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Warren E. Buffett, 2015

On August 10, 2015, Warren E. Buffett, chair and CEO of Berkshire Hathaway Inc., announced that Berkshire Hathaway would acquire the aerospace-parts supplier Precision Castparts Corporation (PCP). In Buffett's largest deal ever, Berkshire would purchase all of PCP's outstanding shares for $235 per share in cash, a 21% premium over the trading price a day earlier. The bid valued PCP's equity at $32.3 billion.[1] The total transaction value would be $37.2 billion, including assuming PCP's outstanding debt—this was what analysts called the "enterprise value." "I've admired PCP's operation for a long time. For good reasons, it is the supplier of choice for the world's aerospace industry, one of the largest sources of American exports,"[2] Buffett said. After the announcement, Berkshire Hathaway's Class A[3] shares moved down 1.1% at market open, a loss in market value of $4.05 billion.[4] PCP's share price jumped 19.2% at the news;[5] the S&P 500 Composite Index opened up 0.2%. **Exhibit 1** illustrates the recent share-price performance for Berkshire Hathaway, PCP, and the S&P 500 Index. **Exhibit 2** presents recent consolidated financial statements for the firm.

The acquisition of PCP, Berkshire Hathaway's largest deal ever, renewed public interest in its sponsor, Buffett. In many ways, he was an anomaly. One of the richest individuals in the world (with an estimated net worth of about $66.5 billion according to *Forbes*), he was also respected and even beloved. Though he had accumulated perhaps the best investment record in history (a compound annual increase in wealth for Berkshire Hathaway of 21.6% from 1965 to 2014),[6] Berkshire Hathaway paid him only $100,000 per year to serve as its CEO. While Buffett and other insiders controlled 39.5% of Berkshire Hathaway, he ran the company in the interests of all shareholders. "We will not take cash compensation, restricted stock, or option grants that would make our results superior to [those of Berkshire's investors]," Buffett said. "I will keep well over 99% of my net worth in Berkshire. My wife and I have never sold a share nor do we intend to."[7]

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[1] The difference between enterprise value and equity value is the amount of debt outstanding. On August 10, 2015, PCP's debt amounted to about $4.9 billion—this differs from the debt indicated in **Exhibit 9**, which was dated March 31, 2015.

[2] Tomi Kilgore, "Warren Buffett's $3.72 Billion Buy of Precision Castparts is His Biggest Buyout Ever," Marketwatch, August 10, 2015 http://www.marketwatch.com/story/warren-buffetts-372-billion-buy-of-precision-castparts-is-his-biggest-buyout-deal-ever-2015-08-10 (accessed Dec. 12, 2016).

[3] 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.

[4] The per-share change in Berkshire Hathaway's Class A share price at the date of the announcement was $1,895. The company had 811,755 Class A shares outstanding and 1,247,366,163 Class B shares outstanding. Class B common shares are equivalent to 1/1500th of Class A common shares.

[5] The per-share change in PCP share price after the announcement was $37.28. The stock closed at $193.88 on August 7, 2015, and opened on August 10, 2015, at $231.16.

[6] In comparison, the annual average total return on all large stocks from 1965 to the end of 2014 was 9.9%. (See Warren Buffett, annual letter to shareholders, 2014.)

[7] Warren Buffett, annual letter to shareholders, 2001. Warren Buffett has since pledged to donate 99% of his net worth to philanthropic foundations. See http://givingpledge.org.

Buffett was the subject of numerous laudatory articles and at least eight biographies, yet he remained an intensely private individual. Although acclaimed by many as an intellectual genius, he shunned the company of intellectuals and preferred to affect the manner of a down-home Nebraskan (he lived in Omaha) and a tough-minded investor. In contrast to the investment world's other "stars," Buffett acknowledged his investment failures both quickly and publicly. Although he held an MBA from Columbia University and credited his mentor, Benjamin Graham, with developing the philosophy of value-based investing that had guided Buffett to his success, he chided business schools for the irrelevance of their finance and investing theories.

Numerous writers sought to distill the essence of Buffett's success. What were the key principles that guided Buffett? Could those principles be applied broadly in the 21st century, or were they unique to Buffett and his time? By understanding those principles, analysts hoped to illuminate the acquisition of PCP. What were Buffett's probable motives in the acquisition? What did Buffett's offer say about his valuation of PCP, and how would it compare with valuations for other comparable firms? Would Berkshire's acquisition of PCP prove to be a success? How would Buffett define success?

Berkshire Hathaway Inc.

Berkshire Hathaway was incorporated in 1889 as Berkshire Cotton Manufacturing and eventually grew to become one of New England's biggest textile producers, accounting for 25% of U.S. cotton-textile production. In 1955, Berkshire Cotton Manufacturing merged with Hathaway Manufacturing and began a secular decline due to inflation, technological change, and intensifying competition from foreign rivals. In 1965, Buffett and some partners acquired control of Berkshire Hathaway, believing that its financial decline could be reversed.

Over the next 20 years, it became apparent that large capital investments would be required for the company to remain competitive, and that even then the financial returns would be mediocre. Fortunately, the textile group generated enough cash in the early years to permit the firm to purchase two insurance companies headquartered in Omaha: National Indemnity Company and National Fire & Marine Insurance Company. Acquisitions of other businesses followed in the 1970s and 1980s; Berkshire Hathaway exited the textile business in 1985.

