles (Forest River), several apparel and footwear operations (including Fruit of the Loom, Garan, H.H. Brown Shoe Group and Brooks Sports), and beginning February 29, 2016, the Duracell Company ("Duracell"), a leading manufacturer of high performance alkaline batteries. This group also includes custom picture framing products (Larson Juhl) and jewelry products (Richline). A summary of revenues and pre-tax earnings of our manufacturing operations follows (in millions).

	Revenues			Pre-tax earnings		
	2016	2015	2014	2016	2015	2014
Industrial products	$ 24,702	$ 16,760	$ 17,622	$ 4,209	$ 2,994	$ 3,159
Building products	10,772	10,316	10,124	1,178	1,167	896
Consumer products	11,032	9,060	9,027	824	732	756
	$ 46,506	$ 36,136	$ 36,773	$ 6,211	$ 4,893	$ 4,811

Aggregate revenues in 2016 were approximately $46.5 billion, an increase of approximately $10.4 billion (28.7%) over 2015. Pre-tax earnings were approximately $6.2 billion in 2016, an increase of $1.3 billion (26.9%) compared to 2015. Excluding PCC and Duracell, manufacturing revenues were flat and pre-tax earnings declined compared to 2015.

Industrial products

Industrial products revenues increased approximately $7.9 billion (47.4%) in 2016 versus 2015, primarily due to the inclusion of PCC, partially offset by revenue declines of $859 million (5.1%) across our other businesses. Sales volumes of our other businesses declined compared to 2015, reflecting sluggish demand for many product categories, particularly for products sold to businesses in the oil and gas and heavy equipment industries. In addition, lower average costs of oil-based raw materials and metals and increased competitive pressures continued to lower average selling prices.

Pre-tax earnings increased $1.2 billion (40.6%) in 2016 compared to 2015, reflecting the inclusion of PCC, partially offset by comparative earnings declines from our other businesses. Lubrizol's earnings in 2016 included pre-tax losses of $365 million in 2016 related to the disposition in the fourth quarter of an underperforming business. Earnings from several of Marmon's manufacturing businesses and Lubrizol's continuing operations declined, while earnings from IMC increased slightly. Generally, our industrial products manufacturers experienced a combination of weaker customer demand, sales price and mix changes, and increased restructuring costs, which were partly offset by benefits from cost containment initiatives and lower average material prices.

Revenues declined $862 million (5%) in 2015 versus 2014. The foreign currency translation impact of a stronger U.S. Dollar produced approximately $782 million of the comparative revenue decline. In addition, commodity cost deflation in petroleum and metals used in certain of our products resulted in lower average selling prices, in particular for specialty chemicals, metal cutting tools, copper wire and plumbing products. Certain of our businesses experienced slowing customer demand over the last half of 2015 as the decline in oil prices and competitive pressures resulted in significantly lower sales volumes to customers in or related to the oil and gas industry. These negative factors were partly offset by revenues from bolt-on acquisitions of Lubrizol.

Pre-tax earnings declined $165 million (5%) in 2015 compared to 2014. The comparative declines in earnings reflected the adverse impact of the stronger U.S. Dollar, partially offset by earnings from bolt-on acquisitions, lower average commodity-based material costs, and actions taken in response to the slowing sales volumes previously referenced. Such actions address cost structures and exiting lower margin business.

Manufacturing, Service and Retailing *(Continued)*

Building products

Building products revenues increased $456 million (4.4%) in 2016 compared to 2015, reflecting volume-driven revenue increases by MiTek, Johns Manville, Acme and Shaw, as well as revenues from bolt-on acquisitions by Shaw and MiTek. The revenue increase reflected increased unit sales across several product categories, partly offset by lower average sales prices and changes in product mix. Pre-tax earnings increased $11 million (0.9%) in 2016 compared to 2015. The favorable effects of increased sales volume and lower manufacturing costs in 2016 (attributable to deflation in certain commodity unit costs) were offset by increased charges for asset impairments, pension settlements and environmental claims.

Revenues increased $192 million (2%) in 2015 compared to 2014. The revenue increase reflected sales volume increases at Shaw, Johns Manville and MiTek, as well as the impact of bolt-on business acquisitions, partially offset by the unfavorable foreign currency translation from a stronger U.S. Dollar ($165 million). Pre-tax earnings increased $271 million (30%) compared to 2014. The overall increase in earnings was primarily attributable to the aforementioned increases in revenues and lower average raw material and energy costs, partially offset by the negative impact of foreign currency translation and increased restructuring charges. Shaw, Johns Manville and Benjamin Moore generated most of the comparative increase in earnings.

Consumer products

Consumer products revenues were approximately $11.0 billion in 2016, an increase of approximately $2.0 billion (21.8%) compared to 2015. The increase reflected the inclusion of Duracell and a 12% increase in Forest River's revenues, which was primarily attributable to increased unit sales. Apparel revenues in 2016 declined $81 million (1.9%) compared to 2015, reflecting lower footwear sales and the impact of a divestiture by Fruit of the Loom in 2015.

Consumer products pre-tax earnings increased $92 million (12.6%) in 2016 compared to 2015. The earnings increase reflected increased earnings from Forest River and apparel and footwear businesses, partly offset by pre-tax losses of Duracell. From its acquisition date, Duracell incurred approximately $109 million in transition, business integration and restructuring costs. Forest River generated a pre-tax earnings increase of 28%, primarily due to increased sales volumes and higher gross margins. Earnings of our apparel businesses increased 22% in 2016, primarily attributable to lower restructuring costs and a loss in 2015 from the disposition of a Fruit of the Loom operation, partly offset by lower earnings from our footwear businesses.

Revenues of our consumer products manufacturers were approximately $9.1 billion in 2015, relatively unchanged from 2014. Forest River's revenues increased 6% compared to 2014, due to a 4% increase in unit sales and increased average prices. Apparel revenues in 2015 declined 4% compared to 2014. The decline in apparel revenues was attributable to lower volume and the negative impact of foreign currency translation resulting from a stronger U.S. Dollar. Pre-tax earnings declined $24 million (3%) in 2015 compared to 2014. The decline was primarily due to a pre-tax loss in 2015 from the disposition of an unprofitable Fruit of the Loom operation and lower earnings from our footwear businesses, partially offset by higher earnings from Forest River.

Service and retailing

Our service and retailing businesses are comprised of a large group of independently managed businesses engaged in a variety of activities. A summary of revenues and pre-tax earnings of these operations follows (in millions).

	Revenues			Pre-tax earnings		
	2016	2015	2014	2016	2015	2014
Service	$ 10,386	$ 10,201	$ 9,854	$ 1,161	$ 1,156	$ 1,202
Retailing	15,092	13,265	4,422	659	564	344
McLane Company	48,075	48,223	46,640	431	502	435
	$ 73,553	$ 71,689	$ 60,916	$ 2,251	$ 2,222	$ 1,981

Service

Our service businesses offer fractional ownership programs for general aviation aircraft (NetJets) and high technology training to operators of aircraft (FlightSafety). We also distribute electronic components (TTI) and franchise and service a network of quick service restaurants (Dairy Queen). Services also include the electronic distribution of corporate news, multimedia and regulatory filings (Business Wire), publication of newspapers and other publications (Buffalo News and the BH Media Group) and operation of a television station in Miami, Florida (WPLG). We also offer third party logistics services that primarily serve the petroleum and chemical industries (Charter Brokerage).

Manufacturing, Service and Retailing *(Continued)*

Service (Continued)

Service revenues increased 1.8% to approximately $10.4 billion in 2016 compared to 2015, primarily due to revenue increases from TTI and Charter Brokerage partly offset by a revenue decrease from NetJets. TTI's revenues increased 7.2%, primarily due to sales volume increases in Asia, Europe and through the Internet, while the increase from Charter Brokerage primarily derived from a commodity trading business launched in 2015. NetJets' revenues decreased 2.0% reflecting lower aircraft sales.

Pre-tax earnings were $1.2 billion in 2016, relatively unchanged versus 2015, reflecting increased earnings from NetJets and lower earnings from our newspaper operations. NetJets' earnings increased 19%, primarily due to lower subcontracting expense and a decline in losses from aircraft impairments and dispositions, partly offset by increases in depreciation and restructuring charges and reduced aircraft sale margins. TTI's earnings were relatively unchanged, as changes in geographic sales mix and price competition produced lower gross margin rates, substantially offsetting the aforementioned revenue increase.

Revenues increased $347 million (3.5%) in 2015 as compared to 2014. The increase included a 5% increase in NetJets' revenues and the impact of the acquisitions of Charter Brokerage and WPLG during 2014, partly offset by reduced revenues from our newspaper operations. The increase in NetJets' revenues was attributable to a 50% increase in aircraft sales, partially offset by lower flight operations revenue.

Pre-tax earnings declined $46 million in 2015 compared to 2014. Earnings benefitted from the WPLG and Charter Brokerage acquisitions, which were more than offset by lower earnings from NetJets. Earnings declined at NetJets as the impact of increased aircraft sales margins was more than offset by increased personnel, aircraft subcontracting and maintenance expenses. A portion of the increase in personnel costs pertained to lump-sum payments made in connection with a collective bargaining agreement reached with our pilots in the fourth quarter of 2015.

Retailing

Our retailing businesses include four distinct home furnishings retailing businesses (Nebraska Furniture Mart, R.C. Willey, Star Furniture and Jordan's), which sell furniture, appliances, flooring and electronics. Our retailers also include Berkshire Hathaway Automotive ("BHA"), which we acquired in the first quarter of 2015. BHA currently includes 83 auto dealerships. BHA sells new and pre-owned automobiles, offering repair and other related services and products, and also includes two related insurance businesses, two auto auctions and a distributor of automotive fluid maintenance products.

Our other retailing businesses include three jewelry retailing businesses (Borsheims, Helzberg and Ben Bridge), See's Candies (confectionary products), Pampered Chef (high quality kitchen tools), Oriental Trading Company (party supplies, school supplies and toys and novelties) and Detlev Louis Motorrad ("Louis"), a Germany-based retailer of motorcycle accessories acquired in the second quarter of 2015.

Retailing revenues increased $1.8 billion (13.8%) in 2016 to $15.1 billion as compared to 2015. The increase in revenues reflected the impact of the BHA and Louis acquisitions during 2015, which accounted for approximately $1.6 billion of the comparative increase. Home furnishings revenues increased $227 million (7.8%), primarily due to new stores opened in 2015 by Nebraska Furniture Mart and Jordan's, as well as modest organic growth. Pre-tax earnings increased $95 million (16.8%) in 2016 compared to 2015. The increase reflected the impact of the BHA and Louis acquisitions and increased earnings from most of our other retailers, which benefitted from a combination of revenue increases and cost savings initiatives.

Revenues increased approximately $8.8 billion in 2015 as compared to 2014. The increase reflected the impact of the BHA and Louis acquisitions, which together contributed revenues of approximately $8.3 billion. Revenues of our home furnishings retailers increased $572 million (24%) over 2014, driven by Nebraska Furniture Mart, which opened a new store in March 2015 and from increases at R.C. Willey and Jordan's. Pre-tax earnings increased $220 million (64%) compared to 2014. The increase was primarily due to the impact of the BHA and Louis acquisitions.

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 businesses that are wholesale distributors of distilled spirits, wine and beer ("beverage"). The grocery and foodservice businesses generate high sales volumes and very low profit margins and have several significant customers, including Wal-Mart, 7-Eleven and Yum! Brands. A curtailment of purchasing by any of its significant customers could have an adverse impact on McLane's periodic revenues and earnings.

Manufacturing, Service and Retailing *(Continued)*

McLane Company (Continued)

Revenues were $48.1 billion in 2016, a decline of $148 million (0.3%) relative to 2015. In 2016, we experienced a comparative decline in grocery revenues, partly offset by an increase in foodservice revenues. Earnings were $431 million in 2016, a decrease of $71 million (14%) compared to 2015. The reduced earnings was primarily due to a reduction in McLane's operating margin (ratio of earnings to revenues). The decline was primarily due to increased employee related costs. Competition in our grocery and foodservice businesses has been and will likely continue to be intense and our ability to control operating costs is a key factor in maintaining profitability. Additionally, earnings in 2015 included a gain of $19 million from the disposition of a subsidiary.

Revenues increased $1.6 billion (3%) in 2015 compared to 2014, reflecting revenue increases in the foodservice unit (6%), beverage unit (8%) and grocery unit (2%). Pre-tax earnings increased $67 million (15%) in 2015 versus 2014. Pre-tax earnings in 2015 included the aforementioned gain from the sale of a subsidiary and otherwise benefitted from lower fuel and trucking costs.

Finance and Financial Products

Our finance and financial products businesses include manufactured housing and finance (Clayton Homes), transportation equipment manufacturing and leasing businesses (UTLX and XTRA, and together, "transportation equipment leasing"), as well as other leasing and financing activities. A summary of revenues and earnings from our finance and financial products businesses follows (in millions).

