Correlations Between Traditional Asset Classes Have Been Rising
Diversification remains a leading tool for managing market risk, but in recent years, investors have had reason to wonder whether it was doing them much good. When correlations between traditional asset classes rise, as they’ve done of late, standard diversification techniques become ineffective. Within equities, differences in geography, capitalization and investment style do not currently provide meaningful diversification benefits, and even between stocks and bonds, the correlations have mounted. Alternatives, such as market-neutral strategies, may be an answer to this conundrum.

A Market-Neutral Strategy May Limit Risk and Preserve Return Potential
A market-neutral strategy may be a useful tool for reducing an investment portfolio’s overall risk while preserving return potential. A market-neutral strategy is a form of hedging that aims to generate returns that are independent of the market’s swings and uncorrelated with both stocks and bonds. Instead of being determined by the markets, returns are influenced by the portfolio manager’s skill, the direction of short-term interest rates and the degree of variation among stock returns.

### Correlations Between Traditional Asset Classes

<table>
<thead>
<tr>
<th>Correlation Coefficient</th>
<th>20-Year</th>
<th>10-Year</th>
<th>3-Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Equities vs. International Equities</td>
<td>0.79</td>
<td>0.90</td>
<td>0.93</td>
</tr>
<tr>
<td>US Large-Cap vs. Small-Cap</td>
<td>0.83</td>
<td>0.92</td>
<td>0.96</td>
</tr>
<tr>
<td>US Growth vs. US Value</td>
<td>0.79</td>
<td>0.92</td>
<td>0.95</td>
</tr>
<tr>
<td>Global Equities vs. Global Fixed Income</td>
<td>0.26</td>
<td>0.30</td>
<td>0.61</td>
</tr>
</tbody>
</table>

As of December 31, 2011
An investor cannot invest in an index. These figures do not include sales charges or operating expenses associated with an investment in a mutual fund, which would reduce total returns.
Source: Morningstar Direct and MSCI World Index

IN THIS PAPER
A market-neutral strategy may be an effective complement to a traditional stock-and-bond portfolio. By using a finely calibrated combination of long and short stock investments, market-neutral strategies may help defuse market risk and volatility, improving overall returns.
How a Market-Neutral Strategy Works

In general, a market-neutral strategy seeks to generate investment returns that are independent of the market environment. In order to cancel out the impact of fluctuations in the equity markets, the portfolio manager makes both short and long investments. In aggregate, the dollar value of the short investments, which pay off if a stock’s value drops, will roughly equal that of the more traditional long investments, which appreciate if the stock price rises. If the market moves up, the losses in the shorts will be partly offset by the gains in the long investments. On the flip side, if markets fall, the shorts will provide a hedge against losses in the long positions.

The performance of a strategy like this is driven primarily by the manager’s skill in selecting individual stocks or other exposures, such as industries, valuations or countries. The ability to take short positions gives the portfolio manager the flexibility to express negative as well as positive convictions about individual stocks. A long-only manager can express an unfavorable view only by avoiding a stock, but this tends to have a fairly limited impact on performance. A market-neutral manager, on the other hand, can seek to materially affect portfolio performance by taking active short bets. An analysis of the Russell 1000 Index over the past 37 years helps to illustrate this point. With the exception of the 50 largest stocks in the index, avoiding the worst-performing 20% of stocks would have contributed less than 10 basis points (b.p.) to the relative quarterly performance of a long-only manager (Display 1). But shorting those same stocks would have added 66 b.p. to relative performance. The advantage was smaller with the largest-capitalization stocks, but shorting still would have added more value.

The Comparison to Long/Short Strategies

A market-neutral strategy is similar in many ways to a long/short strategy. Both invest primarily in publicly traded stocks, occasion-ally using derivatives, exchange-traded funds and other instruments to manage risks, express conviction or reduce costs. But there is a critical difference: long/short strategies typically share in the swings of the equity markets because managers can, and usually do, have unequal sums invested in their long and short positions. Although long/short managers can overweight their

Display 1

<table>
<thead>
<tr>
<th>Russell 1000 Constituents by Market Cap</th>
<th>Average Index Weight*</th>
<th>Typical Quarterly Loss of Bottom 20% Performer</th>
<th>Average Impact from Avoiding (or Shorting) the Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 50</td>
<td>0.89%</td>
<td>−16%</td>
<td>58 b.p.</td>
</tr>
<tr>
<td>Next 450</td>
<td>0.10</td>
<td>−16</td>
<td>7</td>
</tr>
<tr>
<td>Next 500</td>
<td>0.08</td>
<td>−16</td>
<td>5</td>
</tr>
</tbody>
</table>

Assuming ability to take a short position of 100 b.p.: Shorting Strategy 1.00% −16% 66 b.p.