The investment performance of a share in Berkshire Hathaway had astonished most observers. As shown in **Exhibit 3**, a $100 investment in Berkshire Hathaway stock on September 30, 1976, would compound to a value of $305,714 as of July 31, 2015, approximately 39 years later. The investment would result in a 305,614% cumulative return, 22.8% when annualized. Over the same period, a $100 investment in the S&P 500 would compound to a value of $1,999 for a cumulative return of 1,899.1% or 8.0% annualized.[8]

In 2014, Berkshire Hathaway's annual report described the firm as "a holding company owning subsidiaries engaged in a number of diverse business activities."[9] Berkshire Hathaway's portfolio of businesses included:

- *Insurance* (e.g., GEICO, General Re): Insurance and reinsurance[10] of property and casualty risks worldwide and with reinsurance of life, accident, and health risks worldwide in addition.
- *Railroad* (i.e., BNSF): A long-lived asset with heavy regulation and high capital intensity, the company operated one of the largest railroad systems in North America.

[8] The annualized return calculation assumes a 39-year period (actual time period is 38 years 10 months).
[9] Berkshire Hathaway Inc. annual report, 2004.
[10] Reinsurance was insurance for insurance companies, a way of transferring or "ceding" some of the financial risk insurance companies assumed in insuring cars, homes, and businesses to another insurance company, the reinsurer. Insurance Information Institute, "Reinsurance," November 2014, http://www.iii.org/issue-update/reinsurance (accessed Dec. 9, 2016).

- *Utilities and Energy*: Generate, transmit, store, distribute, and supply energy through the subsidiary Berkshire Hathaway Energy company.
- *Manufacturing* (e.g., Lubrizol, PCP): Numerous and diverse manufacturing businesses were grouped into three categories: (1) industrial products, (2) building products, and (3) consumer products.
- *Service and Retailing* (e.g., NetJets, Nebraska Furniture Mart): 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* (e.g., Clayton Homes, ULTX, XTRA): Manufactured housing and related consumer financing; transportation equipment, manufacturing, and leasing; and furniture leasing.

Exhibit 4 gives a summary of revenues, operating profits, capital expenditures, depreciation, and assets for Berkshire Hathaway's various business segments. The company's investment portfolio also included equity interests in numerous publicly traded companies, summarized in **Exhibit 5**.

Buffett's Investment Philosophy

Warren Buffett was first exposed to formal training in investing at Columbia University, where he studied under Benjamin Graham. A coauthor of the classic text *Security Analysis*, Graham developed a method of identifying undervalued stocks (that is, stocks whose prices were less than their intrinsic value). This became the cornerstone of modern value investing. Graham's approach was to focus on the value of assets, such as cash, net working capital, and physical assets. Eventually, Buffett modified that approach to focus also on valuable franchises that were unrecognized by the market.

Over the years, Buffett had expounded his philosophy of investing in his chair's letter to shareholders in Berkshire Hathaway's annual report. By 2005, those lengthy letters had acquired a broad following because of their wisdom and their humorous, self-deprecating tone. The letters emphasized the following elements:

1. Economic reality, not accounting reality. Financial statements prepared by accountants conformed to rules that might not adequately represent the economic reality of a business. Buffett wrote:

   > Because of the limitations of conventional accounting, consolidated reported earnings may reveal relatively little about our true economic performance. Charlie [Munger, Buffett's business partner] and I, both as owners and managers, virtually ignore such consolidated numbers…Accounting consequences do not influence our operating or capital-allocation process.[11]

   Accounting reality was conservative, backward looking, and governed by generally accepted accounting principles (GAAP), even though investment decisions should be based on the economic reality of a business. In economic reality, intangible assets such as patents, trademarks, special managerial expertise, and reputation might be very valuable, yet, under GAAP, they would be carried at little or no value. GAAP measured results in terms of net profit, while in economic reality the results of a business were its *flows of cash*.

   A key feature of Buffett's approach defined economic reality at the level of the business itself, not the market, the economy, or the security—he was a *fundamental analyst* of the business. His analysis sought

[11] Berkshire Hathaway Inc. annual report, 2004.

to judge the simplicity of the business, the consistency of its operating history, the attractiveness of its long-term prospects, the quality of management, and the firm's capacity to create value.

2. The cost of the lost opportunity. Buffett compared an investment opportunity against the next-best alternative, the lost opportunity. In his business decisions, he demonstrated a tendency to frame his choices as either/or decisions rather than yes/no decisions. Thus an important standard of comparison in testing the attractiveness of an acquisition was the potential rate of return from investing in the common stocks of other companies. Buffett held that there was no fundamental difference between buying a business outright and buying a few shares of that business in the equity market. Thus for him, the comparison of an investment against other returns available in the market was an important benchmark of performance.

3. Embrace the time value of money. Buffett assessed intrinsic value as the present value of future expected performance:

> [All other methods fall short in determining whether] an investor is indeed buying something for what it is worth and is therefore truly operating on the principle of obtaining value for his investments…Irrespective of whether a business grows or doesn't, displays volatility or smoothness in earnings, or carries a high price or low in relation to its current earnings and book value, the investment shown by the discounted-flows-of-cash calculation to be the cheapest is the one that the investor should purchase.[12]

Enlarging on his discussion of intrinsic value, Buffett used an educational example:

> We define intrinsic value as the discounted value of the cash that can be taken out of a business during its remaining life. Anyone calculating intrinsic value necessarily comes up with a highly subjective figure that will change both as estimates of future cash flows are revised and as interest rates move. Despite its fuzziness, however, intrinsic value is all important and is the only logical way to evaluate the relative attractiveness of investments and businesses.
>
> To see how historical input (book value) and future output (intrinsic value) can diverge, let us look at another form of investment, a college education. Think of the education's cost as its "book value." If it is to be accurate, the cost 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.[13]