	Revenues			Earnings		
	2016	2015	2014	2016	2015	2014
Manufactured housing and finance	$ 4,230	$ 3,576	$ 3,310	$ 744	$ 706	$ 558
Transportation equipment leasing	2,650	2,540	2,427	959	909	827
Other	795	848	789	427	471	454
	$ 7,675	$ 6,964	$ 6,526			
Pre-tax earnings				2,130	2,086	1,839
Income taxes and noncontrolling interests				703	708	596
				$ 1,427	$ 1,378	$ 1,243

Manufactured housing and finance

Clayton Homes' revenues increased $654 million (18%) in 2016 compared to 2015, attributable to a 30% increase in revenues from home sales, primarily due to a 25% increase in units sold and product mix changes. Interest and other financial service income increased 1.8% from 2015. Pre-tax earnings increased $38 million (5.4%) compared to 2015. Earnings benefitted from increased home sales and improved manufacturing and retailing operating margins, partly offset by lower earnings from lending and financial services, which were negatively impacted by increased insurance losses. A significant portion of Clayton's earnings are generated from lending activities, which in recent years benefitted from relatively low delinquency rates and loan losses and from declining borrowing costs attributable to lower average interest rates. As of December 31, 2016, Clayton Homes' installment loan portfolio was approximately $13.3 billion and approximately 94% of the loan balances were current in terms of payment status.

Revenues and pre-tax earnings increased $266 million (8%) and $148 million (27%) in 2015, respectively, as compared to 2014. The revenue increase was primarily due to a 9% increase in home unit sales. The increase in earnings was primarily due to lower interest expense, improved manufacturing results, relatively low delinquency rates and lower loss rates on loan foreclosures. The decline in interest expense was primarily due to lower interest rates and to a lesser extent lower average balances.

Transportation equipment leasing

Transportation equipment leasing revenues increased $110 million (4.3%) in 2016 compared to 2015. The increase derived primarily from the acquisition of General Electric Company's ("GE") tank car fleet and its railcar repair services business in 2015 and increased rates and tank car additions. These increases were partly offset by lower utilization rates, unfavorable foreign currency effects, lower crane lease demand in North America and reduced volume related to oil and gas markets.

Finance and Financial Products *(Continued)*

Transportation equipment leasing (Continued)

Pre-tax earnings increased $50 million (5.5%) in 2016 compared to 2015. The increase was primarily attributable to revenue growth and lower depreciation rates on certain tank car assets, partially offset by higher repair costs and interest expense on new borrowings from a Berkshire financing subsidiary. Significant portions of transportation leasing expenses, such as depreciation, do not vary proportionately to revenue changes and therefore changes in revenues can disproportionately impact earnings.

Revenues increased 5% in 2015 compared to 2014. The increase reflected increased railcar lease rates, a larger fleet of railcars, higher volumes in our Australian crane business, increased over-the-road trailers on lease and gains on dispositions of trailers. These increases were partially offset by the unfavorable effects of foreign currency exchange attributable to a stronger U.S. Dollar and lower volumes in our North American crane leasing business due to declines in oil drilling activity. As previously mentioned, we acquired GE's tank car fleet on September 30, 2015, which included approximately 25,000 tank cars. We also acquired several railcar repair and maintenance facilities at the end of 2015.

Pre-tax earnings increased $82 million (10%) in 2015 compared to 2014. The increase was primarily attributable to the positive impact of the revenue growth discussed above, which more than offset the unfavorable impact of foreign currency translation and higher railcar repair and warranty costs and depreciation attributable to a larger fleet size.

Other

Other finance activities include CORT furniture leasing, our share of the earnings of a commercial mortgage servicing business ("Berkadia") in which we own a 50% interest, and interest and dividends from a portfolio of investments. Other earnings decreased $44 million in 2016 compared to 2015, reflecting lower earnings from investment securities, partly offset by increased earnings from CORT and Berkadia. Other earnings also includes income from interest rate spreads charged on borrowings by a Berkshire financing subsidiary that are used to finance Clayton Homes' installment loans and beginning in 2016, UTLX's fleet of rail/tank cars held for lease. Offsetting expenses ($74 million in 2016, $62 million in 2015 and $68 million in 2014) were included in Clayton Homes' and UTLX's results.

Investment and Derivative Gains/Losses

A summary of investment and derivative gains and losses and other-than-temporary impairment losses on investments follows (in millions).

	2016	2015	2014
Investment gains/losses	$ 7,635	$ 9,399	$ 4,272
Other-than-temporary impairments	(82)	(26)	(697)
Derivative gains/losses	751	974	506
Gains/losses before income taxes and noncontrolling interests	8,304	10,347	4,081
Income taxes and noncontrolling interests	1,807	3,622	760
Net gains/losses	$ 6,497	$ 6,725	$ 3,321

Investment gains/losses

Investment gains/losses arise primarily from the sale, redemption or exchange of investments. The timing of gains or losses can have a material effect on periodic earnings. Investment gains and losses included in earnings usually have minimal impact on the periodic changes in our consolidated shareholders' equity since most of our investments are recorded at fair value with the unrealized gains and losses included in shareholders' equity as a component of accumulated other comprehensive income.

We believe the amount of investment gains/losses included in earnings in any given period typically has little analytical or predictive value. Our decisions to sell securities are not motivated by the impact that the resulting gains or losses will have on our reported earnings. Although we do not consider investment gains and losses as necessarily meaningful or useful in evaluating our periodic results, we are providing information to explain the nature of such gains and losses when reflected in our earnings.

Investment and Derivative Gains/Losses *(Continued)*

Investment gains/losses (Continued)

Pre-tax investment gains were $7.6 billion in 2016 and included gains of $2.4 billion from the sale to Mars Inc. of our Wrigley preferred stock investment, $610 million from the Kraft Heinz Preferred Stock redemption, $1.2 billion from the Dow Preferred Stock conversion into common stock, and $1.1 billion from the exchange of shares of P&G common stock for 100% of the common stock of Duracell. Income tax expense allocated to investment gains included a benefit from the reduction of certain deferred income tax liabilities in connection with the exchange of P&G common stock for Duracell. Pre-tax investment gains included non-cash holding gains related to our investment in Kraft Heinz of $6.8 billion in 2015. In connection with its acquisition of Kraft Foods on July 2, 2015, Kraft Heinz issued new shares of its common stock in exchange for the outstanding shares of Kraft Foods common stock, thus reducing Berkshire's ownership interest in Kraft Heinz by approximately 50%. Under the equity method of accounting, such transactions are treated by the investor as if it sold a portion of its interests.

Pre-tax investment gains were $4.3 billion in 2014, which included gains of approximately $2.1 billion realized in connection with the exchanges of common stock of Phillips 66 and Graham Holdings Company for 100% of the common stock of a specified subsidiary of each of those companies. Each exchange transaction in 2016 and 2014 was structured as a tax-free reorganization under the Internal Revenue Code. As a result, no income taxes are payable on the excess of the fair value of the businesses received over the tax-basis of the common stock exchanged.

Other-than-temporary impairments ("OTTI")

OTTI charges in 2016 and 2015 were not significant and in 2014 were $697 million, predominantly relating to our investment in equity securities of Tesco PLC. Although we have periodically recorded OTTI charges in earnings in past years, we continue to hold some of those securities. If the market values of those investments increase following the date we recorded OTTI charges, the increases are included in shareholders' equity as a component of accumulated other comprehensive income and not in earnings. When recorded, OTTI charges have no impact whatsoever on the asset values otherwise recorded in our Consolidated Balance Sheets or on our consolidated shareholders' equity. In addition, the recognition of such losses in earnings rather than in accumulated other comprehensive income does not necessarily indicate that sales are planned and sales ultimately may not occur for a number of years. Furthermore, the recognition of OTTI charges does not necessarily indicate that the loss in value of the security is permanent or that the market price of the security will not subsequently increase to and ultimately exceed our original cost.

Derivative gains/losses

Derivative gains/losses primarily represented the changes in fair value of our credit default and equity index put option contract liabilities. The periodic changes in the fair values of these liabilities are recorded in earnings and can be significant, reflecting the volatility of underlying credit and equity markets and the changes in the inputs used to measure such liabilities.

Changes in the values of our equity index put option contract liabilities produced pre-tax gains of $662 million in 2016, which were primarily due to increases in the index values, favorable foreign currency exchange rate changes and shorter remaining contract durations, partly offset by lower interest rates. Our equity index put option contracts produced pre-tax gains of approximately $1.0 billion in 2015, which were primarily attributable to a stronger U.S. Dollar and shorter remaining durations. These contracts produced pre-tax gains of $108 million in 2014. Such gains reflected the favorable impact of foreign currency exchange rate changes and generally higher index values, partially offset by the effect of lower interest rate assumptions.

As of December 31, 2016, the aggregate intrinsic value of our equity put option contracts was approximately $1.0 billion and our recorded liability was approximately $2.9 billion. Our ultimate payment obligations, if any, under our equity index put option contracts will be determined as of the contract expiration dates (beginning in 2018), and will be based on the intrinsic value as defined under the contracts.

In July 2016, our remaining credit default contract was terminated by mutual agreement with the counterparty and we paid the counterparty $195 million. This contract produced pre-tax earnings of $89 million in 2016, pre-tax losses of $34 million in 2015 and pre-tax earnings of $397 million in 2014. We have no further exposure to losses under credit default contracts.

Other

A summary of after-tax other earnings (losses) which include corporate income (including income from our investments in Kraft Heinz), expenses and income taxes not allocated to operating businesses is summarized below (in millions).

	2016	2015	2014
Kraft Heinz earnings	$ 706	$ 841	$ 653
Acquisition accounting expenses	(846)	(515)	(531)
Corporate interest expense	(97)	(191)	(153)
Other	(106)	(105)	(114)
Net earnings (losses) attributable to Berkshire Hathaway shareholders	$ (343)	$ 30	$ (145)

The reduced earnings in 2016 from our investments in Kraft Heinz were due to lower dividends from our Preferred Stock investment, which was redeemed in June 2016, somewhat offset by increased equity method earnings from our common stock investment. Other earnings also include charges from the application of the acquisition method in connection with Berkshire's business acquisitions. Such charges were primarily from the amortization of intangible assets recorded in connection with those business acquisitions, which we view as corporate expenses. Corporate interest expense includes after-tax foreign exchange gains of $159 million in 2016 and losses of $45 million in 2015 with respect to Euro denominated debt issued by Berkshire in March 2015 (€3.0 billion par) and March 2016 (€2.75 billion par). Excluding foreign currency effects, after-tax corporate interest expense was $256 million in 2016 and $146 million in 2015. The increase in 2016 was attributable to increased average outstanding debt.

Financial Condition

Our balance sheet continues to reflect significant liquidity and a strong capital base. Our consolidated shareholders' equity at December 31, 2016 was $283.0 billion, an increase of $27.5 billion since December 31, 2015. Net earnings attributable to Berkshire shareholders in 2016 were $24.1 billion. At December 31, 2016, our insurance and other businesses held cash, cash equivalents and U.S. Treasury Bills of $70.9 billion, and investments (excluding our investment in Kraft Heinz) of $158.3 billion.

In January 2016, we used cash of approximately $32.1 billion to fund the acquisition of PCC, which we funded through a combination of cash on hand and $10 billion borrowed under a 364-day revolving credit agreement. We repaid these borrowings following our issuance in March 2016, of €2.75 billion and $5.5 billion of senior unsecured notes. In August 2016, we issued $750 million of senior unsecured notes to replace $750 million of maturing notes. In January 2017, Berkshire issued new senior notes aggregating €1.1 billion and repaid $1.1 billion of maturing senior notes. There are no other parent company term debt maturities in 2017.

Our railroad, utilities and energy businesses (conducted by 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. In 2016, capital expenditures included $5.1 billion by BHE and $3.8 billion by BNSF. Aggregate capital expenditures of these businesses are forecasted to be $8.6 billion in 2017. We expect future capital expenditures will be funded by cash flows from operations and debt issuances.

BNSF's outstanding debt was approximately $22.0 billion as of December 31, 2016, an increase of $307 million from December 31, 2015. Outstanding borrowings of BHE and its subsidiaries, excluding its borrowings from Berkshire insurance subsidiaries, were approximately $37.0 billion as of December 31, 2016, an increase of approximately $1.0 billion from December 31, 2015. BNSF and BHE debt maturities in 2017 will be $3.6 billion. Berkshire does not guarantee the repayment of debt issued by BNSF, BHE or any of their subsidiaries and is not committed to provide capital to support BNSF or BHE or any of their subsidiaries.

Finance and financial products assets were approximately $41.7 billion as of December 31, 2016, an increase of approximately $2.7 billion since December 31, 2015. Finance assets consist primarily of loans and finance receivables, various types of property held for lease, and cash, cash equivalents, U.S. Treasury Bills and other investments. In September 2016, a Berkshire finance subsidiary received approximately $4.6 billion from the sale of its Wrigley preferred stock investment.

