



QUALITY GROWTH INVESTING

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By Allen Bond, CFA, Business Analyst

The Examining of Financial Market Underpinnings: The Efficient Market Hypothesis, Behavioral Finance, and High ROE Businesses

The efficient market hypothesis (EMH) has been one of the pillars of modern financial theory since its development in the 1960s. Simply put, EMH states that the price of a security reflects all available information about that security.

So, does EMH imply that the market is always right? If so, how can we justify events such as the rapid creation and then deflation of the late 1990s/early 2000s technology bubble? How can we explain the record-setting market high in October 2007 just months before we entered into an historic economic downturn and severe bear market?

The answers to these questions lie in a deeper understanding of EMH – what it implies, what it does not imply, and what it misses.

Efficient Market Hypothesis

EMH was first expressed by French mathematician Louis Bachelier in the early 1900s. It emerged as a prominent theory in the 1960s when Bachelier's work began to circulate among contemporary academics. Famed economist and author Eugene Fama is generally given credit as the father of modern EMH. His work provided evidence for the hypothesis, while he extended and refined the theory. He classified EMH into three forms of efficiency: weak, strong and semi-strong.

Weak-form EMH assumes that current security prices reflect all market technical information such as historical prices, rates of return, trading volume data, etc. Essentially, it implies that historical rates of return are completely independent from future rates of return. Weak-form EMH is hard to dispute. If it did not exist, investors would be able to consistently earn superior returns by simply studying historical price charts and trading data.

At the other end of the spectrum, strong-form EMH states that a security price reflects all information about that security – both public and private. It implies that no investor should be able to consistently earn superior returns. Strong-form EMH does not hold up very well against some very simple tests, the most obvious of which is insider trading. In strong-form EMH, insider trading would not exist because there would be no insiders. And unfortunately, we have seen too many examples of investors profiting from and subsequently being prosecuted for insider trading.

Semi-strong EMH lies in the middle of weak-form and strong-form EMH. It states that all publicly available information is reflected in security prices. Semi-strong EMH encompasses weak-form EMH and, consequently, it includes historical technical information in addition to publicly available fundamental information such as earnings, cash flow and valuation. It implies that security prices react quickly and accurately to new public information. While not perfect, semi-strong EMH makes intuitive sense and has held up relatively well to criticism. Semi-strong EMH is the most commonly cited form of EMH by its proponents.

So, within the framework of EMH (from here on, assume that EMH means semi-strong EMH), we will rephrase our original question: If security prices reflect all publicly available information, does that mean the market is always right? For illustrative purposes, we will consider this question in the context of a couple periods of extraordinary market volatility.

Proving/Disproving EMH

From March 31, 2000 to September 30, 2002, the S&P 500 Index declined 44%. A similar example was the nearly 51% decline in the S&P 500 from October 31, 2007 to February 28, 2009 and the subsequent 46% rebound through September 30, 2009. According to EMH, the prices of these indices should have accurately reflected the knowledge and expectations of all investors on each day during these periods. However, given the dramatic short-term volatility in these periods, it is difficult to believe that EMH held true and that the market was “right” on every day. So, let us move to on to what is perhaps a more interesting question: Do these periods of extraordinary market volatility disprove EMH?

To answer this question, we need to reconsider the meaning of EMH. EMH states that security prices reflect all publicly available information. It does not state, however, that this information must be correct. In fact, because security prices are based in large part on unknown and often volatile future information (expectations), EMH is probably more consistent with the statement that the market is always wrong! Future reality is likely to always deviate from expectations to some degree.

This caveat is probably the best way to explain periods of heightened market volatility without violating the framework of EMH. It could be argued that in those periods the market was efficiently pricing in future expectations. It just turns out that those expectations were proven to be spectacularly wrong.

Unfortunately for EMH, that defense can only go so far. EMH relies on rational investors. More specifically, it needs marginal investors (those that are driving price movements) to objectively and accurately react to new information. Perhaps the market is unbiased and rational on most days but it is not difficult to find some notable exceptions such as the two time periods we have cited here. So what causes investors and markets to be irrational? This question is best answered by a financial discipline known as behavioral finance.

