# Addendum: Q&A with the Authors and the Foundations and Trends in Finance Editor

Foundations and Trends in Finance is publishing a comprehensive review of the academic literature on Hedge Funds. The authors of the hedge fund survey, Vikas Agarwal, Kevin Andrew Mullally, and Narayan Naik briefly discussed some of the highlights of this review with Sheridan Titman, the Foundations and Trends in Finance editor:

**Sheridan Titman:** Can you start by providing a rough estimate of the growth in hedge fund assets over the past 25 years? What is it that sparked this increased popularity of hedge funds?

> **The authors:** The hedge fund industry has grown by roughly 300% per year with the assets increasing from $39 billion in 1990 to $2.97 trillion in mid-2015 (see page 2). There are several reasons for the increased popularity of hedge funds. First, traditional asset managers such as mutual funds have been shown to underperform their benchmarks. Second, unlike mutual funds, hedge funds claim that their returns are largely uncorrelated with the market (that is, market neutrality), which may be appealing for investors for making allocations to hedge funds in their portfolios (see page 7). Third, since hedge funds are not as highly regulated as mutual funds, they can potentially enhance their risk–return trade-offs by using

different tools such as short selling, leverage, and derivatives, which mutual funds are typically restricted from using (see pages 33–38). Moreover, hedge funds typically impose restrictions on investors withdrawing their capital. This can potentially help the managers to invest in illiquid assets and being less vulnerable to fire sales of assets associated with investor redemptions. Finally, hedge fund managers are highly incentivized through performance-based fee in addition to the asset-based management fee. In addition, managers often co-invest in the fund that helps align the interests of the managers with those of the investors (see pages 28–33). Strong incentives have helped the industry to draw talent from different parts of the financial sector (see pages 50–52).

**Sheridan Titman:** In general, can we say that hedge funds outperform mutual funds after fees?

**The authors:** The academic literature, in general, has found that hedge funds tend to outperform mutual funds even after accounting for higher fees charged by hedge funds (see pages 4–5). As discussed above, research has uncovered investment flexibility and incentives to be the main sources of hedge funds' outperformance.

**Sheridan Titman:** What are the challenges associated with evaluating hedge funds? I would like you to specifically address issues that relate to selection bias, back filling bias, return smoothing, etc.

**The authors:** There are several challenges associated with evaluating the risks and returns of hedge funds. First, due to the largely unregulated nature of the industry, there is limited information available on the characteristics and performance of funds. Relatedly, much of the information is voluntarily provided by funds. This in turn introduces several types of biases in the reported hedge fund data. These

biases include (i) selection bias, that is, only certain funds that stand to benefit from reporting, choose to report; (ii) backfilling bias, that is, funds can strategically decide to choose when to report and databases may include their pre-reporting performance history; (iii) survivorship bias, that is, funds exiting the databases after either good or bad performance; and (iv) return smoothing, that is, autocorrelation in returns due to intentional or unintentional smoothing associated with illiquid assets and managerial incentives. Recent evidence also shows that funds sometimes strategically delay their reporting and revise their previously reported performance figures, which makes it harder to draw inferences about hedge fund performance (see pages 91–97).

Second, the performance data on individual hedge funds is limited on several dimensions. The frequency of the return and asset data is monthly with the assets often not being updated and also missing at times. In addition, the survivorship-bias-free data is available only since 1994, which makes it challenging to conduct rigorous statistical analysis especially considering the dynamic nature of hedge fund strategies (page 16). Also, there is limited information about the portfolio holdings of hedge funds. Researchers have primarily relied on long equity and derivative positions reported in the 13F filings, available only at the company level (and not at the fund level). Finally, hedge funds do not report their information to all the commercial databases. Therefore, relying on only a subset of databases to draw conclusions about the hedge fund universe may be problematic (page 91).

**Sheridan Titman:** Is there a way to characterize the best performing hedge funds?

**The authors:** Academic research has revealed different ways to identify best performing hedge funds. Most of

these papers rely on the fund and manager characteristics that are associated with superior fund performance. Stricter restrictions on capital withdrawal, stronger managerial incentives, lower fund and manager age, smaller fund size, higher systematic risk and lower $R^2$ from multifactor models, greater strategy distinctiveness, better manager education and more relevant prior work experience, are all associated with better performing funds (pages 28–56).

**Sheridan Titman:** Do you have any thoughts on the extent to which hedge funds make financial markets more or less efficient?

**The authors:** The evidence on whether hedge funds increase or decrease market efficiency is mixed in the academic literature. Some researchers find that hedge funds ride the bubble in asset markets and do little to correct mispricing while others argue that hedge funds buy and sell securities that are mispriced to benefit from inefficiencies, and thereby improving market efficiency (pages 82–84). Although there is some ambiguity on the direction of the relation between hedge fund activity and market efficiency, the evidence in the literature generally has a consensus that hedge funds improve markets by providing liquidity and transforming corporations through active interventions (pages 84–90).