Financial Condition *(Continued)*

Finance and financial products liabilities were approximately $19.7 billion as of December 31, 2016, an increase of approximately $2.5 billion compared to December 31, 2015. The increase was attributable to $3.5 billion of debt issued by Berkshire Hathaway Finance Corporation ("BHFC") in March, partly offset by lower derivative contract liabilities. The debt proceeds were used to fund loans originated and acquired by Clayton Homes and to fund a portion of existing assets held for lease by our UTLX railcar leasing business. In January 2017, BHFC issued new senior notes aggregating $1.3 billion due in 2019 and 2020 and repaid $1.05 billion of maturing notes. Over the remainder of 2017, an additional $1.75 billion of BHFC senior notes will mature. While we currently intend to have BHFC issue additional notes in 2017 to replace the maturing debt, the amount to be issued will be based on prevailing market conditions.

Berkshire's Board of Directors has authorized Berkshire to repurchase its Class A and Class B common shares at prices no higher than a 20% premium over the book value of the shares. Berkshire may repurchase shares at management's discretion and there is no obligation to repurchase any shares. We expect the program to continue indefinitely. We will not repurchase shares if it reduces the total amount of Berkshire's consolidated cash, cash equivalents and U.S. Treasury Bills holdings below $20 billion. Financial strength and redundant liquidity will always be of paramount importance at Berkshire. There were no share repurchases under the program in 2016.

Contractual Obligations

We are party to contracts associated with ongoing business and financing activities, which will result in cash payments to counterparties in future periods. Certain obligations are included in our Consolidated Balance Sheets, such as notes payable, which require future payments on contractually specified dates and in fixed and determinable amounts. Other obligations pertain to the acquisition of goods or services in the future, such as minimum rentals under operating leases and certain purchase obligations, and are not currently reflected in the financial statements, but will be recognized in future periods as the goods are delivered or services are provided.

The timing and/or amount of the payments under certain contracts are contingent upon the outcome of future events. Actual payments will likely vary, perhaps significantly, from estimates reflected in the table that follows. Most significantly, the timing and amount of future payments arising under property and casualty insurance and reinsurance contracts are contingent upon the outcome of claim settlement activities or events. In addition, obligations arising under life, annuity and health insurance benefits are contingent on future premiums, allowances, mortality, morbidity, expenses and policy lapse rates, as applicable. These amounts are included in the following table based on the liability estimates reflected in our Consolidated Balance Sheet as of December 31, 2016. Although certain insurance losses and loss adjustment expenses and life, annuity and health benefits are recoverable under reinsurance contracts, those receivables recorded in the Consolidated Balance Sheet are not reflected in the table.

A summary of contractual obligations as of December 31, 2016 follows (in millions).

	Estimated payments due by period				
	Total	**2017**	**2018-2019**	**2020-2021**	**After 2021**
Notes payable and other borrowings, including interest	$ 152,519	$14,038	$ 26,047	$ 14,396	$ 98,038
Operating leases	8,285	1,337	2,168	1,610	3,170
Purchase obligations [(1)]	38,189	11,072	7,560	4,937	14,620
Losses and loss adjustment expenses [(2)]	78,351	17,591	17,684	9,791	33,285
Life, annuity and health insurance benefits [(3)]	30,705	1,299	323	490	28,593
Other	13,173	2,221	909	1,639	8,404
Total	$ 321,222	$47,558	$ 54,691	$ 32,863	$ 186,110

(1) *Primarily obligations of BHE, BNSF and NetJets.*

(2) *Before reserve discounts of $1.4 billion.*

(3) *Amounts represent estimated undiscounted benefits, net of estimated future premiums, as applicable.*

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 currently recorded in the financial statements will likely be adjusted in the future based on new available information and changes in other facts and circumstances.

Property and casualty losses

We record liabilities for unpaid losses and loss adjustment expenses based upon estimates of the ultimate amounts payable for losses occurring on or before the balance sheet date. Except for certain workers' compensation reinsurance claims, we record all liabilities for unpaid losses and loss adjustment expenses (referred to in this section as "gross unpaid losses") in the Consolidated Balance Sheets without discounting for time value. The timing and amount of ultimate loss payments are contingent upon, among other things, the timing of claim reporting from insureds and ceding companies and the final determination of the loss amount through the loss adjustment process. We use a variety of techniques in establishing liabilities and all techniques require significant judgments and assumptions. We believe the processes and techniques utilized best suit the underlying claims and available data.

As of any balance sheet date, recorded liabilities include provisions for reported claims, as well as claims not yet reported and the development of reported claims. The period between the loss occurrence date and loss settlement date is the "claim-tail." Property claims usually have relatively short claim-tails, absent litigation. Casualty claims usually have longer claim-tails, occasionally extending for decades. Casualty claims may be more susceptible to litigation and the impact of changing contract interpretations. The legal environment and judicial process further contributes to extending claim-tails. Our liabilities as of December 31, 2016 were $76.9 billion, of which 85% related to GEICO, General Re and BHRG. Additional information regarding significant uncertainties inherent in the processes and techniques of GEICO, General Re and BHRG follows.

GEICO

GEICO predominantly writes private passenger auto insurance. As of December 31, 2016, GEICO's gross unpaid losses and loss adjustment expenses were $15.5 billion and unpaid losses net of reinsurance recoverable were $14.4 billion.

GEICO's claim reserving methodologies produce liability estimates based upon the individual claims. The key assumptions affecting our liability estimates include projections of ultimate claim counts ("frequency") and average loss per claim ("severity"). We utilize a combination of several actuarial estimation methods, including Bornhuetter-Ferguson and chain-ladder methodologies.

Liability estimates for automobile liability coverages (such as bodily injury ("BI"), uninsured motorists, and personal injury protection) are more uncertain due to the longer claim-tails, so we establish additional case development estimates. As of December 31, 2016, case development liabilities averaged approximately 25% of the case reserves. We select case development factors through analysis of the overall adequacy of historical case liabilities.

For unreported claims, IBNR liabilities are based on projections of the ultimate number of claims expected (reported and unreported) for each significant coverage. We use historical claim count data to develop age-to-age projections of the ultimate counts by quarterly accident period, from which we deduct reported claims to produce the number of unreported claims. We estimate the average costs per unreported claim and apply such estimates to the unreported claim counts, producing an IBNR liability estimate. We may record additional IBNR estimates when actuarial techniques are difficult to apply.

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

Unpaid loss and loss adjustment expense liability estimates recorded at the end of 2015 developed downward by $61 million when reevaluated through December 31, 2016, which produced a corresponding increase to pre-tax earnings in 2016. We modified the assumptions used to estimate liabilities at December 31, 2016 as appropriate to reflect the most recent frequency and severity results. Future development of recorded liabilities will depend on whether actual frequency and severity are more or less than anticipated.

Property and casualty losses *(Continued)*

GEICO (Continued)

With respect to liabilities for BI claims, our most significant claim category, we believe it is reasonably possible that average severities will change by at least one percentage point from the severities used in establishing the recorded liabilities at December 31, 2016. We estimate that a one percentage point increase or decrease in BI severities would produce a $240 million increase or decrease in recorded liabilities, with a corresponding decrease or increase in pre-tax earnings. Many of the same economic forces that would likely cause BI severity to differ from expectations would likely also cause severities for other injury coverages to differ in the same direction.

General Re and BHRG

Liabilities for unpaid property and casualty losses and loss adjustment expenses of General Re and BHRG derive primarily from reinsurance contracts. In connection with reinsurance contracts, the nature, extent, timing and perceived reliability of information received from ceding companies varies widely depending on the type of coverage and the contractual reporting terms. Contract terms, conditions and coverages also tend to lack standardization and may evolve more rapidly than primary insurance policies.

The nature and extent of loss information provided under many facultative (individual risk), per occurrence excess or retroactive reinsurance contracts may not differ significantly from the information received under a primary insurance contract if reinsurer personnel either work closely with the ceding company in settling individual claims or manage the claims themselves. However, loss information is often less detailed with respect to aggregate excess-of-loss and quota-share contracts. Additionally, loss information we receive through periodic reports is often in a summary format rather than on an individual claim basis. Loss data includes recoverable paid losses, as well as case loss estimates. Ceding companies infrequently provide IBNR estimates to reinsurers.

Loss reporting to reinsurers is typically slower in comparison to primary insurers. Periodic premium and claims reports are required from ceding companies. In the U.S., such reports are generally required at quarterly intervals ranging from 30 to 90 days after the end of the accounting period. Outside of the U.S., reinsurance reporting practices may vary further. In certain countries, clients report annually, often 90 to 180 days after the end of the annual period. In some instances, reinsurers assume and cede underlying risks thereby creating multiple contractual intermediaries between us and the primary insured potentially compounding the claim reporting delays. The relative impact of reporting delays on the reinsurer may vary depending on the type of coverage, contractual reporting terms and the magnitude of the claim relative to the attachment point of the reinsurance contract and for other reasons.

The premium and loss data we receive is through at least one intermediary (the primary insurer), so there is a risk that the loss data reported is incomplete, inaccurate or the claim is outside the coverage terms. When received, we review the information for completeness and compliance with the contract terms. Generally, our reinsurance contracts permit us to access the ceding company's books and records with respect to the subject business, thus providing the ability to audit the reported information.

In the normal course of business, disputes occasionally arise concerning whether claims are covered by our reinsurance policies. We resolve most coverage disputes through negotiation with the client. If disputes cannot be resolved, our contracts generally provide arbitration, litigation or alternative dispute resolution processes. There are no coverage disputes at this time for which an adverse resolution would likely have a material impact on our consolidated results of operations or financial condition.

General Re

Information concerning General Re's gross and net unpaid losses and loss adjustment expenses as of December 31, 2016 follows (in millions).

Type	
Reported case liabilities	$ 6,536
IBNR liabilities	6,884
Gross unpaid losses and loss adjustment expenses	13,420
Reinsurance recoverable and deferred charges	(693)
Net unpaid losses and loss adjustment expenses	$12,727

Line of business	
Liability and workers' compensation [(1)]	$11,408
Property	2,012
Total	$13,420

(1) *Net of discounts of approximately $1.4 billion.*

Property and casualty losses *(Continued)*

General Re (Continued)

For General Re, the critical processes involved in estimating unpaid losses and loss adjustment expenses include the establishment of case liability estimates, the determination of expected loss ratios, which drive IBNR liability estimates, and the comparison of reported loss trends to the expected loss reporting patterns. Recorded liabilities are subject to "tail risk" where reported losses are beyond the expected loss emergence period.

Our process for estimating unpaid losses and loss adjustment expenses begins with case loss estimates made by the ceding company. Upon notification of a reinsurance claim from a ceding company, we independently evaluate the case losses reported and if appropriate, we use our own case liability estimate. As of December 31, 2016, our case loss estimates exceeded ceding company estimates by approximately $2.2 billion, which were concentrated in the workers' compensation line. We also periodically conduct detailed reviews of individual client claims, which may cause us to adjust our case estimates.

In estimating IBNR liabilities, we consider expected case loss emergence and development patterns, together with expected loss ratios by year. In this process, we classify all loss and premium data into segments ("cells") based primarily on product type (e.g., treaty, facultative and program), line of business (e.g., auto liability, property and workers' compensation) and geographic jurisdiction. For each cell, we aggregate premiums and losses by accident year, policy year or underwriting year and analyze the data over time. There are several hundred cells. We use loss triangles to determine the expected development of reported claims for most coverages, which, together with the expected loss ratios, are used to calculate IBNR liability estimates. We select expected loss ratios by cell and by year based upon indicated ultimate loss ratios and forecasted losses obtained from pricing statistics. Indicated ultimate loss ratios are determined from the selected loss emergence pattern, reported losses and earned premiums. Factors affecting our loss development triangles include, but are not limited to, changes in the following: client claims practices; the frequency of client company claim reviews; policy terms and coverage (such as loss retention levels and occurrence and aggregate policy limits); loss trends, and legal trends that result in unanticipated losses. Collectively, these factors influence our selections of expected loss emergence patterns.

Once the IBNR liabilities are determined, we estimate the expected case loss emergence for the upcoming calendar year, based on the prior year-end expected loss emergence patterns and expected loss ratios. We allocate the expected losses into interim estimates, which we compare to actual reported losses. This comparison provides a test of the adequacy of prior year-end IBNR liabilities and forms the basis for possibly changing IBNR liability assumptions during the course of the year.

During 2016, we reduced net losses for prior years' occurrences by $280 million in the aggregate. This reduction produced a corresponding increase in pre-tax earnings.

Reported claims for prior years' property loss events were less than expected and we reduced our estimated ultimate liabilities by $157 million. However, property losses incurred during any given period may be more volatile because of the effect of catastrophe and large individual property loss events.