Question:

Is EMH to blame for the creation of stock market bubbles?

Answer:

This is an interesting question because stock market bubbles cannot exist within the framework of EMH. According to EMH, security prices reflect the rational expectations of buyers and sellers at all times. By their very nature, bubbles are indicative of irrational behavior which is inconsistent with EMH.

That being said, it stands to reason that blind faith in EMH would allow investors to justify the lofty valuations seen during bubbles and, therefore, may exacerbate the expansion of the bubble.

Behavioral Finance

Behavioral finance attempts to create a link between investor psychology and economics in order to explain market inefficiencies. Proponents of behavioral finance contend that markets are not always efficient because markets are driven by human decisions and that humans are notoriously bad decision makers if left to their own devices. These proponents cite a range of cognitive biases such as loss aversion and focus on the short-term as reasons for consistently sub-optimal decisions.

The modern study of Behavioral Finance got its start in the late 1970s based on the academic work of Amos Tversky and Daniel Kahneman. Their work focused on loss aversion – or what they called prospect theory. They found that individuals experience a greater amount of negative emotion associated with prospective losses than they do positive emotion associated with prospective gains. In other words, losses caused more emotional pain than gains caused positive feelings.

Another bias associated with loss aversion is called the disposition effect, which describes the tendency among investors to hang on to losing securities for too long for fear of realizing a loss, while selling winners far too soon due to eagerness to realize gains.

Another tenet of behavioral finance is recency bias. Recency bias explains the tendency among investors to overweight recent experiences and extrapolate recent trends when making investment decisions. An example of such recency bias is a 1997 study by Yale professor Robert Shiller. He found that at the peak of the Japanese stock market, 14% of Japanese investors expected a crash, but that after the crash a significantly higher 32% of these same investors expected a crash. This bias would seem to be a prime candidate when thinking about root causes for market bubbles. We will expand on this idea a little later.

Question:

Aside from the cognitive biases described by behavioral finance, are there any other factors that may lead to market inefficiencies?

Answer:

When Eugene Fama originally formulated EMH in the 1960s, market dynamics were very different than they are today. Transaction costs were much higher and security price information was not readily available to the average investor. In addition, the modern mutual fund industry as we know it today did not exist. As a result, equity investing was only a realistic option to a very small percentage of the population.

In contrast, today's market is dominated by institutional investors including mutual funds, hedge funds, et. al. As of 2005, large investors owned about 61% of all U.S. equities. In addition, transaction costs have been greatly reduced and security price information is now readily available to just about everyone. In theory, these factors -- more sophisticated investors, better information, etc. -- should make markets more efficient. However, there is also a strong argument to be made that the investment strategies used by some of these investors – excessive leverage, illiquid derivatives, algorithmic trading, etc. – can, at times, exacerbate market volatility above and beyond what should be expected within the framework of EMH. This exaggerated market volatility can lead to market inefficiencies.

