Original Article

The effect of size, age, beta and disclosure requirements on hedge fund performance

Received (in revised form): 10th October 2008

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ABSTRACT In this study, hedge fund returns in excess of the S&P 500 were analyzed to determine the effects of beta, fund size, age and enforced registration in 2006 as a result of Rule 203(b)(3)-2. It was discovered that beta had a positive effect on performance, while the increasing age of a fund caused managers to suffer from 'style drift', thereby reducing the hedge fund's performance. It was also found that registration increased returns by 11.6 per cent by raising the net worth requirement for accredited investors, thereby providing funds with a more knowledgeable investor and increased asset base stability. This suggests that advisers have been able to use funds more efficiently by taking on more leveraged positions and holding less cash on hand, while pursuing a greater number of strategies.

Journal of Derivatives & Hedge Funds (2009) 15, 241-251. doi:10.1057/jdhf.2009.12

Keywords: hedge fund regulation; Rule 203(b)(3)-2; disclosure requirements

INTRODUCTION

Although hedge funds have been in existence since 1949, their performance has only attracted significant attention over the past decade. Although there is no set definition for a hedge fund, it usually refers to an actively managed investment pool that does not advertise, and is privately organized to be exempt from the Securities Acts of 1933 and 1934. These features

allow it to engage in a larger variety of investment strategies than funds regulated under the Securities Acts of 1933 and 1934. The recent attention received by hedge funds is a result of two factors. The first factor is the large returns generated by hedge funds for their investors. The second factor is the increasing regulation of hedge funds by the Securities and Exchange Commission (SEC) to protect investors from fraud.

As the investment strategies of hedge funds are not restricted by the SEC, they have been able to generate large returns by using aggressive investment strategies that are normally unavailable to mutual funds. These include unrestricted use of leverage, derivatives, short selling and undiversified portfolios; however, the US government allows only institutions and high-net worth individuals to invest in hedge funds. These restrictions aim to ensure that only educated investors participate in these funds.

Despite these regulations, several large hedge funds have failed, and these failures have caused the SEC to rethink the adequacy of their actions thus far. Long Term Capital Management (LTCM), a hedge fund created in 1994, relied on arbitrage as its primary investment strategy. By the beginning of 1998, LTCM was highly leveraged, with only US\$5 billion of equity in comparison to \$125 billion of borrowings, and was investing in mortgage-backed securities and emerging markets. When Russia experienced its ruble crisis on 17 August 1998, LTCM's portfolio suffered greatly. By September 1998, LTCM's equity was reduced to \$600 million, and banks realized that the firm could potentially default. To prevent a worldwide financial crisis, the Federal Reserve organized a \$3.5 billion safety package funded by US investment banks. Although the investing banks became LTCM's new management, LTCM was eventually liquidated, and many banks made substantial write-offs. 1 Not many hedge fund losses have had a systemic impact as significant as that of LTCM: however, since 2006, funds such as Amaranth Advisors and MotherRock have lost half their assets to bad bets in energy futures. These losses, which amounted to \$4.5 billion and \$230 million, respectively, led to the eventual shutdown of these funds. Similarly, in

mid-2007, the sub-prime mortgage crisis brought about the collapse of two major Bear Sterns hedge funds, as well as permanent, adverse changes to 40 others.

To understand whether additional government regulation is necessary to protect investors from future losses of this magnitude, it is helpful to understand the impact of earlier attempts at regulating hedge funds. Consequently, this article examines a recent attempt to reduce fraud by hedge fund advisers. In September 2003, the SEC enacted a rule that required all hedge fund advisers to register with the SEC by 1 February 2006. The regulation was, however, short lived, and was invalidated by the US Federal Court of Appeals in Goldstein v. SEC (No 04-1434, 23 June 2006, DC Circuit).² This article will analyze the effect of the regulation on a hedge fund's returns in excess of the S&P 500, controlling for the age, size and beta of the hedge fund. As this regulation required most hedge fund advisers to register, but did not limit their investment strategies, the effect should be an increase in hedge fund performance as a result of the transparency of their activities and the investor protection it offered. Our results suggest that the regulation did not have an adverse impact on hedge fund performance, and that it may have even increased performance.

