Buffet was the 3rd richest person on *Forbes'* 2015 list of the world's richest.

What Has Warren Buffett Done For You Lately?

By Charles Reback

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ABSTRACT

This paper demonstrates that the average investor has been unable to free ride on Warren Buffett's coattails since the world became aware of his skills. I provide evidence that by the early- to mid-1990s Buffett was too famous for Berkshire Hathaway (BH) to remain underpriced. I compare the return that Buffett has earned, proxied by BH's book value per share (BVPS), to the return earned by BH shareholders. Early BH investors earned returns above those generated by Buffett, while more recent investors earned returns below what Buffett generated. This was caused by the market's recognition of Buffett's investing prowess and a resulting increase in BH's price to book (P/B) ratio. Furthermore, in recent years BH shareholders have not earned positive abnormal returns after adjusting for market risk.

INTRODUCTION

The purpose of this paper is not to demonstrate the Warren Buffett is a great investor, as that is generally accepted even among academics. Since 1965 Berkshire Hathaway (BH) stock has returned 21.7% per year, more that double the Standard & Poors 500 Index's return of 9.9% (Berkshire Hathaway 2014 Annual Report, 2). Few academics or practitioners doubt that Warren Buffett is one of the great investors of our time (Frazzini, Kabiller, and Pedersen). What this paper does is demonstrate that that average investor has been unable to free ride on Warren Buffett's coattails since the world became aware of his skills.

I provide evidence that by the early- to mid-1990s Buffett was too famous for BH to remain underpriced. I compare the return that Buffett has earned, proxied by BH's book value per share (BVPS), to the return earned by BH shareholders. Early BH investors earned returns above those generated by Buffett while more recent investors earned returns below what Buffett generated. This was caused by the market's recognition of Buffett's investing prowess and a resulting increase in BH's price to book (P/B) ratio. Furthermore, BH's annual return has declined significantly in recent years, although I do not explicitly investigate this phenomenon.

Some interpretations of the Efficient Market Hypothesis (EMH) do not preclude investors with superior skills from outperforming the market (Bodie, Kane, and Marcus, 237). However, the EMH does imply that this excess return will be captured by the skilled investor and will not accrue to the retail investor. For example, a hedge fund may outperform the market before fees, but once their fees are taken into account, the average investor earns an average return. The manager captures the excess return through these fees.

Analogously, BH's stock price has risen to reflect the market's expectations of Buffett's performance. As his fame and reputation spread and the market increased its valuation of BH, the performance of BH's stock has declined relative to its BVPS return.

BACKGROUND

Through his investment partnership, Warren Buffett first became a BH shareholder on December 12, 1962 when he bought 2,000 shares at $7.50 each (Schroeder, 271). At the time BH was a fading textile company based in New Bedford, MA. It was a classic Ben Graham stock, selling for well under book value, and with working capital of $16.50 per share (Lowenstein, 78). He continued to acquire shares. By 1965 his partnership owned 49% of the company and on May 10, 1965 Buffett was elected chairman of the board (Schroeder, 277). At this point BH was one of many investments in the partnership, albeit one of its larger positions. Over the next few years Buffett began BH's diversification and transformation into a conglomerate. In May 1969 Buffett decided to dissolve his partnership, claiming to be unable to find new investment opportunities (Lowenstein, 114). All of the partnership's positions were sold with the exception of 70.3%-owned BH and 80%-owned Diversified Retailing [1,2] (Buffett, Partnership Letters, various dates). Shares in these two firms were distributed to the partners. At the time of its liquidation the partnership had net assets of about $100 million, of which $26.5 million belonged to Buffett (Schroeder, 334).

Since that time BH has continued to grow, internally and through acquisitions, and to prosper, with a market capitalization of over $161 billion as of September 18, 2015.

DATA SOURCES

The data used in the analyses come from several sources. Berkshire Hathaway's 2014 Annual Report provided the annual increases in BH's BVPS and stock price and the total return on the Standard & Poor's 500 Index.