To illustrate the mechanics of this example, consider the hypothetical case presented in **Exhibit 6**. Suppose an individual has the opportunity to invest $50 million in a business—this is its cost or book value. This business will throw off cash at the rate of 20% of its investment base each year. Suppose

[12] Berkshire Hathaway Inc. annual report, 1992.
[13] Berkshire Hathaway Inc. annual report, 1992.

that instead of receiving any dividends, the owner decides to reinvest all cash flow back into the business—at this rate, the book value of the business will grow at 20% per year. Suppose that the investor plans to sell the business for its book value at the end of the fifth year. Does this investment create value for the individual? One determines this by discounting the future cash flows to the present at a cost of equity of 15%. Suppose that this is the investor's opportunity cost, the required return that could have been earned elsewhere at comparable risk. Dividing the present value of future cash flows (i.e., Buffett's intrinsic value) by the cost of the investment (i.e., Buffett's book value) indicates that every dollar invested buys securities worth $1.23. Value is created.

Consider an opposing case, summarized in **Exhibit 7**. The example is similar in all respects, except for one key difference: the annual return on the investment is 10%. The result is that every dollar invested buys securities worth $0.80. Value is destroyed.

Comparing the two cases in **Exhibits 6** and **7**, the difference in value creation and destruction is driven entirely by the relationship between the expected returns and the discount rate: in the first case, the spread is positive; in the second case, it is negative. Only in the instance where expected returns equal the discount rate will book value equal intrinsic value. In short, book value or the investment outlay may not reflect the economic reality. One needs to focus on the prospective rates of return, and how they compare to the required rate of return.

4. Measure performance by gain in intrinsic value, not accounting profit. Buffett wrote:

> Our long-term economic goal…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.[14]

The gain in intrinsic value could be modeled as the value added by a business above and beyond the charge for the use of capital in that business. The gain in intrinsic value was analogous to the economic-profit and market-value-added measures used by analysts in leading corporations to assess financial performance. Those measures focus on the ability to earn returns in excess of the cost of capital.

5. Set a required return consistent with the risk you bear. Conventional academic and practitioner thinking held that the more risk one took, the more one should get paid. Thus discount rates used in determining intrinsic values should be determined by the risk of the cash flows being valued. The conventional model for estimating the cost of equity capital was the capital asset pricing model (CAPM), which added a risk premium to the long-term risk-free rate of return, such as the U.S. Treasury bond yield. In August 2015, a weighted average of Berkshire Hathaway's cost of equity and debt capital was about 8%.[15]

Buffett departed from conventional thinking by using the rate of return on the long-term (e.g., 30-year) U.S. Treasury bond to discount cash flows—in August 2015, the yield on the 30-year U.S. Treasury bond was 2.89%. Defending this practice, Buffett argued that he avoided risk, and therefore should

[14] Berkshire Hathaway Inc. annual report, 2004.

[15] Berkshire Hathaway's cost of equity was 9.2%, which reflected a beta of 0.90, an expected market return of 9.90%, and a risk-free rate of 2.89%. The yield on corporate bonds rated AA was 3.95%—and after a 39% expected marginal tax rate, the cost of debt would be 2.3%. Weights of capital were 16.9% for debt and 83.1% for equity. In contrast, the beta for PCP was 0.38. Analysts expected that PCP's cash flows would grow indefinitely at about the long-term expected real growth rate of the U.S. economy, 2.5%.

use a risk-free discount rate. His firm used little debt financing. He focused on companies with predictable and stable earnings. He or his vice chair, Charlie Munger, sat on the boards of directors, where they obtained a candid inside view of the company and could intervene in management decisions if necessary. Buffett once said, "I put a heavy weight on certainty. If you do that, the whole idea of a risk factor doesn't make sense to me. Risk comes from not knowing what you're doing."[16] He also wrote:

> We define risk, using dictionary terms, as "the possibility of loss or injury." Academics, however, like to define "risk" differently, averring that it is the relative volatility of a stock or a portfolio of stocks—that is, the volatility as compared to that of a large universe of stocks. Employing databases and statistical skills, these academics compute with precision the "beta" of a stock—its relative volatility in the past—and then build arcane investment and capital allocation theories around this calculation. In their hunger for a single statistic to measure risk, however, they forget a fundamental principle: it is better to be approximately right than precisely wrong.[17]

6. Diversify reasonably. Berkshire Hathaway represented a diverse portfolio of business interests. But Buffett disagreed with conventional wisdom that investors should hold a broad portfolio of stocks in order to shed company-specific risk. In his view, investors typically purchased far too many stocks rather than waiting for one exceptional company. Buffett said:

> Figure businesses out that you understand and concentrate. Diversification is protection against ignorance, but if you don't feel ignorant, the need for it goes down drastically.[18]

7. Invest based on information, analysis, and self-discipline, not on emotion or hunch. Buffett repeatedly emphasized awareness and information as the foundation for investing. He said, "Anyone not aware of the fool in the market probably is the fool in the market."19 Buffett was fond of repeating a parable told to him by Graham:

> There was a small private business and one of the owners was a man named Market. Every day, Mr. Market had a new opinion of what the business was worth, and at that price stood ready to buy your interest or sell you his. As excitable as he was opinionated, Mr. Market presented a constant distraction to his fellow owners. "What does he know?" they would wonder, as he bid them an extraordinarily high price or a depressingly low one. Actually, the gentleman knew little or nothing. You may be happy to sell out to him when he quotes you a ridiculously high price, and equally happy to buy from him when his price is low. But the rest of the time, you will be wiser to form your own ideas of the value of your holdings, based on full reports from the company about its operation and financial position.[20]

Buffett used this allegory to illustrate the irrationality of stock prices as compared to true intrinsic value. Graham believed that an investor's worst enemy was not the stock market, but oneself. Superior training could not compensate for the absence of the requisite temperament for investing. Over the long term, stock prices should have a strong relationship with the economic progress of the business.