Past performance does not guarantee future results. Typical quarterly loss is calculated over the 1974–2011 time period. Within each cohort, weighting is equal. An investor cannot invest directly in an index or average, neither of which includes sales charges or operating expenses associated with an investment in a mutual fund, which would reduce total returns.

Source: FactSet, Russell Investment Group and AllianceBernstein

Display 2

Market Neutral Is Usually Detached from Market Fluctuations

short positions, this is relatively uncommon. They generally favor their long positions, and thus their portfolios tend to thrive when the markets rise and suffer when they fall.
When Do Market-Neutral Strategies Perform Well?

Market-neutral strategies strive to take advantage of variations among stock returns. By shorting stocks they consider unattractive and taking long positions in stocks they consider attractive, managers seek to capture the spread in performance between the strongest and the weakest stocks. This works best when there is a significant gap, or dispersion, between the best- and worst-performing stocks. Conversely, when stocks move together in lockstep, which tends to happen at the extremes of both “irrational exuberance” and macroeconomic angst, it doesn’t matter much whether one owns the best stocks or the worst ones. All boats are caught in the overpowering tide. So, opportunities for market-neutral strategies—indeed, for any strategy that relies on stock-picking—are curtailed when stock returns cluster together in tight correlation.

Periods of high correlation among stocks are generally periods of extreme risk-seeking or risk aversion. At these times, it is generally a stock’s perceived riskiness (or lack thereof), rather than its fundamental attractiveness, that tends to determine returns. The degree to which stock returns have been correlated has varied significantly over time, with spikes around market crises (Display 2). Generally, those spikes favor top-down directional investment strategies, while periods of low-to-medium correlation favor bottom-up approaches based on stock-specific fundamental or quantitative characteristics.

Research Shows Stabilizing, Diversifying Effect

In order to illustrate the potential returns from a market-neutral strategy in different macroeconomic environments, we ran a hypothetical scenario using the HFRI Equity Market Neutral Index. The index displayed little correlation to the movements of stocks, bonds, real estate, commodities and other alternative strategies over time. These low correlations have been a powerful diversifier.

The market-neutral index delivered 6.94% annualized returns since 1990, compared with 8.60% for the S&P 500 Index and 7.11% for the Barclays Capital US Aggregate Bond Index (Display 3). The market-neutral index was also less volatile and produced a better risk/reward ratio, as indicated by its higher Sharpe ratio. As we expected, our analysis showed that over a long period, excess returns—which are a measure of the reward for taking risk—for the market-neutral index were largely uncorrelated with the underlying equity markets. We also expected market-neutral returns to show relatively little
correlation with bonds. Indeed, the index often demonstrated substantially negative correlation, particularly over the past eight years. Thus, market-neutral strategies can at times act as a stabilizer and diversifier for some portfolios.

Effect of Interest Rates, Inflation and Return Dispersion
Historically, rising short-term interest rates have been favorable for market-neutral strategies. In a short sale, an investor pays a fee to borrow a stock that he believes is going to fall in value. He sells the stock at the current high price and deposits the cash proceeds, earning interest at the fed funds rate. If his bet is successful, the stock goes down and the short seller can then buy the stock at a lower price and return it to the lender. The short seller’s profit consists of the money he made by selling the stock at a high price and buying it back more cheaply, plus the interest he earned while the cash from the high-priced sale was deposited at the fed funds rate. When short-term rates are low, this interest income is generally immaterial and can even be negative due to the costs of borrowing stocks. However, if short-term rates revert to their historical average of 3% to 4%, interest can make a meaningful contribution to a market-neutral portfolio’s absolute return.