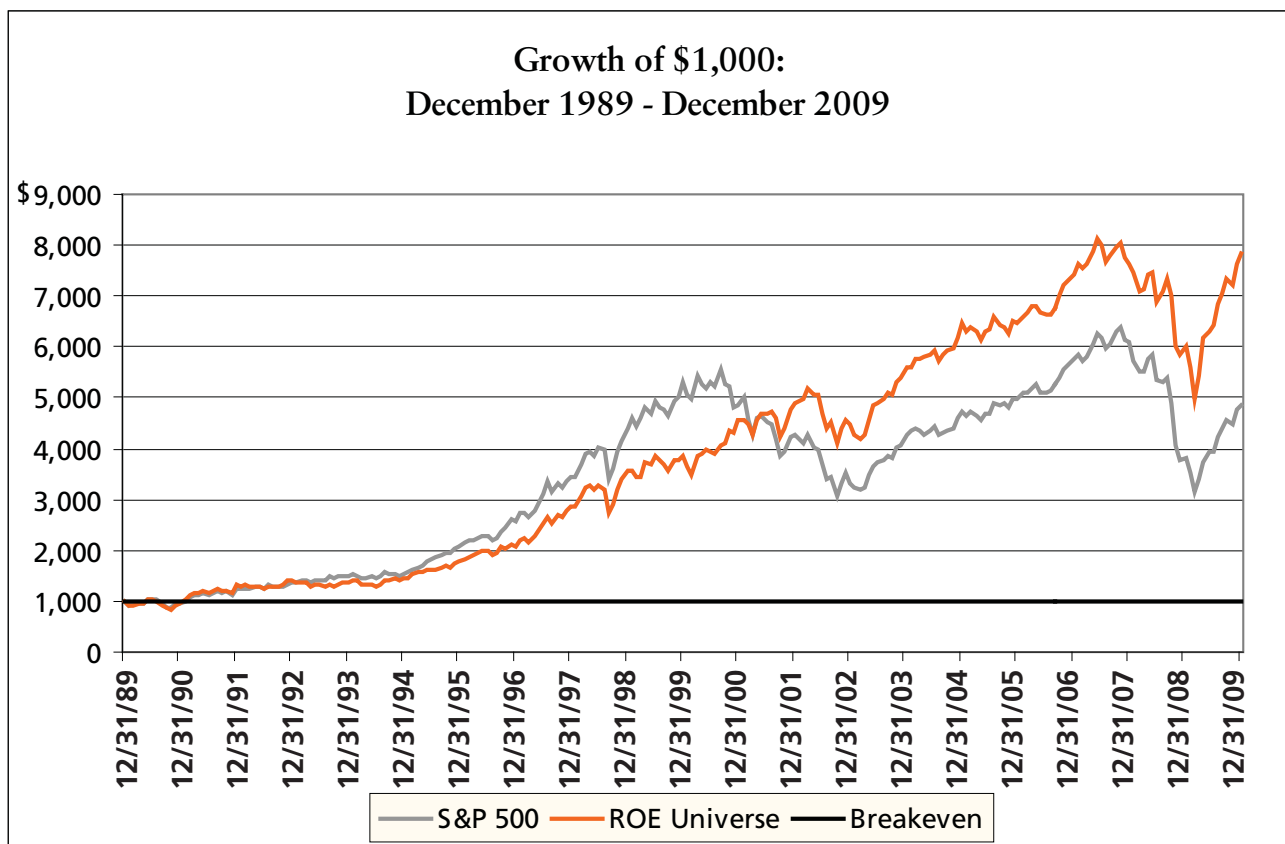
High ROE Businesses

Now that we have discussed EMH and some of the implications of behavioral finance, let us conclude for now that EMH is a powerful model in explaining market behavior, but not one that is without flaws. Within the context of EMH and behavioral finance, we will try to answer one final question:

How can active investors attempt to identify market inefficiencies and take advantage of them?

At Jensen Investment Management, we have answered this question by focusing our investments within a unique part of the market. We will only invest in companies that have generated a Return on Equity (ROE) of at least 15% for 10 consecutive years. This is a very selective screen. We apply this screen to approximately 5,000 companies each year and are left with an investable universe that is consistently fewer than 200 companies.

In order to learn more about their characteristics, we conducted a study of the historical performance and risk characteristics of high ROE companies. As a result, we have learned that this high ROE universe (ROE universe¹) has proven to be very powerful in terms of price performance relative to the overall market. Over the 20 year period from December 31, 1989 through December 31, 2009, the ROE universe has produced an annualized return of 10.9% relative to an 8.2% annualized return for the S&P 500 Index over the same period. Further, the ROE universe has generated this excess return with lower risk than the overall market. This is demonstrated by the universe's superior Sharpe Ratio² of 1.77 versus 0.99 for the S&P 500 Index for this same 20 year period. This long-term outperformance is inconsistent with EMH. Let us examine the ROE universe within the framework of EMH and behavioral finance in order to understand why it has posted superior long-term investment returns.*



Past performance does not guarantee future results

¹ The ROE universe is a hypothetical universe that consists of third-party data from 12/31/89 through 12/31/06 that has been linked with Jensen data from 12/31/06 through 12/31/09. While the hypothetical ROE universe was constructed using Jensen's screening methodology (greater than 15% ROE for 10 consecutive years), it does not represent Jensen's investable universe from 12/31/89 through 12/31/06. Please read the disclosure at the end of this paper for more detail about universe construction.