[16] Jim Rasmussen, "Buffett Talks Strategy with Students," *Omaha World-Herald*, January 2, 1994, 26.
[17] Berkshire Hathaway Inc. annual report, 1993; Andrew Kilpatrick, *Of Permanent Value: The Story of Warren Buffett* (Birmingham, AL: AKPE, 1994): 574.
[18] *Forbes*, October 19, 1993; Kilpatrick, 574.
[19] Quoted in Michael Lewis's *Liar's Poker* (New York: Norton, 1989): 35.
[20] Berkshire Hathaway Inc. annual report, 1987. This quotation was paraphrased from James Grant's *Minding Mr. Market* (New York: Times Books, 1993): xxi.

But daily market quotations were heavily influenced by momentary greed or fear and were an unreliable measure of intrinsic value. Buffett said:

> As far as I am concerned, the stock market doesn't exist. It is there only as a reference to see if anybody is offering to do anything foolish. When we invest in stocks, we invest in businesses. You simply have to behave according to what is rational rather than according to what is fashionable.[21]

Accordingly, Buffett did not try to "time the market" (i.e., trade stocks based on expectations of changes in the market cycle)—his was a strategy of patient, long-term investing. As if in contrast to Mr. Market, Buffett expressed more contrarian goals: "We simply attempt to be fearful when others are greedy and to be greedy only when others are fearful."[22] Buffett also said, "Lethargy bordering on sloth remains the cornerstone of our investment style,"[23] and "The market, like the Lord, helps those who help themselves. But unlike the Lord, the market does not forgive those who know not what they do."[24]

8. Look for market inefficiencies. Buffett scorned the academic theory of capital-market efficiency. The efficient-markets hypothesis (EMH) held that publicly known information was rapidly impounded into share prices, and that as a result, stock prices were fair in reflecting what was known about the company. Under EMH, there were no bargains to be had, and trying to outperform the market would be futile. "It has been helpful to me to have tens of thousands turned out of business schools that taught that it didn't do any good to think," Buffett said.[25]

> I think it's fascinating how the ruling orthodoxy can cause a lot of people to think the earth is flat. Investing in a market where people believe in efficiency is like playing bridge with someone who's been told it doesn't do any good to look at the cards.[26]

9. Align the interests of agents and owners. Explaining his significant ownership interest in Berkshire Hathaway, Buffett said, "I am a better businessman because I am an investor. And I am a better investor because I am a businessman."[27]

As if to illustrate this sentiment, he said:

> 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.[28]

For four out of six Berkshire directors, more than 50% of the family net worth was represented by shares in Berkshire Hathaway. The senior managers of Berkshire Hathaway subsidiaries either held

[21] Peter Lynch, *One Up on Wall Street* (New York: Penguin Books, 1990): 78.
[22] Berkshire Hathaway Inc. annual report, 1986.
[23] Berkshire Hathaway Inc. annual report, 1990.
[24] Berkshire Hathaway Inc. letters to shareholders, 1977–83.
[25] Kilpatrick, 353.
[26] L. J. Davis, "Buffett Takes Stock," *New York Times*, April 1, 1990.
[27] *Forbes*, October 19, 1993; Kilpatrick, 574.
[28] "Owner-Related Business Principles," Berkshire Hathaway annual report, 2004.

shares in the company or were compensated under incentive plans that imitated the potential returns from an equity interest in their business unit, or both.[29]

Precision Castparts

"In the short run, the market is a voting machine but in the long run, it is a weighing machine."

—Benjamin Graham[30]

The vote was in and the market's reaction to Berkshire Hathaway's acquisition of PCP indicated disapproval. The market ascribed $4.05 billion less value to Berkshire Hathaway after the announced acquisition than before it. At the same time, the value of PCP jumped more than $5 billion, close to 20% of the market value of the firm. The market seemed to be saying that Buffett and Berkshire had overpaid for the business.

Buffett didn't seem to think so. And despite his age, he didn't appear to be slowing down. PCP was the largest acquisition in a string of large purchases over the past several years, including Duracell, Kraft, Heinz, and Burlington Northern Santa Fe, totaling more than $70 billion in deal value in all. These acquisitions, along with many more over the years, followed a similar blueprint (**Exhibit 8**). The gist of the acquisition criteria seemed to be relatively straightforward—Berkshire Hathaway looked for well-run businesses producing consistent results offered at a fair price. As Berkshire Hathaway stated in its press release following the PCP acquisition:

> PCP fits perfectly into the Berkshire model and will substantially increase our normalized per-share earning power. Under CEO Mark Donegan, PCP has become the world's premier supplier of aerospace components (most of them destined to be original equipment, though spares are important to the company as well). Mark's accomplishments remind me of the magic regularly performed by Jacob Harpaz at IMC, our remarkable Israeli manufacturer of cutting tools. The two men transform very ordinary raw materials into extraordinary products that are used by major manufacturers worldwide. Each is the da Vinci of his craft. PCP's products, often delivered under multi-year contracts, are key components in most large aircraft.[31]

PCP manufactured complex metal components and products for very specific applications, mainly in the critical aerospace and power applications. The components were used in products with highly complex engineering processes, such as large jet-aircraft engines. Its customer base was concentrated and sophisticated, including General Electric, Pratt & Whitney, and Rolls-Royce, for whom they had been supplying castings for multiple decades.[32]

Exhibit 9 presents PCP's income statement and balance sheet ending March 31, 2015. **Exhibit 10** provides financials on comparable firms. **Exhibit 11** provides valuation multiples for comparable firms. The beta of PCP, measured after the acquisition announcement, was 0.38.