This effect is clearly visible when looking at the performance of market-neutral strategies in different interest-rate environments. The HFRI Equity Market Neutral Index delivered better returns when interest rates were rising, while lagging when interest rates fell (Display 4). The same was true of different inflation settings, which is not surprising, given that accelerating inflation generally coincides with rising short-term rates.

We also tested the hypothesis that the best results occur when stock returns are widely dispersed (Display 5). We expected the index to do best when stock-specific characteristics, rather than macroeconomic considerations, had a dominant impact on returns. Our historical testing did, in fact, bear this out.

These relationships set the stage for understanding the likely performance of market-neutral strategies in different economic settings, as well as the risks associated with the category. The
key risk elements are manager skill and spikes in correlation among stock returns, which restrict the reward for superior stock-picking. This dynamic was powerfully evident from the middle of 2007 to late 2009, when extreme risk aversion sent correlations among stock returns soaring. As a result, market-neutral strategies, which would be benchmarked to short-term government rates, delivered disappointing returns of –11%.

**Who Should Consider Investing? And How Much?**

We believe that investors who might benefit from market-neutral strategies include those who expect short-term interest rates to rise and those seeking to stabilize and diversify their portfolios with investments that don’t typically move in tandem with most traditional asset classes. The latter may include investors who are uncertain about the market’s direction or those who are already highly vulnerable to swings in the capital markets. Our research suggested that a typical investor with a target allocation of 60% equities and 40% bonds may benefit from allocating 10% to 20% to a market-neutral strategy (Display 6). The benefit comes primarily from lower volatility in the overall portfolio with similar returns. It is important to bear in mind, however, that the results of our research cannot be assumed to represent the future performance of actual portfolios.

Since manager skill is a critical variable with a market-neutral strategy, we conducted an optimization analysis to recommend allocations to the hypothetical strategy depending on the manager’s skill. It is important to bear in mind that an optimum asset mix is extremely sensitive to the starting assumptions about the expected returns, volatility and correlations of stocks, bonds and the market-neutral strategy. But on the whole, the appropriate market-neutral allocation rises with the manager’s skill, which

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**Display 6**

**How Much to Allocate**

Hypothetical Benefit of Including Market Neutral in a Typical Asset Allocation

<table>
<thead>
<tr>
<th>Sharpe Ratio*</th>
<th>0.48</th>
<th>0.51</th>
<th>0.55</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>8.1%</td>
<td>8.0%</td>
<td>7.9%</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>9.5</td>
<td>8.7</td>
<td>8.0</td>
</tr>
</tbody>
</table>

Historical analysis and past performance do not guarantee future results. These returns are for illustrative purposes only and do not reflect the performance of any fund. Diversification does not eliminate the risk of loss. An investor cannot invest in an index. These figures do not include sales charges or operating expenses associated with an investment in a mutual fund, which would reduce total returns.

Bonds are represented by Barclays Capital US Aggregate Bond Index, US stocks by S&P 500 Index and market neutral by HFRI Equity Market Neutral Index.

* A measure of the reward per unit of risk over an observation period. In general, funds with higher Sharpe ratios have better risk-adjusted historical returns.

Source: Barclays Capital, Hedge Fund Research, S&P and AllianceBernstein
is indicated by a higher information ratio (Display 7). The suitable allocation declines if the market-neutral strategy is highly correlated with the equity markets, which would suggest a design flaw and, therefore, a less skilled manager. Assuming an information ratio of 0.45 to 0.55, low correlation with the market and typical risk aversion, the appropriate allocation to a market-neutral strategy would be 6% to 34%. In the current environment of low interest rates, our optimization would favor replacing some of the bond allocation with a skillful market-neutral manager.

**Risks to Consider**

Like all investment strategies, market-neutral investments may lose value. They share some or all of the risks inherent in the various tactics and asset classes that they employ. And losses can be magnified if several components of a strategy fail simultaneously, which can happen during market crises.

At the simplest level, there is no guarantee that a manager’s techniques and the components of the portfolio will work as intended. Market-neutral strategies may invest in assets such as derivatives that can be riskier and more volatile than traditional investments, particularly in falling markets. They may also invest in less-liquid securities that can be difficult to buy or sell at will. They employ leverage tactics, including short sales, that tend to magnify both gains and losses. Some strategies may invest globally, potentially exposing investors to volatility in currencies, politics and national economies. In addition, a market-neutral strategy’s costs may pose downside risk. Costs associated with forms of investment such as short selling or exchange-traded funds can detract from performance, as can the transaction costs generated by turnover within the portfolio. In addition, some short-term gains may have adverse tax consequences for some clients.