In 2016, reported nominal losses for prior years' workers' compensation were less than expected, which after reevaluating expected remaining IBNR estimates, resulted in a reduction of nominal liabilities by $165 million. However, we discount workers' compensation liabilities and after adjusting for changes in discounts, workers' compensation losses for prior years' occurrences had a minimal impact on pre-tax earnings. An increase of ten percent in the tail of the expected loss emergence pattern and an increase of ten percent in the expected loss ratios would produce a net increase in discounted workers' compensation IBNR liabilities of approximately $889 million, producing a corresponding decrease in pre-tax earnings. We believe it is reasonably possible for these assumptions to increase at these rates.

Other casualty and general liability reported losses (excluding mass tort losses) were less than expected in 2016, resulting in a $205 million increase in pre-tax earnings. However, casualty losses tend to be long-tailed and it should not be assumed that favorable loss experience in a given period will continue in the future. For our significant casualty and general liability cells, we estimate that an increase of five percent in the claim-tails of the expected loss emergence patterns and a five percent increase in expected loss ratios would produce a net increase in our nominal IBNR liabilities and a corresponding reduction in pre-tax earnings of approximately $900 million. While we believe it is reasonably possible for these assumptions to increase at these rates, more likely outcomes are less than $900 million given the diversification in worldwide business.

Property and casualty losses *(Continued)*

General Re (Continued)

Overall industry-wide loss experience data and informed judgment are used when internal loss data is of limited reliability, such as for mass tort, asbestos and hazardous waste (collectively, "mass tort") liability estimates. General Re's net liability for such losses at December 31, 2016, was approximately $1.2 billion, which included an increase in estimated ultimate losses of $98 million during 2016, which produced a corresponding reduction in pre-tax earnings. Mass tort loss estimations are difficult to determine due to the changing legal environment, and increases may be required in the future if new exposures or claimants are identified, new claims are reported or new theories of liability emerge. In addition to the previously described methodologies, we consider "survival ratios", which is the average net claim payments in recent years in relation to net unpaid losses, as a rough guide to reserve adequacy. General Re's survival ratio was approximately 15 years as of December 31, 2016.

BHRG

A summary of BHRG's unpaid losses and loss adjustment expenses as of December 31, 2016 follows (in millions).

	Property	Casualty	Total
Reported case liabilities	$1,556	$ 2,399	$ 3,955
IBNR liabilities	2,904	4,831	7,735
Retroactive reinsurance liabilities	—	24,675	24,675
Gross unpaid losses and loss adjustment expenses	$4,460	$31,905	36,365
Deferred charges and reinsurance recoverable			(8,509)
Net unpaid losses and loss adjustment expenses			$27,856

We use a variety of actuarial methodologies to establish unpaid losses and loss adjustment expenses. Certain methodologies, such as paid and incurred loss development techniques, incurred and paid loss Bornhuetter-Ferguson techniques and frequency and severity techniques, are utilized, as well as ground-up techniques when appropriate.

A large percentage of BHRG's unpaid losses and loss adjustment expenses derive from retroactive reinsurance contracts, which relate to loss events occurring before the contract inception date. Gross liabilities with respect to such contracts were approximately $24.7 billion at December 31, 2016, and were predominately for casualty and liability coverages. We expect the claim-tail related to certain of these contracts to be very long.

We establish aggregate liability estimates by individual contract, considering exposure and development trends. In establishing retroactive reinsurance liabilities, we often analyze historical aggregate loss payment patterns and project expected losses under various scenarios. We assign judgmental probability factors to these scenarios and an expected outcome is determined. We then monitor loss payment activity and review ceding company reports and other information concerning the underlying losses, and we re-estimate expected ultimate losses when significant events are reported or revealed.

Certain of our contracts include significant exposures to asbestos, environmental and other latent injury claims. We estimate that our liabilities for such claims were approximately $13.7 billion at December 31, 2016. We do not receive consistently reliable information regarding asbestos, environmental and latent injury claims data from all ceding companies, particularly with respect to multi-line or aggregate excess-of-loss policies. Periodically, we conduct a detailed analysis of the underlying loss data to make an estimate of ultimate reinsured losses. When detailed loss information is unavailable, we develop estimates by applying recent industry trends and projections to aggregate client data. Judgments in these areas necessarily consider the stability of the legal and regulatory environment under which we expect these claims will be adjudicated. Legal reform and legislation could also have a significant impact on our ultimate liabilities.

Changes in ultimate estimated liabilities for prior years' retroactive reinsurance contracts were relatively insignificant in 2016, as were changes in the estimated timing and amount of remaining unpaid losses. In 2016, we paid losses and loss adjustment expenses of approximately $1.1 billion with respect to these contracts.

Property and casualty losses *(Continued)*

BHRG (Continued)

We currently believe that maximum losses payable under our retroactive policies will not exceed $40 billion due to the aggregate contract limits that are applicable to most of these contracts. Absent significant judicial or legislative changes affecting asbestos, environmental or latent injury exposures, we also currently believe it unlikely that losses will develop upward to the maximum loss payable or downward by more than 15% of our year-end estimate.

We also record deferred charges with respect to our retroactive reinsurance contracts, which at contract inception represents the excess, if any, of the estimated ultimate liability for unpaid losses over premiums. Unamortized deferred charges were approximately $8.0 billion at December 31, 2016, which will be amortized and charged to pre-tax earnings in the future based on the expected timing and amount of loss payments. Significant changes in such estimates may have a significant effect on unamortized deferred charges and the amount of periodic amortization. Based on the contracts in effect as of December 31, 2016, and the new AIG contract we currently estimate that amortization expense in 2017 will approximate $950 million.

Gross unpaid losses and loss adjustment expense liabilities related to property and casualty contracts, other than retroactive reinsurance, were approximately $11.7 billion as of December 31, 2016 and consisted primarily of traditional property and casualty coverages written primarily under excess-of-loss and quota-share treaties. These coverages included catastrophe and aviation contracts that tend to generate low frequency/high severity losses, although such liabilities have diminished in recent years due to declines in business written. Reserving techniques for catastrophe and individual risk contracts generally rely more on a per-policy assessment of the ultimate cost associated with the individual loss event rather than with an analysis of the historical development patterns of past losses.

We generally establish liabilities for unpaid losses and loss adjustments expenses for these contracts based upon loss estimates reported by ceding companies and IBNR reserves that are primarily a function of reported losses from ceding companies and anticipated loss ratios established on a portfolio basis, supplemented by management's estimates of the impact of major catastrophe events as they become known. In 2016, we decreased estimated ultimate losses for prior years' occurrences by approximately $585 million, which primarily derived from lower than expected losses reported by ceding companies. The decrease produced a corresponding increase in pre-tax earnings.

Derivative contract liabilities

We measure derivative contract liabilities at fair value. Our most significant derivative contract exposures relate to equity index put option contracts written between 2004 and 2008. We believe that the fair values produced for long-duration options are inherently subjective. Actual values in an exchange may differ significantly from the values produced by any mathematical model, as transaction values may also reflect perceptions of individual buyers and sellers as well as other changes in market conditions.

We determine the fair value of equity index put option contracts using a Black-Scholes based option valuation model. Inputs to the model include the current index value, strike price, interest rate, dividend rate and contract expiration date. The weighted average interest and dividend rates used as of December 31, 2016 were 1.2% and 3.3%, respectively. The interest rates were approximately 57 basis points (on a weighted average basis) over benchmark interest rates at the end of 2016 and represented our estimate of our nonperformance risk. We believe that the most significant economic risks under these contracts relate to changes in the index value component and, to a lesser degree, the foreign currency component.

The Black-Scholes based model also incorporates volatility estimates that measure potential price changes over time. Our contracts have an average remaining maturity of about four years. The weighted average volatility used as of December 31, 2016 was approximately 20.2%. We determine the weighted average volatilities based on the volatility input for each contract weighted by the contract's notional value. The volatility input for each contract reflects our expectation of future price volatility. The potential impact from changes in our volatility assumptions are as follows. (Dollars in millions).

Fair value at December 31, 2016	$2,890
Hypothetical change in volatility	**Hypothetical fair value**
Increase 2 percentage points	$3,098
Increase 4 percentage points	3,319
Decrease 2 percentage points	2,695
Decrease 4 percentage points	2,516

Other Critical Accounting Policies

Our Consolidated Balance Sheet at December 31, 2016 included goodwill of acquired businesses of $79.5 billion. We evaluate goodwill for impairment at least annually and we conducted our most recent annual review during the fourth quarter of 2016. Our review includes determining the estimated fair values of our reporting units. There are several methods of estimating a reporting unit's fair value, including market quotations, underlying asset and liability fair value determinations and other valuation techniques, such as discounted projected future net earnings or net cash flows and multiples of earnings. We primarily use discounted projected future earnings or cash flow methods. The key assumptions and inputs used in such methods may include forecasting revenues and expenses, operating cash flows and capital expenditures, as well as an appropriate discount rate and other inputs. A significant amount of judgment is required in estimating the fair value of a reporting unit and in performing goodwill impairment tests. Due to the inherent uncertainty in forecasting cash flows and earnings, actual results may vary significantly from the forecasts. If the carrying amount of a reporting unit, including goodwill, exceeds the estimated fair value, then, as required by GAAP, we estimate the fair values of the identifiable assets and liabilities of the reporting unit. The excess of the estimated fair value of the reporting unit over the estimated fair value of its net assets establishes the implied value of goodwill. The excess of the recorded amount of goodwill over the implied goodwill value is charged to earnings as an impairment loss.

Market Risk Disclosures

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

Equity Price Risk

Historically, equity securities have represented a significant portion of our investment portfolio. Strategically, we strive to invest in businesses that possess excellent economics and able and honest management and at sensible prices, and we prefer to invest a meaningful amount in each investee. Consequently, equity investments are concentrated in relatively few issuers. At December 31, 2016, approximately 60% of the total fair value of equity securities and other investments was concentrated in five issuers.

We often hold our equity investments for long periods and short-term price volatility has and will occur. We are not necessarily disturbed by market price declines provided the underlying business, economic and management characteristics of the investees remain favorable. We strive to maintain significant levels of shareholder capital and ample liquidity to provide a margin of safety against short-term price volatility.

Market prices for equity securities are subject to fluctuation and consequently, the amount realized in the subsequent sale of an investment may significantly differ from the reported market value. Fluctuation in the market price of a security may result from perceived changes in the underlying economic characteristics of the investee, the relative price of alternative investments and general market conditions.

We are also subject to equity price risk with respect to our equity index put option contracts. While our ultimate liability with respect to these contracts is determined from the movement of the underlying stock index between the contract inception date and expiration date, fair values of these contracts are also affected by changes in other factors such as interest rates, expected dividend rates and the remaining duration of the contract.

Equity Price Risk *(Continued)*

The following table summarizes our equity securities and other investments and derivative contract liabilities with significant equity price risk as of December 31, 2016 and 2015. We also show the effects of a hypothetical 30% increase and a 30% decrease in market prices as of those dates. The selected 30% hypothetical changes does not reflect the best or worst case scenarios. Indeed, results could be far worse due both to the nature of equity markets and the aforementioned concentrations existing in our equity investment portfolio. Dollar amounts are in millions.

	Fair Value	Hypothetical Price Change	Estimated Fair Value after Hypothetical Change in Prices	Hypothetical Percentage Increase (Decrease) in Shareholders' Equity
December 31, 2016				
Assets:				
Equity securities	$122,032	30% increase	$158,642	8.4
		30% decrease	85,422	(8.4)
Other investments [(1)]	9,597	30% increase	13,699	0.9
		30% decrease	5,677	(0.9)
Liabilities:				
Equity index put option contracts	2,890	30% increase	1,602	0.3
		30% decrease	5,572	(0.6)
December 31, 2015				
Assets:				
Equity securities	$112,137	30% increase	$145,778	8.6
		30% decrease	78,496	(8.6)
Other investments [(1)]	13,839	30% increase	17,985	1.1
		30% decrease	9,385	(1.1)
Liabilities:				
Equity index put option contracts	3,552	30% increase	2,044	0.4
		30% decrease	6,561	(0.8)

(1) *Excludes other investments that do not possess significant equity price risk.*

Interest Rate Risk

We regularly invest in bonds, loans or other interest rate sensitive instruments. Our strategy is to acquire securities that are attractively priced relative to the perceived credit risk. Our management recognizes and accepts that losses may occur. We also issue debt in the ordinary course of business to fund business operations, business acquisitions and for other general purposes. We strive to maintain high credit ratings so as to minimize the cost of our debt. We rarely utilize derivative products, such as interest rate swaps, to manage interest rate risks.

The fair values of our fixed maturity investments and notes payable and other borrowings will fluctuate in response to changes in market interest rates. In addition, changes in interest rate assumptions used in our equity index put option contract models cause changes in reported liabilities with respect to those contracts. Increases and decreases in interest rates generally translate into decreases and increases in fair values of those instruments. Additionally, fair values of interest rate sensitive instruments may be affected by the creditworthiness of the issuer, prepayment options, relative values of alternative investments, the liquidity of the instrument and other general market conditions. The fair values of fixed interest rate instruments are usually more sensitive to interest rate changes than variable rate instruments.