HISTORY OF HEDGE FUNDS

Existing regulation

Over the past few years, the United States government has gradually started regulating hedge funds. According to the Securities Act of 1933, Regulation D – Rule 501, an 'accredited investor' is defined as an individual with an income of at least \$200 000 (\$300 000 with a



spouse) in each of the two most recent years. An individual may also qualify if their net worth (individual or with a spouse) is in excess of \$1 million. Additionally, institutions are allowed to invest if they have assets in excess of \$5 million. By limiting investors to those that qualify under the aforementioned conditions, hedge funds were able to avoid registering with the government and any subsequent regulation. While the Securities Act of 1933 applied to the primary market, the Securities Exchange Act of 1934 created the SEC and extended its reach to the regulation of secondary market trading. Finally, the Investment Company Act of 1940 created two additional guidelines regarding the regulation of investment funds with the introduction of Section 3(c)1 and 3(c)7. Section 3(c)1 limited the size of hedge funds to under 100 'accredited investors', and prohibits the fund from obtaining investors through a public offering. In 1996, Section 3(c)7 was added to this Act. Section 3(c)7 mandated that hedge funds were not limited to 100 investors if they were comprised of 'qualified purchasers'. These are individuals with over \$5 million in investments. Finally, Rule 203(b)3 of the Investment Advisers Act of 1940 stated that to be exempt from federal registration, an adviser must have had fewer than 15 clients in the past 12 months. This individual also may not advertise their services as an investment adviser to the public. These guidelines allow the SEC to ensure that hedge fund investors are knowledgeable individuals who do not require extensive government protection.

In September 2003, the SEC added an additional stipulation for hedge funds, to assure that investors were protected from fraudulent activity on behalf of hedge fund advisers. Rule 203(b)(3)-2 required that hedge fund advisers

register with the SEC by 1 February 2006. This was accomplished by amending the definition of 'client' under Section 203(b)3. Before this amendment, an investment fund that used Sections 3(c)1 or 3(c)7 to avoid regulation could consider all the clients within a hedge fund as a single 'client'. As the investment adviser did not create a separate investment strategy for each individual, they could be considered a single entity. Section 203(b)3-2 stated that each shareholder, limited partner, member or beneficiary of the firm must be counted as a partner. Furthermore, if this hedge fund provided services to a mutual fund or any other investment fund that was regulated under the Investment Company Act of 1940, then it needed to consider each of its investors as a separate client as well. By requiring hedge fund advisers to register with the SEC, the net worth requirement for accredited investors was effectively raised to \$1.5 million. If the funds did not meet this threshold, the SEC would not permit advisers to collect performance-based fees. Hedge funds could still avoid registration with the SEC if they had less than \$25 million under management or if investors' funds required a lockup longer than 2 years.

Under Part I of this Uniform Application for Investment Adviser Application (Form ADV), advisers listed their business location, ownership structure, basic operations and past disciplinary events. Part II, which is provided to the client, discloses the adviser's fees, investment style, potential conflicts of interest, brokerage practices, affiliations with other securities professionals, education and business background, as well as any other information that may be relevant to a client's decision to hire the adviser.³



On 23 June 2006, the US Court of Appeals for the DC Circuit invalidated Section 203(b)3-2 in *Goldstein et al* v. *Securities and Exchange Commission* (No 04-1434, 23 June 2006, DC Circuit).² The court stated that 'the [SEC]'s interpretation of the word "client" comes close to violating the plain language of the statute. At best, it is counterintuitive to characterize the investors in a hedge fund as the "clients" of the adviser'. The SEC had 45 days to petition this ruling; however, their failure to do so caused some hedge funds to deregister once the window had passed.