**Choosing a Market-Neutral Strategy**

While issues of risk allocation and style consistency are always important, they are quintessential when considering a market-neutral strategy. The volatility, or risk, and total return of a typical long-only product is primarily determined by its beta to the underlying market.
In a market-neutral product, manager skill and the size of the risk budget account for the bulk of the return. Assessing the skill of a market-neutral manager is difficult, given the variations in tactics among managers and the relative novelty of the category. It may help to have a detailed understanding of the main product types, their risk/return trade-offs and the correlations among them. Some of the typical approaches are described in Display 8.

**Market-Neutral Approaches Vary and Can Be Combined**

While a market-neutral strategy may be designed to effectively neutralize exposure to the market, the more interesting and important question is what the net long or the net short exposure is. These exposures define the risk of the product and the character of its potential returns. A detailed analysis of the portfolio can help identify any unintended bets and provide a useful performance attribution by approach. For example, macro approaches may involve an arbitrage among industries, risk characteristics, style, size and other macro factors. Such tactics would still rely on trading equities or equity indices, ETFs or swaps, but they would express their views at an aggregate level. A manager would still maintain market neutrality at the aggregate portfolio level but seek returns by net long or short exposures to specific industries, styles and so on. Usually, these approaches are fairly scalable and rely on a combination of judgment and quantitative tools to identify sources of exploitable mispricing or trend-following.

Fundamental market-neutral approaches generally seek to leverage stock-specific insights by taking long positions in stocks that seem attractive and shorting ones that seem unattractive. Fundamental managers may use quantitative tools to help with position sizing and to avoid unintended bets, but the bulk of the expected return is driven by stock selection. In general, fundamental managers will focus on the differences between the market’s view and their own assessment of a stock’s proper value, growth prospects and short-term fundamentals. The concentration and size of individual positions, along with the magnitude of industry bets, will determine the volatility and potential returns of this approach.

Quantitative approaches seek to arbitrage the returns of stocks with “desirable” versus “undesirable” traits, without regard to qualitative assessments of those metrics. This approach is grounded in behavioral finance, which argues that market participants do not always act rationally and are subject to certain biases that produce pricing anomalies that can be exploited. While these tactics are implemented at the stock level, stock-specific returns are usually minimized and returns are pursued at an overall attribute level (e.g., valuation, capital use and growth). Many of these strategies seek to be highly disciplined in maintaining neutrality vis-à-vis factors such as oil prices, interest rates and sector bets. They tend to view volatility as a risk, and thus a negative, in determining position sizing and portfolio construction.

Finally, technical approaches include a wide range of tactics that seek to exploit anomalies in liquidity and other technical traits. These investments tend to be shorter-term and entail high turnover. Many high-frequency and statistical-arbitrage strategies would fall into this category. Generally, these approaches neutralize exposure to overall market trends by taking long positions in stocks with high and rising demand, while shorting stocks that are under growing selling pressure. Many of these strategies also take advantage of correlation among stocks and changes in volatility levels.

While these tactics are described as being separate, they are often used in combination. A key issue is to make sure that risk allocation is done in a premeditated manner.

**Ensuring Diversified Sources of Return**

Market-neutral strategies have two basic tools for controlling risk and determining the absolute level of relative return: diversification and leverage. Diversification may reduce risk, but it also may materially depress overall returns. Furthermore, the apparent benefits of diversification can evaporate just when investors need them most—during market crises. Leverage can lift absolute returns but can be catastrophic when everything fails at once.
The interplay between diversification and leverage became dramatically evident among some of the quantitative market-neutral managers around the middle of 2007. Some of them had allocated 70% to 90% of their risk budgets according to various quantitative metrics that historically had delivered positive returns and had neutral or negative performance correlation. In order to achieve a “purely quantitative” alpha, they also neutralized or reduced exposure to various idiosyncratic factors by owning huge numbers of stocks and avoiding sector or style bets. Not surprisingly, this extensive diversification depressed expected returns. To reach their target returns, some quantitative funds compensated with leverage of between 4:1 and 6:1, on top of the 2:1 leverage that comes from being long and short similar amounts of money. In other words, total risk was scaled upward by eight to 12 times the original equity capital. As the risk in the market began to increase, these managers started to deleverage, which, along with other factors such as repricing of risk, led to a downward spiral in returns and a breakdown in the historical correlation relationships.