² **Sharpe Ratio:** a measure of risk-adjusted returns; calculated here as annualized return minus annualized T-bill return divided by standard deviation of returns.

**In addition, please note that the securities included in the ROE universe are not representative of the actual, more concentrated portfolio holdings of any account managed by Jensen Investment Management currently or in the past, and therefore these back-tested results for the ROE universe should not be considered indicative of the past or future performance of any such managed account; for important additional information regarding this matter, please see the disclosures at the end of this paper.*

High ROE Translates into Staying Power

We will begin our analysis with a quick summary of ROE and the implications for the ROE universe.

While not perfect, ROE is a powerful tool for analyzing a company. It measures three separate components of a business: historical profitability, efficiency and leverage. Our requirement for 10 consecutive years of strong performance results in a universe of companies with staying power. Over the past 10 years, an average of only 13% of companies have exited the universe each year and a meaningful number of those exits have come from investor-friendly events such as takeovers. The companies within the ROE universe generally share common characteristics such as strong competitive advantages, redundant cash flow generation, returns above their capital costs, and relatively stable business performance. To summarize, we believe that the ROE screen results in a universe of extremely high quality companies.

So why has this universe of high quality companies outperformed the market over the past 20 years? The data used to calculate ROE is publicly available and, therefore, should be accurately reflected in the security prices according to EMH. The universe's outperformance suggests that the market systematically undervalues high quality companies. Why would this be the case? Perhaps the ROE universe exploits some of the holes in EMH that are described by behavioral finance.

Let us start with loss aversion – the tendency investors have to hang on to losers for too long due to the fear of realizing a loss. We believe the ROE universe helps eliminate this bias due to its strict inclusion/exclusion rule. For example, a company is excluded from this universe if it violates the 15% ROE hurdle, whether or not it has generated a loss. While the 15% hurdle may seem arbitrary, we have seen evidence that such a violation may signal a loss of competitive advantage or a major change to the business.

Question:

What is the relevance of a business having a 15% ROE for 10 consecutive years?

Answer:

