

A PARED-DOWN APPROACH TO STOCK PICKING THAT IS MARKET-NEUTRAL AND RESULTS-DRIVEN



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A white paper discussing how this strategy
of market-neutral approaches delivers on its promise

A Pared-Down Approach to Stock Picking That is Market-Neutral and Results-Driven

Narrowing Down the Field

Investors looking for opportunities in the hedge fund market first need to consider an overall strategy approach. The typical 'Big Three' are: 1) Directional, 2) Market-Neutral, and 3) Event-Driven. Directional strategies seek to anticipate market movements, market-neutral approaches try to capitalize on arbitrage opportunities, and event-driven strategies look to take advantage of mergers, acquisitions, bankruptcies, and other special situations.

Within these three general baskets lives a plethora of investment strategies claiming to deliver top-shelf performance results. In the world of hedge funds this over-estimation is fictional, much as in Garrison Keillor's Lake Wobegon, where all the women are strong, all the men are good-looking, and all the children are above average.

Statistically speaking, we know this can't be true. But equally true is the fact that some subset of these approaches can and do deliver results that outperform both their peer group and their performance benchmarks. In this paper we will explain how one such strategy approach in the category of market-neutral delivers on its promise.

Long/Short Pairs Trading: A Difference With A Distinction

A market-neutral strategy that can achieve this kind of result is long/short pairs trading. Pairs trading is unlike a general long/short strategy, which typically is a long-biased strategy where the short side of the portfolio is an afterthought.

In pairs trading, a long equity position is matched directly with a short position in a stock that embodies similar traits like sector and capitalization. The pairing of two such stocks creates a combined trading position that captures relative price movements of the two stocks versus each other (see Figure 1).



Figure 1: A **Price Ratio Chart** is a chart of two stocks plotted together. Here is an example of Ford and GM.

It is calculated by dividing one stock price into the other. These are normally line charts and measure deviation from the mean or average spread between the two stocks in the pair.

When the price ratio line moves to its first or second deviation from the mean it's time to enter the trade. The profit is anywhere in the spread as it comes back to the mean.

(Source: tradingstocks.com)

While the paired stock position is able to capture relative market movements between the paired stocks, it simultaneously lessens the impact of the overall equity market, as the pair comprises a natural hedge against directional movements. **The essence of creating alpha in such pairs trading resides in the combination of stock selection, optimal entry/exit points for the pairs trades, and overall management of trading positions and risk.**

A Positive Point Of View

Employing a long/short pairs trading approach to the US equity markets offers inherent advantages.

- The large number of listed US equities offers a comprehensive opportunity set to match long and short positions encompassing a wide range of market sectors.
- The liquidity of the market means the 'price to play' in such a pairs strategy is attractive, as there exists plenty of trading volume, narrow bid/ask spreads, and low transaction costs.
- Well-established infrastructure between borrowers and lenders creates relative ease in borrowing stocks, critical in establishing the short position for each pair.

So Where Are All The Players?

It seems almost too simple to be true: if pairs trading can make money in the market while limiting the downside risks involved in the overall market, why would any trader with the ability to go long or short not pairs trade?

The answer, in its most basic form, is equally simple: because it's not so easy to establish the paired position. **As in most trading strategies, regardless of approach or style, the baseline differential between great, mediocre, and awful is execution.**

For pairs trading, research and application prior to establishing, and then subsequently trading around the pair, make all the difference. Considerations include:

- Stock selection—the ability to identify where the anomalies are between correlated equities—is fundamental to narrowing the universe of the broader market down to the best group of potential pairs.
- Developing the research and methodologies to achieve superior stock identification takes time, expertise, patience and skill.
- Continually reviewing the broader market situation and evaluating the changing market data for both the basket of pairs traded as well as potential new pairings allows for optimal portfolio allocation in the pairs trading methodology.
- Delineating the optimal entry/exit points while simultaneously maintaining appropriate risk management for the duration of the trade requires vigilance and the ability to refine an approach while retaining its core methodology.
- Establishing appropriate risk management practices that create prudent controls while maximizing returns requires a fine balance of risk/reward that must accommodate the dynamics of this type of strategy.

Many managers can provide attractive results in an upward trending market. **The true measure of an investment strategy is to create value across market cycles—up, down, or moving sideways.** This takes superior skill and demonstrated ability.

What's In It For Me?

