

Berkshire Hathaway Inc BRK.B (XNYS)

Morningstar Rating ★★★★ 15 Nov 2019 22:46, UTC	Last Price 219.74 USD 15 Nov 2019	Fair Value Estimate 253.00 USD 30 Jul 2019 22:37, UTC	Price/Fair Value 0.87	Trailing Dividend Yield % — 15 Nov 2019	Forward Dividend Yield % 0.00 15 Nov 2019	Market Cap (Bil) 537.13 15 Nov 2019	Industry Insurance - Diversified	Stewardship Exemplary
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Morningstar Pillars	Analyst	Quantitative
Economic Moat	Wide	Wide
Valuation	★★★★	Fairly Valued
Uncertainty	Medium	High
Financial Health	—	Strong

Source: Morningstar Equity Research

Quantitative Valuation



	Current	5-Yr Avg	Sector	Country
Price/Quant Fair Value	0.97	0.94	0.87	0.83
Price/Earnings	20.0	16.2	12.7	20.1
Forward P/E	18.5	—	10.5	13.9
Price/Cash Flow	14.4	11.5	9.5	13.1
Price/Free Cash Flow	24.7	19.7	10.9	19.5
Trailing Dividend Yield%	—	—	3.64	2.35

Source: Morningstar

Bulls Say

- ▶ Book value per share, which is still a good proxy for measuring changes in Berkshire's intrinsic value, increased at an 18.7% CAGR during 1965-2018, compared with a 9.7% return for the S&P 500 TR Index.
- ▶ Berkshire's stock performance has been equally strong, increasing at a 20.5% CAGR during 1965-2018. The shares increased at an 11.5% (12.2% CAGR during 2014-18 (2009-18), compared with an 8.5% (13.1%) average annual return for the S&P 500.
- ▶ At the end of June 2019, Berkshire had \$125 billion in insurance float. The cost of the firm's float has been negative for much of the past decade.

Bears Say

- ▶ Given the size of its operations, Berkshire's biggest long-term hurdle will be its ability to consistently find deals that not only add value but are large enough to be meaningful.
- ▶ Another big issue facing the firm is the longevity of chairman and CEO Warren Buffett (who turns 89 at the end of August 2019) and managing partner Charlie Munger (who turns 96 in January 2020).
- ▶ Berkshire's insurance business faces competitive and highly cyclical markets that occasionally produce large losses, and several of its noninsurance operations are economically sensitive and focused on U.S. markets.

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Occidental Petroleum Dominates Berkshire's Equity Purchase Activity During Q3

Business Strategy and Outlook

Greggory Warren, CFA, Analyst, 16 August 2019

We think two big concerns--first, that Berkshire Hathaway's size will prevent it from growing at a decent clip in the future and, second, that the company's shares will get pummeled once Warren Buffett no longer runs the show--have kept some investors on the sidelines. While we do not expect Berkshire to be able to consistently increase its book value per share at a double-digit rate going forward--a feat the firm achieved six times during 2009-18--we think the company is still capable of increasing book value per share at a high-single- to low-double-digit rate annually. This should leave returns solidly and consistently above Berkshire's cost of capital, which is what we expect from companies with wide economic moats.

As for succession planning, Buffett's three main roles--chairman, CEO, and investment manager--are expected to be split once he departs. Our long-standing view has been that Buffett's son, Howard Buffett, will serve as nonexecutive chairman and that Ted Weschler and Todd Combs will serve as co-investment managers of Berkshire's investment portfolio. As for the CEO role, we think there are two fine candidates in Ajit Jain and Greg Abel, both of whom would bring unique insights to the role. Our preference, though, would be to have Jain take control of all of Berkshire's insurance operations, while Abel (who has experience with both operations and acquisitions) fills the role of chief executive.

With investment opportunities few and far between these days, the company does face another near- to medium-term issue--bulging cash balances that (absent any sizable deals) will need to be returned to shareholders. While Buffett has been clear about share repurchases being his preferred option (relative to dividends) for reducing excess cash balances (not dedicated to acquisitions or stock investments) down the road, we expect him to be just as cost-conscious when buying back Berkshire's shares as he has been with other investments historically. We believe that share repurchases are more likely at prices closer to 1.3 times average end-of-quarter book value per share.

Analyst Note

Greggory Warren, CFA, Analyst, 17 November 2019

There were few surprises in wide-moat-rated Berkshire Hathaway's third-quarter 13-F filing, with the company not only putting \$10 billion toward 8% cumulative perpetual preferred stock of Occidental Petroleum but purchasing an additional 7.5 million shares of the oil and gas exploration and production company (for an estimated \$354 million) during the period. As part of the financing deal for Occidental's purchase of Anadarko, which closed in early August, Berkshire also picked up warrants to purchase up to 80 million shares of Occidental's common stock at an exercise price of \$62.50 per share. As for the other sole purchase during the quarter, Berkshire picked up 1.2 million shares of Restoration Hardware, a luxury retailer operating in the furniture and home furnishing industry, for an estimated \$173 million, which was more likely a purchase for the portfolios run by Todd Combs and/or Ted Weschler.

As for the sales, Berkshire continued to trim its stake in Wells Fargo, necessary to keep the insurer's stake below the 10% bank holding company threshold, raising an estimated \$1.5 billion through the sale of 31.4 million shares. Berkshire also trimmed its stake in Apple, likely because it had grown to too large of a position in some of the smaller retirement-based portfolios that Combs and Weschler are running for the firm, with the estimated \$158 million in proceeds generated from the sale of 750,000 shares likely funding the purchase of Restoration Hardware. Berkshire also reduced its stake in Phillips 66, selling 370,000 shares for an estimated \$36 million, and Liberty Media Sirius XM Radio, selling 1.6 million shares for an estimated \$10 million. The company also received \$983 million for the 5.2 million shares of Red Hat it held, following the acquisition of the software firm by IBM.

Economic Moat

Greggory Warren, Analyst, 16 August 2019

Berkshire's wide economic moat is more than just a sum of its parts, although the parts that make up the whole of the firm are fairly moaty in their own regard. The company's insurance operations--Geico, Berkshire

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Close Competitors	Currency (Mil)	Market Cap	TTM Sales	Operating Margin	TTM/PE
Progressive Corp PGR	USD	42,620	36,292	0.00	13.64
Allstate Corp ALL	USD	35,992	42,684	0.00	14.81
Markel Corp MKL	USD	15,517	8,079	0.00	28.74

even when gains are the result of the investing prowess of someone like Buffett. We believe insurers that consistently achieve positive underwriting profitability are better bets in the long run, as insurance profitability tends to be more sustainable than investment income.

Hathaway Reinsurance Group, or BHRG, and Berkshire Hathaway Primary Group, or BHPG--remain important contributors to the overall business. Not only do they account for 25%-35% of Berkshire's pretax earnings (and close to 40% of our current valuation of the firm owing to the firm being overcapitalized and maintaining a larger than normal equity investment portfolio for a property and casualty insurer), but they also generate low-cost float. These temporary cash holdings, which arise from premiums being collected in advance of future claims, have allowed Berkshire to generate additional returns as the company has invested these funds in assets that are commensurate with the duration of the business that is being underwritten, and have tended to come at little to no cost to Berkshire given the company's proclivity for generating underwriting gains the past several decades. That said, from an economic moat perspective, we don't believe the insurance industry is particularly conducive to the development of sustainable competitive advantages. While there are some high-quality companies operating in the industry (with Berkshire having some of the best operators in the different segments where it competes), the product that insurers sell is basically a commodity, with excess returns being difficult to achieve on a consistent basis.