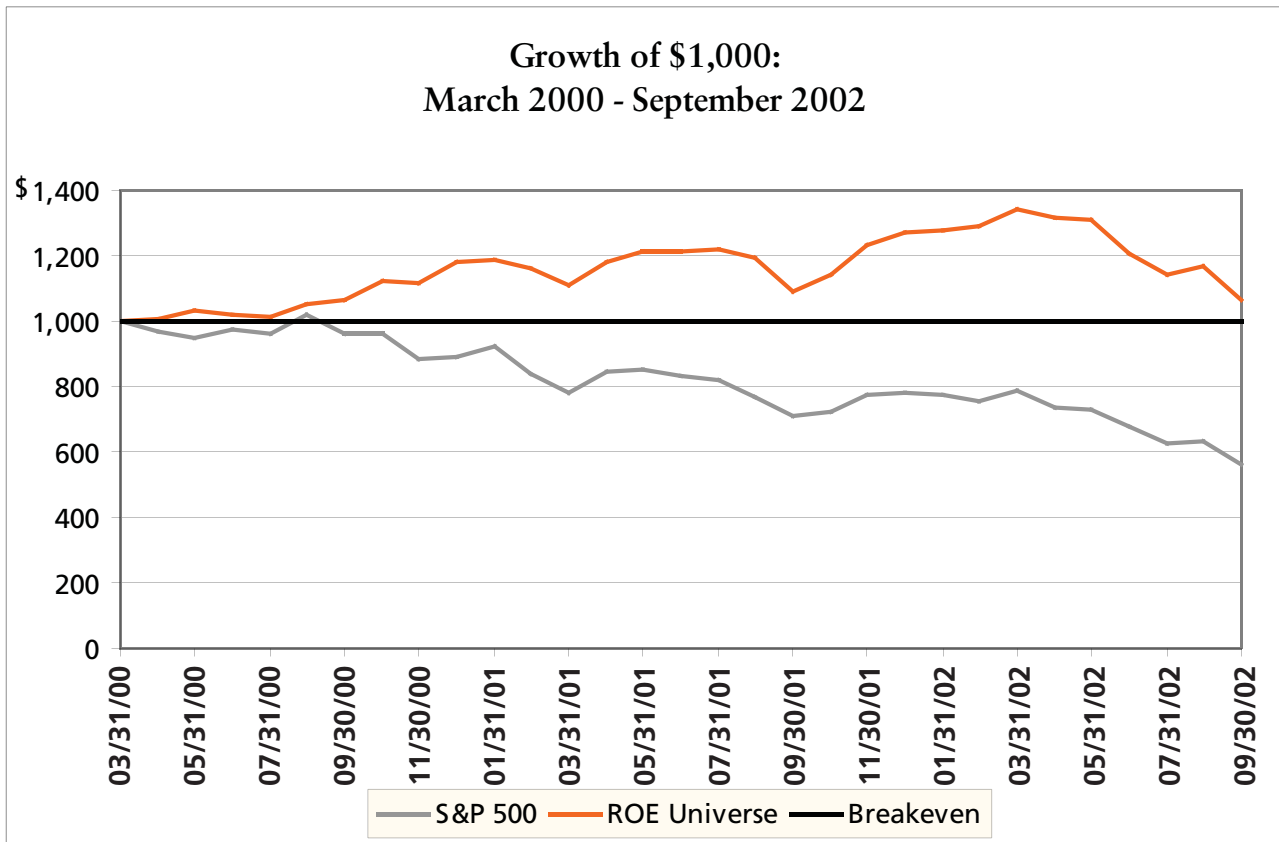
The 15% ROE is not arbitrary. Jensen's use of 15% ROE for 10 years is based on the 1970s academic research of Harvard University professor William Fruhan. Fruhan found that firms consistently generating ROEs of 15% or higher were earning in excess of their capital cost and, therefore, were consistently creating shareholder value. We believe that Jensen's 21 years in business utilizing these criteria for selecting stocks has validated Fruhan's original work.

The Basis for the 10 Year Threshold

Now onto recency bias – short-term focus versus long-term focus. The ROE universe companies greatly reduces the effect of short-term bias due to its requirement of 10 years of sustained high performance. We believe this is the universe's most powerful attribute. It has served it well during significant market downturns that occurred following periods in which the market appeared to have been swayed more by short-term euphoria than by long-term fundamentals. While historically it has been common for the universe to underperform the market during shorter periods of strong market performance, we believe this focus on long-term business fundamentals helps avoid the temptation to “chase performance” during times when market returns outrun business performance.

Let us go back to our two previous examples to offer some evidence. In the late 1990s it is widely believed that short-term excitement over the burgeoning Internet and the “new economy” resulted in

lofty valuations on unproven companies that were unsustainable for the long-term. The result was a subsequent three-year bear market in which valuations returned to more reasonable levels. As we stated previously, the S&P 500 Index fell by 44% from March 2000 through September 2002. During this same period, the stocks that comprise the ROE universe actually rose by 7%.



Past performance does not guarantee future results

Just as the economy was beginning to pull itself out of the recession that accompanied that early 2000s bear market, we witnessed the creation of a new bubble. Due to extremely low interest rates and aggressive lending by financial institutions, home prices soared and consumers began to withdraw the equity in their homes to fuel high levels of consumption. This activity manifested itself in the equity markets as short-term excitement over financial engineering and the supposed disintermediation of risk drove unjustifiable valuations on risky financial institutions.

As we are all painfully aware, these trends proved to be unsustainable and equity markets endured another painful bear market from which we are still recovering. The S&P 500 Index fell a staggering 51% from October 31, 2007 to February 28, 2009. During this period, the ROE universe once again outperformed as it fell a lesser 38%.

Question:

Does the ROE universe only outperform during bear markets?

Answer:

During the last 20 years, the ROE universe's best periods of relative performance have come during the two bear market periods noted in this article, and historically it has been common for it to underperform the market during shorter periods of strong market performance. However, it has also demonstrated sustained periods of outperformance during certain bull markets such as those in the early and mid-1990s and the mid-2000s.