We have discussed the reasons why pairs trading can provide an attractive arbitrage investment strategy within the general category of market-neutral approaches from the perspective of a portfolio manager. But the value of any trading strategy is its relevance to the investor who allocates capital to the portfolio manager. The prospects for the trading approach must match the investor's desired goals, and its resulting performance must generate the results that satisfy these objectives,

Goal-setting and performance objectives combine in unique ways for each investor, and are affected by the desired risk/reward parameters. **Every investor seeks to strike the right balance of upside gain while protecting against downside loss—the key to long-term investment success, often called the 'efficient frontier' (Figure 2).'**

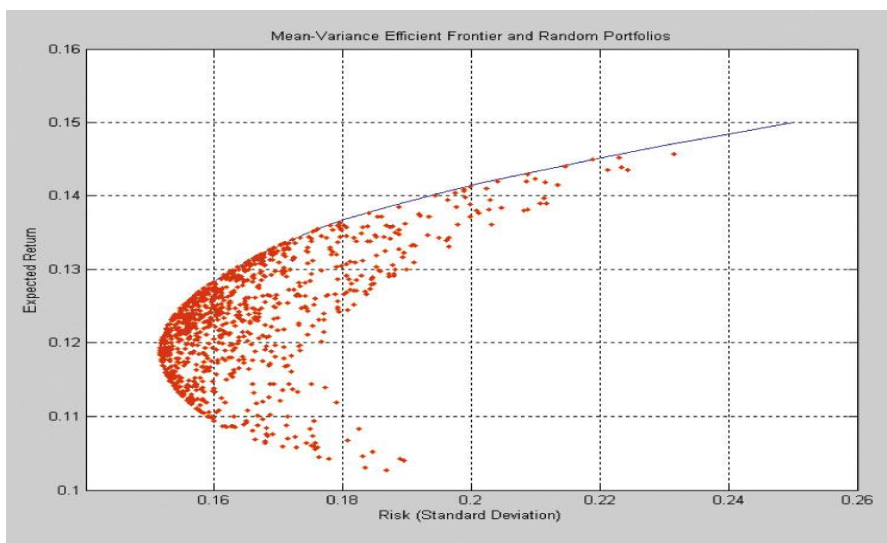


Figure 2: **Mean Variance Efficient Frontier and Random Portfolios** (Return vs. risk: the efficient frontier as defined in finance theory.) Source: Bob Taylor, www.foliotechnologies.com

Trading approaches that can deliver within the parameters of the investor risk/reward profile are the strategies that have the most likely chance to achieve the investor's commitment to long-term investment and success.

Utility Function: Performance and Downside Protection

The magic bullet for achieving the highest performance returns with the lowest possible risk does not exist. The investment decision-making process always comes down to some form of trade-off between the two variables. **How much risk can one bear to gain potentially higher returns, or how much upside gain will one be content to potentially lose out on to strengthen the protective stance against downside moves in a portfolio?**

Defining this combination is commonly referred to as the investor's utility function. The concept of this utility function is essential to an investor's portfolio allocation process. Thus, the first step in building a portfolio's investment mix begins with stating goals and objectives for the portfolio's overall performance.

The investment objectives of a portfolio might be hard—such as T-bills plus 300 bps—or it might be soft—such as seeking to beat the industry benchmark average while describing the limits of the average portfolio drawdown over a predetermined period of time.

Many different trading approaches can be used to construct the optimal portfolio mix. Returning to the pairs trading discussion, let us examine how an allocation to a pairs trading strategy to the overall portfolio construction can help to reduce the total portfolio risk while enhancing the return characteristics to maximize the utility function objectives.

A Pared-Down Approach To Attractive Returns With Lower Risk

The market-neutral characteristics inherent in US equity pairs trading make it possible to achieve returns with little or no correlation to the broader equity market. This characteristic means that, when adding a component of US equity pairs trading to an investment portfolio that includes some measure of US equity exposure, the overall portfolio risk profile can be reduced and thus optimized.

When the pairs trading allocation simultaneously adds incremental value in terms of performance, the performance objectives of the investor are maximized in addition to having reduced the risk exposure. An additional inherent value of a long/short US equity pairs trading approach lies in its capacity to employ varying amounts of leverage. **The application of leverage can adjust the strategy's risk/reward profile to match the objectives of a variety of investors** (Figure 3).

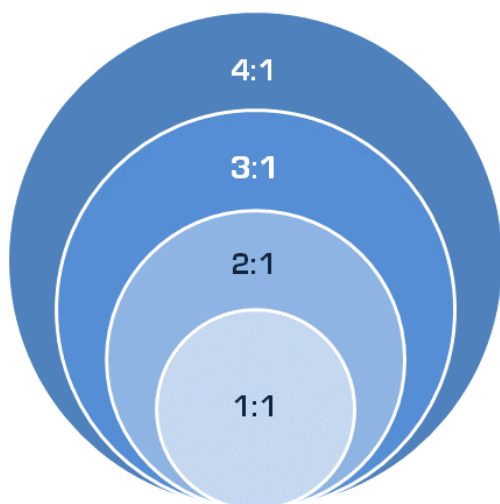


Figure 3: Application of varying use of leverage to illustrate anticipated reward:risk parameters within a portfolio.