Buyers of insurance are not inclined to pay a premium for brands, and the products themselves are easily replicable. Competition among insurance firms is fierce, and participants have been known to slash prices or simply undercut competitors to gain market share. Insurance is also one of the few industries where the cost of goods sold (signified by claims) may not be known for years, providing an incentive for companies to sacrifice long-term profitability in favor of near-term growth. In reinsurance, this dynamic can be even more pronounced, as losses in this business tend to be large in nature and may not be realized for years after a policy is written. Insurers can, however, develop sustainable cost advantages by either focusing on less commodified areas of the market or by developing efficient and/or scalable distribution platforms. What they can't do is gain a sustainable competitive advantage through investing,

Given the continued strong growth of its auto insurance operations, and the more meager growth in its reinsurance operations, Geico has become the largest generator of earned premiums for Berkshire. The auto insurer has made great strides with its direct-selling operations, moving from its position as the seventh-largest U.S. private auto insurance underwriter two decades ago (with 3.6% market share) to the second-largest at the end of 2018, with 13.4% of the market compared with industry leader State Farm at 17.1%. Much like its closest competitor, Progressive (which generated 11.0% of written premiums last year), Geico has set itself apart from the rest of the industry by its scale in the direct response channel. While scaling is typically difficult for insurance companies, personal line insurers like Geico and Progressive have been better at spreading fixed costs over a wider base, as their business models do not require as much human capital and specialized underwriters as other insurance lines. Given the similarity in their auto insurance operations, with both firms at the forefront of the shift into non-agent-derived business, as well as the level and consistency of each insurer's underwriting profitability the past decade (with Geico producing an average annual combined ratio, including the impact of hurricanes and other natural disasters, of 95.8% during 2009-18 compared with Progressive at 93.3%), we believe that Geico, much like Progressive, has a narrow economic moat.

With regards to Berkshire's reinsurance arm--BHRG--we believe that at best it has a narrow economic moat around its operations. For a premium, reinsurers assume all or part of an insurance or reinsurance policy written by another insurer. While any insurance company can underwrite reinsurance, a handful of larger companies--Munich Re, Swiss Re, Berkshire Hathaway, Hannover Rueck, and SCOR SE--hold sway over the lion's share of global premiums written. The policies underwritten by reinsurers often contain large long-tail risks that few companies have the capacity to endure and, when priced appropriately, can generate favorable long-term returns. That said, reinsurers compete almost exclusively on price and capital strength, making it almost impossible to build structural cost advantages. Losses in the reinsurance market are

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also lumpy and may not be realized for years after a policy is written, magnifying the importance of disciplined and accurate underwriting skills. While we don't normally view reinsurers as benefiting from favorable competitive positions, there are some specialty lines where a long history of underwriting incidence and/or from unique relationships can allow firms to build sustainable competitive advantages. We believe that Berkshire's reinsurance operations are unique. The company's overall balance sheet strength makes it capable of taking on large amounts of super-catastrophe underwriting (covering events like terrorism and natural catastrophes) that few companies have the capacity to endure. Historically, it has also had the luxury of walking away from business when an appropriate premium cannot be obtained, something its publicly traded peers cannot always do. However, its underwriting profitability has been less consistent because of the nature of the risks that it is underwriting and is much narrower than Berkshire's other insurance businesses. The company sticks with reinsurance, though, even if it can be unprofitable from time to time, because it generates float that can be invested for longer periods of time than short-tail lines such as auto insurance.

As for BHPG, which has been Berkshire's most profitable insurance business the past 20 years, we believe the segment has developed a narrow economic moat. What is all the more remarkable about this is that BHPG is a conglomeration of several different insurance operations, including National Indemnity's primary group, Berkshire Hathaway Homestate Companies, Berkshire Hathaway Specialty Insurance, Medical Protective Company, U.S. Investment Corporation, Berkshire Hathaway Guard Insurance Companies, and Applied Underwriters, which Berkshire is in the process of divesting. These entities offer coverage as varied as workers' compensation and commercial auto and property coverage to excess and surplus lines. By focusing more on specialty lines that require extensive experience or unique relationships to underwrite effectively, BHPG has been able to put together a continuous record of solid earned premium growth and underwriting profitability, which is a rarity in the insurance business (with most P&C insurers willing to take underwriting losses from time to time in order to generate earned premium growth, believing that they can make up the difference with investment gains).

Of the more than 70 noninsurance businesses that make up Berkshire's remaining subsidiaries, Burlington

Northern Santa Fe and Berkshire Hathaway Energy are usually lumped together under the company's railroad utilities and energy segment in Berkshire's financial statements. While their contribution to pretax earnings and our own fair value estimate for the firm are now overshadowed a bit by the newly combined manufacturing, service, and retailing segment (which rolled up Berkshire's finance and financial products division at the end of 2018), they are far more transparent than the company's other operating segments. On a combined basis, BNSF and BHE have generated 30%-35% of Berkshire's pretax earnings on average and currently contribute 28% to our estimate of the company's overall fair value.

The most interesting thing about these two businesses is that neither one was a major contributor to Berkshire's pretax earnings just over a decade ago. Buffett's shift into such debt-heavy capital-intensive businesses as railroads and utilities has represented a marked departure from many of Berkshire's other acquisitions over the years, which have tended to require less ongoing capital investment and have had little to no debt and have tended to produce higher returns on average. That said, were Buffett to focus on buying more asset-light companies with fewer capital investment needs, it would have left his successors with even greater amounts of cash to have to reinvest annually in the longer term. During 2014-18, the firm generated an average of \$21.8 billion annually in free cash flow. The amount of excess cash Buffett would have needed to find a home for would have been meaningfully higher had Berkshire purchased similar-size companies to BNSF and BHE with similar cash flow profiles that were not investing close to \$10 billion on average annually collectively in their own property and equipment.

With BNSF, which was acquired in full in February 2010, Berkshire picked up a Class I railroad operator--an industry designation for a large operator with an extensive system of interconnected rails, yards, terminals, and expansive fleets of motive power and rolling stock. We believe that all of the major North American Class I railroads benefit from colossal barriers to entry due to their established, practically impossible-to-replicate networks of rights of way and continuously welded steel rail. While barges, ships, aircraft, and trucks also haul freight, railroads are by far the lowest-cost option when no waterway connects the origin and destination, especially for freight with low

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value per unit weight. Customers have few choices thus wield limited buyer power, with most Class I railroads operating as duopolies (and some being a monopoly supplier) to the end client in many markets. This provides the major North American Class I railroads with efficient scale. Believing that operators like BNSF will continue to leverage their competitive advantages of low cost and efficient scale to generate returns on invested capital in excess of their cost of capital, we have awarded them wide-moat ratings.

As for Berkshire Hathaway Energy, which Buffett built up through investments in MidAmerican Energy (supplanting a 76% equity stake taken in early 2000 with additional purchases that have raised its interest to 90.9%), PacifiCorp (acquired in full during 2005), NV Energy (acquired in full at the end of 2013), and AltaLink (acquired in full at the end of 2014), we think the business overall is endowed with a narrow economic moat. While BHE has picked up pipeline assets—which have wide-moat characteristics—the majority of its revenue and profitability (and ongoing capital investment) are driven by its three main regulated utilities: MidAmerican Energy, PacifiCorp, and NV Energy. We think that regulated utilities cannot establish more than a narrow moat around their businesses, even with their difficult-to-replicate networks of power generation, transmission, and distribution, given that their rates, as well as their returns, are set by state and federal regulators.