One consequence of the 2006 registration was that it provided hedge fund investors as well as researchers with the ability to collect hedge fund data that was much less biased. Before 2006, researchers had to gather the data themselves or pay for data collected by private firms, all of which relied on the data that hedge funds decided to make available to the public. Obviously, the primary issue with the accuracy of this data is that hedge funds would mainly report their strategies and performance if they were successful in producing high returns. Therefore, the data used by the studies is biased, and not representative of the entire hedge fund population. Additionally, many of these studies were not able to use large data sets as a result of the limited availability of information and the substantial costs involved in procuring them. On the other hand, studies during the 2006 regulation window could rely on data from every domestic hedge fund, as it was necessary for this information to be presented to the SEC.

Literature review

A number of studies have examined the determinants of hedge fund performance. Regarding the effect of hedge fund size on

performance, there are studies available that support each of the three possibilities: positive, negative and no relationship. Liang⁴ compared a set of 385 hedge funds and 4776 mutual funds over a 3-year period between 1994 and 1996. The first part of the study proved that high returns by hedge funds compared to mutual funds could be attributed to actively managed portfolios, investment strategies and fees that linked management incentives with those of their investors. Hedge funds were able to employ these strategies because they were not regulated like mutual funds. The second part of the study employed a cross-sectional regression of average monthly returns on fund characteristics such as incentive fees, fund age and assets. Whereas incentive fees, assets and lockup period had a positive relationship with performance, age showed a negative relationship.

Nevertheless, Gregoriou and Rouah⁵ examined 204 hedge funds for the period between 1994 and 1999, and found that hedge fund size had no impact on performance, regardless of whether they controlled for Sharpe and Treynor ratios. In contrast, Jones⁶ analyzed 1790 small funds (up to \$100 million in assets), 480 medium funds (\$100 million – \$500 million) and 137 large funds (over \$500 million) to show that as fund size increased, returns decreased.

Similarly, Ammann and Moerth⁷ used a sample of 4014 hedge funds broken down into 100 'percentiles' based on asset size to test how asset size affects a fund's performance, standard deviation of performance and Sharpe ratio. There was a negative relationship between fund size and performance; however, on average, funds with an asset size of under \$1 million tended to underperform. This was explained by the higher relative operational costs associated with small firms. The same negative relationship



exists between assets size and standard deviation of performance. Finally, the Sharpe ratio had no significant effect on performance.

In her 2006 study, Jones also showed that a firm's age is inversely related to its performance. Funds under 2 years old performed better than those between 2 and 4 years, which in turn performed better than funds over 4 years old.

As beta is a measure of systematic risk, it captures the volatility of a stock or portfolio compared to the market. Based on this, we might expect that funds with a beta much higher than 1 or lower than -1 would experience greater losses and returns than those that tend to mimic the S&P 500. However, by definition, hedge funds should be using hedging strategies. Use of hedging strategies should cause hedge fund returns to have no significant relationship with beta. By simultaneously taking long and short positions in an investment, a hedge should be able to create large returns with a beta close to zero. Nevertheless, Ibbotson's⁸ analysis of 3000 hedge funds showed that beta is significant in explaining a large portion of their returns, with the remainder attributable to alpha and management fees. Géhin and Vaissié⁹ further demonstrated that beta is a significant determinant of hedge fund performance and the effect of beta on performance is strongest for the portion of these returns that is attributable to market exposure and exploiting market opportunities.

Ackermann¹⁰ used the risk-adjusted returns from hedge funds and mutual funds, between 1988 and 1995, to understand the effects of government regulation. The unique characteristics of hedge funds, such as their extensive use of leverage, short selling, derivatives, lock-up periods and incentive fees, were used to explain hedge funds' ability to

outperform mutual funds during this period. The study found no indication that leverage, short selling or derivatives reduce mutual fund returns. However, lock-up periods and incentive fees had a significant positive effect on hedge fund returns.

