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Summary of “Buffett’s Alpha”¹

Buffett’s success has become the focal point of the debate on market efficiency. While the efficient-market argument suggests his success may simply be luck, Buffett countered that it is no coincidence that many of the winners in the stock market come from the same intellectual village, “Graham-and-Doddsville”.² This paper suggests that Buffett’s success is a reward for successful implementation of exposures to factors that have historically produced high returns.

To understand Buffett’s investment returns, the authors study separately the stock return of Berkshire Hathaway, Berkshire’s holdings of private firms, and Berkshire’s holdings of publicly traded stocks. However, the Berkshire stock return is complicated by tax treatments of multinational firms and deferred tax, and the paper’s construction of return to private holdings relies heavily on an over-simplified cost of liabilities and ignores the illiquidity of private equity. So, in this summary, we will focus on their study of Berkshire’s investment return on holdings of public firms.

Using the quarterly 13F reports, a time series of monthly returns is constructed under the assumption that Berkshire’s portfolio of public stocks does not change within a quarter. The public holdings deliver an outstanding average return of 19% per year in excess of the T-Bill rate, with a moderate annualized Sharpe ratio of 0.76. Adjusting for the market exposure, the information ratio is even lower, 0.66.³

The authors suggest the high average return comes from leverage, and estimate Berkshire’s firmwide average asset-to-equity ratio to be 1.6 from 1976 to 2011.⁴ Berkshire’s cost of liabilities is mainly driven by its debt cost and insurance float. Berkshire’s debt has benefitted from being highly rated (AAA from 1989 to 2009). Insurance and reinsurance businesses provide a unique access to cheap, term leverage. The estimated average annual cost of insurance float is only 2.2%, more than 3% lower than the average T-bill rate. Being able to maintain leverage at a relatively low cost gives Buffett an edge, especially in the rough periods where others might have been forced into a fire sale.

To understand what kind of stocks Berkshire owns, the authors regress the monthly returns to public holdings on the standard factors, including market excess return, small-minus-big (size), value-minus-growth (value), winner-minus-loser (momentum),⁵ and two new factors called “betting-against-beta” (BAB) and “quality-minus-junk” (QMJ) (to be discussed later). Buffet’s portfolio has a market beta that is significantly less than one. This seems to suggest that Berkshire avoids systematic risk, but after controlling for all the other factors, its market beta increases to 0.98.

The loading on value factor is significantly positive, while the exposure to momentum is negative. This provides evidence that Buffet’s choice of stocks does tilt to bargain stocks and he does not chase the trend. As Berkshire’s portfolio grows bigger over time, it overweighs more large stocks, probably to avoid the transaction cost from trading stocks of small market cap. Using only market, size, value, and momentum as benchmarks, Berkshire delivers a statistically significant alpha of 5.3% per year. But once BAB and QMJ factors are added as benchmarks, the alpha decreased to 0.3%, not

significantly different from zero. Thus, Buffett's alpha seems to be driven by the exposure to BAB and QMJ.

BAB factor is simply a long-short portfolio that buys stocks with low market beta and sells stocks with high market beta. When a majority of market participants face leverage constraint, they may acquire more high-beta stocks to achieve a target exposure to market risk or a target return volatility. BAB strategy takes advantage of the overpricing of high-beta stocks and the underpricing of low-beta stocks, and thus earns a premium that arises from investors' financial constraints.⁶ Buffett's positive loading on this factor indicates that he aims to provide the rest of market more risk exposure as alternative to the desired level of leverage that is too high to be achievable. The implementation of this strategy clearly benefits from Berkshire's unique access to financing.

QMJ (quality-minus-junk) factor buys companies that are profitable, safe, and have high payout, and sells companies on the other end of this quality spectrum.⁷ According to Asness, Frazzini, and Pedersen (2013), the market seems to underprice quality stocks on a "risk-adjusted" basis. Therefore, a positive exposure to QMJ generates significant excess return unexplained by the standard four factors. A tilt towards value stocks with low market-to-book ratio and significant loading on QMJ testify Berkshire's value investing philosophy: Acquire quality companies at bargain prices.

In essence, this paper suggests "the secret to Buffett's success is his preference for cheap, safe, high-quality stocks combined with his consistent use of leverage to magnify returns while surviving the inevitable absolute and relative drawdowns this entails".

¹ Frazzini, Andrea, David Kabiller, and Lasse Heje Pedersen, 2013, *New York University* working paper.

² Buffett, Warren E., 1984, The Superinvestors of Graham-and-Doddsville, *Columbia Business School Magazine*, 4-15.

³ The information ratio is defined as the intercept in a regression of monthly excess returns on market excess returns, divided by the standard deviation of the regression residuals.

⁴ In the calculation of leverage, market value of equity (i.e. the market capitalization of Berkshire Hathaway) is used instead of the book value, and the total asset value is the sum of market equity value and the book value of liabilities. A more conservative measure, which replaces the book value of liabilities with the sum of debt and insurance float, suggests an average leverage (asset-to-equity) ratio of 1.4.

⁵ For details of the four factors, please refer to: Fama, Eugene F., and Kenneth R. French, 1993, Common risk factors in the returns on stocks and bonds, *Journal of Financial Economics* 33, 3-56; Carhart, Mark M., 1997, On persistence in mutual fund performance, *Journal of Finance* 52, 57-82.

⁶ Frazzini, Andrea and Lasse Heje Pedersen, 2014, Betting Against Beta, *Journal of Financial Economics* 111, 1-25.

⁷ Asness, Cliff, Andrea Frazzini, and Lasse Heje Pedersen, 2013, Quality Minus Junk, *AQR Capital Management* working paper.