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[29] In April 2005, the U.S. Securities and Exchange Commission interviewed Buffett in connection with an investigation into the insurance giant AIG and its dealings with Berkshire Hathaway's General Reinsurance unit. Buffett reported that he had questioned General Re's CEO about the transactions with AIG, but that he never learned any details.

[30] as quoted in Berkshire Hathaway Inc. letter to shareholders, 1993.

[31] PCP press release, August 10, 2015.

[32] PCP annual report, 2014.

Conclusion

The announcement of Berkshire Hathaway's acquisition of PCP prompted some critical commentary. The Economist magazine wrote,

> But [Buffett] is far from a model for how capitalism should be transformed. He is a careful, largely ethical accumulator of capital invested in traditional businesses, preferably with oligopolistic qualities, whereas what America needs right now is more risk-taking, lower prices, higher investment and much more competition. You won't find much at all about these ideas in Mr. Buffett's shareholder letters.[33]

Conventional thinking held that it would be difficult for Warren Buffett to maintain his record of 21.6% annual growth[34] in shareholder wealth. Buffett acknowledged that "a fat wallet is the enemy of superior investment results."[35] He stated that it was the firm's goal to meet a 15% annual growth rate in intrinsic value. Would the PCP acquisition serve Berkshire Hathaway's long-term goals? Was the bid price appropriate? How did Berkshire Hathaway's offer measure up against the company's valuation implied by the multiples for comparable firms? Did Berkshire Hathaway overpay for PCP? Was the market's reaction rational?

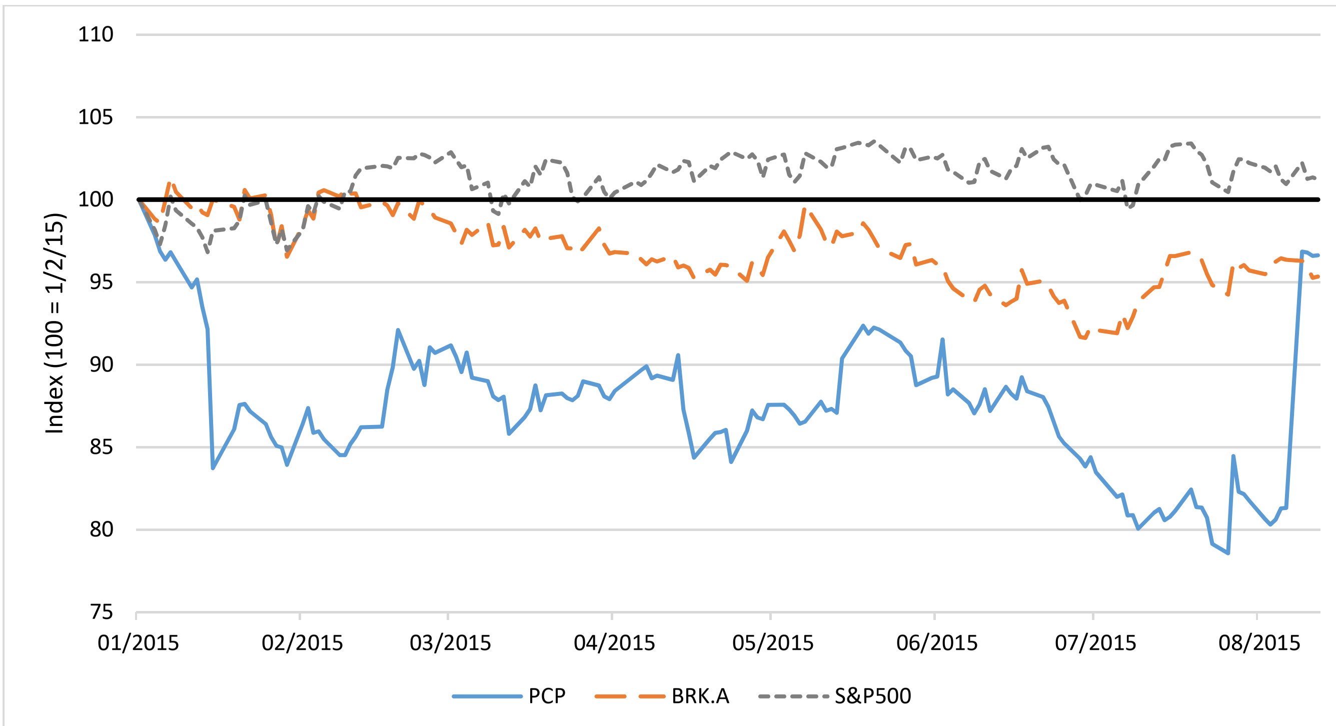
Or did Buffett pay a fair price for a great business? If so, what determines a fair price? What makes a great business? And why would Berkshire Hathaway be interested in buying PCP? Why would PCP be interested in selling itself to Berkshire Hathaway? What value did Berkshire Hathaway bring to the equation?