Conclusion

We believe that EMH is strong model and worth considering when evaluating market behavior. However, it is not bulletproof and we do not believe that it accurately explains market behavior in all instances. The concepts within behavioral finance shed some light on the human biases that may explain the breakdowns in EMH. We believe these inefficiencies can be exploited by long-term investing in high quality, sustainable businesses.

All factual information contained in this article is derived from sources which Jensen believes are reliable, but Jensen cannot guarantee complete accuracy. Any charts, graphics, or formulas contained in this piece are only for the purpose of illustration. Our views expressed herein should not be construed as an indication that the investment recommendations or decisions we make in the future will be profitable, and are not designed or intended as the basis or determination for making any investment decision for any security.

The ROE universe for whose 20 year returns and risk characteristics are stated in this paper is a hypothetical universe of securities developed by Jensen in conjunction with the back-testing of its high ROE Quality Growth investment strategy. Therefore, it is important to note the following:

- Because over time Jensen has changed the sources for its fundamental financial data and has revised certain of the criteria required for a company to qualify annually for the universe of securities from which investment selections are made, the securities included in the back-tested ROE universe (and their related performance shown herein) for 2006 and prior are different than the actual universe of securities (and their actual performance) developed during this period by the firm from which securities were selected when making investment decisions for client accounts.
- Because Jensen's high ROE Quality Growth investment strategy involves the use of concentrated/non-diversified portfolios (normally approximately 20 to 30 holdings), accounts managed by Jensen include only a small number of the securities that qualify for Jensen's investable universe each year (currently approximately 150). In addition, a number of the securities that qualify each year exhibit valuations and other characteristics that Jensen considers to be more indicative of value rather than growth stocks, and as a result such securities are normally excluded from investment consideration for the accounts of the firm's high ROE Quality Growth clients.

Due to these factors, the portfolio of securities included in the ROE universe that served as the basis for this study is not representative of the current or past securities portfolios for any current or former investment advisory client of Jensen, including The Jensen Portfolio (the "Fund"). Furthermore, the hypothetical investment performance shown herein for the ROE universe should not be considered indicative of the historical performance record, or of the future performance, for any current or former client account managed by Jensen, including the Fund. For the periods ended December 31, 2009, the 10-year and since-inception gross and net performance figures for the Fund, which commenced operations in August 1992 and is a mutual fund managed by Jensen using the firm's high ROE Quality Growth strategy, were lower than the hypothetical performance for the ROE universe for such periods.

Performance data shown represents past performance; past performance does not guarantee future results. All valuations and returns shown herein include the reinvestment of dividends. The performance stated herein for the ROE universe represents gross performance, and therefore does not reflect the deduction of brokerage commissions, investment advisory fees or other expenses of investing. The Standard & Poor's (S&P) 500 Index is a broad based, market value weighted index of 500 stocks that is widely recognized as being representative of the U.S. equity market in general. The Index is unmanaged and investors cannot actually make investments in the Index. The Index is provided for comparative purposes only and does not reflect fees, brokerage commissions or other expenses of investing.

Index performance and ROE universe performance are not indicative of Fund performance. For current standardized performance of the fund please visit www.jenseninvestment.com.

The high ROE Quality Growth accounts managed by Jensen (including the Fund) are nondiversified, meaning that they may concentrate their assets in fewer individual holdings than a diversified product, and therefore are more exposed to individual stock volatility than a diversified investment product.

Investing involves risk; loss of principal is possible.

The Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The prospectus contains this and other important information about the investment company, and it may be obtained by calling 800-992-4144, or visiting www.jenseninvestment.com. Read it carefully before investing.

Free Cash Flow: Is equal to the after-tax net income of a company plus depreciation and amortization less capital expenditures.

ROE: Is equal to a company's after-tax earnings (excluding non-recurring items) divided by its average stockholder equity for the year.

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5300 Meadows Road, Suite 250
Lake Oswego, OR 97035-8234
503 726 4384 Toll Free 1 800 221 4384
Fax 503 726 4385
www.jenseninvestment.com