While Berkshire's manufacturing, service, and retailing operations are now one of the largest contributors to pretax earnings, following the folding of the old finance and financial products segment into the MSR unit, getting a handle on the profitability (and economic moats) of the wide array of businesses (operating in more than a handful of different industries) that make up the segment is difficult at best. Unlike BNSF and BHE, both of which file quarterly and annual reports with the Securities and Exchange Commission, there is little financial information available on the firms operating in this segment. That said, given Buffett's penchant for acquiring companies that have consistent earnings power, generate above-average returns on capital, hold little debt, and are run by solid management teams, we believe that the vast majority of the businesses that make up the segment are collectively endowed with a narrow economic moat.

We'd also note that during 2018, the five largest

companies (on a pretax earnings basis) in the MSR segment—Precision Castparts, Lubrizol, Clayton Homes, Marmon, and IMC/ISCAR—accounted for more than half of the pretax earnings produced by the division. Each of these subsidiaries, by our estimates, has a fairly solid narrow moat around its operations. When combined with the next five largest subsidiaries—Shaw Industries, Forest River, Johns Manville, TTI, and MiTek Industries—the 10 subsidiaries accounted for more than 70% of the MSR segment's pretax earnings last year, with a moat rating overall that skews to the narrow end of the spectrum. With Buffett running Berkshire on a decentralized basis, the managers of the company's operating subsidiaries are empowered to make their own business decisions.

In most cases, the managers running Berkshire's subsidiaries are the same individuals who sold their firms to Buffett, leaving them with a vested interest in the businesses they run. Barring a truly disruptive event in their industries, we expect these firms to continue to have the same advantages that attracted Buffett to them in the first place. That does not mean that there won't be subsidiaries whose competitive advantages diminish over time (exemplified by the demise of the textile manufacturer that Berkshire Hathaway derives its own name from), it's just that the large collection of moaty firms that reside within Berkshire's manufacturing, service, and retailing operations, is more likely to maintain a narrow economic moat in aggregate, even as a few firms along the way succumb to changing competitive dynamics within their industries.

Fair Value & Profit Drivers

Gregory Warren, Analyst, 16 August 2019

Our fair value estimate for Berkshire Hathaway is \$253 per Class B share. With the company's book value expected to grow at a high-single- to double-digit rate both this year and next, our estimate is equivalent to 1.52 and 1.39 times our estimates for the company's book value at the end of 2019 and 2020, respectively. For some perspective, during the past five (10) calendar years, Berkshire's shares have traded at an average of 1.48 (1.41) times the company's trailing calendar year-end book value per share. We use an 8.7% cost of equity in our valuation.

We use a sum-of-the-parts methodology to arrive at our fair value estimate. Our valuation for Berkshire's insurance operations (which includes its equity investment holdings) is \$100 per Class B share. Our five-year forecast, which

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includes both reported and forecast catastrophe-related losses, has earned premium growth averaging 8.6% per year during 2019-23, with the insurance group's combined ratio averaging 95.9% annually. During the past five (10) calendar years, earned premiums have grown 9.4% (8.4%) on average annually, with the operations maintaining a combined ratio of 97.3% (96.1%) on average.

Our fair value estimate for the company's BNSF railroad operations of \$50 per Class B share assumes that unit volumes increase at a 0.1% CAGR during 2019-23 (dragged down by the ongoing secular decline in coal), with freight revenue expanding 2.7% on average annually and the company's operating ratio reaching 60.7% by the end of 2023. For Berkshire's utilities and energy division, our fair value estimate of \$19 per Class B share assumes constructive rate-case outcomes for each of the division's U.S. regulated utilities, which should generate results that are near their allowable returns on equity over the next five years.

Our valuation for Berkshire's manufacturing, service, and retail operations (which now includes the old finance and financial products segment) is equivalent to \$84 per Class B share. This assumes average annual revenue growth of 3.4% during 2019-23, with pretax operating margins averaging around 8.5% annually. Although the MSR segment has provided plenty of opportunity to deploy capital through acquisitions and internal investments, our expectations are for more modest levels of investment going forward, with the unit impacted by an anticipated slowdown in the U.S. economy, as well.

Risk & Uncertainty

Greggory Warren, Analyst, 16 August 2019

Berkshire is exposed to large potential losses through its insurance operations. While the company believes its catastrophe and supercatastrophe underwriting can generate solid long-term results, the volatility of these business lines, which have the potential to subject the firm to especially large losses, tends to be high. Berkshire maintains much higher capital levels than almost all other insurers, though, which we believe mitigates much of this risk.

Several of the firm's key businesses--insurance, energy generation and distribution, and rail transport--operate in industries that are subject to higher degrees of regulatory oversight, which could have an impact on future business

combinations, as well as the setting of rates that are charged to customers. On top of that, many of the firm's noninsurance operations are exposed to the cyclical nature of the economy, with results typically suffering during economic slowdowns and recessions.

Berkshire is also exposed to foreign currency, equity price, and credit default risk through its various investments and operating companies. The company's derivative contracts, in particular, could affect the firm's earnings and capital position, especially during more volatile markets, given that they are recorded at fair value and are, therefore, updated periodically to reflect the ongoing changes in the value of these contracts. The contracts remaining at year-end 2018 will expire from 2019 through 2025.

Berkshire depends on two key employees, Warren Buffett and Charlie Munger, for almost all of its investment and capital-allocation decisions. With Buffett turning 89 in late August 2019 and Munger turning 96 in early January 2020, it has become increasingly likely that our valuation horizon will end up exceeding their life spans, with the quality of investment returns and capital allocation likely to deteriorate under new management.

Stewardship

Greggory Warren, Analyst, 16 August 2019

Warren Buffett has been the chairman and CEO of Berkshire Hathaway since 1970. Charlie Munger has served as the company's vice chairman since 1978. Berkshire has two classes of common stock, with Class B shares holding 1/1,500th of the economic rights of Class A shares and only 1/10,000th of the voting rights. Buffett is Berkshire's largest shareholder, with a 30.5% voting stake and a 16.0% economic interest in the firm (based on our estimates following his July 2019 annual charitable donations). Buffett has been a strong steward of investor capital, consistently aligning his own interests with those of shareholders, with Berkshire's wide economic moat derived in part from the success that he has had in melding the firm's financial strength and underwriting ability with his own investment acumen.

Buffett's stewardship has allowed Berkshire to increase its book value per share at an estimated compound annual growth rate of 18.7% during 1965-2018, compared with a 9.7% return for the S&P 500 TR Index. The firm has not only increased its book value per share at a double-digit rate annually 42 separate times during 1965-2018 but has

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reported declines in its book value just twice during the past 54 years (in 2001 and 2008). While Buffett recently attempted to beg investors off book value per share growth, stating in Berkshire's recent annual report that the "metric has lost the relevance it once had," we still view it as a valuable gauge for assessing changes in intrinsic value--that is, until such time that Berkshire is buying back a ton of stock. Until then, we expect the firm to increase book value per share at a high-single-digit to low-double-digit rate--comfortably above its cost of capital--much as we've seen since the start of the millennium.

Given the impressive long-term track record that Buffett and Munger have put together while at the helm at Berkshire, it is important that much of what they've built remains intact once they depart the scene. Succession was not formally addressed by the company until 2005, when Berkshire noted that Buffett's three main jobs--chairman, chief executive, and chief investment officer--would be handled by one chairman (expected to be his son, Howard Buffett), one CEO (with candidates identified but not revealed), and several external hires (reporting directly to the CEO) to manage the investment portfolio. While we have clarity on the investment side of things, with Todd Combs and Ted Weschler expected to be the only outside hires to work with Berkshire's investment portfolio, questions linger over who the firm's next CEO will be.