[33] "The Other Side of Warren Buffett," *Economist*, August 13, 2016.
[34] Berkshire Hathaway Inc. letter to shareholders, 2014.
[35] Garth Alexander, "Buffett Spends $2bn on Return to His Roots," *Times* (London), August 17, 1995.

Exhibit 1

Warren E. Buffett, 2015

Relative Share Price Performance of Berkshire Hathaway Class A Share, PCP, and the S&P 500
January 1, 2015, to August 13, 2015



Note: PCP = Precision Castparts; BRK.A = Berkshire Hathaway Class A shares; S&P500 = Standard & Poor's 500 Index.
Data source: Google Finance.

Exhibit 2

Warren E. Buffett, 2015

Berkshire Hathaway Condensed Consolidated Financial Statements

Income Statement (In millions, except per share data, unless otherwise specified)	**2011**	**2012**	**2013**	**2014**
Revenue	$143,700	$162,500	$182,200	$194,700
Operating expenses	123,080	134,810	147,770	163,340
Income from operations	20,620	27,690	34,430	31,360
Net interest expense	5,310	5,450	5,630	3,250
Income before income tax expense	15,310	22,240	28,800	28,110
Income tax expense	4,570	6,920	8,950	7,940
Consolidated net income	$10,075	$15,310	$19,850	$20,170

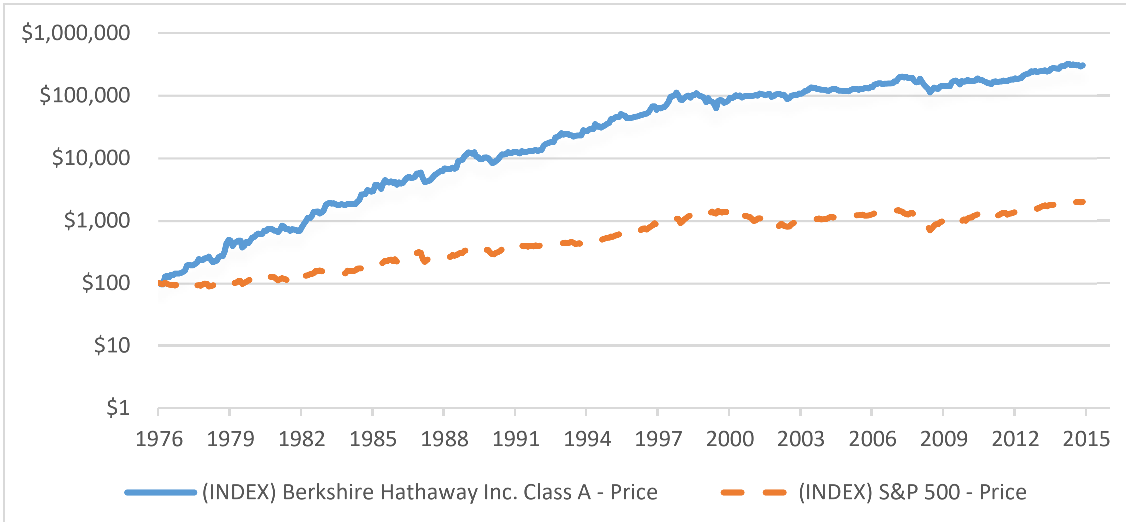
Balance Sheet (In millions, except per share data, unless otherwise specified)	**2011**	**2012**	**2013**	**2014**
Assets:				
Current assets	$79,220	$91,200	$91,500	$107,900
Net property, plant and equipment	100,400	106,900	122,200	137,200
Deferred tax assets	10,540	9,780	8,430	8,430
Other assets	213,040	229,320	271,270	281,070
Total assets	$403,200	$437,200	$493,400	$534,600
Liabilities & Shareholder Equity:				
Current liabilities	$34,200	$47,290	$44,470	$48,510
Deferred tax liabilities	47,650	53,670	65,870	70,370
Long-term debt	58,890	50,810	65,590	71,930
Other long-term liabilities	93,460	93,830	92,970	100,790
Total liabilities	234,200	245,600	268,900	291,600
Shareholders' equity	169,000	191,600	224,500	243,000
Total liabilities and stockholders' equity	$403,200	$437,200	$493,400	$534,600

Data source: Factset.

Exhibit 3

Warren E. Buffett, 2015

Berkshire Hathaway Class A Shares versus S&P 500 Index over 39 Years



	BRK.A	S&P 500
5 Years Annualized	12.8%	13.8%
15 Years Annualized	9.5%	2.6%
39 Years Annualized	22.8%	8.0%

Note: Period listed as 2015 represents January 1, 2015 to July 31, 2015.

Data source: Yahoo! Finance.

