

Will the Real Alpha Please Stand Up?

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EXECUTIVE SUMMARY

Congratulations! Your investment manager has outperformed. But should you be celebrating? Do you know how they achieved that outperformance or what risks your portfolio was subjected to in order to get those returns?

A manager who has generated positive excess return relative to the benchmark may not necessarily have delivered positive alpha. In practice, some investment managers rely primarily on beta in their attempts to deliver excess returns. To illustrate, we compared two fixed income investment managers. After regressing both managers' excess returns against a set of fixed income market factors, we found that Manager 1 had significant exposure to interest rates and risk assets, while Manager 2 had no significant exposure to any of the risk factors. As a result, Manager 1 delivered a modest level of alpha that was not statistically significant, while Manager 2 delivered a larger and statistically significant alpha.

We also examined the core fixed income managers that landed in the top 20% of their peer group for five-year performance ending December 31, 2015. Plotting the managers' average allocation to different asset classes at year-end over the past ten years shows these managers, on average, had a large overweight position in risk assets and non-benchmark securities throughout the period. Not surprising, their performance was highly correlated with the overall performance of risk assets. This static overweight represents beta, not alpha. On the other hand, tactical exposure to these riskier securities can generate alpha and show skill.

Although true alpha in the fixed income market is elusive, we believe skilled managers can capture alpha from multiple sources by: (1) Dynamically allocating among asset sectors based on forecasts of relative performance; (2) Selecting individual bonds within each sector based on fundamental and valuation factors; (3) Opportunistically using non-benchmark sectors to enhance performance; and (4) Adopting an integrated portfolio construction process to capture multiple sources of alpha and manage risk.

Introduction

Suppose your investment manager tells you your portfolio has significantly outperformed its benchmark. Should you be happy with this result? It depends. The outperformance your manager is referring to is known as excess return (the return of the portfolio less the return of the benchmark), which may not be the same thing as alpha. Perhaps the manager generated excess return by packing the portfolio with risky securities or securities not eligible for inclusion in the benchmark. Maybe the manager moved in and out of different market segments based on relative value and had a much more modest level of average risk. Or, it's possible the manager didn't rely on market risk at all. In this paper, we provide a framework for evaluating manager performance in a way that identifies how the manager generated performance and more accurately defines and measures alpha.

Simple Alpha, Beta, and Excess Return

A fundamental tenet of investment theory asserts the expected return of an investment is proportional to the underlying level of systematic (or market) risk. The level of exposure to market risk is “beta,” and the expected return after adjusting for market risk is “alpha.” In addition to providing an informative way to gauge expected returns, the alpha/beta framework provides a useful tool for analyzing realized portfolio performance. The concept is represented by this simple regression equation:

$$r_p = \beta_m * r_m + \alpha$$

- ▶ r_p is the expected return of the portfolio
- ▶ β_m is the market beta coefficient of the portfolio
- ▶ r_m is the return of the market
- ▶ α is alpha

A portfolio with a great deal of market risk (a relatively large market beta coefficient) generally will exhibit returns that track those of the overall market but at a larger magnitude. The term alpha denotes the return contribution after adjusting for the level of market risk.

Let's consider a simple real market example. An investment manager holds only one stock, Lincoln National Corp (LNC), in the portfolio, and the benchmark is the S&P 500 Index. We compared the cumulative returns for the five-year period ended December 31, 2015. During this period, LNC significantly outperformed the benchmark, delivering an excess return of 1,300 bps (see Table 1). Was this due to alpha, or did LNC simply exhibit more market risk than the overall market (and therefore the benchmark)? Figure 1 illustrates a regression of the daily price return of LNC against the S&P 500, the numerical results of which we have included in Table 1. Once we adjusted the LNC return for the level of market risk exposure (beta), the alpha is actually negative. An investment committee may not be happy with this result, because the stock should have performed better based on its level of



market risk (all other factors being equal). The manager’s decision to hold LNC instead of another stock destroyed value.

This concept of adjusting returns for market risk is elegant, simple, and understandable. However, the practice of attributing all market risks into a single market beta coefficient does not adequately capture all sources of systemic risk associated with owning a security. A multi-factor framework can improve on performance measurement precision by accounting for the different market risk components separately.