I use two metrics to proxy Buffett's fame. First, I use the number of mentions of him or of BH in *The Wall Street Journal*. This was obtained from ProQuest Historical Newspapers by searching their *Wall Street Journal* database by year for the terms "Warren Buffett" and "Berkshire Hathaway."

Secondly, I consider the attendance at BH annual meetings, held in Omaha in April or May, and sometimes referred to as the "Capitalist Woodstock." For several years during the 1980s and 1990s Buffett reported meeting attendance in his annual chairman's letter.

Finally, the data to calculate BH's P/B ratio are from COMPUSTAT's North American database. The monthly return data used in the econometric analysis for BH and the CRSP Value Weighted Index are from CRSP and the Fama/French Factors and the risk-free rate are from Ken French's Data Library.

ANALYSIS

While there is no specific "event date" for Buffett's transition from obscurity to fame, I hypothesize and defend a narrow span. Much evidence points to the period of about 1985-1995. I consider three sources in defense of this assertion: mentions in *The Wall Street Journal*, BH annual meeting attendance, and econometric analysis.

For most of his career Buffett toiled in relative obscurity. He was profiled in 1969 and 1975 articles in *Forbes,* and he was featured in John Train's 1980 book *The Money Masters*.

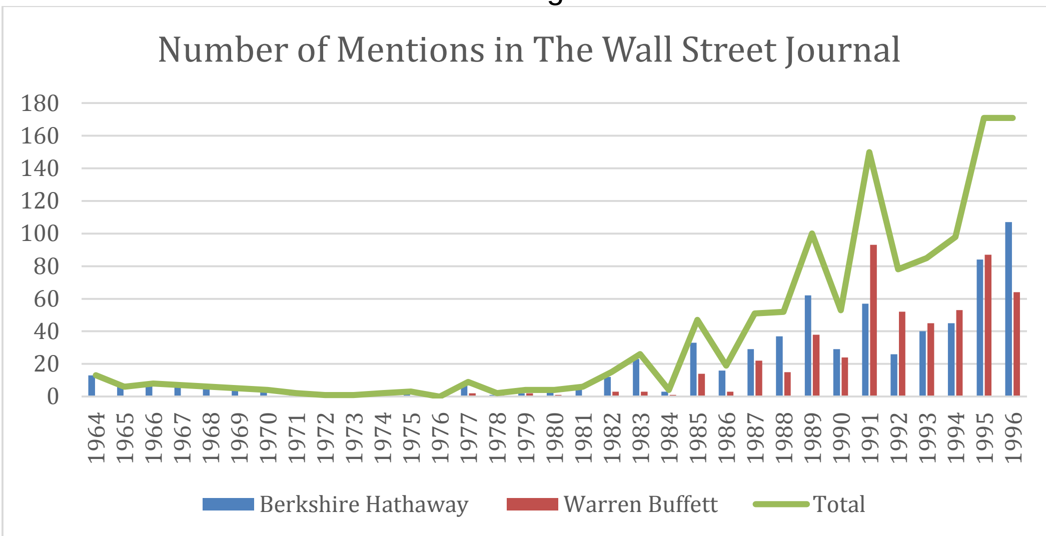
His name was first mentioned in *The Wall Street Journal* in 1972, but then not again until 1977. Prior to 1985, the *Journal* mentioned him a total of 14 times. Then in 1985 the Journal mentioned Buffett 14 times and BH 33 times. From 1987 to 1996 "Warren Buffett" or "Berkshire Hathaway" received an average of 101 mentions per year. These mentions peaked in 1991 while he was the reluctant interim chairman of Salomon Brothers in the wake of its treasury bid-rigging scandal. Table 1 and Figure 1 below summarize these results for 1964 through 1996. Although not shown, the earliest mention of Berkshire Hathaway was in 1954, some ten years before Buffett's involvement with the firm. The data are only reported through 1996 but that is sufficient, as by that time both Buffett and BH were household names among investors and additional publicity would have had little incremental effect.