Exhibit 4

Warren E. Buffett, 2015

Business-Segment Information for Berkshire Hathaway Inc.
(dollars in millions)

Segment	Revenues		EBIT		Capital Expenditures		Depreciation		Total Assets	
	2014	*2015*	*2014*	*2015*	*2014*	*2015*	*2014*	*2015*	*2014*	*2015*
Insurance Group	$ 45,623	$ 45,856	$ 7,025	$ 6,387	$ 94	$ 115	$ 69	$ 77	$ 225,432	$ 219,451
Manufacturing	$ 36,773	$ 36,136	$ 4,811	$ 4,893	$ 1,324	$ 1,292	$ 943	$ 938	$ 34,509	$ 34,141
Service & Retailing	$ 60,916	$ 71,689	$ 1,981	$ 2,222	$ 832	$ 912	$ 620	$ 665	$ 16,722	$ 22,170
Railroad	$ 23,239	$ 21,967	$ 6,169	$ 6,775	$ 5,243	$ 5,651	$ 1,804	$ 1,932	$ 62,916	$ 66,613
Utility and Energy	$ 17,614	$ 18,231	$ 2,711	$ 2,851	$ 6,555	$ 5,876	$ 2,177	$ 2,451	$ 71,482	$ 74,221
Finance & Financial Products	$ 6,526	$ 6,964	$ 1,839	$ 2,086	$ 1,137	$ 2,236	$ 602	$ 610	$ 32,164	$ 37,621
Other	$ 3,982	$ 9,978	$ 3,569	$ -	$ -	$ -	$ -	$ -	$ 60,714	$ 98,040
Total	$ 194,673	$ 210,821	$ 28,105	$ 25,214	$ 15,185	$ 16,082	$ 6,215	$ 6,673	$ 503,939	$ 552,257

Source: SEC documents.

Exhibit 5

Warren E. Buffett, 2015

Major Investees of Berkshire Hathaway
(dollars in millions)

Shares**	Company	Percentage of Company Owned	12/31/14 Cost*	Market
			(in millions)	
151,610,700	American Express Company	14.8	$ 1,287	$ 14,106
400,000,000	The Coca-Cola Company	9.2	1,299	16,888
18,513,482	DaVita HealthCare Partners Inc.	8.6	843	1,402
15,430,586	Deere & Company	4.5	1,253	1,365
24,617,939	DIRECTV	4.9	1,454	2,134
13,062,594	The Goldman Sachs Group, Inc.	3.0	750	2,532
76,971,817	International Business Machines Corp.	7.8	13,157	12,349
24,669,778	Moody's Corporation	12.1	248	2,364
20,060,390	Munich Re	11.8	2,990	4,023
52,477,678	The Procter & Gamble Company	1.9	336	4,683 ***
22,169,930	Sanofi	1.7	1,721	2,032
96,890,665	U.S. Bancorp	5.4	3,033	4,355
43,387,980	USG Corporation	30.0	836	1,214
67,707,544	Wal-Mart Stores, Inc.	2.1	3,798	5,815
483,470,853	Wells Fargo & Company	9.4	11,871	26,504
	Others		10,180	15,704
	Total Common Stocks Carried at Market		$55,056	$ 117,470

*Actual purchase price and tax basis; GAAP "cost" differs in a few cases because of write-ups or write-downs that have been required under GAAP rules.
**Excludes shares held by pension funds of Berkshire subsidiaries.
***Held under contract of sale for this amount.

Source: Berkshire Hathaway Inc. letter to shareholders, 2014.

Exhibit 6

Warren E. Buffett, 2015

Hypothetical Example of Value Creation

Assume:

- Five-year investment horizon, when you liquidate at "book" or accumulated investment value
- Initial investment is $50 million
- No dividends are paid, all cash flows are reinvested
- Return on equity = 20%
- Cost of equity = 15%

Year		0	1	2	3	4	5
Investment or **book** equity **value**		50	60	72	86	104	124
Market value (or intrinsic value)	=	Present value @ 15% of 124				= $61.65	
Market/book	=				$61.65/50.00	= $1.23	

Value created: $1.00 invested becomes $1.23 in market value.

Source: Author analysis.

Exhibit 7

Warren E. Buffett, 2015

Hypothetical Example of Value Destruction

Assume:

- Five-year investment horizon, when you liquidate at "book" or accumulated investment value
- Initial investment of $50 million
- No dividends are paid, all cash flows are reinvested
- Return on equity = 10%
- Cost of equity = 15%

Year	0	1	2	3	4	5
Investment or **book** equity **value**	50	55	60	67	73	81

Market value (or intrinsic value)	=	Present value @ 15% of $81	= $40.30
Market/book	=	$40.30/50.00	= $0.80

Value destroyed: $1.00 invested becomes $0.80 in market value.

Source: Author analysis.

Exhibit 8

Warren E. Buffett, 2015

Berkshire Hathaway 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 pretax earnings unless the business will fit into one of our existing units)
2. Consistent earning power demonstrated (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. 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 billion to $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."

Source: Berkshire Hathaway Inc. annual report, 2014.

Exhibit 9

Warren E. Buffett, 2015

PCP Consolidated Financial Statements

Income Statement

(In millions, except per share data, unless otherwise specified)

	12 Months Ending March 31		
	2013	**2014**	**2015***
Revenue	$8,347	$9,533	$10,005
Operating expenses[1]	6,188	6,874	7,393
Income from operations	2,159	2,659	2,612
Net interest expense	31	71	65
Income before income tax expense	2,128	2,588	2,547
Income tax expense	695	830	816
Consolidated net income from continuing operations[2]	$1,433	$1,758	$1,731

Balance Sheet

(In millions, except per share data, unless otherwise specified)

	12 Months Ending March 31	
	2014	**2015**
Assets:		
Current assets	$5,507	$5,972
Net property, plant, and equipment	2,300	2,474
Other assets	10,779	10,982
Total assets	$18,586	$19,428
Liabilities & Shareholder Equity:		
Current liabilities	$1,608	$2,827
Long-term debt	3,569	3,493
Pension obligation	442	678
Other long-term liabilities	1,554	1,473
Total liabilities	7,173	8,471
Shareholders' equity[3]	11,413	10,957
Total liabilities and stockholders' equity	$18,586	$19,428

*Note - Fiscal year ends March 31. Period listed as 2015 represents March 31, 2014 to March 31, 2015

Note: The market value of PCP's equity shortly before the announcement of the acquisition by Berkshire Hathaway was $31,208 million.