We continue to envision the main role of the next chief executive at Berkshire to be one of capital allocator in chief. With all of the company's operating businesses managed on a decentralized basis, eliminating the need for layers of management control and pushing responsibility for each business down to the subsidiary level, Buffett has had the freedom to focus on managing the firm's investments and making capital-allocation decisions. He has noted at times, though, that the job requires more than just investment prowess and, as such, he would not advocate for a candidate to run Berkshire who only had investing experience, with no operational experience to speak of. Buffett has also been vocal about the next CEO coming from within the company's ranks.

We believe Ajit Jain, who was added to Berkshire's board at the start of 2018 and assumed the title of Vice Chairman-Insurance Operations, and Greg Abel, who also joined the board and was elevated to Vice

Chairman-Noninsurance Business Operations, are the top two candidates to replace Buffett. While Jain is the first name the board might turn to in the event of Buffett's departure, we think Berkshire would be better served longer term having him focus on overseeing the entire insurance business (which his new position allows him to do). While Jain's experience has primarily been on the underwriting side of the business, his success there has been built on his ability to avoid making "dumb decisions" rather than making "brilliant" ones.

If the firm's next CEO is expected to do nothing more than act as a caretaker for the business, tending to the needs of the managers of the different subsidiaries, overseeing the actions of the investment managers handling the company's investment portfolio, and dealing with the capital-allocation and risk assessments that need to be made along the way, then we could not think of a better candidate than Jain. The only problem is that Jain has been on the record several times saying he does not want the job, which is the main reason we regard Abel--who not only brings with him the operational experience of running Berkshire Hathaway Energy for many years but has a ton of experience doing acquisitions--as the most likely choice to succeed Buffett.

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Analyst Notes Archive

Investment Gains Offset Weaker Operating Results in Berkshire's 2Q; No Change to FVE

Greggory Warren, Analyst, 03 August 2019

As wide-moat Berkshire Hathaway reported second-quarter results that were in line with our expectations, we are leaving our \$380,000 (\$253) per Class A (B) share fair value estimate in place. Second-quarter (first-half) revenue, which now includes unrealized and realized gains/losses from Berkshire's investments and derivatives portfolios, increased 7.4% (29.9%) to \$73.6 (\$154.6) billion. Excluding the impact of investment and derivative gains/losses and other adjustments, second-quarter (first-half) operating revenue increased 2.1% (2.8%) to \$63.5 (\$124.0) billion.

Operating earnings, excluding the impact of investment and derivative gains/losses, declined 10.9% (4.0%) year over year to \$6.1 (\$11.7) billion during the second quarter (first half) of 2019. When including the impact of the investment and derivative gains/losses, Berkshire's operating earnings rose 17.2% (228.6%) to \$14.1 (\$35.7) billion. Aided by share repurchases that the firm has made over the past year, net earnings per Class A equivalent share rose 17.9% (230.1%) to \$8,608 (\$21,824) during the second quarter (first half) of 2019.

Book value per share, which still serves as a decent proxy for measuring changes in Berkshire's intrinsic value, increased 4.0% sequentially to \$233,977 (from \$224,950 at the end of the March quarter), slightly better than our forecast of \$233,948. The company closed out the June quarter with a record \$122.4 billion in cash and cash equivalents, up from \$114.2 billion at the end of March (and \$103.2 billion at the end of June 2018).

This left Berkshire with around \$98 billion in dry powder that could be committed to investments, acquisitions, share repurchases, and dividends. That said, we were surprised by the lack of share repurchase activity (just \$442 million) during the second quarter, with the firm sitting on so much cash and its shares priced as attractively as they were during the first quarter (when Berkshire bought \$1.7 billion of common stock).

Five Reasons to Consider Buying Berkshire Hathaway

Greggory Warren, Analyst, 11 August 2019

The equity bull market that began more than a decade ago is likely to end sometime in the near to medium term, and some economic indicators are starting to point to a potential recession in the U.S. economy. We are highlighting wide-moat-rated Berkshire Hathaway as a long-term investment idea that is likely to hold up better than most firms in a downturn, especially given its cache of close to \$100 billion in dry powder that could be committed to investments, acquisitions, and share repurchases.

We view Berkshire Hathaway's decentralized business model, broad business diversification, high cash generation capabilities, and unmatched balance sheet strength as providers of opportunities that might elude other firms, as well as of some downside protection in any potential downturn. It is these advantages, in particular, that should allow Berkshire's book value per share to continue to grow at a high-single- to low-double-digit rate in the near to medium term, comfortably above our estimate of the company's cost of capital.

While CEO Warren Buffett laments the dearth of investment opportunities that has allowed a ton of cash to build on Berkshire's balance sheet, it is a natural byproduct of the company's disciplined approach to investing, a lack of a dividend and a limited amount of share repurchase activity over the years. We continue to believe that the firm will eventually have to evolve, though, from a reinvestment machine to one that returns more capital to shareholders.

With Berkshire's shares currently trading at a 20% discount to our \$380,000 (\$253) per Class A (B) share fair value estimate, and 1.2 times our estimate for end of 2019 book value per share, it's the cheapest we can remember seeing in a number of years, providing a good entry point for long-term investors.

Berkshire Uses USG Sale Proceeds to Fund \$1.1 Billion of Additional Stock Purchases During 2Q

Greggory Warren, Analyst, 14 August 2019

There were few surprises in wide-moat-rated Berkshire Hathaway's second-quarter 13-F filing, with the company utilizing the \$1.8 billion in proceeds it garnered from Knauf's acquisition of its 28% ownership stake in USG to fund the purchase of four names--Amazon.com, Bank of America, U.S. Bancorp, and Red Hat--during the period.

Berkshire Hathaway Inc BRK.B (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★★	219.74 USD	253.00 USD	0.87	—	0.00	537.13	Insurance - Diversified	Exemplary
15 Nov 2019 22:46, UTC	15 Nov 2019	30 Jul 2019 22:37, UTC		15 Nov 2019	15 Nov 2019	15 Nov 2019		

business.

CEO Warren Buffett had already mentioned that Berkshire had put more money to work in Amazon.com during the quarter, acquiring another 54,000 shares for an estimated \$100 million, but with the stake over the \$1 billion mark now it rests more firmly in the Buffett-approved box.

We were also aware of Berkshire taking its stake in Bank of America up over the 10% ownership threshold that Buffett has preferred to keep not only Berkshire's bank holdings under but its other holdings as well, with the insurer buying another 31.1 million shares for an estimate \$880 million. Berkshire also raised its stake in U.S. Bancorp, acquiring another 3.2 million shares for \$160 million, and picked up an additional 61,400 shares of Red Hat for \$11 million.

As for sales, Berkshire sold 284,100 shares of Charter Communications for an estimated \$105 million and was paid \$1.7 billion for its 39.0 billion shares of USG Corporation during the second quarter.

With the additions to Bank of America and U.S. Bancorp the Financial Services sector accounted for 44.9% of Berkshire's holdings at the end of June, with Technology stocks at 25.7% and Consumer Defensive names at 15.2%. The rest of the \$208.1 billion equity portfolio was made up of holdings from the Industrials (7.2%), Consumer Cyclical (3.3%), Communication Services (1.4%), Healthcare (1.3%), Energy (0.4%), Basic Materials (0.3%), and Real Estate (0.3%).