Two recent articles have found some evidence that hedge funds misreport returns when returns are negative but close to zero (that is, small losses). Bollen and Pool¹¹ analyzed 4286 hedge funds from January 1994 to December 2005. Using pooled cross-sectional, time-series data, Bollen and Pool found a discontinuity at zero for hedge fund returns, suggesting that when possible, fund managers avoid reporting losses and this in turn distorts returns. Cumming 12 expanded on Bollen and Pool's results, by analyzing 690 hedge funds across 16 countries for the period January 2003 to December 2005. After controlling for past fund performance, market returns, fund characteristics and countryspecific GDP per capita, Cumming also found a discontinuity at zero. He speculates that fund managers with zero or marginally negative returns have an incentive to misreport their returns as marginally positive to attract new investors.

Cumming also analyzed when these managers are more likely to misreport their earnings. Regulation of hedge funds that restricts the location decision of the fund or imposes minimum capitalization requirements, increased misreporting. However, regulation that increased the transparency and monitoring of reported returns decreased the probability of misreporting.

DATA AND METHODS

Empirical model

Unlike most prior studies, which used crosssectional regressions by segmenting hedge funds



based on age or size, we used a fixed-effects panel data model to better understand the consequence of regulation across the entire hedge fund industry over nine quarters, between May 2005 and July 2007. Although a time-series framework could have been used to analyze the change in hedge fund returns above the S&P 500 before and after regulation, it would have ignored the differences among hedge funds.

Using the fixed effects model, each hedge fund is assumed to have time-independent effects:

$$Ret_{it} - SPX_t = \alpha_i + \beta_{it}X + \mu_{it}$$

with i hedge funds over t quarters; Ret_{it} represents the hedge fund's average return in percentage terms, while SPX_t is the average return on the S&P 500 in the same period. By subtracting the two terms, the dependent variable becomes the excess returns hedge funds are able to achieve. These independent variables are represented by β_{it} individual while α_i represents the other characteristics of hedge funds that may affect excess returns but do not vary with time. Finally, μ_{it} is the random error term.

Here we regressed hedge fund returns above the S&P 500 as a function of hedge fund size, measured by their assets (Size), fund age in months (Age), volatility compared to the S&P 500 (Beta), and a dummy variable for government-enforced hedge fund registration (Reg). This dummy variable was represented by a 1 for those quarters when the SEC required hedge funds to register according to Rule 203(b)(3)-2, and a 0 otherwise.

While we expect assets and age to decrease excess hedge fund returns, the opposite is true for the other two factors. An adviser at a smaller hedge fund can pursue only his/her best

investment ideas; however, as hedge fund size increases, this is not the case. A larger fund must look to its secondary ideas and even further, as the profitability of any investment or arbitrage opportunity diminishes as demand increases and the market adjusts. Therefore, these funds suffer from diminishing returns as assets increase. Similarly, with age, advisors tend to suffer from 'style drift' the longer they manage a fund. This means that the advisor will start to pursue investment strategies outside their area of expertize, thereby leading to lower returns. One would normally expect beta to have little effect on hedge fund returns, as by definition these funds should be hedging their positions, thereby attaining betas close to zero. However, this is not the case with modern hedge funds because of the number of firms in existence and the amount of assets in their possession. Many of today's hedge funds use risky strategies to earn high returns for their investors. As the S&P 500 had positive returns during this period, we can expect funds with larger betas to have earned higher returns in excess of the market.

Finally, registration is a little more difficult to explain. One would normally expect regulation to lower returns, as hedge funds are able to earn higher returns than mutual funds because their investment strategies are not limited. However, Rule 203(b)(3)-2 did not regulate hedge funds. Instead, it required these funds to register with the SEC, to ensure investor confidence. Therefore, this registration would be expected to increase returns for two reasons. The first of these is the reduction of fraudulent or unethical behavior by advisors. All advisors were required to register with the SEC, and their use of investor funds became transparent, thereby increasing the efficient use of the fund's assets. Second, the increased net worth requirement for



accredited investors improved the knowledge and experience of the average hedge fund investor. This meant that hedge fund investors were less likely to panic or act inappropriately in response to market and portfolio volatility. Instead of limiting investment strategies, this opened up new opportunities for advisors. By providing a more stable asset base and experienced investor, advisors could keep less of their assets as cash, invest in more illiquid securities, and take on a more leveraged position, without worrying about losing investors.