Table 1
Number of Mentions in The Wall Street Journal

Year	"Berkshire Hathaway"	"Warren Buffett"	Total	Total	Cumulative Total
1964	13		13	1.08%	1.08%
1965	6		6	0.50%	1.58%
1966	8		8	0.67%	2.24%
1967	7		7	0.58%	2.83%
1968	6		6	0.50%	3.33%
1969	5		5	0.42%	3.74%
1970	4		4	0.33%	4.07%
1971	2		2	0.17%	4.24%
1972	0	1	1	0.08%	4.32%
1973	1	0	1	0.08%	4.41%
1974	2	0	2	0.17%	4.57%
1975	3	0	3	0.25%	4.82%
1976	0	0	0	0.00%	4.82%
1977	7	2	9	0.75%	5.57%
1978	1	1	2	0.17%	5.74%
1979	2	2	4	0.33%	6.07%
1980	3	1	4	0.33%	6.40%
1981	6	0	6	0.50%	6.90%
1982	12	3	15	1.25%	8.15%
1983	23	3	26	2.16%	10.31%
1984	3	1	4	0.33%	10.64%
1985	33	14	47	3.91%	14.55%
1986	16	3	19	1.58%	16.13%
1987	29	22	51	4.24%	20.37%
1988	37	15	52	4.32%	24.69%
1989	62	38	100	8.31%	33.00%
1990	29	24	53	4.41%	37.41%
1991	57	93	150	12.47%	49.88%
1992	26	52	78	6.48%	56.36%
1993	40	45	85	7.07%	63.42%
1994	45	53	98	8.15%	71.57%
1995	84	87	171	14.21%	85.79%
1996	107	64	171	14.21%	100.00%
Total	679	524	1203	100.00%	

Source: ProQuest Historical Newspapers: The Wall Street Journal (1889-1996)
Accessed 25 June, 2014

Figure 1



Source: ProQuest Historical Newspapers: The Wall Street Journal (1889-1996)
Accessed 25 June, 2014

Annual meeting attendance points to a similar time period for the transition. For several years during the 1980s and 1990s Buffett reported meeting attendance in his annual chairman's letter. As reported in Table 2 below, in 1985 250 people attended. By 1989 attendance had reached 1,000, and the meeting held in 1998 attracted about 10,000 people. For the past few years (2014-2015) attendance has been around 40,000

Table 2
Berkshire Hathaway
Annual Meeting
Attendance

Calendar Year	Attendance
1985	250
1986	450
1987	450
1988	N/A
1989	1000
1990	1300
1991	1550
1992	1700
1993	2200
1994	Over 2750
1995	4000
1996	5000
1997	7500
1998	Over 10000

Source: http://www.berkshirehathaway.com/letters/letters.html
Accessed June 15, 2015

By both these measures Buffett and BH were becoming well known in the mid- to late-1980s and by the mid-1990s they had attracted a large following.

Econometric evidence confirms a transition point in this period. For the years 1965 to 2014 I estimated the linear equation

$$mktret_t = \beta_0 + \beta_1 bookret_t + \varepsilon_t$$

where

$mktret_t$ is the annual increase in BH's stock price in year t, and
$bookret_t$ is the annual increase in BH's BVPS in year t

I then conducted individual Chow Tests for each of the years from 1974 to 2004 to look for the existence of a structural change in the relationship between the two variables. Table 3 below summarizes the results. For example, the first line of Table 3 compares the relationship of the variables *mktret* and *bookret* from the period 1965-1974 to their relationship in the period 1975-2014. A statistically significant result implies that the relationship of the two variables differed in the two periods. Then I compare the periods 1965-1975 with 1976-2014, and so on.

Using a 5% significance level, the Chow Test rejects the null hypothesis that the two variables exhibit the same relationship in the two sub-periods after the years 1979, 1980, 1985, and 1989-1993. In all other years the test fails to reject the null hypothesis. The years with the highest level of statistical significance are 1989 and 1990, with p-values of .0228 and .0118. Econometrically those two years are the most likely years for the change in the relationship between the book value returns and the market value returns. More broadly, the change appears to have occurred between 1989 and 1993.