Data source: Edgar.

[1] Excludes restructuring charges.
[2] Excludes equity in unconsolidated investments.
[3] Excludes noncontrolling interests.

Exhibit 10

Warren E. Buffett, 2015

Comparable Firms

		Price Per Share			(dollars in millions)										
Company	Shares O/S	Low	High	Div. Per Share	Total Assets	Total Liabilities	Cash and Equiv	ST Debt	LT Debt	Net Debt	Rev	EBITDA	EBIT	Net Income
Alcoa	1,216.7	$15.77	$16.03	$0.12	$37,399	$22,605	$1,877	$83	$8,769	$6,975	$23,906	$3,556	$2,185	$2,043
LISI	54.0	$21.30	$21.50	$0.37	$1,387	$677	$111	$46	$246	$181	$1,307	$193	$131	$81
ThyssenKrupp	565.9	$20.64	$20.85	$0.11	$41,547	$38,348	$4,122	$1,071	$6,651	$3,600	$41,304	$2,290	$1,314	$210
Allegheny Technologies	108.7	$34.59	$35.41	$0.72	$6,583	$3,861	$270	$18	$1,509	$1,257	$4,223	$283	$106	($3)
Carpenter Technology	53.1	$61.75	$63.35	$0.72	$3,058	$1,553	$120	$0	$604	$484	$2,173	$382	$212	$133
Precision Castparts	141.8	$209.61	$211.36	$0.12	$19,428	$8,471	$474	$1,093	$3,493	$4,112	$10,005	$2,927	$2,602	$1,530

Note: Dollar values are in millions except for share prices and dividends per share, which are in dollar units. Shares outstanding (O/S) are stated in millions.

ALCOA, INC., engages in lightweight metals engineering and manufacturing. Its products are used worldwide in aircraft, automobiles, commercial transportation, packaging, oil and gas, defense, and industrial applications.

LISI SA engages in the manufacturing of multifunctional fasteners and assembly components for three business sectors: Aerospace, Automotive, and Medical.

THYSSENKRUPP AG engages in the production of steel. The Components Technology business area offers components for the automotive, construction, and engineering sectors.

ALLEGHENY TECHNOLOGIES, INC., engages in the manufacture of specialty materials and components for different industries, which include aerospace and defense, oil and gas, and chemical processing, as well as electrical energy.

CARPENTER TECHNOLOGY CORP. engages in developing, manufacturing, and distributing cast/wrought and powder-metal stainless steels. It operates through Specialty Alloys Operations and Performance Engineered Products segments.

Data sources: Company reports; Factset.

Exhibit 11

Warren E. Buffett, 2015

Valuation of PCP Based on Multiples for Comparable Firms

Line	Company Name	MV Equity	Enterprise Value	Book Value	CY '14 Rev	CY '14 EBITDA	CY '14 EBIT	CY '14 Net Income	Enterprise Value as Multiple of: Revenue	Enterprise Value as Multiple of: EBITDA	Enterprise Value as Multiple of: EBIT	MV of Equity as Multiple of: Net Income	MV of Equity as Multiple of: Book Value
1	Alcoa	$13,637	$23,164	$10,599	$23,906	$3,556	$2,185	$2,043	0.97x	6.51x	10.60x	6.68x	1.29x
2	LISI	$1,332	$1,517	$709	$1,307	$193	$131	$81	1.16x	7.86x	11.56x	16.36x	1.88x
3	ThyssenKrupp	$9,460	$12,924	$3,182	$41,304	$2,290	$1,314	$210	0.31x	5.64x	9.84x	45.05x	2.97x
4	Allegheny Technologies	$1,804	$3,193	$2,598	$4,223	$283	$106	($3)	0.76x	11.28x	30.09x	NM	0.69x
5	Carpenter Technology	$1,627	$2,220	$1,326	$2,173	$382	$212	$133	1.02x	5.81x	10.47x	12.25x	1.23x
6	Median	$1,804	$3,193	$2,598	$4,223	$382	$212	$133	0.97x	6.51x	10.60x	14.31x	1.29x
7	Mean	$5,572	$8,603	$3,683	$14,583	$1,341	$790	$493	0.84x	7.42x	14.51x	20.08x	1.61x
	Precision Castparts			$10,929	$10,005	$2,927	$2,602	$1,530					
8	Implied Value - Median[1]								$9,705	$19,055	$27,581	$21,894	$14,098
9	Implied Value - Mean[1]								$8,404	$21,718	$37,755	$30,722	$17,596

Data Source: Factset.

[1] The calculation of the implied values for PCP based on the median of the peer firms' multiples takes the product of the median value of the multiples of comparable firms (line 8) and multiplies it times the relevant base (revenue, EBITDA, EBIT, net income, or book value) for PCP. The same method is used for the calculation of the implied value based on the average or mean of the peer firms' multiples (line 9). For instance, the implied value based on the (insert "**mean**" and strike "median") multiple of EBIT ($37,755 million) is derived by multiplying 14.51 (the mean EBIT multiple for the comparable firms) times $2,602 million (the EBIT of PCP).