Table 1: Lincoln National Corp (LNC) vs. S&P 500 (5 Years ending 12/31/15)

Investment	5-Year Cumulative Return	Beta	Annualized Alpha
LNC	92.6%	1.83	-460 bps
S&P 500 Index	79.6%	1.00	0 bps

Source: Bloomberg

Figure 1: Lincoln National Corp (LNC) vs. S&P 500 – Regression of Daily Price Return (5 Years ending 12/31/15)



Source: Bloomberg

Complex Beta – The Multifactor Framework

We can use the same basic approach here, only now we have multiple market beta coefficients. Now the assessment of alpha involves adjusting the portfolio return for exposures to all relevant market factors. As in the simplified case, we can use this multi-factor framework to analyze both the portfolio total return (for which the coefficient measures the absolute exposure to a given factor) and the excess return (for which the coefficient measures the relative exposure to a given factor between the portfolio and the benchmark). This multiple regression structure is captured in this equation:

$$r_p = \sum_{i=1}^N \beta_i * r_i + \alpha$$

- ▶ r_p is the expected return of the portfolio
- ▶ N is the number of market factors
- ▶ β_i are the market factor coefficients of the portfolio
- ▶ r_i are the market factor returns
- ▶ α is alpha

For equity portfolios, the spectrum of market factors includes country, industry, market capitalization, style (value vs. growth), etc. For fixed income portfolios, potential market factors include most of the equity factors in addition to sector (corporate, government, MBS, etc.), maturity, credit quality, call provisions, cash flow structuring, credit priority in default, etc. Each of these factors can have a significant contribution to return.

Admittedly, this multi-factor framework seems rather complicated, but we should not discount its importance. Beta is very easy and inexpensive to add to a portfolio. An investor wishing to build a portfolio with a high level of risk (speculative credit quality, foreign securities, small market capitalization, etc.) can easily achieve that in today's marketplace by allocating capital to various index funds or ETFs. Is your investment manager just loading your portfolio with risk? Or is your manager using a unique set of insights to deliver value after adjusting results for various market exposures? The difference is important.

Beta Masquerading as Alpha

In practice, some investment managers rely primarily on beta in their attempts to deliver excess returns. To illustrate this, we've chosen two fixed income managers from the eVestment database. Assume you hired both managers at the end of 2005, and they have been managing portfolios for you through 2015, using the Barclays U.S. Aggregate Bond Index as the benchmark. Based solely on excess returns, both managers performed well. Manager 1 delivered a whopping 264 bps annualized excess return over the benchmark. During an investment review meeting, Manager 1 proudly touts alpha above and beyond expectations. Manager 2 generated an annualized excess return of 116 bps. Proud of this performance, Manager 2 details the alpha provided. But did both managers really deliver alpha?

Table 2 illustrates the results of regression analysis of both managers' excess returns against a set of fixed income market factors. We included the factor beta coefficients, the alpha coefficient, and the R-squared statistic. We also indicated if each coefficient is statistically significant at the 95% confidence level. There are a few things to note. Manager 1's R-squared value indicates market factors explained 91% of its excess returns. This means the lion's share of what Manager 1 delivered was simply a result of its average exposure to market risk above and beyond the benchmark. By contrast, the market factors only explained 3% of Manager 2's excess return. Unsurprisingly, three market beta factor coefficients were statistically significant for Manager 1, while none were statistically significant for Manager 2. To show the strength of this significance, we included a scatter plot of Manager 1's monthly excess returns against the Barclays U.S. High Yield Corporate Bond Index over the 10-year period (Figure 2). As you can see, the two series are highly correlated. But it's important to note high yield bonds are not eligible for inclusion in the Barclays U.S. Aggregate Bond benchmark because they are classified as speculative credit quality by the rating agencies. So, in addition to taking on significant market risks among benchmark sectors, Manager 1 also relied on constant exposure to the high yield sector, which represents beta, not alpha. Finally, and to the main point, Manager 1 delivered a modest level of alpha that is not statistically significant, while Manager 2 delivered a statistically significant alpha that is larger than its excess return.

