



RISK & RETURN

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Risk and return are the twins of investing. They are the yin and the yang. Successful investors learn the proper balance and interplay between them. Investment return is a set of probable future outcomes. Achieving high and sustainable investment returns requires the ability to develop achievable forecasts. High-return investing requires both vision and courage. Effective investment risk management demands a contrasting set of behaviors, centered on an unrelenting discipline.

Unhealthy risk aversion can be a barrier to high-return investing. Consider that a small subset of investors are unbalanced towards risk avoidance instead of return. These include short sellers and perennial bears. Their historical performance numbers are poor.

Even worse, faulty risk management can lead to disaster, regardless of how courageous or far-sighted the investor. The stock market provides the sternest test for proper risk management. We have studied almost every failure of formerly high-return stock market investors. Invariably they crashed because they violated one of the two basic rules of risk management: 1) know what you own and 2) pay attention to the value of the stock in relation to the value of the actual company.

Even though risk management is vitally important and easily described, investors have generally avoided addressing the issue of risk. It is not difficult to understand what risk is; the Merriam-Webster dictionary succinctly defines risk as "the possibility of loss". We think there are two primary reasons why risk has been largely ignored in favor of its twin, return.

Return is the 'yang'—bright, upward, expanding, and strong. Risk is the "yin"—dark, passive, contracting, and weak. Return is the tipsy drunk at the party who captures the moment. Risk is the spouse who removes the drinks; the party pooper. The very nature of risk means it is more morose than glamorous. Second, the application of risk to investing requires all investors to face their fears and

personal biases. No wonder the topic of risk is not popular; it is unpleasant and difficult.

Before we delve more deeply into risk and return, we need to point out that there has been a profound change in the way most people invest. Instead of investing in stocks directly, most investors purchase intermediate assets, primarily mutual funds and hedge funds. Today in the U.S. the number of mutual funds dwarfs the number of individual stocks; about 8,000 mutual funds and 3,700 publicly traded stocks.

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Here is the point: whether investors purchase a mutual fund or a hedge fund, all investment roads get to the same place—ownership of individual securities. If we are to properly address the issues of risk and return, we must start at the level of the individual stock.

We are going to spend the next portion of this piece discussing the correct application of risk at the individual security level. We will then explain how we balance and integrate risk and return. Along the way we will point out the perverse effects of the prevailing orthodoxy towards risk management.



In order to properly apply risk to real-world investing we need to separate the notion of risk into two categories: actual risk and perceived risk. Actual risk is the possibility of loss. Perceived risk is the possibility of loss assessed uniquely by each individual investor, based on their own life experiences and normal human behavior biases. Often perceived risk is very different from actual risk.

For instance, the difference between actual and perceived risk is quite pronounced during air travel. The empirical evidence is conclusive: the actual risk of crashing in a commercial airliner is low. Even so the perceived risk by many passengers is high, based on each passenger's personal history and proclivity to become anxious sitting in a crowded airplane that is going really fast and operating in three dimensions.

Beyond the influence of our own life experiences, there are many common behavioral biases that skew our assessment of risk. Here are some: 1) over-optimism about our own abilities, 2) hindsight, 3) self-attribution—self-credit for good outcome, bad luck for

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bad outcome, 4) recency—the tendency to overweight the re-occurrence of an infrequent event, 5) loss aversion—assigning more weight to a loss than corresponding gain, 6) availability—the tendency to over-utilize easily available and measurable data, and 7) representativeness—to judge by appearance rather than likelihood.

None of us ever can see actual risk with total clarity. But what we can do is assess risk clearly enough so that we can make decisions based primarily on actual, not perceived risk. We can also be conscious that our own life experiences and consistent biases will be working against our ability to see actual risk clearly. Finally we can cross-check to make sure our risk management is moving us in the right direction; we should be able to determine whether the riskiness of an investment is increasing or decreasing.