Table 3

Chow Test for the Presence of a Structural Break

	Number of Observations				
Year Tested	Period 1	Period 2	Chow Test F-Statistic	P value	
1974	10	40	1.0423	0.3608	
1975	11	39	0.4800	0.6218	
1976	12	38	1.8473	0.1692	
1977	13	37	1.7140	0.1914	
1978	14	36	1.5074	0.2322	
1979	15	35	3.3137	0.0452	**
1980	16	34	3.3788	0.0427	**
1981	17	33	2.7047	0.0775	*
1982	18	32	1.5067	0.2324	
1983	19	31	2.0253	0.1436	
1984	20	30	2.1596	0.1269	
1985	21	29	3.2029	0.0499	**
1986	22	28	2.8706	0.0707	*
1987	23	27	2.8289	0.0694	*
1988	24	26	2.8939	0.0655	*
1989	25	25	4.1092	0.0228	**
1990	26	24	4.8953	0.0118	**
1991	27	23	3.4681	0.0395	**
1992	28	22	3.4911	0.0388	**
1993	29	21	3.2385	0.0483	**
1994	30	20	3.1593	0.0518	*
1995	31	19	2.9234	0.0638	*
1996	32	18	1.7057	0.1929	
1997	33	17	1.3804	0.2617	
1998	34	16	0.6241	0.5402	
1999	35	15	0.9290	0.4022	
2000	36	14	0.4968	0.6117	
2001	37	13	0.0278	0.9726	
2002	38	12	0.0631	0.9390	
2003	39	11	0.0893	0.9148	
2004	40	10	0.1255	0.8824	