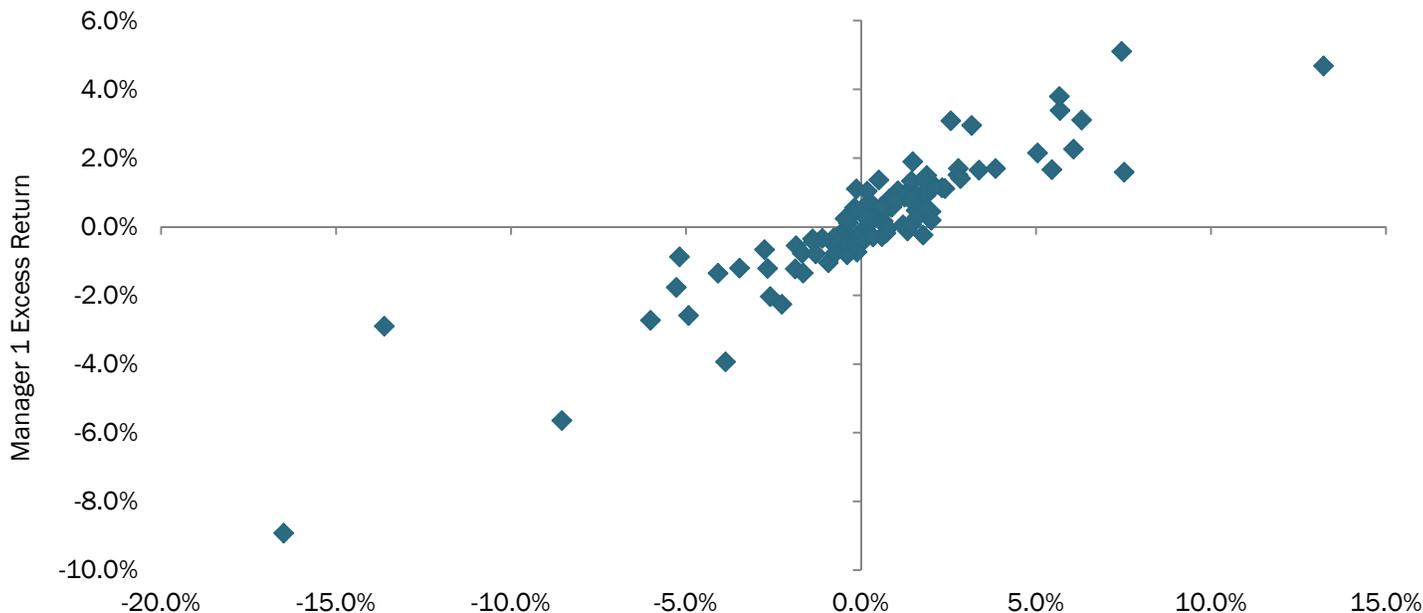
Table 2: Regression Analysis (10 Years ending 12/31/15)

Factor / Statistic	Manager 1	Manager 2
Interest Rate Duration	0.23 / Significant	-0.08 / Not Significant
High Yield Corporate	0.28 / Significant	-0.13 / Not Significant
Investment Grade Corporate	0.50 / Significant	0.25 / Not Significant
Agency Debentures	-0.05 / Not Significant	-0.64 / Not Significant
Agency MBS	0.00 / Not Significant	0.19 / Not Significant
ABS / CMBS	-0.01 / Not Significant	0.16 / Not Significant
Alpha (annualized)	40 bps / Not Significant	339 bps / Significant
R-Squared	91%	3%

Source: eVestment, Barclays Capital



Figure 2: Manager 1 vs. High Yield Index (10 Years ending 12/31/15)



Source: eVestment, Barclays Capital

As it turns out, an investment committee should be much more impressed with Manager 2 for adding real alpha in the portfolio. Manager 1 brought beta masquerading as alpha. Manager 1's results are almost purely due to exposure to factor risk both inside and outside the benchmark. It's no surprise that during 2008, a year in which all risk assets performed poorly, Manager 1 posted an eye-popping -1,800 bps excess return, while Manager 2 posted a more reasonable -200 bps excess return.