Interest Rate Risk *(Continued)*

The following table summarizes the estimated effects of hypothetical changes in interest rates on our significant assets and liabilities that are subject to interest rate risk. We assumed that the interest rate changes occur immediately and uniformly to each category of instrument containing interest rate risk, and that there are no significant changes to other factors used to determine the value of the instrument. The hypothetical changes in interest rates do not reflect the best or worst case scenarios. Variations in interest rates could produce significant changes in the timing of repayments due to prepayment options available to the issuer. For these reasons, actual results might differ from those reflected in the table. Dollars are in millions.

		Estimated Fair Value after Hypothetical Change in Interest Rates (bp=basis points)			
	Fair Value	100 bp decrease	100 bp increase	200 bp increase	300 bp increase
December 31, 2016					
Assets:					
Investments in fixed maturity securities	$ 23,465	$ 24,120	$ 22,893	$ 22,428	$ 21,985
Other investments [(1)]	7,659	8,095	7,213	6,780	6,367
Loans and finance receivables	13,717	14,230	13,237	12,790	12,370
Liabilities:					
Notes payable and other borrowings:					
Insurance and other	27,712	29,475	26,154	24,770	23,533
Railroad, utilities and energy	65,774	72,261	60,302	55,634	51,624
Finance and financial products	15,825	16,408	15,318	14,872	14,476
Equity index put option contracts	2,890	3,287	2,533	2,213	1,928
December 31, 2015					
Assets:					
Investments in fixed maturity securities	$ 26,027	$ 26,618	$ 25,351	$ 24,733	$ 24,164
Other investments [(1)]	11,394	11,571	10,664	10,228	9,814
Loans and finance receivables	13,112	13,594	12,661	12,240	11,844
Liabilities:					
Notes payable and other borrowings:					
Insurance and other	14,773	15,589	13,979	13,287	12,679
Railroad, utilities and energy	62,471	68,625	57,279	52,833	49,006
Finance and financial products	12,363	12,942	11,860	11,420	11,032
Equity index put option contracts	3,552	4,110	3,059	2,624	2,242

(1) *Excludes other investments that are not subject to a significant level of interest rate risk.*

Foreign Currency Risk

Certain of our subsidiaries operate in foreign jurisdictions and we transact business in foreign currencies. In addition, we hold investments in common stocks of major multinational companies, such as The Coca-Cola Company, who have significant foreign business and foreign currency risk of their own. We generally do not attempt to match assets and liabilities by currency and do not use derivative contracts to hedge or manage foreign currency price changes in any meaningful way. Our net assets subject to financial statement translation into U.S. Dollars are primarily in our insurance, utilities and energy and certain manufacturing and services subsidiaries. This translation related impact may be offset by gains or losses related to net liabilities of Berkshire and certain of its U.S. subsidiaries that are denominated in foreign currencies, including gains and losses from the remeasurement of such liabilities due to changes in exchange rates.

Commodity Price Risk

Our subsidiaries use commodities in various ways in manufacturing and providing services. As such, we are subject to price risks related to various commodities. In most instances, we attempt to manage these risks through the pricing of our products and services to customers. To the extent that we are unable to sustain price increases in response to commodity price increases, our operating results will likely be adversely affected. We utilize derivative contracts to manage commodity price risks at BHE.

BHE's exposures to commodities include variations in the price of fuel required to generate electricity, wholesale electricity purchased and sold and natural gas supply for customers. Commodity prices are subject to wide price swings as supply and demand are impacted by, among many other unpredictable items, weather, market liquidity, generating facility availability, customer usage, storage and transmission and transportation constraints.

To mitigate a portion of the price volatility, BHE uses derivative instruments, including forwards, futures, options, swaps and other agreements, to effectively secure future supply or sell future production generally at fixed prices. The settled cost of these contracts is generally recoverable from customers in regulated rates. Financial results would be negatively impacted if the costs of wholesale electricity, fuel or natural gas are greater than what is permitted to be recovered in rates. The table that follows summarizes commodity price risk on energy derivative contracts of BHE as of December 31, 2016 and 2015 and shows the effects of a hypothetical 10% increase and a 10% decrease in forward market prices by the expected volumes for these contracts as of each date. The selected hypothetical change does not reflect the best or worst case scenarios. Dollars are in millions.

	Fair Value Net Assets (Liabilities)	Hypothetical Price Change	Estimated Fair Value after Hypothetical Change in Price
December 31, 2016	$ (87)	10% increase	$ (18)
		10% decrease	(156)
December 31, 2015	$(233)	10% increase	$(152)
		10% decrease	(313)

In June 1996, Berkshire's Chairman, Warren E. Buffett, issued a booklet entitled **"An Owner's Manual*"** to Berkshire's Class A and Class B shareholders. The purpose of the manual was to explain Berkshire's broad economic principles of operation. An updated version is reproduced on this and the following pages.

OWNER-RELATED BUSINESS PRINCIPLES

At the time of the Blue Chip merger in 1983, I set down 13 owner-related business principles that I thought would help new shareholders understand our managerial approach. As is appropriate for "principles," all 13 remain alive and well today, and they are stated here in italics.

1. *Although our form is corporate, our attitude is partnership. Charlie Munger and I think of our shareholders as owner-partners, and of ourselves as managing partners. (Because of the size of our shareholdings we are also, for better or worse, controlling partners.) We do not view the company itself as the ultimate owner of our business assets but instead view the company as a conduit through which our shareholders own the assets.*

   Charlie and I hope that you do not think of yourself as merely owning a piece of paper whose price wiggles around daily and that is a candidate for sale when some economic or political event makes you nervous. We hope you instead visualize yourself as a part owner of a business that you expect to stay with indefinitely, much as you might if you owned a farm or apartment house in partnership with members of your family. For our part, we do not view Berkshire shareholders as faceless members of an ever-shifting crowd, but rather as co-venturers who have entrusted their funds to us for what may well turn out to be the remainder of their lives.

   The evidence suggests that most Berkshire shareholders have indeed embraced this long-term partnership concept. The annual percentage turnover in Berkshire's shares is a fraction of that occurring in the stocks of other major American corporations, even when the shares I own are excluded from the calculation.

   In effect, our shareholders behave in respect to their Berkshire stock much as Berkshire itself behaves in respect to companies in which it has an investment. As owners of, say, Coca-Cola or American Express shares, we think of Berkshire as being a non-managing partner in two extraordinary businesses, in which we measure our success by the long-term progress of the companies rather than by the month-to-month movements of their stocks. In fact, we would not care in the least if several years went by in which there was no trading, or quotation of prices, in the stocks of those companies. If we have good long-term expectations, short-term price changes are meaningless for us except to the extent they offer us an opportunity to increase our ownership at an attractive price.

2. *In line with Berkshire's owner-orientation, most of our directors have a major portion of their net worth invested in the company. We eat our own cooking.*

   Charlie's family has the majority of its net worth in Berkshire shares; I have more than 98%. In addition, many of my relatives – my sisters and cousins, for example – keep a huge portion of their net worth in Berkshire stock.

   Charlie and I feel totally comfortable with this eggs-in-one-basket situation because Berkshire itself owns a wide variety of truly extraordinary businesses. Indeed, we believe that Berkshire is close to being unique in the quality and diversity of the businesses in which it owns either a controlling interest or a minority interest of significance.

   Charlie and I cannot promise you results. But we can guarantee that your financial fortunes will move in lockstep with ours for whatever period of time you elect to be our partner. We have no interest in large salaries or options or other means of gaining an "edge" over you. We want to make money only when our partners do and in exactly the same proportion. Moreover, when I do something dumb, I want you to be able to derive some solace from the fact that my financial suffering is proportional to yours.

3. *Our long-term economic goal (subject to some qualifications mentioned later) is to maximize Berkshire's average annual rate of gain in intrinsic business value on a per-share basis. We do not measure the economic significance or performance of Berkshire by its size; we measure by per-share progress. We are certain that the rate of per-share progress will diminish in the future – a greatly enlarged capital base will see to that. But we will be disappointed if our rate does not exceed that of the average large American corporation.*

4. *Our preference would be to reach our goal by directly owning a diversified group of businesses that generate cash and consistently earn above-average returns on capital. Our second choice is to own parts of similar businesses, attained primarily through purchases of marketable common stocks by our insurance subsidiaries. The price and availability of businesses and the need for insurance capital determine any given year's capital allocation.*

In recent years we have made a number of acquisitions. Though there will be dry years, we expect to make many more in the decades to come, and our hope is that they will be large. If these purchases approach the quality of those we have made in the past, Berkshire will be well served.

The challenge for us is to generate ideas as rapidly as we generate cash. In this respect, a depressed stock market is likely to present us with significant advantages. For one thing, it tends to reduce the prices at which entire companies become available for purchase. Second, a depressed market makes it easier for our insurance companies to buy small pieces of wonderful businesses – including additional pieces of businesses we already own – at attractive prices. And third, some of those same wonderful businesses are consistent buyers of their own shares, which means that they, and we, gain from the cheaper prices at which they can buy.

Overall, Berkshire and its long-term shareholders benefit from a sinking stock market much as a regular purchaser of food benefits from declining food prices. So when the market plummets – as it will from time to time – neither panic nor mourn. It's good news for Berkshire.

5. *Because of our two-pronged approach to business ownership and because of the limitations of conventional accounting, consolidated reported earnings may reveal relatively little about our true economic performance. Charlie and I, both as owners and managers, virtually ignore such consolidated numbers. However, we will also report to you the earnings of each major business we control, numbers we consider of great importance. These figures, along with other information we will supply about the individual businesses, should generally aid you in making judgments about them.*

To state things simply, we try to give you in the annual report the numbers and other information that really matter. Charlie and I pay a great deal of attention to how well our businesses are doing, and we also work to understand the environment in which each business is operating. For example, is one of our businesses enjoying an industry tailwind or is it facing a headwind? Charlie and I need to know exactly which situation prevails and to adjust our expectations accordingly. We will also pass along our conclusions to you.

Over time, the large majority of our businesses have exceeded our expectations. But sometimes we have disappointments, and we will try to be as candid in informing you about those as we are in describing the happier experiences. When we use unconventional measures to chart our progress – for instance, you will be reading in our annual reports about insurance "float" – we will try to explain these concepts and why we regard them as important. In other words, we believe in telling you how we think so that you can evaluate not only Berkshire's businesses but also assess our approach to management and capital allocation.

6. *Accounting consequences do not influence our operating or capital-allocation decisions. When acquisition costs are similar, we much prefer to purchase $2 of earnings that is not reportable by us under standard accounting principles than to purchase $1 of earnings that is reportable. This is precisely the choice that often faces us since entire businesses (whose earnings will be fully reportable) frequently sell for double the pro-rata price of small portions (whose earnings will be largely unreportable). In aggregate and over time, we expect the unreported earnings to be fully reflected in our intrinsic business value through capital gains.*

We have found over time that the undistributed earnings of our investees, in aggregate, have been fully as beneficial to Berkshire as if they had been distributed to us (and therefore had been included in the earnings we officially report). This pleasant result has occurred because most of our investees are engaged in truly outstanding businesses that can often employ incremental capital to great advantage, either by putting it to work in their businesses or by repurchasing their shares. Obviously, every capital decision that our investees have made has not benefitted us as shareholders, but overall we have garnered far more than a dollar of value for each dollar they have retained. We consequently regard look-through earnings as realistically portraying our yearly gain from operations.

7. *We use debt sparingly and, when we do borrow, we attempt to structure our loans on a long-term fixed-rate basis. We will reject interesting opportunities rather than over-leverage our balance sheet. This conservatism has penalized our results but it is the only behavior that leaves us comfortable, considering our fiduciary obligations to policyholders, lenders and the many equity holders who have committed unusually large portions of their net worth to our care. (As one of the Indianapolis "500" winners said: "To finish first, you must first finish.")*

The financial calculus that Charlie and I employ would never permit our trading a good night's sleep for a shot at a few extra percentage points of return. I've never believed in risking what my family and friends have and need in order to pursue what they don't have and don't need.

Besides, Berkshire has access to two low-cost, non-perilous sources of leverage that allow us to safely own far more assets than our equity capital alone would permit: deferred taxes and "float," the funds of others that our insurance business holds because it receives premiums before needing to pay out losses. Both of these funding sources have grown rapidly and now total about $168 billion.

Better yet, this funding to date has often been cost-free. Deferred tax liabilities bear no interest. And as long as we can break even in our insurance underwriting the cost of the float developed from that operation is zero. Neither item, of course, is equity; these are real liabilities. But they are liabilities without covenants or due dates attached to them. In effect, they give us the benefit of debt – an ability to have more assets working for us – but saddle us with none of its drawbacks.