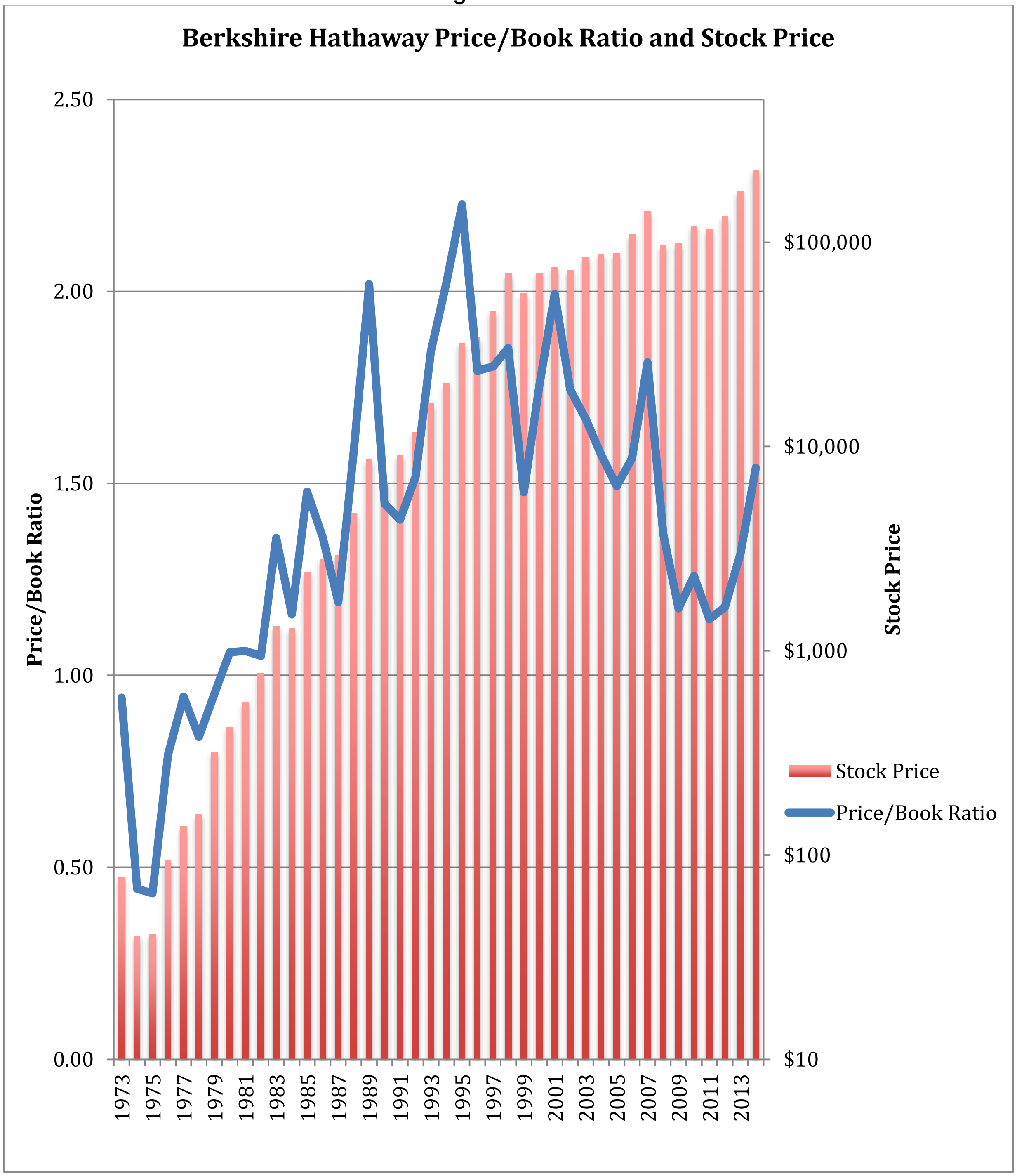
* Significant at 10% level

**Significant at 5% level

From September 30, 1965 through December 31, 2014, BH's BVPS grew at 19.4% annually while the MVPS increased at an annual rate of 21.6%. [3,4] Over the same period the S&P 500 including dividends grew at 9.9% per year.

The mathematical explanation for the stock's outperformance of the growth in BVPS is that the P/B ratio has increased over time. This can be seen in Figure 2 below. Although COMPUSTAT does not provide complete data until 1973, they report that in December 1968 BH's P/B ratio was .98. In December 2014 the P/B ratio was a much larger 1.54. Figure 2 shows BH's P/B ratio at year-end from 1973-2014. From 1973-1990 the P/B ratio averaged 1.1, while from 1991-2014 the P/B ratio averaged 1.6. The growth in P/B has not been constant, nor has it always been increasing. As Shiller (1981) showed, stock prices exhibit excess volatility when compared to economic fundamentals, and BH is no exception. Through WB's fifty-year reign, BVPS has had a standard deviation of 14.3% per year, while the stock's standard deviation was 34.9%. BH's P/B ratio reached a high of 2.22 at year-end 1995 with its low of 0.43 in 1974. BH's P/B ratio has not fallen below 1 since 1979. Throughout this time BH's stock price has steadily increased, from $78 per share in December 1973 to $226,000 per share in December 2014.

Figure 2



Source: COMPUSTAT North American database

Summarizing the annual returns from BH's 2014 annual report of Buffett's first twenty years of running the company, 1965-1984, when he was largely unknown, BVPS grew at 22.40% annually, while the market price per share grew by 26.08% per year, an outperformance of 3.68% annually. During the most recent twenty-year period, 1995-2014, by which time Buffett had become a household name, BH's BVPS grew at 13.59% annually, while the market price per share grew by only 12.12% per year, an underperformance of 1.46% annually. Further, the shareholders bear an added level of risk in that the stock price has been more volatile than the BVPS. The P/B ratio is relatively high in times of exuberance, like 1999, and relatively low in times of despair, like 1974 and 2008. Thus shareholders have had a bumpier ride than those of the underlying investments.

Finally, when formally accounting for BH stock's level of risk by using the Capital Asset Pricing Model (CAPM), shareholders have fared no better than average. Using the Fama/French three-factor model, BH stock has not earned a positive abnormal return (alpha) since 1989. Table 4 summarizes the results of this regression analysis.