The Top Performers

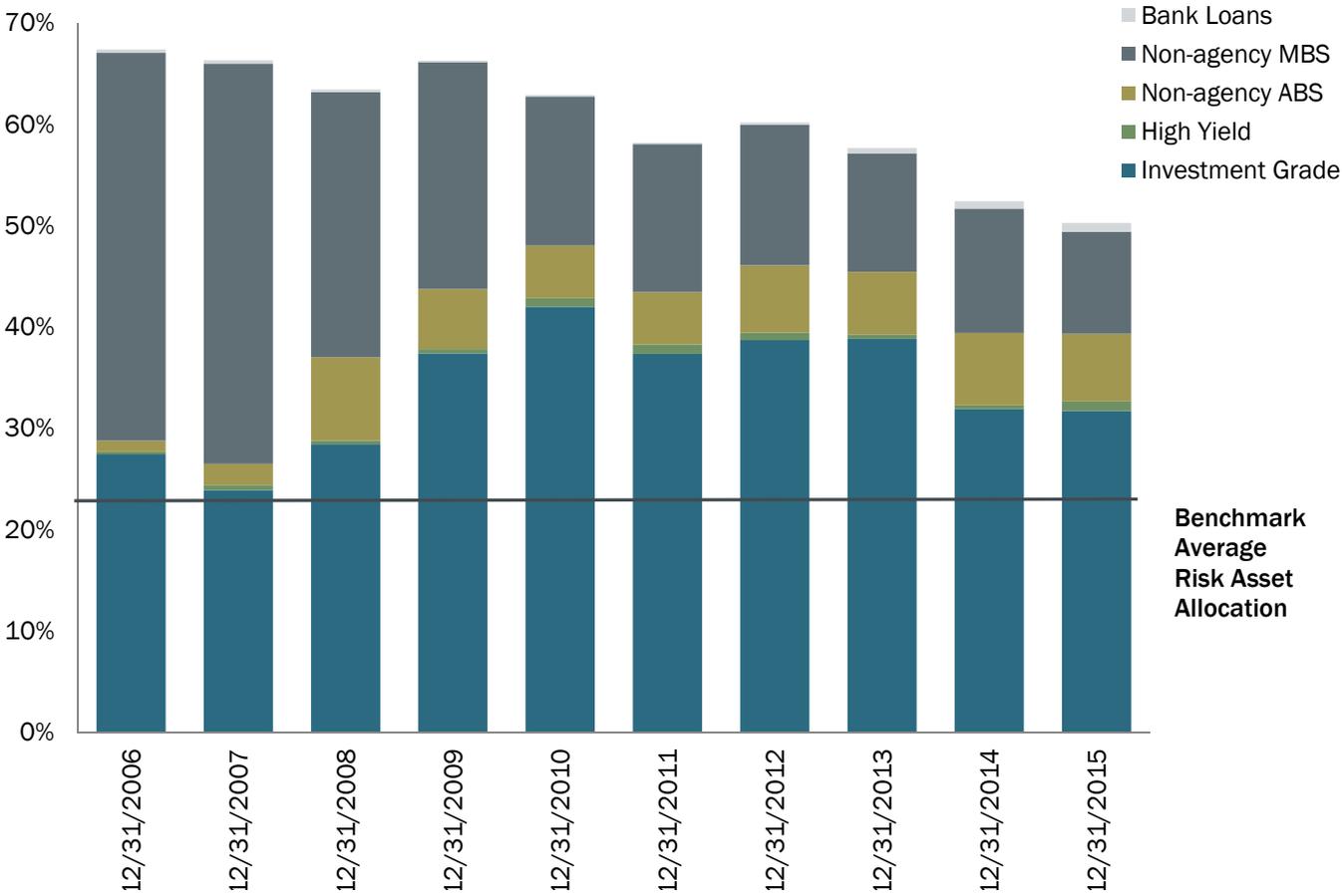
Next, we examined the top 20% of bond managers in the eVestment Core Fixed Income peer universe for the five-year period ending December 31, 2015. Two questions immediately bubbled to the surface. First, why did these managers outperform? Second, was their strong performance based on skill (dynamic active positioning with consistent and desirable results) or chance (long-term static buy-and-hold positioning that happened to perform well under the time frame in question)?

We attempt to answer these questions by examining the managers' allocation to different asset classes over time. Figure 3 includes the manager group's average allocation to risk assets since shortly before the financial crisis. For the purposes of this analysis, we define a risk asset as a security issued by any entity other than those affiliated with a government entity. There are several things to note. The benchmark allocation (Barclays U.S. Aggregate Bond Index allocation) to risk assets averaged approximately 23% during this time period. The managers' allocation to



risk assets ranged from 50% to 67% in total, and from nearly one-third to more than one-half of that risk asset exposure was obtained by owning securities not included in the benchmark. Moreover, these non-benchmark securities exhibited a level of credit risk much higher than that of the securities eligible for inclusion in the benchmark.