One of the easiest ways to see how actual and perceived risk can deviate is to examine the publicly traded stock in an individual company. Let's say Widgets Corporation is worth \$20 per share. If the stock in Widgets Corp is selling for \$30 per share the investors are at risk that the stock will decline to \$20, the real value of Widget Company. On the other hand, if the stock in Widgets Corp were to sell for \$10 per share, the investors are more likely to see that the stock will increase in price to \$20. From this example it is very clear that if the stock were to sell at \$10 per share the investor has less actual risk than when the stock sells at \$30 per share. Simply, an inexpensive stock (i.e., one selling at a discount to actual value) is less risky than an expensive stock.

According to today's prevailing view of risk, if the stock were to decline from \$30 to \$10 per share, the price volatility, or "beta" of the stock would increase, making the investment riskier. A risk model based on historical "beta" would lead an investor to conclude that if stock declines from a 50% premium to actual value to a 33% discount to actual value, the riskiness of the investment has increased. This is simply perverse. The theory of beta, which is based on short-term price volatility, often moves the investor in the wrong direction by increasing perceived risk while actual risk is declining.

There is another significant measure of risk that is available to investors willing to look beyond stock price volatility and earnings per share. The quality of a balance sheet can tell much about the business and financial risk inherent in any investment. For example, the publicly traded stocks of Service Company and our previously mentioned Widget Corp both sell at \$10 per share; each company will earn \$1 per share in 2018. Thus, the two stocks are valued equally solely based on earnings.

The differences between the two companies becomes very stark when their respective balance sheets are considered. Service Company has \$10 per share cash on its balance sheet and no debt while Widget Corp has \$10 per share of debt on its balance sheet with minimal cash. Clearly Service Company has less actual financial risk than Widget Corp. Further, if the \$10 per share held by Service Company is not needed to operate the business and could be distributed to shareholders, Service Company is a less risky investment purely from a valuation standpoint. In this example, using market volatility as measure of risk or P/E ratios as a sole measure of valuation could lead investors to incorrectly assess the absolute and relative risks of investing in Service Company or Widget Corp.



If Service Company had experienced higher recent price volatility than Widget Corp, then Service Company would be showing higher Beta and could be considered a higher risk investment than Widget Corp. This is nonsensical.

Closing the gap between actual and perceived risk is one of the cornerstones of prudent investment management. We are all fortunate that Benjamin Graham, the father of value investing, captured the path in three words, "margin of safety". If an investor faithfully honors the margin of safety, he or she will reduce the gap.

Fortunately, the practice of building a margin of safety in each stock and by extension, each portfolio is straightforward and includes three elements: 1) know what you own, 2) pay a fair price for the stock, and 3) diversify your portfolio by balancing the margin of safety with the potential return.

KNOW WHAT YOU OWN

This crucial step in risk assessment seems so obvious, yet far too few investors deign to follow this practice. We can understand why: we have found this to be perhaps the most challenging activity in risk management. The root problem is that the process of analyzing a company typically leads to a dead end, and we end up not investing. Our initial take on a possible investment is always positive; otherwise, why would we begin the research? The company might have some interesting products for a large addressable market. Once we dig into the financial statements, we often discover that the management is very poor at allocating shareholder capital or they compensate themselves far too generously. Perhaps the most humiliating outcome is that we cannot figure out how they run their business. We think we are pretty smart analysts yet we cannot figure out what they are doing! Worse, the stock is running up and our competitors own the stock!

We know of no way to eliminate the difficulty of knowing what you own; we have sought to reduce the frustrations around this arduous exercise to a manageable level. The practice of humility is essential, to reassure each other that it is ok to admit that you cannot figure out a company.

There is another very powerful step to encourage the practice of looking at many potential investments and only picking a few: the practice of celebrating seemingly wasted effort. Every time an analyst researches a company, there is considerable learning taking place. This learning is not wasted. This is the kind of learning which

enables an analyst to be ready and able to recognize when a truly fine opportunity presents itself.