Insurance Gains Offset Slightly Weaker Operating Results in Berkshire's Q3; No Change to FVE

Greggory Warren, Analyst, 02 November 2019

With wide-moat Berkshire Hathaway reporting third-quarter results that were in line with our expectations, we are leaving our \$380,000 (\$253) per Class A(B) share fair value estimate in place. Third-quarter (year-to-date) revenue, which includes unrealized and realized gains/losses from Berkshire's investments and derivatives portfolios, declined (increased) 2.9% (16.9%) to \$78.2 (\$230.5) billion. Excluding the impact of investment and derivative gains/losses and other adjustments, third-quarter (year-to-date) operating revenue increased 2.4% (2.8%) to \$64.9 (\$189.2) billion as improved results from the company's insurance, manufacturing, and service and retail operations helped offset weakness at the railroad and utilities/energy

Operating earnings, excluding the impact of investment and derivative gains/losses, increased 14.2% (2.6%) year over year to \$7.9 (\$19.6) billion during the third quarter (first nine months) of 2019. When including the impact of the investment and derivative gains/losses, Berkshire's earnings declined (increased) 25.7% (215.9%) to \$8.7 (\$32.7) billion. With the company lapping a difficult fourth quarter, we expect Berkshire to close out the year with solid results (even with the drag from ongoing trade tensions and tariffs).

Book value per share, which still serves as a decent proxy for measuring changes in Berkshire's intrinsic value, increased 4.1% sequentially to \$243,483 (from \$233,977 at the end of the June quarter), slightly better than our forecast of \$240,411. The company closed out the September quarter with a record \$128.2 billion in cash and cash equivalents, up from \$122.4 billion at the end of June (and \$103.6 billion at the end of the third quarter of 2018). This left Berkshire, by our estimates, with around \$103 billion in dry powder at the start of the fourth quarter that could be committed to investments, acquisitions, share repurchases, and dividends.

Occidental Petroleum Dominates Berkshire's Equity Purchase Activity During Q3

Greggory Warren, Analyst, 17 November 2019

There were few surprises in wide-moat-rated Berkshire Hathaway's third-quarter 13-F filing, with the company not only putting \$10 billion toward 8% cumulative perpetual preferred stock of Occidental Petroleum but purchasing an additional 7.5 million shares of the oil and gas exploration and production company (for an estimated \$354 million) during the period. As part of the financing deal for Occidental's purchase of Anadarko, which closed in early August, Berkshire also picked up warrants to purchase up to 80 million shares of Occidental's common stock at an exercise price of \$62.50 per share. As for the other sole purchase during the quarter, Berkshire picked up 1.2 million shares of Restoration Hardware, a luxury retailer operating in the furniture and home furnishing industry, for an estimated \$173 million, which was more likely a purchase for the portfolios run by Todd Combs and/or Ted Weschler.

As for the sales, Berkshire continued to trim its stake in Wells Fargo, necessary to keep the insurer's stake below

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★★★★★ 15 Nov 2019 22:46, UTC	219.74 USD 15 Nov 2019	253.00 USD 30 Jul 2019 22:37, UTC	0.87	— 15 Nov 2019	0.00 15 Nov 2019	537.13 15 Nov 2019	Insurance - Diversified	Exemplary

the 10% bank holding company threshold, raising an estimated \$1.5 billion through the sale of 31.4 million shares. Berkshire also trimmed its stake in Apple, likely because it had grown to too large of a position in some of the smaller retirement-based portfolios that Combs and Weschler are running for the firm, with the estimated \$158 million in proceeds generated from the sale of 750,000 shares likely funding the purchase of Restoration Hardware. Berkshire also reduced its stake in Phillips 66, selling 370,000 shares for an estimated \$36 million, and Liberty Media Sirius XM Radio, selling 1.6 million shares for an estimated \$10 million. The company also received \$983 million for the 5.2 million shares of Red Hat it held, following the acquisition of the software firm by IBM.

Berkshire Hathaway Inc B BRK.B ★★★^Q 17 Nov 2019 02:00 UTC

Last Close
15 Nov 2019
219.74

Fair Value^Q
17 Nov 2019 02:00 UTC
225.63

Market Cap
15 Nov 2019
537.1 Bil

Sector
Financial Services

Industry
Insurance - Diversified

Country of Domicile
USA United States

There is no one analyst in which a Quantitative Fair Value Estimate and Quantitative Star Rating are attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative fair value. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities. For information regarding Conflicts of Interests, visit <http://global.morningstar.com/equitydisclosures>

Company Profile

Berkshire Hathaway is a holding company with a wide array of subsidiaries engaged in diverse activities. The firm's core business segment is insurance, run primarily through Geico, Berkshire Hathaway Reinsurance Group and Berkshire Hathaway Primary Group. Berkshire has used the excess cash thrown off from these and its other operations over the years to acquire Burlington Northern Santa Fe (railroad), Berkshire Hathaway Energy (utilities and energy distributors), and the firms that make up its manufacturing, service, and retailing

Quantitative Scores

		Scores		
		All	Rel Sector	Rel Country
Quantitative Moat	Wide	100	100	100
Valuation	Fairly Valued	22	27	25
Quantitative Uncertainty	High	96	98	93
Financial Health	Strong	95	60	95



Valuation

	Current	5-Yr Avg	Sector Median	Country Median
Price/Quant Fair Value	0.97	0.94	0.87	0.83
Price/Earnings	20.0	16.2	12.7	20.1
Forward P/E	18.5	—	10.5	13.9
Price/Cash Flow	14.4	11.5	9.5	13.1
Price/Free Cash Flow	24.7	19.7	10.9	19.5
Trailing Dividend Yield %	—	—	3.64	2.35
Price/Book	1.4	1.4	1.1	2.4
Price/Sales	2.1	1.8	2.9	2.4

Profitability

	Current	5-Yr Avg	Sector Median	Country Median
Return on Equity %	7.0	8.5	10.1	12.9
Return on Assets %	3.5	4.0	1.4	5.2
Revenue/Employee (K)	665.2	616.5	762.0	325.9

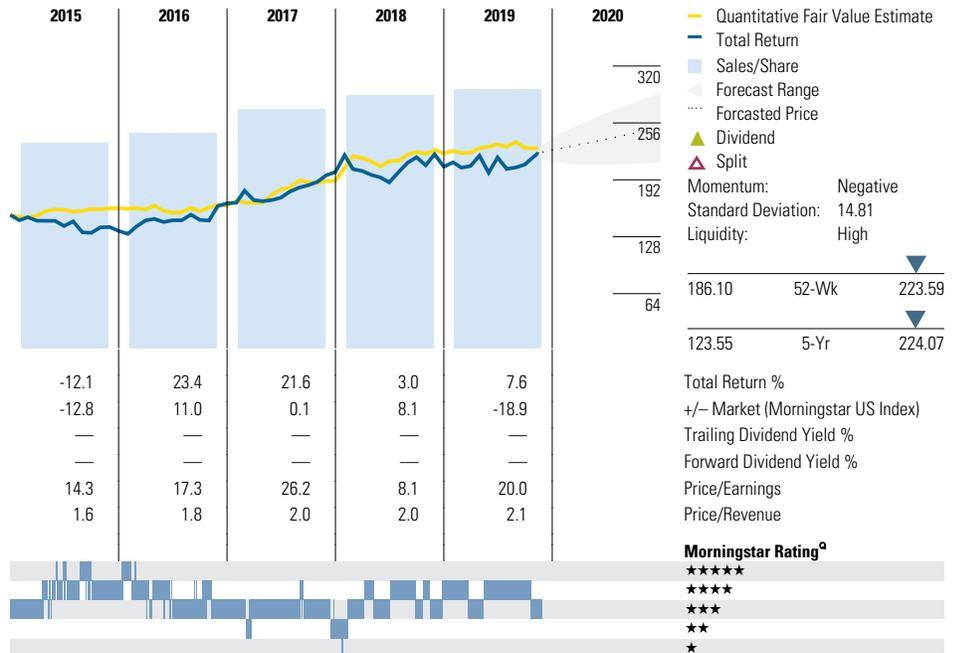
Financial Health

	Current	5-Yr Avg	Sector Median	Country Median
Distance to Default	0.8	0.8	0.8	0.5
Solvency Score	—	—	503.7	552.4
Assets/Equity	2.0	2.1	3.7	1.7
Long-Term Debt/Equity	0.3	0.3	0.3	0.4