Figure 3: Top 20% Managers: Risk Asset Allocation (5 Years ending 12/31/15)



Source: eVestment, Barclays Capital

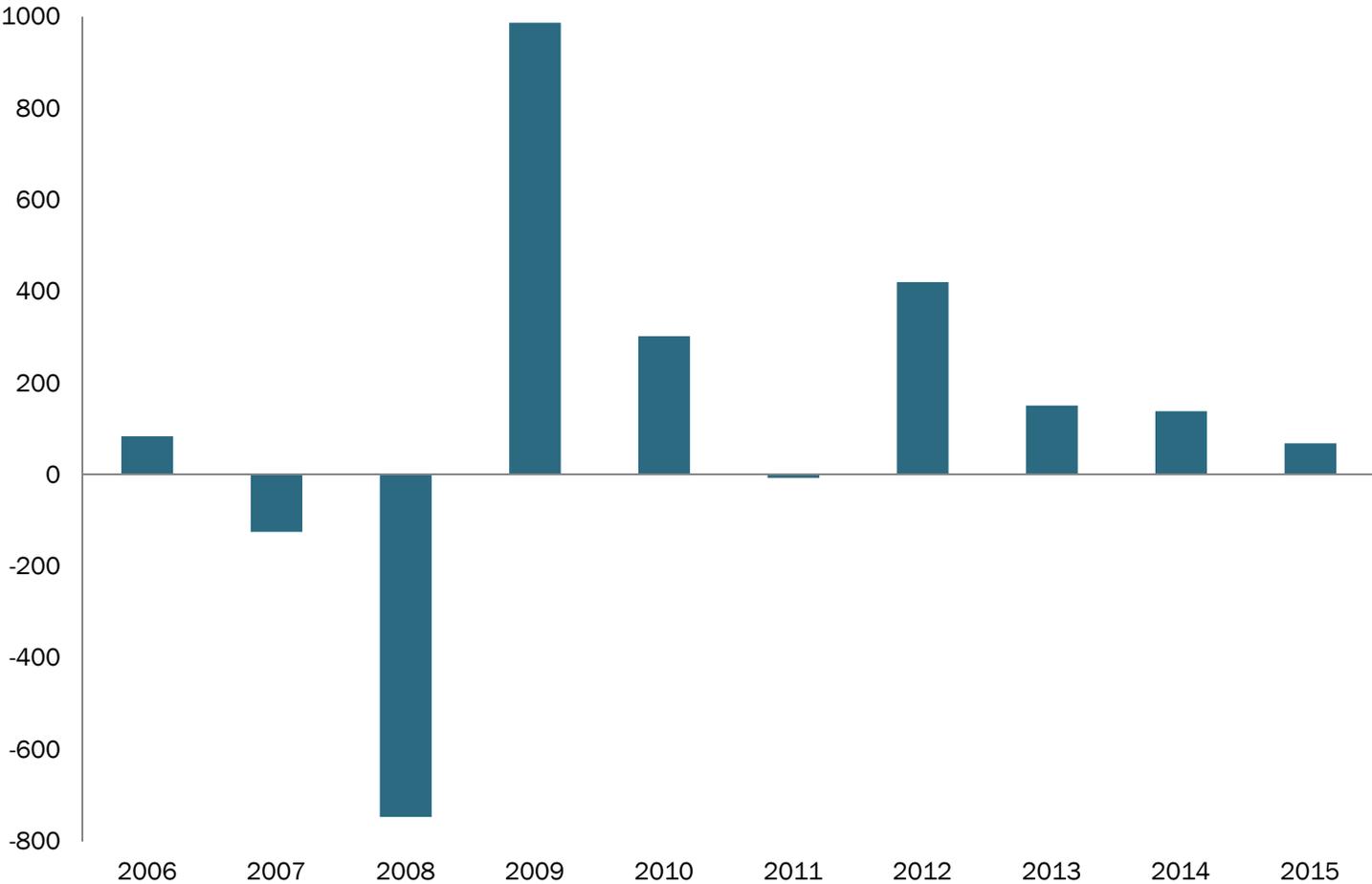
As the chart illustrates, the managers exhibiting the best performance over the last several years did so, on average, by maintaining a large overweight position in risk assets. Using year-end measures of their positioning, this overweight appeared rather static, as if the managers rode these risk assets into the financial crisis and back out. To confirm, Figure 4 shows the average yearly excess returns of this same group of managers relative to their preferred benchmark over the past 10 calendar years. The excess returns were highly correlated with the returns of



risk assets, with a correlation coefficient of 0.84 to the S&P 500. Such a coefficient does not provide diversification from risk assets, a benefit generally sought by fixed income investors.