Using monthly data I estimate the model

$$brkprem_t = \alpha + \beta_1 mktprem_t + \beta_2 smb_t + \beta_3 hml_t + \varepsilon_t$$

where

α is the constant or intercept term, which reflects positive or negative abnormal returns. Practitioners commonly call this "alpha,"
$brkprem_t$ is the risk premium earned by BH stock after subtracting risk free rate from its return,
$mktprem_t$ is the risk premium earned by the CRSP Value Weighted Index after subtracting the risk free rate from its return,
smb_t (small minus big) is a monthly factor to capture the small firm effect,
hml_t (high minus low) is a monthly factor to capture the value effect.

Table 4
Berkshire Hathaway Performance Analysis

	1976-1979	1980-1984	1985-1989	1990-1994	1995-1999	2000-2004	2005-2009	2010-2014
	dependent variable is brkprem							
mktprem	1.386***	0.866***	1.115***	1.060***	1.186***	0.581***	0.503***	0.448**
	(0.493)	(0.206)	(0.222)	(0.188)	(0.248)	(0.144)	(0.137)	(0.172)
smb	-0.646	0.974***	0.101	-0.127	-0.545*	-0.515***	-0.201	-0.329
	(0.768)	(0.339)	(0.432)	(0.274)	(0.273)	(0.150)	(0.252)	(0.306)
hml	1.934**	0.527*	0.544	0.167	0.759**	0.484**	0.489**	0.0750
	(0.885)	(0.292)	(0.511)	(0.281)	(0.368)	(0.190)	(0.215)	(0.317)
alpha	0.0461**	0.00558	0.0180*	0.00777	-0.00295	0.00679	0.000584	0.00942
	(0.0175)	(0.00819)	(0.00986)	(0.00649)	(0.00902)	(0.00681)	(0.00550)	(0.00604)
N	35	60	60	60	60	60	60	60
adj R-sq	0.192	0.357	0.313	0.345	0.308	0.429	0.317	0.072

Standard errors in parentheses
* Significant at 10% level
** Significant at 5% level
** Significant at 1% level

I estimate the regressions for the 35-month period from February 1976 to December 1979, and subsequently for five-year periods. The coefficient on *mktprem* has fallen, indicating that BH has reduced its market risk over time and now has less market risk than the average stock. The negative coefficient on *smb* shows that BH is more closely correlated with large stocks than with small ones. The positive coefficient on *hml* reflects a positive correlation with BH and value (low P/B) stocks than with glamour (high P/B) stocks. Significantly, the constant term, while positive in all but one period (1995-1999), has not been statistically significant since the 1985-1989 period, when Buffett was beginning to become well-known. This indicates that beyond the effects of the three explanatory variables, BH has not delivered a statistically significant positive return for its shareholders since the late 1980s. In other words, alpha is zero.

CONCLUSION

While there is little doubt that Warren Buffett has been a great investor, the average retail investor can no longer abnormally profit from his skills. Since the early 1990s, when Buffett became a household name, Berkshire Hathaway's stock returns have lagged below the returns on its BVPS. After accounting for market risk, the small firm effect, and the value effect, Berkshire Hathaway shareholders have not realized positive abnormal returns since that time.

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Endnotes

1. At the time BH had its textile business, Illinois National Bank and Trust Company of Rockford, Illinois, National Indemnity Company and National Fire and Marine Insurance Company and Sun Newspapers. Diversified Retailing owned Hochschild, Kohn & Co. and Associated Cotton Shops (Partnership letter dated October 9, 1969).

2. BPL controlled 800,000 of 1,000,000 shares of Diversified Retailing and 691,441 of 983,582 shares of BH (Partnership letter dated December 5, 1969).

3. In 1965 and 1966 BH’s fiscal year ended September 30. Thereafter it is December 31. From 1979 on insurance companies were required to value equity securities at their market value. Results through 1978 have been restated to value equity securities at market value (BH 2014 Annual Report, p. 2).

4. BH only once paid a dividend, ten cents per share, in 1967.

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