Of course, there is no guarantee that we can obtain our float in the future at no cost. But we feel our chances of attaining that goal are as good as those of anyone in the insurance business. Not only have we reached the goal in the past (despite a number of important mistakes by your Chairman), our 1996 acquisition of GEICO, materially improved our prospects for getting there in the future.

In our present configuration we expect additional borrowings to be concentrated in our utilities and railroad businesses, loans that are non-recourse to Berkshire. Here, we will favor long-term, fixed-rate loans.

8. *A managerial "wish list" will not be filled at shareholder expense. We will not diversify by purchasing entire businesses at control prices that ignore long-term economic consequences to our shareholders. We will only do with your money what we would do with our own, weighing fully the values you can obtain by diversifying your own portfolios through direct purchases in the stock market.*

   Charlie and I are interested only in acquisitions that we believe will raise the *per-share* intrinsic value of Berkshire's stock. The size of our paychecks or our offices will never be related to the size of Berkshire's balance sheet.

9. *We feel noble intentions should be checked periodically against results. We test the wisdom of retaining earnings by assessing whether retention, over time, delivers shareholders at least $1 of market value for each $1 retained. To date, this test has been met. We will continue to apply it on a five-year rolling basis. As our net worth grows, it is more difficult to use retained earnings wisely.*

   I should have written the "five-year rolling basis" sentence differently, an error I didn't realize until I received a question about this subject at the 2009 annual meeting.

   When the stock market has declined sharply over a five-year stretch, our market-price premium to book value has sometimes shrunk. And when that happens, we fail the test as I improperly formulated it. In fact, we fell far short as early as 1971-75, well before I wrote this principle in 1983.

   The five-year test should be: (1) during the period did our book-value gain exceed the performance of the S&P; and (2) did our stock consistently sell at a premium to book, meaning that every $1 of retained earnings was always worth more than $1? If these tests are met, retaining earnings has made sense.

10. *We will issue common stock only when we receive as much in business value as we give. This rule applies to all forms of issuance – not only mergers or public stock offerings, but stock-for-debt swaps, stock options, and convertible securities as well. We will not sell small portions of your company – and that is what the issuance of shares amounts to – on a basis inconsistent with the value of the entire enterprise.*

    When we sold the Class B shares in 1996, we stated that Berkshire stock was not undervalued – and some people found that shocking. That reaction was not well-founded. Shock should have registered instead had we issued shares when our stock *was* undervalued. Managements that say or imply during a public offering that their stock is undervalued are usually being economical with the truth or uneconomical with their existing shareholders' money: Owners unfairly lose if their managers deliberately sell assets for 80¢ that in fact are worth $1. We didn't commit that kind of crime in our offering of Class B shares and we never will. (We did *not*, however, say at the time of the sale that our stock was overvalued, though many media have reported that we did.)

11. *You should be fully aware of one attitude Charlie and I share that hurts our financial performance: Regardless of price, we have no interest at all in selling any good businesses that Berkshire owns. We are also very reluctant to sell sub-par businesses as long as we expect them to generate at least some cash and as long as we feel good about their managers and labor relations. We hope not to repeat the capital-allocation mistakes that led us into such sub-par businesses. And we react with great caution to suggestions that our poor businesses can be restored to satisfactory profitability by major capital expenditures. (The projections will be dazzling and the advocates sincere, but, in the end, major additional investment in a terrible industry usually is about as rewarding as struggling in quicksand.) Nevertheless, gin rummy managerial behavior (discard your least promising business at each turn) is not our style. We would rather have our overall results penalized a bit than engage in that kind of behavior.*

We continue to avoid gin rummy behavior. True, we closed our textile business in the mid-1980's after 20 years of struggling with it, but only because we felt it was doomed to run never-ending operating losses. We have not, however, given thought to selling operations that would command very fancy prices nor have we dumped our laggards, though we focus hard on curing the problems that cause them to lag. To clean up some confusion voiced in 2016, we emphasize that the comments here refer to businesses we control, not to marketable securities.

12. *We will be candid in our reporting to you, emphasizing the pluses and minuses important in appraising business value. Our guideline is to tell you the business facts that we would want to know if our positions were reversed. We owe you no less. Moreover, as a company with a major communications business, it would be inexcusable for us to apply lesser standards of accuracy, balance and incisiveness when reporting on ourselves than we would expect our news people to apply when reporting on others. We also believe candor benefits us as managers: The CEO who misleads others in public may eventually mislead himself in private.*

At Berkshire you will find no "big bath" accounting maneuvers or restructurings nor any "smoothing" of quarterly or annual results. We will always tell you how many strokes we have taken on each hole and never play around with the scorecard. When the numbers are a very rough "guesstimate," as they necessarily must be in insurance reserving, we will try to be both consistent and conservative in our approach.

We will be communicating with you in several ways. Through the annual report, I try to give all shareholders as much value-defining information as can be conveyed in a document kept to reasonable length. We also try to convey a liberal quantity of condensed but important information in the quarterly reports we post on the internet, though I don't write those (one recital a year is enough). Still another important occasion for communication is our Annual Meeting, at which Charlie and I are delighted to spend five hours or more answering questions about Berkshire. But there is one way we *can't* communicate: on a one-on-one basis. That isn't feasible given Berkshire's many thousands of owners.

In all of our communications, we try to make sure that no single shareholder gets an edge: We do not follow the usual practice of giving earnings "guidance" or other information of value to analysts or large shareholders. Our goal is to have all of our owners updated at the same time.

13. *Despite our policy of candor, we will discuss our activities in marketable securities only to the extent legally required. Good investment ideas are rare, valuable and subject to competitive appropriation just as good product or business acquisition ideas are. Therefore we normally will not talk about our investment ideas. This ban extends even to securities we have sold (because we may purchase them again) and to stocks we are incorrectly rumored to be buying. If we deny those reports but say "no comment" on other occasions, the no-comments become confirmation.*

Though we continue to be unwilling to talk about specific stocks, we freely discuss our business and investment philosophy. I benefitted enormously from the intellectual generosity of Ben Graham, the greatest teacher in the history of finance, and I believe it appropriate to pass along what I learned from him, even if that creates new and able investment competitors for Berkshire just as Ben's teachings did for him.

TWO ADDED PRINCIPLES

14. *To the extent possible, we would like each Berkshire shareholder to record a gain or loss in market value during his period of ownership that is proportional to the gain or loss in per-share intrinsic value recorded by the company during that holding period. For this to come about, the relationship between the intrinsic value and the market price of a Berkshire share would need to remain constant, and by our preferences at 1-to-1. As that implies, we would rather see Berkshire's stock price at a* ***fair*** *level than a* ***high*** *level. Obviously, Charlie and I can't control Berkshire's price. But by our policies and communications, we can encourage informed, rational behavior by owners that, in turn, will tend to produce a stock price that is also rational. Our it's-as-bad-to-be-overvalued-as-to-be-undervalued approach may disappoint some shareholders. We believe, however, that it affords Berkshire the best prospect of attracting long-term investors who seek to profit from the progress of the company rather than from the investment mistakes of their partners.*

15. *We regularly compare the gain in Berkshire's per-share book value to the performance of the S&P 500. Over time, we hope to outpace this yardstick. Otherwise, why do our investors need us? The measurement, however, has certain shortcomings that are described in the next section. Moreover, it now is less meaningful on a year-to-year basis than was formerly the case. That is because our equity holdings, whose value tends to move with the S&P 500, are a far smaller portion of our net worth than they were in earlier years. Additionally, gains in the S&P stocks are counted in full in calculating that index, whereas gains in Berkshire's equity holdings are counted at 65% because of the federal tax we incur. We, therefore, expect to outperform the S&P in lackluster years for the stock market and underperform when the market has a strong year.*

INTRINSIC VALUE

Now let's focus on a term that I mentioned earlier and that you will encounter in future annual reports.

Intrinsic value is an all-important concept that offers the only logical approach to evaluating the relative attractiveness of investments and businesses. Intrinsic value can be defined simply: It is the discounted value of the cash that can be taken out of a business during its remaining life.

The calculation of intrinsic value, though, is not so simple. As our definition suggests, intrinsic value is an estimate rather than a precise figure, and it is additionally an estimate that must be changed if interest rates move or forecasts of future cash flows are revised. Two people looking at the same set of facts, moreover – and this would apply even to Charlie and me – will almost inevitably come up with at least slightly different intrinsic value figures. That is one reason we never give you our estimates of intrinsic value. What our annual reports do supply, though, are the facts that we ourselves use to calculate this value.

Meanwhile, we regularly report our per-share book value, an easily calculable number, though one of limited use. The limitations do not arise from our holdings of marketable securities, which are carried on our books at their current prices. Rather the inadequacies of book value have to do with the companies we control, whose values as stated on our books may be far different from their intrinsic values.

The disparity can go in either direction. For example, in 1964 we could state with certitude that Berkshire's per-share book value was $19.46. However, that figure considerably overstated the company's intrinsic value, since all of the company's resources were tied up in a sub-profitable textile business. Our textile assets had neither going-concern nor liquidation values equal to their carrying values. Today, however, Berkshire's situation is reversed: Now, our book value *far* understates Berkshire's intrinsic value, a point true because many of the businesses we control are worth much more than their carrying value.

Inadequate though they are in telling the story, we give you Berkshire's book-value figures because they today serve as a rough, albeit significantly understated, tracking measure for Berkshire's intrinsic value. In other words, the percentage change in book value in any given year is likely to be reasonably close to that year's change in intrinsic value.

You can gain some insight into the differences between book value and intrinsic value by looking at one form of investment, a college education. Think of the education's cost as its "book value." If this cost is to be accurate, it should include the earnings that were foregone by the student because he chose college rather than a job.

For this exercise, we will ignore the important non-economic benefits of an education and focus strictly on its economic value. First, we must estimate the earnings that the graduate will receive over his lifetime and subtract from that figure an estimate of what he would have earned had he lacked his education. That gives us an excess earnings figure, which must then be discounted, at an appropriate interest rate, back to graduation day. The dollar result equals the intrinsic economic value of the education.

Some graduates will find that the book value of their education exceeds its intrinsic value, which means that whoever paid for the education didn't get his money's worth. In other cases, the intrinsic value of an education will far exceed its book value, a result that proves capital was wisely deployed. In all cases, what is clear is that book value is meaningless as an indicator of intrinsic value.

THE MANAGING OF BERKSHIRE

I think it's appropriate that I conclude with a discussion of Berkshire's management, today and in the future. As our first owner-related principle tells you, Charlie and I are the managing partners of Berkshire. But we subcontract all of the heavy lifting in this business to the managers of our subsidiaries. In fact, we delegate almost to the point of abdication: Though Berkshire has about 367,000 employees, only 25 of these are at headquarters.

Charlie and I mainly attend to capital allocation and the care and feeding of our key managers. Most of these managers are happiest when they are left alone to run their businesses, and that is customarily just how we leave them. That puts them in charge of all operating decisions and of dispatching the excess cash they generate to headquarters. By sending it to us, they don't get diverted by the various enticements that would come their way were they responsible for deploying the cash their businesses throw off. Furthermore, Charlie and I are exposed to a much wider range of possibilities for investing these funds than any of our managers could find in his or her own industry.

Most of our managers are independently wealthy, and it's therefore up to us to create a climate that encourages them to choose working with Berkshire over golfing or fishing. This leaves us needing to treat them fairly and in the manner that we would wish to be treated if our positions were reversed.

As for the allocation of capital, that's an activity both Charlie and I enjoy and in which we have acquired some useful experience. In a general sense, grey hair doesn't hurt on this playing field: You don't need good hand-eye coordination or well-toned muscles to push money around (thank heavens). As long as our minds continue to function effectively, Charlie and I can keep on doing our jobs pretty much as we have in the past.

On my death, Berkshire's ownership picture will change but not in a disruptive way: None of my stock will have to be sold to take care of the cash bequests I have made or for taxes. Other assets of mine will take care of these requirements. All Berkshire shares will be left to foundations that will likely receive the stock in roughly equal installments over a dozen or so years.

At my death, the Buffett family will not be involved in managing the business but, as very substantial shareholders, will help in picking and overseeing the managers who do. Just who those managers will be, of course, depends on the date of my death. But I can anticipate what the management structure will be: Essentially my job will be split into two parts. One executive will become CEO and responsible for operations. The responsibility for investments will be given to one or more executives. If the acquisition of new businesses is in prospect, these executives will cooperate in making the decisions needed, subject, of course, to board approval. We will continue to have an extraordinarily shareholder-minded board, one whose interests are solidly aligned with yours.

Were we to need the management structure I have just described on an immediate basis, our directors know my recommendations for both posts. All candidates currently work for or are available to Berkshire and are people in whom I have total confidence. Our managerial roster has never been stronger.