1:1 =	6% annualized ROR with 5% volatility
2:1 =	12% annualized ROR with 10% volatility
3:1 =	18% annualized ROR with 15% volatility
4:1 =	24% annualized ROR with 20% volatility

The true value of a pairs trading strategy lies in its potential to improve both sides of the utility function for an investor—reducing overall portfolio risk while improving overall portfolio returns. Although it is no magic bullet, it is a powerful performance tool for the investor to consider.

Given the hedged nature of the equity pairs trading strategy, there is definitely a performance factor to consider when evaluating the return characteristics:

- In sustained declining markets, the potential for gain exists in the strategy through the short positions inherent in each pair.
- Although the performance of the pairs strategy is likely to lag a bull market, the portfolio manager can achieve absolute positive returns with superior stock selection and portfolio management techniques.

Indeed, this outperformance criteria is something that investors should look for when evaluating a pairs trading strategy: does it deliver on both legs of the investment utility function: attractive gains with attractive risk management?

Market-Neutral: The Weighting Game

There are further aspects of the general market-neutral approach that an investor looking at pairs trading should evaluate: the concepts of dollar neutrality and beta neutrality.

- Dollar-neutral simply means that the portfolio of pairs trading comprises approximately equal values of dollars long versus dollars short over the basket of pairs trades held. Therefore, the dollar weighting of the portfolio positions long to short is approximately 1:1.
- Beta-neutral in a US equity pairs trading strategy means that the paired position sizes have been adjusted relative to each stock's relative volatility, or beta, to the overall market.

As US equity pairs trading tends to be a dynamic trading strategy, rebalancing of the portfolio to preserve dollar or beta neutrality becomes an important factor in maintaining the integrity of the overall portfolio.

Since transaction costs can create friction for the portfolio returns, the advantages of employing the strategy in the US equity market take on even greater significance. Low transaction costs and ease of establishing positions, both long and short, in the US equity markets are valuable trading considerations that cannot be found easily in other pairs trading strategies.

Finally, the skill and experience of a pairs trading portfolio manager through a variety of market cycles and conditions dictates the pairs trading portfolio's ability to achieve stated performance and risk management objectives.

Slow and Steady Wins the Race

The advantages of long/short US equity pairs trading are numerous, particularly in its scalability and ability to perform in all market conditions. Setting expectations for what kind of utility function this type of market-neutral strategy offers investors is key to the decision process for investors evaluating pairs trader portfolio managers.

This type of investment strategy naturally lends itself to small, steady gains and tight risk controls on potential downside swings in a portfolio's overall return. Most investors recognize that capital preservation is critical to achieving long-term performance goals (Figure 4).

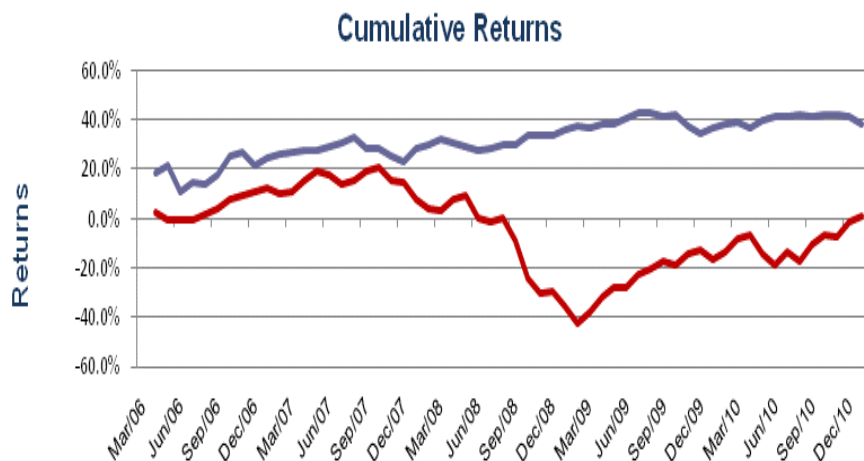


Figure 4: Sample pairs trading portfolio returns (blue) versus the S&P (red) over time frame from 3/2006-12/2010 illustrating the non-correlated return stream and downside risk protection

The pairs trading strategy, which seeks to achieve market-neutral status, either beta or dollar neutral, can be expected to deliver:

- annual returns that generally can be expected to be in the range of high single-digit to low double-digits,
- an attractive risk profile that establishes very low correlation to the overall market,
- use of, on average, very modest leverage.

While this type of strategy is not expected to outperform in bullish markets, it can significantly outperform in bearish or sideways markets, and, in either case, provides excellent downside protection and diversification for overall portfolio construction. In today's uncertain markets, this objective seems a natural fit to many investors' utility function goals.

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