There are a number of approaches that may avoid—or at least mitigate—that trauma. The first, and perhaps most important, is to have sources of alpha on the short side of the portfolio that are different from those on the long side. If there is a high correlation between short and long sources of excess return, failures and successes will be heavily amplified, with no diversification benefit. Managers can seek to address this issue in a variety of ways. They can separate the fundamental teams responsible for the long and short investments; they can use quantitative factors in an asymmetric manner; or they can have different investment horizons for the long and short positions. The key is to monitor whether the performance of the long and short positions is essentially uncorrelated.

An alternative, or complementary, approach to diversification is to use multiple approaches to portfolio construction, dividing the risk budget among macro, fundamental, quantitative and technical strategies. This should structurally increase diversification. Another approach is to diversify approaches based on their implied time horizons. For example, a manager with a 100% turnover has an effective investment horizon of about one year, while 400% turnover implies a target of roughly one quarter. Historically, approaches with dramatically different time horizons remained fairly uncorrelated even in times of crisis. Thus, combining them may achieve better Sharpe ratios, or risk-adjusted returns (Display 9). In particular, our analysis suggests that even a small allocation to a limited-capacity, high-turnover strategy can enhance risk-adjusted returns. Once the appropriate degree of diversification has been achieved, leverage can be useful in raising the target return premium.

Contingency Plans

Even after all the due diligence has been performed on the approaches deployed, the sources of diversification and the degree of leverage, there is one critical question that still must be asked of prospective managers: what processes and tools will guide your actions when your strategy or your underlying assumptions begin to fail on a short-term basis?

The answer to this question may reveal a great deal about a manager’s implied time horizon, capacity limitations and potential for hitting contractual, performance-based trip wires known as drawdowns. Responding to inflection points is key to avoiding periods of prolonged underperformance and successfully managing drawdowns. Approaches may include volatility trading, which is paying for hedging when volatility is extremely depressed; neutralization of exposures through

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Display 9

<table>
<thead>
<tr>
<th>Time Horizon Diversification Can Have a Big Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregation of Quantitative Strategies Optimized for Different Time Horizons</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AUM Mix</th>
<th>Daily</th>
<th>Quarterly</th>
<th>Annual</th>
<th>Three-Year</th>
<th>Combined</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5%</td>
<td>20%</td>
<td>35%</td>
<td>40%</td>
<td>100%</td>
</tr>
<tr>
<td>Sharpe Ratio</td>
<td>2.09</td>
<td>0.62</td>
<td>0.44</td>
<td>0.30</td>
<td>0.88</td>
</tr>
</tbody>
</table>

futures; and reducing the riskiest positions. Obviously, a hard-coded policy of slashing risk during market disruptions is not always desirable. Sometimes it may even be wise to go the other way and double up on underperforming strategies. The best tactics will depend on the situation and the structure of the portfolio at the time of the event. However, the process, decision-making metrics and tools to address the situation should be clear up front.

**Market Neutral: An All-Weather Option**

Market-neutral strategies may be a valuable complement to a traditional stock-and-bond portfolio. A well-designed market-neutral strategy should provide excess return regardless of the swings in the equity markets. Therefore, it should help to insulate investors from market crises and periods of unnerving volatility. A market-neutral strategy may also help offset the harm of inflation and rising short-term interest rates, since it should perform well in those conditions. These advantages may be particularly important to investors now, given that markets remain uncertain and rates are close to historical lows. Choosing a skilled market-neutral manager is critical, since returns should not be driven by the overall direction of the market, but instead should depend very heavily on the manager’s ability. Indeed, the manager’s skill is a central source of risk. A poorly designed or badly executed strategy may not provide the desired insulation and could amplify the market’s swings. Evaluating managers can be difficult, given the wide range of tactics they use and the relative novelty of market-neutral products. Therefore, advisors must delve deeply into the details of each product’s structure and contingency plans. Armed with this understanding, many investors may benefit from a market-neutral allocation.