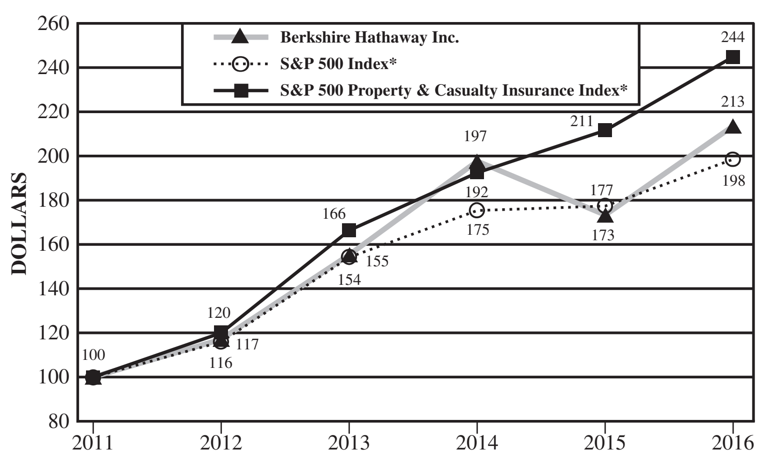
I will continue to keep the directors posted on the succession issue. Since Berkshire stock will make up virtually my entire estate and will account for a similar portion of the assets of various foundations for a considerable period after my death, you can be sure that the directors and I have thought through the succession question carefully and that we are well prepared. You can be equally sure that the principles we have employed to date in running Berkshire will continue to guide the managers who succeed me and that our unusually strong and well-defined culture will remain intact. As an added assurance that this will be the case, I believe it would be wise when I am no longer CEO to have a member of the Buffett family serve as the non-paid, non-executive Chairman of the Board. That decision, however, will be the responsibility of the then Board of Directors.

Lest we end on a morbid note, I also want to assure you that I have never felt better. I love running Berkshire, and if enjoying life promotes longevity, Methuselah's record is in jeopardy.

Warren E. Buffett
Chairman

STOCK PERFORMANCE GRAPH

The following chart compares the subsequent value of $100 invested in Berkshire common stock on December 31, 2011 with a similar investment in the Standard and Poor's 500 Stock Index and in the Standard and Poor's Property – Casualty Insurance Index.**



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

** *It would be difficult to develop a peer group of companies similar to Berkshire. The Corporation owns subsidiaries engaged in a number of diverse business activities of which the most important is the property and casualty insurance business and, accordingly, management has used the Standard and Poor's Property—Casualty Insurance Index for comparative purposes.*

BERKSHIRE HATHAWAY INC.
HOW TO MINIMIZE INVESTMENT RETURNS *

It's been an easy matter for Berkshire and other owners of American equities to prosper over the years. Between December 31, 1899 and December 31, 1999, to give a really long-term example, the Dow rose from 66 to 11,497. (Guess what annual growth rate is required to produce this result; the surprising answer is at the end of this section.) This huge rise came about for a simple reason: Over the century American businesses did extraordinarily well and investors rode the wave of their prosperity. Businesses continue to do well. But now shareholders, through a series of self-inflicted wounds, are in a major way cutting the returns they will realize from their investments.

The explanation of how this is happening begins with a fundamental truth: With unimportant exceptions, such as bankruptcies in which some of a company's losses are borne by creditors, *the most that owners in aggregate can earn between now and Judgment Day is what their businesses in aggregate earn.* True, by buying and selling that is clever or lucky, investor A may take more than his share of the pie at the expense of investor B. And, yes, all investors *feel* richer when stocks soar. But an owner can exit only by having someone take his place. If one investor sells high, another must buy high. For owners as a whole, there is simply no magic – no shower of money from outer space – that will enable them to extract wealth from their companies beyond that created by the companies themselves.

Indeed, owners must earn less than their businesses earn because of "frictional" costs. And that's my point: These costs are now being incurred in amounts that will cause shareholders to earn *far* less than they historically have.

To understand how this toll has ballooned, imagine for a moment that all American corporations are, and always will be, owned by a single family. We'll call them the Gotrocks. After paying taxes on dividends, this family – generation after generation – becomes richer by the aggregate amount earned by its companies. Today that amount is about $700 billion annually. Naturally, the family spends some of these dollars. But the portion it saves steadily compounds for its benefit. In the Gotrocks household everyone grows wealthier at the same pace, and all is harmonious.

But let's now assume that a few fast-talking Helpers approach the family and persuade each of its members to try to outsmart his relatives by buying certain of their holdings and selling them certain others. The Helpers – for a fee, of course – obligingly agree to handle these transactions. The Gotrocks still own all of corporate America; the trades just rearrange who owns what. So the family's annual gain in wealth diminishes, equaling the earnings of American business *minus* commissions paid. The more that family members trade, the smaller their share of the pie and the larger the slice received by the Helpers. This fact is not lost upon these broker-Helpers: Activity is their friend and, in a wide variety of ways, they urge it on.

After a while, most of the family members realize that they are not doing so well at this new "beat-my-brother" game. Enter another set of Helpers. These newcomers explain to each member of the Gotrocks clan that by himself he'll never outsmart the rest of the family. The suggested cure: "Hire a manager – yes, us – and get the job done professionally." These manager-Helpers continue to use the broker-Helpers to execute trades; the managers may even increase their activity so as to permit the brokers to prosper still more. Overall, a bigger slice of the pie now goes to the two classes of Helpers.

The family's disappointment grows. Each of its members is now employing professionals. Yet overall, the group's finances have taken a turn for the worse. The solution? More help, of course.

It arrives in the form of financial planners and institutional consultants, who weigh in to advise the Gotrocks on selecting manager-Helpers. The befuddled family welcomes this assistance. By now its members know they can pick neither the right stocks nor the right stock-pickers. Why, one might ask, should they expect success in picking the right consultant? But this question does not occur to the Gotrocks, and the consultant-Helpers certainly don't suggest it to them.

The Gotrocks, now supporting three classes of expensive Helpers, find that their results get worse, and they sink into despair. But just as hope seems lost, a fourth group – we'll call them the hyper-Helpers – appears. These friendly folk explain to the Gotrocks that their unsatisfactory results are occurring because the existing Helpers – brokers, managers, consultants – are not sufficiently motivated and are simply going through the motions. "What," the new Helpers ask, "can you expect from such a bunch of zombies?"

The new arrivals offer a breathtakingly simple solution: *Pay more money*. Brimming with self-confidence, the hyper-Helpers assert that huge contingent payments – in addition to stiff fixed fees – are what each family member must fork over in order to *really* outmaneuver his relatives.

The more observant members of the family see that some of the hyper-Helpers are really just manager-Helpers wearing new uniforms, bearing sewn-on sexy names like HEDGE FUND or PRIVATE EQUITY. The new Helpers, however, assure the Gotrocks that this change of clothing is all-important, bestowing on its wearers magical powers similar to those acquired by mild-mannered Clark Kent when he changed into his Superman costume. Calmed by this explanation, the family decides to pay up.

And that's where we are today: A record portion of the earnings that would go in their entirety to owners – if they all just stayed in their rocking chairs – is now going to a swelling army of Helpers. Particularly expensive is the recent pandemic of profit arrangements under which Helpers receive large portions of the winnings when they are smart or lucky, and leave family members with all of the losses – and large fixed fees to boot – when the Helpers are dumb or unlucky (or occasionally crooked).

* *Reproduced from Berkshire Hathaway Inc. 2005 Annual Report.*

A sufficient number of arrangements like this – heads, the Helper takes much of the winnings; tails, the Gotrocks lose and pay dearly for the privilege of doing so – may make it more accurate to call the family the Hadrocks. Today, in fact, the family's frictional costs of all sorts may well amount to 20% of the earnings of American business. In other words, the burden of paying Helpers may cause American equity investors, overall, to earn only 80% or so of what they would earn if they just sat still and listened to no one.

Long ago, Sir Isaac Newton gave us three laws of motion, which were the work of genius. But Sir Isaac's talents didn't extend to investing: He lost a bundle in the South Sea Bubble, explaining later, "I can calculate the movement of the stars, but not the madness of men." If he had not been traumatized by this loss, Sir Isaac might well have gone on to discover the Fourth Law of Motion*: For investors as a whole, returns decrease as motion increases.*

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Here's the answer to the question posed at the beginning of this section: To get very specific, the Dow increased from 65.73 to 11,497.12 in the 20th century, and that amounts to a gain of 5.3% compounded annually. (Investors would also have received dividends, of course.) To achieve an equal rate of gain in the 21st century, the Dow will have to rise by December 31, 2099 to – brace yourself – precisely 2,011,011.23. But I'm willing to settle for 2,000,000; six years into this century, the Dow has gained not at all.

BERKSHIRE HATHAWAY INC.
COMMON STOCK

General

Berkshire has two classes of common stock designated Class A common stock and Class B common stock. Each share of Class A common stock is convertible, at the option of the holder, into 1,500 shares of Class B common stock. Shares of Class B common stock are not convertible into shares of Class A common stock.

Stock Transfer Agent

Wells Fargo Bank, N.A., P. O. Box 64854, St. Paul, MN 55164-0854 serves as Transfer Agent and Registrar for the Company's common stock. Correspondence may be directed to Wells Fargo at the address indicated or at *wellsfargo.com/shareownerservices*. Telephone inquiries should be directed to the Shareowner Relations Department at 1-877-602-7411 between 7:00 A.M. and 7:00 P.M. Central Time. Certificates for re-issue or transfer should be directed to the Transfer Department at the address indicated.

Shareholders of record wishing to convert Class A common stock into Class B common stock may contact Wells Fargo in writing. Along with the underlying stock certificate, shareholders should provide Wells Fargo with specific written instructions regarding the number of shares to be converted and the manner in which the Class B shares are to be registered. We recommend that you use certified or registered mail when delivering the stock certificates and written instructions.

If Class A shares are held in "street name," shareholders wishing to convert all or a portion of their holding should contact their broker or bank nominee. It will be necessary for the nominee to make the request for conversion.

Shareholders

Berkshire had approximately 2,300 record holders of its Class A common stock and 20,200 record holders of its Class B common stock at February 15, 2017. Record owners included nominees holding at least 430,000 shares of Class A common stock and 1,300,000,000 shares of Class B common stock on behalf of beneficial-but-not-of-record owners.

Price Range of Common Stock

Berkshire's Class A and Class B common stock are listed for trading on the New York Stock Exchange, trading symbol: BRK.A and BRK.B. The following table sets forth the high and low sales prices per share, as reported on the New York Stock Exchange Composite List during the periods indicated:

	2016				2015			
	Class A		Class B		Class A		Class B	
	High	Low	High	Low	High	Low	High	Low
First Quarter	$215,130	$186,900	$143.40	$123.55	$227,500	$215,151	$ 151.69	$ 142.50
Second Quarter	221,985	205,074	148.03	136.65	223,012	204,800	148.57	136.08
Third Quarter	226,490	211,500	151.05	140.95	217,100	190,007	144.69	125.50
Fourth Quarter	250,786	213,030	167.25	141.92	207,780	192,200	138.62	127.46

Dividends

Berkshire has not declared a cash dividend since 1967.

BERKSHIRE HATHAWAY INC.
OPERATING COMPANIES
INSURANCE BUSINESSES

Company	Employees
Applied Underwriters	749
Berkshire Hathaway GUARD Insurance Companies	553
Berkshire Hathaway Homestate Companies	937
Berkshire Hathaway Reinsurance Group	737
Berkshire Hathaway Specialty	793
Central States Indemnity	55
GEICO	36,085
General Re	2,180
Med Pro Group	732
National Indemnity Primary Group	626
United States Liability Insurance Companies	883
Insurance total	44,330

NON-INSURANCE BUSINESSES

Company	Employees
Acme	2,380
Adalet [(1)]	157
Affordable Housing Partners, Inc.	15
AltaLink [(2)]	805
Altaquip [(1)]	165
Ben Bridge Jeweler	1,159
Benjamin Moore	1,778
Berkshire Hathaway Automotive	11,005
Berkshire Hathaway Energy Company [(2)]	27
BHE Renewables [(2)]	330
BHE U.S. Transmission [(2)]	16
BH Media Group	4,194
Borsheims	159
Brooks Sports	647
BNSF	42,000
The Buffalo News	675
Business Wire	495
CalEnergy Philippines [(2)]	58
Carefree of Colorado [(1)]	335
Charter Brokerage	154
Clayton Homes	14,677
Cleveland Wood Products [(1)]	41
CORT	2,597
CTB	3,002
Dairy Queen	475
Detlev Louis	1,281
Douglas/Quikut [(1)]	32
Duracell	3,195
Fechheimer	419
FlightSafety	4,517
Forest River	10,383
France [(1)]	114
Fruit of the Loom [(3)]	26,418
Garan	4,330
H. H. Brown Shoe Group	970
Halex [(1)]	63
Helzberg Diamonds	2,249
HomeServices of America [(2)]	4,520
IMC International Metalworking Companies	12,120
Johns Manville	7,192
Jordan's Furniture	1,071
Justin Brands	839
Kern River Gas [(2)]	146
Kirby [(1)]	449
Larson-Juhl	1,381
LiquidPower Specialty Products, Inc.	236
Lubrizol	8,753
The Marmon Group [(4)]	18,872
McLane Company	23,494
MidAmerican Energy [(2)]	3,321
MidAmerican Energy Services [(2)]	125
MiTek Inc.	5,128
Nebraska Furniture Mart	4,951
NetJets	6,371
Northern Natural Gas [(2)]	905
Northern Powergrid [(2)]	2,489
NV Energy [(2)]	2,471
Oriental Trading	1,534
PacifiCorp [(2)]	5,549
Pampered Chef	437
Precision Castparts	30,651
Precision Steel Warehouse	130
Richline Group	3,015
Russell [(3)]	1,551
Other Scott Fetzer Companies [(1)]	281
See's Candies	2,475
Shaw Industries	21,540
Stahl [(1)]	136
Star Furniture	665
TTI, Inc.	5,054
United Consumer Financial Services [(1)]	188
Vanity Fair Brands [(3)]	208
Wayne Water Systems [(1)]	86
Western Enterprises [(1)]	237
R.C.Willey Home Furnishings	2,728
World Book [(1)]	145
WPLG, Inc.	183
XTRA	372
Non-insurance total	323,316
Corporate Office	25
	367,671

(1) A Scott Fetzer Company
(2) A Berkshire Hathaway Energy Company
(3) A Fruit of the Loom, Inc. Company
(4) The Marmon Group consists of approximately 175 manufacturing and service businesses that operate within 15 business sectors.

