Using "Market Randomness" for an Investing Advantage

A White Paper on Active Trading vs. Passive Investing

Executive Summary

Despite the financial industry advising investors for decades to use a buy-and-hold approach to stocks and equity funds with the argument that stock prices generally rise over time, data shows that this is a poor way to generate wealth, even long-term. The random nature of stock prices means inflation-adjusted returns significantly underperform investment targets, and exposes the buy-and-hold investor to greater risk than Wall St. will acknowledge.

Research highlights include:

- Since 2000, buying-and-holding a market portfolio has yielded only 3.5% inflation-adjusted returns, but with 6x the risk that can wipe those returns out in any given year.
- To be successful with a buy-and-hold strategy you need to have the same luck as guessing coin flips correctly for the next 20 years.
- A more engaged investment strategy has yielded 16% higher inflation-adjusted returns since 2000, and with only 2/3 the risk.
- On a trade-by-trade basis, an actively managed portfolio was profitable 22% more frequently than buy-and-hold.

Active Trading vs. Passive Investing: Truth and Myth

First, **buy-and-hold** is the name for a strategy where the investor buys a stock or a fund with no real plan to sell it until after some indeterminate amount of time. The investor may own the stock or fund for years, and is likely not aware of the risks or costs associated with doing that. That's why it's called a "passive" approach – there is little direct involvement by the individual investor.

> **"Passive" investing – there is little direct involvement by the individual investor.**

> **Active Trading – clear goals and full transparency.**

Active trading is the name for an engaged approach to investing with clear goals and full transparency of risks and costs. The amount of trading activity an "active" investor has is entirely up to the individual, and the emphasis is on awareness of market conditions and how they impact the investor's portfolio. Active trading is all about controlling your investments, increasing returns and decreasing risk.

Banks, money managers, mutual funds and brokers spend billions every year in marketing buy-and-hold strategies to investors. Why? Because those financial

institutions earn billions more simply by "housing" investors' portfolios through fees, borrowing and lending rates, and interest. They earn this money regardless of the performance of the portfolios. And maintaining large client assets keeps the money flowing consistently into coffers of the banks, managers and brokers. That's why they tout "buy-and-hold" to keep clients from moving their assets.

With all that marketing, it's no wonder that most people who want to invest think that buy-and-hold is the safest, most successful approach.

Debunking Major Myth

Investors are told that stocks and equity indices can grow 9% annually, on average. That, unfortunately, is a myth that we have disproven through quantitative data analysis.

Since 2000, a passive buy-and-hold strategy of the S&P 500 would have yielded only 5.7% annually, including dividends. That falls far short of the oft-claimed 9% target. And it gets worse. After factoring in inflation, the return since 2000 was only 3.5% annually. Moreover, the risk of this passive buy-and-hold portfolio was 18%. That means that on any given year, there is a 68% probability that the return on the portfolio would be anywhere from losing -14.5% and making +21.5%. Wall St. never quantifies risk of passive investing like that. Why? If you knew, you'd never do it.

Investors are told that stocks and equity indices can grow 9% annually, on average. That, unfortunately, is a myth.

So, if an investor with a passive buy-and-hold portfolio needs to take some money out for emergencies or retirement, for example, she had better hope that she's getting out in one of the up 21.5% years, not one of the -14.5% years! And the distribution of the up and down years is completely random. There is no predictive value in the past performance of a passive buy-and-hold portfolio.

It's the randomness – the 50/50 gamble -- of being "right" on the direction of the market, a fund, or an individual stock that plagues passive buy-and-hold. On the other hand, engaged, active trading takes advantage of this randomness to free the investor from having to be "right" all the time. Using a small suite of strategies, the active trader may have the same bullish outlook as the passive investor, but with a strategy that can make money if the price of the stock goes up, stays the same, or even drops a bit, the active trader has more scenarios of profitability than the passive investor.

A passive buy-and-hold strategy of the S&P 500 ... after factoring in inflation, the return since 2000 was only 3.5% annually.