Holding a static overweight to risk assets and non-benchmark securities does not represent skill. An investor could have produced a similar result by establishing an appropriate mix of ETF positions and holding them from 2006 until today. A manager would have exhibited more skill by dynamically allocating positions based on the market environment and adding value that is not as correlated to the performance of risk assets.

Figure 4: Top 20% Managers: Excess Return (in Basis Points)



Source: eVestment

Where Can We Find Alpha in Fixed Income?

Although true alpha in the fixed income market is elusive, we believe skilled managers can capture multiple sources of alpha by conducting rigorous research and following disciplined investment processes. One source of alpha exists in dynamic sector allocation. Fixed income managers have the flexibility to invest in multiple sectors, including Treasuries, agency MBS, non-agency MBS, and corporates. In distressed market environments, risky sectors, such as corporate bond and non-agency MBS, tend to underperform Treasuries and agency MBS. Conversely, in low volatility market environments, the riskier sectors tend to outperform. Our research indicates it is possible to anticipate these different market environments by using multiple leading indicators, such as macroeconomic, relative value, momentum, and market sentiment indicators. By following these leading indicators and dynamically underweighting or overweighting certain sectors in different market environments, skilled managers can generate positive alpha regardless of the performance of the overall market.

Another source of fixed income alpha is individual bond selection. Each fixed income sector consists of a large universe of individual bonds. For example, in the corporate bond sector a manager can choose from thousands of corporate bonds issued by companies in different industries and containing various credit ratings and maturities. Even within a single industry, there are hundreds of companies with different characteristics, such as earnings, cash flow, leverage, etc. Our research shows that through rigorous analysis of company fundamental characteristics, it is possible to identify bonds more likely to perform well and those more likely to experience distress and downgrades.

Managers can also opportunistically use non-benchmark sectors to generate alpha, rather than maintaining a constant overweight in these securities. Some managers are allowed to invest in certain non-benchmark sectors, such as high yield and non-agency MBS. Allocating to these sectors can significantly enhance portfolio performance. Again, the skill is in the ability to anticipate when these sectors will outperform, as opposed to maintaining a static allocation to them.

An often overlooked source of alpha comes from an integrated portfolio construction process. This is particularly important for managers only able to invest in cash bonds. An integrated process allows a manager to combine multiple alpha-generating strategies that complement each other. Managers can use portfolio construction tools, such as optimizers and risk models, to form diversified portfolios to deliver alpha while maintaining a target risk level.

Are the Alphas of Today Just the Betas of Tomorrow?

An institutional investor analyzing manager performance in 1980 would have confronted a much different problem from the one investment programs are facing today. Some segments of the current market didn't exist then, and for those that did, pricing may not have been transparent. Therefore, the identification and measurement of a sensible set of market factors shouldn't be considered static concepts.

The sub-prime mortgage market provides a recent and significant example of this. Before more-relaxed lending standards encouraged the creation of these riskier home loans and prior to the securitization engine producing complex securities that brought sub-prime mortgage exposure to portfolios, this portion of the market was essentially non-existent. In the early years following the introduction of sub-prime mortgages, investors did not have a sufficient data history to support their understanding of how these securities would behave. It was not possible to accurately evaluate the performance of a manager who held these securities, because appropriate data simply weren't available. Therefore, managers who had substantial sub-prime exposure leading up to the financial crisis appeared to be delivering significant alpha. Their performance added value that was uncorrelated to market factors well-understood at the time. Now, with the benefit of hindsight and longer data sets, it is clear sub-prime was simply another risk factor, not a magical source of alpha.

Thinking ahead, what might be included as additional market factors in the future? Merger risk, price momentum, regulatory risk – all of these could at some point be important parts of a sound multifactor model.

Parting Comments

We hope this paper has provided a useful context for thinking about realized investment performance. In absolute terms, beta is not bad. Some institutions have a targeted level of beta in their portfolios (e.g., a corporate pension plan funded against a liability that exhibits significant interest rate beta). However, it is important to know how your manager is performing against its benchmark after accounting for beta. Generating true alpha requires a high level of skill. Producing beta does not.

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