Growth Per Share

	1-Year	3-Year	5-Year	10-Year
Revenue %	-6.9	2.2	4.4	7.7
Operating Income %	—	—	—	—
Earnings %	-91.1	-44.9	-27.1	-2.7
Dividends %	—	—	—	—
Book Value %	0.4	11.0	9.5	11.7
Stock Total Return %	1.1	11.7	8.6	12.4

Price vs. Quantitative Fair Value

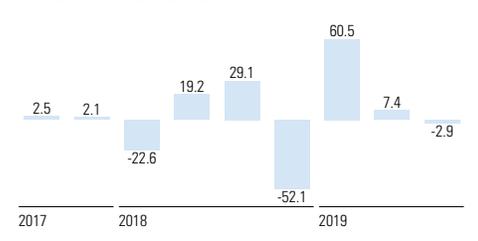


	2014	2015	2016	2017	2018	TTM	Financials (Fiscal Year in Mil)
Revenue	194,673	210,821	223,604	242,137	225,382	258,750	Revenue
% Change	6.9	8.3	6.1	8.3	-6.9	14.8	% Change
Operating Income	—	—	—	—	—	—	Operating Income
% Change	—	—	—	—	—	—	% Change
Net Income	19,872	24,083	24,074	44,940	4,021	26,866	Net Income
Operating Cash Flow	32,010	31,491	32,535	45,776	37,400	37,455	Operating Cash Flow
Capital Spending	-15,185	-16,082	-12,954	-11,708	-14,537	-15,636	Capital Spending
Free Cash Flow	16,825	15,409	19,581	34,068	22,863	21,819	Free Cash Flow
% Sales	8.6	7.3	8.8	14.1	10.1	8.4	% Sales
EPS	8.06	9.77	9.76	18.22	1.63	11.00	EPS
% Change	2.0	21.2	-0.1	86.6	-91.0	574.8	% Change
Free Cash Flow/Share	7.14	6.16	7.62	13.38	8.71	9.40	Free Cash Flow/Share
Dividends/Share	—	—	—	—	—	—	Dividends/Share
Book Value/Share	96.36	100.72	109.17	124.95	152.60	156.46	Book Value/Share
Shares Outstanding (Mil)	2,464	2,465	2,466	2,467	2,461	2,445	Shares Outstanding (Mil)
Return on Equity %	8.6	9.7	8.9	14.2	1.2	7.0	Profitability
Return on Assets %	3.9	4.5	4.1	6.8	0.6	3.5	Return on Assets %
Net Margin %	10.2	11.4	10.8	18.6	1.8	10.4	Net Margin %
Asset Turnover	0.39	0.39	0.38	0.37	0.32	0.34	Asset Turnover
Financial Leverage	2.2	2.2	2.2	2.0	2.0	2.0	Financial Leverage
Gross Margin %	—	—	—	—	—	—	Gross Margin %
Operating Margin %	—	—	—	—	—	—	Operating Margin %
Long-Term Debt	79,370	82,300	99,550	96,267	93,117	97,695	Long-Term Debt
Total Equity	240,170	255,550	283,001	348,296	348,703	397,609	Total Equity
Fixed Asset Turns	1.5	1.5	1.5	1.6	1.4	1.5	Fixed Asset Turns

Quarterly Revenue & EPS

	Mar	Jun	Sep	Dec	Total
Revenue (Bil)	81.0	73.6	75.9	—	—
2019	81.0	73.6	75.9	—	—
2018	50.5	68.6	78.2	28.2	225.4
2017	65.2	57.5	60.5	58.9	242.1
2016	52.4	54.5	59.1	57.7	223.6
Earnings Per Share (I)	8.81	5.74	6.75	—	—
2019	8.81	5.74	6.75	—	—
2018	-0.46	4.87	7.52	-10.32	1.63
2017	1.65	1.73	1.65	13.19	18.22
2016	2.27	2.03	2.92	2.55	9.76

Revenue Growth Year On Year %



Research Methodology for Valuing Companies

Qualitative Equity Research Overview

At the heart of our valuation system is a detailed projection of a company's future cash flows, resulting from our analysts' research. Analysts create custom industry and company assumptions to feed income statement, balance sheet, and capital investment assumptions into our globally standardized, proprietary discounted cash flow, or DCF, modeling templates. We use scenario analysis, in-depth competitive advantage analysis, and a variety of other analytical tools to augment this process. We believe this bottom-up, long-term, fundamentally based approach allows our analysts to focus on long-term business drivers, which have the greatest valuation impact, rather than short-term market noise.

Morningstar's equity research group ("we," "our") believes that a company's intrinsic worth results from the future cash flows it can generate. The Morningstar Rating for stocks identifies stocks trading at an uncertainty-adjusted discount or premium to their intrinsic worth—or fair value estimate, in Morningstar terminology. Five-star stocks sell for the biggest risk-adjusted discount to their fair values whereas 1-star stocks trade at premiums to their intrinsic worth.

Four key components drive the Morningstar rating: (1) our assessment of the firm's economic moat, (2) our estimate of the stock's fair value, (3) our uncertainty around that fair value estimate and (4) the current market price. This process ultimately culminates in our single-point star rating.

1. Economic Moat

The concept of an economic moat plays a vital role not only in our qualitative assessment of a firm's long-term investment potential, but also in the actual calculation of our fair value estimates. An economic moat is a structural feature that allows a firm to sustain excess profits over a long period of time. We define excess economic profits as returns on invested capital (or ROIC) over and above our estimate of a firm's cost of capital, or weighted average cost of capital (or WACC). Without a moat, profits are more susceptible to competition. We have identified five sources of economic moats:

intangible assets, switching costs, network effect, cost advantage, and efficient scale.

Companies with a narrow moat are those we believe are more likely than not to achieve normalized excess returns for at least the next 10 years. Wide-moat companies are those in which we have very high confidence that excess returns will remain for 10 years, with excess returns more likely than not to remain for at least 20 years. The longer a firm generates economic profits, the higher its intrinsic value. We believe low-quality no-moat companies will see their normalized returns gravitate toward the firm's cost of capital more quickly than companies with moats.

To assess the direction of the underlying competitive advantages, analysts perform ongoing assessments of the moat trend. A firm's moat trend is positive in cases where we think its sources of competitive advantage are growing stronger; stable where we don't anticipate changes to competitive advantages over the next several years; or negative when we see signs of deterioration.

All the moat and moat trend ratings undergo periodic review and any changes must be approved by the Morningstar Economic Moat Committee, comprised of senior members of Morningstar's equity research department.

2. Estimated Fair Value

Combining our analysts' financial forecasts with the firm's economic moat helps us assess how long returns on invested capital are likely to exceed the firm's cost of capital. Returns of firms with a wide economic moat rating are assumed to fade to the perpetuity period over a longer period of time than the returns of narrow-moat firms, and both will fade slower than no-moat firms, increasing our estimate of their intrinsic value.

Our model is divided into three distinct stages:

Stage I: Explicit Forecast

In this stage, which can last five to 10 years, analysts make full financial statement forecasts, including items such as revenue, profit margins, tax rates, changes in working-capital accounts, and capital spending. Based on these projections, we calculate earnings before interest, after taxes, or EBI, and the net new investment, or NNI, to derive our annual free cash flow forecast.