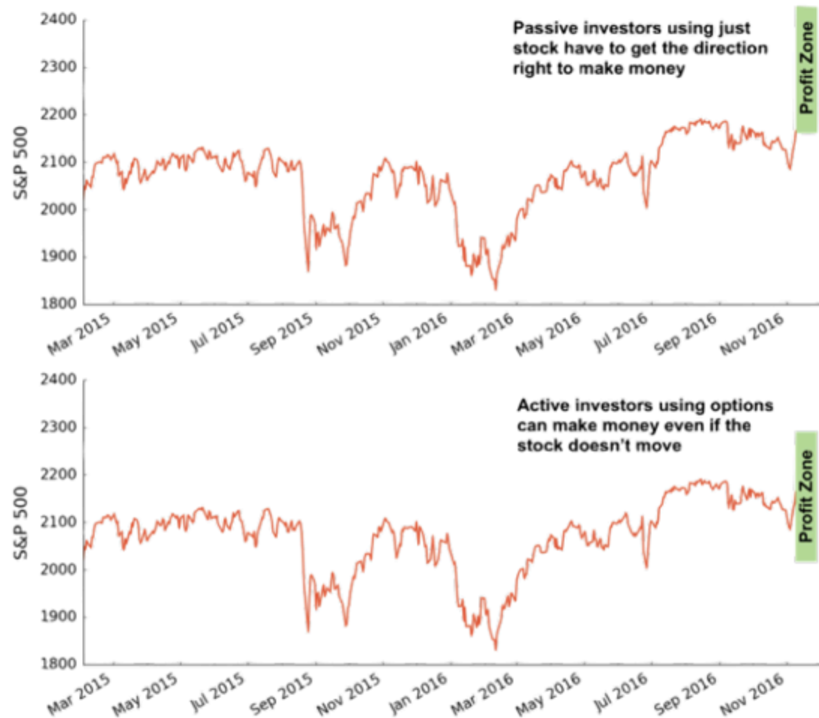


Figure 1: Options Can Provide Investors With More Opportunity

Active trading can deliver better returns than passive investing, but it is not nearly as profitable for the banks, funds and brokers. That's why active trading is not only not marketed to investors, but is also attacked as "churning" or "high frequency" or "day trading". While those things are real, they are most often due to the direction of a financial advisor and not the market decisions of the individual investor. With active trading, the investor guides her own decisions aligned with her own goals.

So, yes, passive buy-and-hold CAN make money over time, just not as much as Wall St., financial advisors and funds would lead you to believe, and not as much as you could with active trading, and with a lot more risk.

Engaged, active trading takes advantage of this randomness to free the investor from having to be "right" all the time.

Active trading can deliver better returns than passive investing.

How do probabilities help active traders beat passive investing?

You're probability familiar with the "bell curve" from being "graded on the curve" in school. Most kids get C's, fewer get D's and B's, and fewer still get F's and A's. That's the normal distribution. And stock and index returns work the same way.

Looking at historical weekly stock returns, most of the time they're very small, less than 1%. That corresponds to the peak, or middle of the normal distribution.

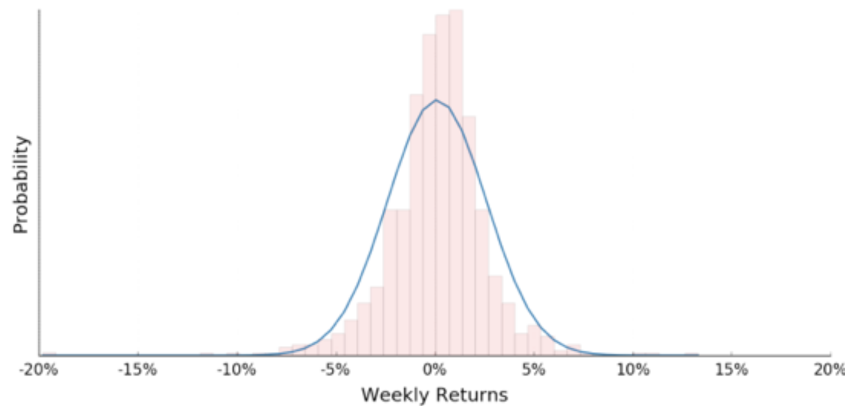


Figure 2: Weekly Probability Distributions of the S&P 500

Also note that larger negative returns are just as likely as larger positive returns. That means if you are holding a stock long term for a large return, you're just as likely to have a large negative return.