BERKSHIRE HATHAWAY INC.
AUTOMOBILE DEALERSHIPS

Dealership Name	City, State	Dealership Name	City, State
Arrowhead Cadillac	Glendale, AZ	Kenny Kent Lexus	Evansville, IN
Superstition Springs Lexus	Mesa, AZ	Kenny Kent Toyota	Evansville, IN
Acura Of Peoria	Peoria, AZ	Van Chevrolet Cadillac Subaru	Kansas City, MO
Infiniti of Peoria	Peoria, AZ	Audi of Springfield/BMW of Springfield	Springfield, MO
Peoria Ford	Peoria, AZ	Reliable Chevrolet/Infiniti of Springfield/ Elite Automotive Group	Springfield, MO
Peoria Nissan	Peoria, AZ	Reliable Imports	Springfield, MO
ABC Nissan	Phoenix, AZ	Reliable Toyota Lexus	Springfield, MO
Bell Honda	Phoenix, AZ	BMW of Lincoln/Husker Auto Group	Lincoln, NE
Camelback Ford Lincoln	Phoenix, AZ	Husker Chevrolet Cadillac GMC	Lincoln, NE
Camelback Hyundai	Phoenix, AZ	Village Pointe Toyota	Omaha, NE
Camelback Kia	Phoenix, AZ	Reliable Chevrolet	Albuquerque, NM
Camelback Volkswagen Subaru Mazda	Phoenix, AZ	Reliable Nissan	Albuquerque, NM
Camelback Toyota	Phoenix, AZ	Vandergriff Acura	Arlington, TX
Infiniti on Camelback	Phoenix, AZ	Vandergriff Chevrolet	Arlington, TX
Midway Chevrolet	Phoenix, AZ	Vandergriff Honda	Arlington, TX
Midway Nissan	Phoenix, AZ	Vandergriff Hyundai	Arlington, TX
Showcase Honda	Phoenix, AZ	Vandergriff Toyota	Arlington, TX
Volvo Cars of Phoenix	Phoenix, AZ	Van Hyundai	Carrollton, TX
Airpark Dodge Chrysler Jeep	Scottsdale, AZ	Toyota of Dallas	Dallas, TX
Alpha Romeo of Scottsdale/Fiat of Scottsdale	Scottsdale, AZ	Crest Nissan	Frisco, TX
Infiniti of Scottsdale	Scottsdale, AZ	Stonebriar Chevrolet	Frisco, TX
Pinnacle Nissan	Scottsdale, AZ	Honda of Fort Worth	Ft. Worth, TX
Van Chevrolet/Van Buick GMC	Scottsdale, AZ	Grand Prairie Ford	Grand Prairie, TX
Surprise Ford	Surprise, AZ	Grapevine Ford Lincoln	Grapevine, TX
Cerritos Nissan	Cerritos, CA	Texas Nissan of Grapevine	Grapevine, TX
Serramonte Ford	Colma, CA	Texas Toyota of Grapevine	Grapevine, TX
South County Lexus	Mission Viejo, CA	Joe Myers Ford Lincoln	Houston, TX
Frontier Ford	Santa Clara, CA	Joe Myers Mazda Kia	Houston, TX
Toyota of Deerfield Beach	Deerfield Beach, FL	Joe Myers Toyota	Houston, TX
Delray Honda	Delray Beach, FL	Westway Ford	Irving, TX
David Maus Volkswagen North	Orlando, FL	McKinney Buick GMC	McKinney, TX
David Maus Volkswagen South	Orlando, FL	Nissan of McKinney	McKinney, TX
David Maus Chevrolet	Sanford, FL	Town East Ford	Mesquite, TX
David Maus Toyota	Sanford, FL	Trophy Nissan	Mesquite, TX
Mercedes-Benz of South Atlanta	Atlanta, GA	Crest Cadillac	Plano, TX
Mall of Georgia Ford	Buford, GA	Crest Infiniti	Plano, TX
Gwinnett Place Ford Lincoln	Duluth, GA	Crest Volvo Cars	Plano, TX
Gwinnett Place Nissan	Duluth, GA	Reliable Chevrolet	Richardson, TX
Crown Nissan	Decatur, GA	Richardson Chrysler Jeep Dodge Ram	Richardson, TX
Crown Toyota	Decatur, GA	Toyota of Richardson	Richardson, TX
Miles Chevrolet	Decatur, GA	North Park Toyota of San Antonio	San Antonio, TX
Kenny Kent Chevrolet	Evansville, IN		

BERKSHIRE HATHAWAY INC.
REAL ESTATE BROKERAGE BUSINESSES *

Brand	State	Major Cities Served	Number of Agents
RealtySouth	Alabama	Birmingham	769
Roberts Brothers Inc.	Alabama	Mobile	194
Long Companies	Arizona	Tucson	753
Guarantee Real Estate	California	Fresno	470
Intero Real Estate Services	California	Silicon Valley	1,034
Berkshire Hathaway HomeServices California Properties	California	San Diego/Los Angeles	2,529
Kentwood Real Estate	Colorado	Denver	238
Berkshire Hathaway HomeServices New England Properties	Connecticut, Rhode Island	Hartford; Westerly	1,258
Houlihan Lawrence	Connecticut, New York	Darien; Westchester	1,180
Berkshire Hathaway HomeServices Fox & Roach	Delaware, New Jersey, Pennsylvania	Wilmington; Ocean City; Philadelphia	4,729
Berkshire Hathaway Florida Network Realty	Florida	Jacksonville	372
EWM REALTORS®	Florida	Miami	770
Harry Norman, REALTORS®	Georgia	Atlanta	883
Berkshire Hathaway HomeServices Georgia Properties	Georgia	Atlanta	1,550
Berkshire Hathaway HomeServices KoenigRubloff Realty Group	Illinois, Michigan	Chicago; New Buffalo	1,426
Semonin REALTORS®	Indiana, Kentucky	New Albany; Louisville	461
Iowa Realty	Iowa	Des Moines	743
Berkshire Hathaway HomeServices First Realty	Iowa	Des Moines	73
Rector-Hayden REALTORS®	Kentucky	Lexington	214
Wakefield Reutlinger Realtors	Kentucky	Louisville	41
Champion Realty Inc.	Maryland	Annapolis	208
Edina Realty	Minnesota, Wisconsin	Minneapolis/St. Paul; Eau Claire	2,416
Carol Jones REALTORS®	Missouri	Springfield/Branson	240
ReeceNichols	Missouri, Kansas	Kansas City	2,070
Berkshire Hathaway HomeServices Kansas City Realty	Missouri	Kansas City	75
CBSHOME Real Estate	Nebraska	Omaha	373
HOME Real Estate	Nebraska	Lincoln	181
Woods Bros. Realty	Nebraska	Lincoln	178
Berkshire Hathaway HomeServices New York Properties	New York	Manhattan	8
Berkshire Hathaway Westchester Properties	New York	Westchester	89
Berkshire Hathaway HomeServices Carolinas Realty	North Carolina	Charlotte/Winston-Salem	320
Berkshire Hathaway HomeServices York Simpson Underwood Realty	North Carolina	Raleigh	319
Berkshire Hathaway HomeServices Yost & Little	North Carolina	Greensboro	178
Huff Realty	Ohio	Cincinnati	402
Berkshire Hathaway HomeServices Northwest Real Estate	Oregon, Washington	Portland; Seattle	738
Berkshire Hathaway Real Estate Professionals	Oregon	Salem	183
Allie Beth Allman & Associates	Texas	Dallas	307
First Weber Group REALTORS®	Wisconsin	Milwaukee; Madison	1,070

* The list above does not include over 375 real estate brokerage franchisees with over 46,000 agents located in 47 states and currently operating under three primary brand names including Berkshire Hathaway HomeServices. In exchange for certain fees, these franchisees are provided the right to use the three brand names.

BERKSHIRE HATHAWAY INC.
DAILY NEWSPAPERS

Publication	City	Circulation Daily	Circulation Sunday
Alabama			
Opelika Auburn News	Opelika/Auburn	9,812	11,110
Dothan Eagle	Dothan	18,125	20,171
Iowa			
The Daily Nonpareil	Council Bluffs	7,831	8,607
Nebraska			
York News-Times	York	2,500	—
The North Platte Telegraph	North Platte	7,648	7,685
Kearney Hub	Kearney	8,488	—
Star-Herald	Scottsbluff	9,212	9,577
The Grand Island Independent	Grand Island	14,505	15,579
Omaha World-Herald	Omaha	99,104	123,805
New Jersey			
The Press of Atlantic City	Atlantic City	36,120	43,099
New York			
Buffalo News	Buffalo	116,235	174,779
North Carolina			
The McDowell News	Marion	3,182	3,374
The News Herald	Morganton	5,518	6,285
Statesville Record and Landmark	Statesville	7,157	8,476
Hickory Daily Record	Hickory	12,027	15,125
Winston-Salem Journal	Winston-Salem	41,150	51,807
Greensboro News & Record	Greensboro	39,474	55,621
Oklahoma			
Tulsa World	Tulsa	59,553	79,863
Tulsa Business & Legal News	Tulsa	319	—
South Carolina			
Morning News	Florence	14,228	18,741
Texas			
The Eagle	Bryan/College Station	11,844	13,498
Tribune-Herald	Waco	21,618	26,234
Virginia			
Culpeper Star Exponent	Culpeper	3,560	3,972
The News Virginian	Waynesboro	4,125	4,430
Danville Register and Bee	Danville	9,606	12,422
The Daily Progress	Charlottesville	14,693	17,280
Bristol Herald Courier	Bristol	17,904	21,416
The News and Advance	Lynchburg	18,714	23,497
Richmond Times-Dispatch	Richmond	88,715	113,483
The Roanoke Times	Roanoke	47,972	60,198
Martinsville Bulletin	Martinsville	9,980	11,298
Free Lance-Star	Fredericksburg	29,245	33,978

BERKSHIRE HATHAWAY INC.

DIRECTORS

WARREN E. BUFFETT,
Chairman and CEO of Berkshire

CHARLES T. MUNGER,
Vice Chairman of Berkshire

HOWARD G. BUFFETT,
President of Buffett Farms

STEPHEN B. BURKE,
Chief Executive Officer of NBCUniversal, a media and entertainment company.

SUSAN L. DECKER,
Former President of Yahoo! Inc., an internet company.

WILLIAM H. GATES III,
Co-Chair of the Bill and Melinda Gates Foundation

DAVID S. GOTTESMAN,
Senior Managing Director of First Manhattan Company, an investment advisory firm.

CHARLOTTE GUYMAN,
Former Chairman of the Board of Directors of UW Medicine, an academic medical center.

THOMAS S. MURPHY,
Former Chairman of the Board and CEO of Capital Cities/ABC

RONALD L. OLSON,
Partner of the law firm of Munger, Tolles & Olson LLP

WALTER SCOTT, JR.,
Former Chairman of Level 3 Communications, a successor to certain businesses of Peter Kiewit Sons' Inc. which is engaged in telecommunications and computer outsourcing.

MERYL B. WITMER,
Managing member of the General Partner of Eagle Capital Partners L.P., an investment partnership.

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Letters from Annual Reports (1977 through 2016), quarterly reports, press releases and other information about Berkshire may be obtained on the Internet at www.berkshirehathaway.com.

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