What is the cost to individual investors of sub-optimal portfolio diversification?

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Summary: Investors more easily understand investment costs that are directly measurable, such as fees deducted on investment statements. However, many investors ignore or are unaware of the “opportunity costs” of their sub-optimal investment behaviors. Opportunity costs are usually much more difficult to measure directly, but can be even higher than the more visible costs that they do understand. The opportunity cost of being poorly diversified can be quantified under certain circumstances. While sub-optimal diversification costs can be difficult or impossible to anticipate for individual portfolios, investors can look at studies of large investor populations for guidance on the size of investment opportunity costs. The study, “Equity Portfolio Diversification” by Alok Kumar of Cornell and William Goetzmann of Yale is particularly useful in providing investors with an indication of the scale of the opportunity costs incurred by poorly diversified individual investors.1 (See also this related article about this study: Is the average individual investor portfolio well diversified?) Professors Kumar and Goetzmann analyzed over 40,000 discount brokerage equity investment accounts with over $2 billion in total assets for the 1991 through 1996 period. The equities purchased by these investors tended to be in large consumer products and technology companies with well-known names – many of the same firms that constitute the S&P 500 index. The vast majority of these investors’ portfolios were very significantly under-diversified. On average, the portfolios of investors in this study held four stocks in 1991 and 7 in 1997. About 25% of accounts held only one stock, and about half held one or two stocks. On a risk-adjusted basis, this lack of diversification was quite costly to these investors. When compared to the broad market portfolio, 80% to 90% of these investors’ portfolios underperformed the market over the period of the study. In a typical sample month, 83% of portfolios with only one to three stocks underperformed the market, while 72% of portfolios with seven or more stocks underperformed the market. Average portfolio performance overall was suboptimal, but when a portfolio was less diversified, performance was even worse. While Professors Kumar and Goetzmann do not report specifically on the dollar impact of the suboptimal diversification strategies of these individual investors, it is possible to get a rough estimate of the opportunity cost to these investors. Professors Kumar and Goetzmann used statistical methods to compare the performance of the combined portfolio of all individual investor accounts with the performance of a widely used, “multi-factor” broad market returns model. The model estimated returns for a) the market in excess of the risk free rate, b) a large versus small stock factor, c) a value versus growth stock factor, and d) a performance reversion to the historical average factor.

Professors Kumar and Goetzmann provided a graph of ‘alpha’ comparing the returns of all individual investor portfolios combined to the S&P 500 index.2 Alpha is a measurement of portfolio performance that adjusts for risk. It is a commonly used measurement to compare the performance of a money manager in the money management industry to a relevant market index. Positive alpha would indicate performance in excess of the benchmark index, while negative alpha would indicate performance that lags the index. Positive alpha is not necessarily an indicator of investment still, but rather is just the artifact of lucky securities selection. (See: How stable have

Morningstar Ratings been over time? and What the instability of mutual fund Morningstar Ratings means for long-term investors – a commentary) The aggregate portfolio for all individual investor accounts in this study was characterized by negative alpha throughout the four-year study period. When compared to the multi-factor market model, the aggregate portfolio of these self-directed investors lagged the market model’s performance in every month of the 48 month study period. Instead, these investors could have held a close approximation to the multi-factor market model by holding a selection of broadly diversified, low cost, passive index mutual funds. The aggregate investor portfolio of this study underperformed the four-factor market model by between .5% to over 4% annually. During the four-year period that was modeled, the total underperformance totaled roughly 10%. Given that the sum of investor assets averaged about $2.18 million, these investors had an estimated opportunity cost of over $200 million in only four years! Owning a poorly diversified of portfolio stocks was a very poor investment strategy for the average investor in this very large sample. The average annual return of the typical investor in this study was reduced by about 2½ percent annually. For example, an average investor with a poorly diversified $100,000 account unnecessarily threw away approximately $2,500 annually or $10,000 over four years! The information from this study is discouraging. Compared to investing with a passive, broad market index strategy, these individual investors paid several unnecessarily prices. Because they were not diversified, on average: ->They incurred higher portfolio risk. (Risk equals portfolio price volatility, which causes great unease and worry to most investors. Less volatility is better.) ->They lost money relative to the passive multifactor market index return (This is particularly worrisome, because with efficient market pricing one would have expected only higher average volatility, but not lower average returns. Apparently, these investors also had suboptimal portfolio management practices in addition to being under-diversified.). ->They paid unnecessary transaction costs and higher taxes associated with these active management strategies. ->They simply wasted the time that they spent tracking companies, but did not achieve superior risk-adjusted returns. (See: The value and opportunity cost of your time) There certainly would have been more skillful ways for these investors to self-manage their portfolios. The average investor in this study demonstrated negative skill. He lost money when compared to a market index investment. This is strong evidence that the average investor simply does not know how to manage his or her own portfolio. Individual investors need either to dramatically improve their personal skills or fire themselves and hire someone who can do a better job. However, when individual investors do hire professional managers, they still need to be very proactive about understanding performance and measuring the full range of costs and taxes.

These related articles may also be useful to you: ->Excessive investment costs are a huge problem for individual investors ->Beware of large and hidden mutual fund costs ->How much do hidden mutual fund trading expenses cost you? ->Invest in fixed income securities through bond mutual funds with low investment fees ->Is it worth paying higher bond mutual fund management fees? -> Passive individual investors are “free riders” who benefit from the higher costs of active traders ->The investment industry is not your investment partner 1) Alok Kumarand William Goetzmann. “Equity Portfolio Diversification.” Yale International Center for Finance Working paper No.00-59, November 2002: 1-43

2) ibid, p. 30