The distributions of returns of stocks and indices are consistent and powerful tools. Instead of guessing whether a stock might go up or down (50/50), we can use the normal distribution to quantify how high or low a stock or index might be in a week, month or year. For example:

The distributions of returns of stocks and indices are consistent and powerful tools.

What is the probability AAPL will increase by 10% within 3 months?

What is the probability the S&P 500 will drop by 5% in the next 2 weeks?

What is the probability bonds will rise by 20% in the next year?

The passive buy-and-hold approach ignores this information. The active, engaged trader uses it to her advantage with simple strategies that can make money based on probability and logic.

The passive buy-and-hold approach ignores this information. The active, engaged trader uses it to her advantage with simple strategies that can make money based on probability and logic.

Why should long-term investors use probabilities and options?

If you are a stock investor and think the price of a stock will go up – i.e. you're bullish on that stock – you have one strategy at your disposal. You can buy shares of the stock and have about a 50% probability of making some money at some point in the future. That's a lot of uncertainty.

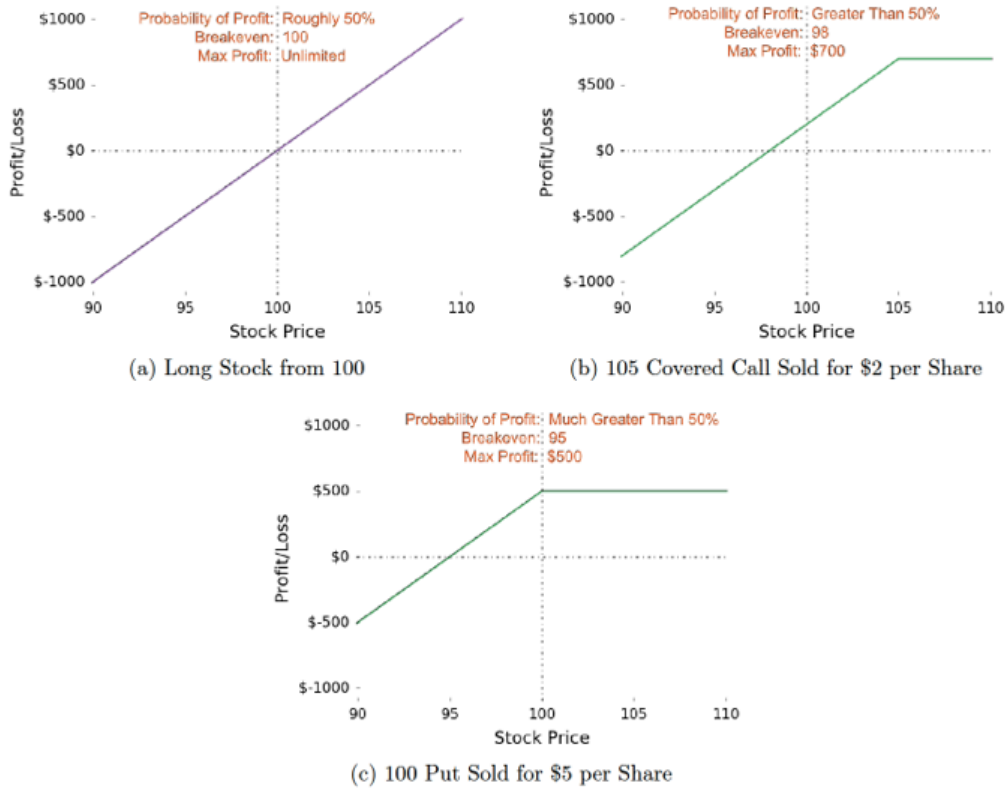
An active trader will use option strategies that are available for accounts of any size and any experience level. With options, you can have a better than 50% probability of making money and less risk than buying stock. The choice is yours. Covered calls, for example, which is selling a call against long stock, is an active trading strategy for bullish investors. You may have heard of it as a way to "generate income" on a portfolio. It's really an active trading strategy to increase the probability of making money.