Stage II: Fade

The second stage of our model is the period it will take the company's return on new invested capital—the return on capital of the next dollar invested ("RONIC")—to decline (or rise) to its cost of capital. During the Stage II period, we use a formula to approximate cash flows in lieu of explicitly modeling the income statement, balance sheet, and cash flow statement as we do in Stage I. The length of the second stage depends on the strength of the company's economic moat. We forecast this period to last anywhere from one year (for companies with no economic moat) to 10–15 years or more (for wide-moat companies). During this period, cash flows are forecast using four assumptions: an average growth rate for EBI over the period, a normalized investment rate, average return on new invested capital, or RONIC, and the number of years until perpetuity, when excess returns cease. The investment rate and return on new invested capital decline until the perpetuity stage is reached. In the case of firms that do not earn their cost of capital, we assume marginal ROICs rise to the firm's cost of capital (usually attributable to less reinvestment), and we may truncate the second stage.

Stage III: Perpetuity

Once a company's marginal ROIC hits its cost of capital, we calculate a continuing value, using a standard perpetuity formula. At perpetuity, we assume that any growth or decline or investment in the business neither creates nor destroys value and that any new investment provides a return in line with estimated WACC.

Because a dollar earned today is worth more than a dollar earned tomorrow, we discount our projections of cash flows in stages I, II, and III to arrive at a total present value of expected future cash flows. Because we are modeling free cash flow to the firm—representing cash available to provide a return to all capital providers—we discount future cash flows using the WACC, which is a weighted average of the costs of equity, debt, and preferred stock (and any other funding sources), using expected future proportionate long-term market-value weights.

Morningstar Research Methodology for Valuing Companies



Research Methodology for Valuing Companies

3. Uncertainty Around That Fair Value Estimate

Morningstar's Uncertainty Rating captures a range of likely potential intrinsic values for a company and uses it to assign the margin of safety required before investing, which in turn explicitly drives our stock star rating system. The Uncertainty Rating represents the analysts' ability to bound the estimated value of the shares in a company around the fair value estimate, based on the characteristics of the business underlying the stock, including operating and financial leverage, sales sensitivity to the overall economy, product concentration, pricing power, and other company-specific factors.

Analysts consider at least two scenarios in addition to their base case: a bull case and a bear case. Assumptions are chosen such that the analyst believes there is a 25% probability that the company will perform better than the bull case, and a 25% probability that the company will perform worse than the bear case. The distance between the bull and bear cases is an important indicator of the uncertainty underlying the fair value estimate.

Our recommended margin of safety widens as our uncertainty of the estimated value of the equity increases. The more uncertain we are about the estimated value of the equity, the greater the discount we require relative to our estimate of the value of the firm before we would recommend the purchase of the shares. In addition, the uncertainty rating provides guidance in portfolio construction based on risk tolerance.

Our uncertainty ratings for our qualitative analysis are low, medium, high, very high, and extreme.

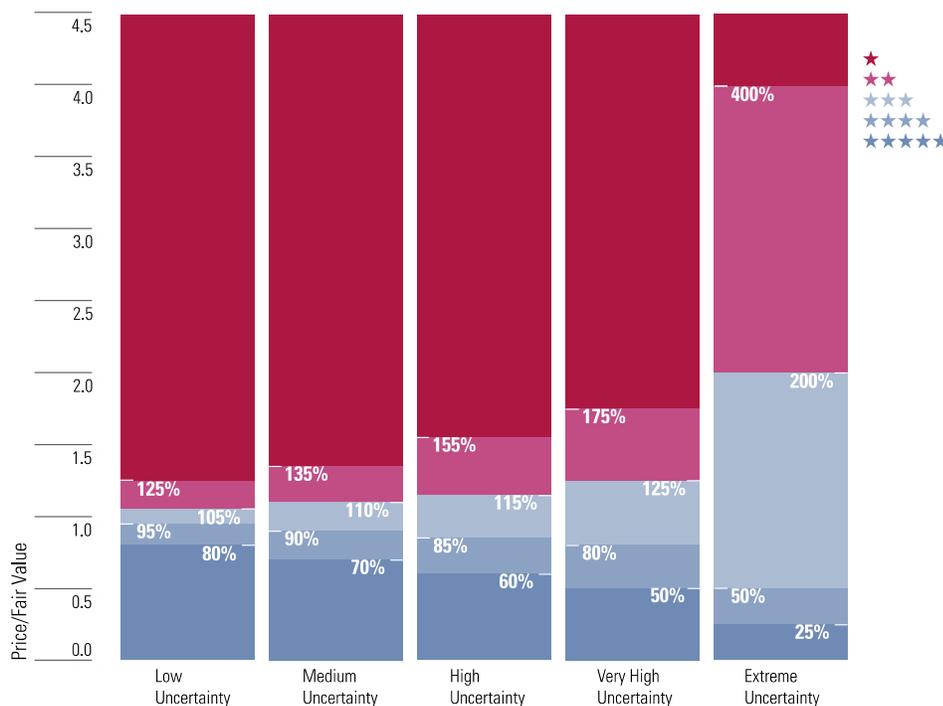
- ▶ Low—margin of safety for 5-star rating is a 20% discount and for 1-star rating is 25% premium.
- ▶ Medium—margin of safety for 5-star rating is a 30% discount and for 1-star rating is 35% premium.
- ▶ High—margin of safety for 5-star rating is a 40% discount and for 1-star rating is 55% premium.
- ▶ Very High—margin of safety for 5-star rating is a 50% discount and for 1-star rating is 75% premium.
- ▶ Extreme—margin of safety for 5-star rating is a 75% discount and for 1-star rating is 300% premium.

4. Market Price

The market prices used in this analysis and noted in the report come from exchange on which the stock is listed, which we believe is a reliable source.

For more details about our methodology, please go to <https://shareholders.morningstar.com>.

Morningstar Equity Research Star Rating Methodology



Morningstar Star Rating for Stocks

Once we determine the fair value estimate of a stock, we compare it with the stock's current market price on a daily basis, and the star rating is automatically re-calculated at the market close on every day the market on which the stock is listed is open.

Please note, there is no predefined distribution of stars. That is, the percentage of stocks that earn 5 stars can fluctuate daily, so the star ratings, in the aggregate, can serve as a gauge of the broader market's valuation. When there are many 5-star stocks, the stock market as a whole is more undervalued, in our opinion, than when very few companies garner our highest rating.

We expect that if our base-case assumptions are true the market price will converge on our fair value estimate over time, generally within three years (although it is impossible to predict the exact time frame in which market prices may adjust).

Our star ratings are guideposts to a broad audience and individuals must consider their own specific investment goals, risk tolerance, tax situation, time horizon, income needs, and complete investment portfolio, among other factors.

The Morningstar Star Ratings for stocks are defined below:

★★★★★ We believe appreciation beyond a fair risk-adjusted return is highly likely over a multiyear time frame. The current market price represents an excessively pessimistic outlook, limiting downside risk and maximizing upside potential.

★★★★ We believe appreciation beyond a fair risk-adjusted return is likely.

★★★ Indicates our belief that investors are likely to receive a fair risk-adjusted return (approximately cost of equity).

★★ We believe investors are likely to receive a less than fair risk-adjusted return.

★ Indicates a high probability of undesirable risk-adjusted returns from the current market price over a multiyear time frame, based on our analysis. The market is pricing in an excessively optimistic outlook, limiting upside potential and leaving the investor exposed to Capital loss.

Research Methodology for Valuing Companies

Other Definitions

Last Price: Price of the stock as of the close of the market of the last trading day before date of the report.