PAYING A FAIR PRICE FOR THE STOCK

After the basic due diligence is completed there are two more critical steps. First, the analyst must estimate the current value and predicted future value of the company. The analyst must then calculate whether the public stock purchase price is low enough so that the stock performance will mirror the fundamental progress of the underlying company.

These steps are straightforward, requiring basic math. The challenge is discipline and patience. An investor must not become lulled into paying too high a stock price for a fine company. Or to continue to hold a stock whose price is wildly out of line with the real value of the underlying company.

PROPERLY DIVERSIFYING YOUR PORTFOLIO

Diversification is a critical inflection point for investors, the integration of risk and return. What is the right number of stocks which will honor the margin of safety yet allow for superior portfolio results? Too few stocks and the investor risks a devastating permanent loss of capital from one investment; too many stocks virtually guarantees mediocre returns.

WHAT'S THE RIGHT NUMBER OF STOCKS IN A PORTFOLIO?

The right number of stocks varies by investor. The beginning step towards the right number begins with the next stock. That is, the next stock added to a portfolio should satisfy three criteria:

- 1) Can we build an adequate margin of safety for that specific investment? We must be comfortable that we not only understand what we are buying but can also make a reasonable assessment of what the investment is actually worth.



- 2) Will the new purchase have a material impact on the performance of the portfolio? This means the position size must be more than a token amount. We think a minimum initial investment of 1% of the portfolio with an ultimate investment of 3% satisfies the issue of materiality.
- 3) Will the new investment enhance the risk/return characteristics of the portfolio? The primary focus of this question is on the return of the portfolio. That is, every new purchase should enhance the expected return of the entire portfolio. The secondary focus might be that the new purchase would behave differently from the other stocks in the portfolio, because of a different business model or different end markets.

At DGI our natural number of stocks in our portfolios has averaged between 45 and 50 for several decades. This number gives us a proper balance between performance and margin of safety.

The prevailing orthodoxy in diversification is clearly different from ours. According to Bloomberg, for mutual funds with over \$500 million in assets and proactively managed (i.e., not an index fund nor ETF), the average number of stocks held in their portfolios as of April 30, 2018 was 166. The 25 largest proactively managed mutual funds were even more broadly diversified, owning an average of 220 stocks per mutual fund.

In order to gauge how effectively this prevailing practice balances and integrates risk and return, we need to evaluate whether they can build an adequate margin of safety in the next new stock and whether the next new stock could have a material impact on the performance of the portfolio.

We believe a well-organized investment effort could develop an adequate margin of safety for every one of the 166+ stocks. Such an approach would require at least three or more separate teams to focus on perhaps 40-50 stocks for each team. This effort would require far more coordination than a single team, mostly because of


the difficulty of applying a single process across multiple teams. But it could be done.

For portfolios with 166+ stocks, we do not believe it is possible to solve the issue of materiality. The math is straightforward. A portfolio of 166 stocks means the average position is 2/3 of 1% of the portfolio. Since position sizes vary in every portfolio, a 166-stock portfolio would own many positions of 0.2% or less; these positions are not material to the portfolio.

Why is materiality so important? The challenge of successfully developing a margin of safety for an investment requires considerable emotional and analytical effort. Why would an analyst/investor do the hard work to develop a margin of safety for a stock position that would have no material effect on the portfolio's performance?

Over the past two decades there have been many articles detailing the failure of mutual funds to outperform their benchmarks. We think one primary cause of the performance shortfall has been the issue of materiality. Professional investors have over-diversified their portfolios leading to reduced materiality and virtually eliminated the motivation to do the hard work to develop a margin of safety.

The failure of proactive fund managers to balance and integrate risk and return while charging high investment fees has paved the way for index funds, hedge funds, and ETF's.

We will examine how well index funds, hedge funds, and ETF's balance and integrate risk and return in a subsequent paper. 

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