A short put is another active trading strategy for bullish investors. It has no more risk than buying the shares of stock, and has a higher probability of making money. Let's see how.

First, as is done with all strategy analysis, we compare our results with a passive approach of buying the stock. In Figure 4a we illustrate buying 100 shares of stock. If the stock rises $1 we make $100 and if it decreases $1 we lose $100. Figure 4b illustrates a covered call, which is buying 100 shares of stock and selling a call. This allows someone else to buy your stock from you at a higher price in exchange for immediate payment. We are capping our upside profit, but in doing so we are lowering the position's breakeven. In the example illustrated, we are receiving $2 per share which lowers our breakeven to 98 but capping our profit to $700, which is based on the strike sold (105) plus the $200 in profit received from selling the call.

An active trader will use option strategies that are available for accounts of any size and any experience level.

Figure 4c illustrates the profit and loss of one of the simplest option strategies, the short put. The short put on average has had among the highest probabilities of success – routinely profitable 80% of the time. This strategy also takes advantage of the leverage available with options and unused money can be invested thus earning a basic rate of return. The success of this strategy is due to the seller of the put receiving money regardless of the stock's direction. Additionally since the put is sold at-the-money, the extrinsic value of the option is at its highest. The disadvantage to both the covered call and the short put is that the investor is capping his or her maximum potential profit. This, however, is generally only an issue in extremely strong bull markets. The advantage is that both option strategies are income producing; money received from selling the put and selling the call in the covered call provide stability. This positive cash flow lowers the volatility of the portfolio more than a typical buy-and-hold strategy.



(a) Long Stock from 100

(b) 105 Covered Call Sold for $2 per Share

(c) 100 Put Sold for $5 per Share

Figure 4: Comparison of the Different Strategy Payoffs

Figure 5 shows the results of passively buying-and-holding the S&P 500 compared against the two active option strategies, the covered call and the short put. The results show the short put on the S&P 500 (SPX) had the highest yearly average return from 2000 to 2016 with an average return of 6.6%; and this strategy did so with one-third less risk as measured by the yearly standard deviation. Both active approaches maintained profitability more consistently than the buy-and-hold approach, reaching 67% and 60% of weeks profitable compared to 55% of weeks profitable for the buy-and-hold approach.

Strategy	Avg. Yearly Return	Std. Dev. of Yearly Returns	% Weeks Profitable
Buy-and-Hold S&P 500	5.7%	18.1%	55%
Short Put on S&P 500	6.6%	13.0%	67%
Covered Call on S&P 500	6.3%	14.8%	60%

Figure 5: Comparison of Different Strategies from Jan 2000 to July 2016

Lastly, the growth of $10,000 can be seen in Figure 6.

Figure 6: Growth of $10,000, Jan 2000 to July 2016

Summary

So, to achieve superior investment returns, reduce risk and not play Wall St.'s game, all you need to know is a few simple strategies that take advantage of probabilities in the market. Historically, this small change from passive to active would have yielded 16% greater return with 2/3 the risk. Plus, active trading gives you much greater financial flexibility. This is how you can become financially independent and more confident of your future.

A more engaged, active approach to investing not only consistently outperforms buy-and-hold, but also does so with less risk. These facts drive the point that wealth is built not by relying on Wall St., but on using the random nature of markets to the investor's advantage.