Stewardship Rating: Represents our assessment of management's stewardship of shareholder capital, with particular emphasis on capital allocation decisions. Analysts consider companies' investment strategy and valuation, financial leverage, dividend and share buyback policies, execution, compensation, related party transactions, and accounting practices. Corporate governance practices are only considered if they've had a demonstrated impact on shareholder value. Analysts assign one of three ratings: "Exemplary," "Standard," and "Poor." Analysts judge stewardship from an equity holder's perspective. Ratings are determined on an absolute basis. Most companies will receive a Standard rating, and this is the default rating in the absence of evidence that managers have made exceptionally strong or poor capital allocation decisions.

Quantitative Valuation: Using the below terms, intended to denote the relationship between the security's Last Price and Morningstar's quantitative fair value estimate for that security.

- ▶ Undervalued: Last Price is below Morningstar's quantitative fair value estimate.
- ▶ Fairly Valued: Last Price is in line with Morningstar's quantitative fair value estimate.
- ▶ Overvalued: Last Price is above Morningstar's quantitative fair value estimate.

Risk Warning

Please note that investments in securities are subject to market and other risks and there is no assurance or guarantee that the intended investment objectives will be achieved. Past performance of a security may or may not be sustained in future and is no indication of future performance. A security investment return and an investor's principal value will fluctuate so that, when redeemed, an investor's shares may be worth more or less than their original cost. A security's current investment performance may be lower or higher than the investment performance noted within the report. Morningstar's Uncertainty Rating serves as a useful data point with respect to sensitivity analysis of the assumptions used in our determining a fair value price.

Quantitative Equity Reports Overview

The quantitative report on equities consists of data, statistics and quantitative equity ratings on equity securities. Morningstar, Inc.'s quantitative equity ratings are forward looking and are generated by a statistical model that is based on Morningstar Inc.'s analyst-driven equity ratings and quantitative statistics. Given the nature of the

quantitative report and the quantitative ratings, there is no one analyst in which a given report is attributed to; however, Mr. Lee Davidson, Head of Quantitative Research for Morningstar, Inc., is responsible for overseeing the methodology that supports the quantitative equity ratings used in this report. As an employee of Morningstar, Inc., Mr. Davidson is guided by Morningstar, Inc.'s Code of Ethics and Personal Securities Trading Policy in carrying out his responsibilities.

Quantitative Equity Ratings

Morningstar's quantitative equity ratings consist of:

- (i) Quantitative Fair Value Estimate
 - (ii) Quantitative Star Rating
 - (iii) Quantitative Uncertainty
 - (iv) Quantitative Economic Moat
 - (v) Quantitative Financial Health
- (collectively the "Quantitative Ratings").

The Quantitative Ratings are calculated daily and derived from the analyst-driven ratings of a company's peers as determined by statistical algorithms. Morningstar, Inc. ("Morningstar," "we," "our") calculates Quantitative Ratings for companies whether it already provides analyst ratings and qualitative coverage. In some cases, the Quantitative Ratings may differ from the analyst ratings because a company's analyst-driven ratings can significantly differ from other companies in its peer group.

Quantitative Fair Value Estimate: Intended to represent Morningstar's estimate of the per share dollar amount that a company's equity is worth today. Morningstar calculates the quantitative fair value estimate using a statistical model derived from the fair value estimate Morningstar's equity analysts assign to companies. Please go to <https://shareholders.morningstar.com> for information about fair value estimates Morningstar's equity analysts assign to companies.

Quantitative Economic Moat: Intended to describe the strength of a firm's competitive position. It is calculated using an algorithm designed to predict the Economic Moat rating a Morningstar analyst would assign to the stock. The rating is expressed as Narrow, Wide, or None.

- ▶ Narrow: assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 70% but less than 99%.
- ▶ Wide: assigned when the probability of a stock receiving a "Wide Moat" rating by an analyst is greater than 99%.
- ▶ None: assigned when the probability of an analyst receiving a "Wide Moat" rating by an analyst is less than 70%.

Quantitative Star Rating: Intended to be the summary rating based on the combination of our Quantitative Fair

Value Estimate, current market price, and the Quantitative Uncertainty Rating. The rating is expressed as 1-Star, 2-Star, 3-Star, 4-Star, and 5-Star.

★: the stock is overvalued with a reasonable margin of safety.

Log (Quant FVE/Price) < -1 * Quantitative Uncertainty

★★: the stock is somewhat overvalued.

Log (Quant FVE/Price) between (-1 * Quantitative Uncertainty, -0.5 * Quantitative Uncertainty)

★★★: the stock is approximately fairly valued.

Log (Quant FVE/Price) between (-0.5 * Quantitative Uncertainty, 0.5 * Quantitative Uncertainty)

★★★★: the stock is somewhat undervalued.

Log (Quant FVE/Price) between (0.5 * Quantitative Uncertainty, 1 * Quantitative Uncertainty)

★★★★★: the stock is undervalued with a reasonable margin of safety. Log (Quant FVE/Price) > 1 * Quantitative Uncertainty

Quantitative Uncertainty: Intended to represent Morningstar's level of uncertainty about the accuracy of the quantitative fair value estimate. Generally, the lower the quantitative Uncertainty, the narrower the potential range of outcomes for that particular company. The rating is expressed as Low, Medium, High, Very High, and Extreme.

- ▶ Low: the interquartile range for possible fair values is less than 10%.
- ▶ Medium: the interquartile range for possible fair values is less than 15% but greater than 10%.
- ▶ High: the interquartile range for possible fair values is less than 35% but greater than 15%.
- ▶ Very High: the interquartile range for possible fair values is less than 80% but greater than 35%.
- ▶ Extreme: the interquartile range for possible fair values is greater than 80%.

Quantitative Financial Health: Intended to reflect the probability that a firm will face financial distress in the near future. The calculation uses a predictive model designed to anticipate when a company may default on its financial obligations. The rating is expressed as Weak, Moderate, and Strong.

- ▶ Weak: assigned when Quantitative Financial Health < 0.2
- ▶ Moderate: assigned when Quantitative Financial Health is between 0.2 and 0.7
- ▶ Strong: assigned when Quantitative Financial Health > 0.7

Research Methodology for Valuing Companies

Other Definitions

Last Close: Price of the stock as of the close of the market of the last trading day before date of the report.

Quantitative Valuation: Using the below terms, intended to denote the relationship between the security's Last Price and Morningstar's quantitative fair value estimate for that security.

- ▶ Undervalued: Last Price is below Morningstar's quantitative fair value estimate.
- ▶ Fairly Valued: Last Price is in line with Morningstar's quantitative fair value estimate.
- ▶ Overvalued: Last Price is above Morningstar's quantitative fair value estimate.

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Berkshire Hathaway Inc BRK.B (XNYS)

Morningstar Rating ★★★★★ 15 Nov 2019 22:46, UTC	Last Price 219.74 USD 15 Nov 2019	Fair Value Estimate 253.00 USD 30 Jul 2019 22:37, UTC	Price/Fair Value 0.87	Trailing Dividend Yield % — 15 Nov 2019	Forward Dividend Yield % 0.00 15 Nov 2019	Market Cap (Bil) 537.13 15 Nov 2019	Industry Insurance - Diversified	Stewardship Exemplary
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Berkshire Hathaway Inc BRK.B (XNYS)

Morningstar Rating	Last Price	Fair Value Estimate	Price/Fair Value	Trailing Dividend Yield %	Forward Dividend Yield %	Market Cap (Bil)	Industry	Stewardship
★★★★	219.74 USD	253.00 USD	0.87	—	0.00	537.13	Insurance - Diversified	Exemplary
15 Nov 2019 22:46, UTC	15 Nov 2019	30 Jul 2019 22:37, UTC		15 Nov 2019	15 Nov 2019	15 Nov 2019		

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