Using these variables, our equation becomes

NetRet_{it} =
$$\alpha_i + \bar{\beta}_1 \text{Beta}_{it} + \bar{\beta}_2 \text{Age}_{it} + \bar{\beta}_1 \text{Size}_{it} + \bar{\beta}_4 \text{Reg}_{it} + \mu_{it}$$

Using a Bloomberg terminal, it is possible to access an enormous collection of comprehensive data for over 60 000 funds; however, once the criteria was limited to U.S. hedge funds, the number was reduced to around 13 000 funds. For this analysis, a random sample of 50 hedge funds was collected. These hedge funds were chosen using a Monte Carlo simulation that randomly chose two numbers: the first indicated the Bloomberg page number on which to find the hedge fund, while the second was the position of the fund on this page. For each of the hedge funds, data were collected regarding the fund's returns, beta, fund age and size for each of the three quarters before the February 2006 regulation, as well as the three quarters following this period. After this regression was run, additional data were collected to observe how hedge funds performed during the three quarters after they were no longer required to register with the SEC. Finally, a second regression analyzed the behavior of hedge fund returns over the 9 quarters, whereas a third regression only used the last six quarters.

 Q_1 – Q_6 covers pre-registration to registration, Q_4 – Q_9 covers registration to post-registration and Q_1 – Q_9 covers the entire period. Initially, we analyzed Q_1 – Q_6 , consisting of data from the six quarters between May 2005 and October 2006, to observe whether the introduction of government-enforced disclosure in February 2006 had any effect on hedge fund performance. Once we established that a relationship existed, we analyzed Q_1 – Q_9 , which spanned nine quarters from May 2005 to July 2007. This analysis was performed to observe whether the increased returns from the 2006 legislation were still significant once enforced registration was lifted. Finally, the last data set from Q4 to Q₉ was analyzed to focus specifically on hedge fund performance when enforced disclosure was no longer in effect.

RESULTS

Table 1 displays means and standard deviations for the independent and dependent variables in three separate time periods: Q_1 – Q_6 , Q_1 – Q_9 and Q_4 – Q_9 .

The ability of hedge fund managers to pursue aggressive investment strategies that are not regulated by the SEC allows them to create large returns for their investors. This is evident by the mean for NETRET, which shows that the average hedge fund return is over 10 per cent above that of the S&P 500. Additionally, the mean for BETA is around 1.1, which shows that these hedge funds are practicing very risky strategies to produce the correspondingly large returns. As a result of the considerable number of hedge funds today, and the competition among financial institutions to create large returns for their investors, it is no longer realistic for hedge funds to rely



Table 1: Means and standard deviations

Variable	Mean	Standard deviation	Minimum	Maximum
NETRET (Q ₁ –Q ₆)	17.86	19.12	-19.10	102.38
NETRET (Q ₁ –Q ₉)	13.50	18.71	-29.76	102.38
NETRET (Q_4-Q_9)	12.39	19.94	-29.76	102.38
AGE (Q_1-Q_6)	127.25	105.77	5.00	684.00
AGE (Q_1-Q_9)	131.76	105.87	5.00	693.00
AGE (Q_4-Q_9)	136.28	105.76	14.00	693.00
SIZE (Q_1-Q_6)	789.4	1314.3	0.663	10 534.4
SIZE (Q_1-Q_9)	921.5	1590.6	0.663	14 496.1
SIZE (Q_4-Q_9)	1042.3	1770.5	0.775	14 496.1
BETA (Q_1-Q_6)	1.101	0.557	-0.210	4.165
BETA (Q_1-Q_9)	1.104	0.516	-0.210	4.165
BETA (Q_4-Q_9)	1.172	0.538	-0.127	4.165

NETRET: Average fund return in excess of the S&P 500 in percent form.

AGE: Age of the hedge fund since its inception date. Measured in months.

SIZE: Average size of the fund in millions, as determined by its assets.

BETA: Beta of the fund, compared to the S&P 500.

solely on arbitrage opportunities and hedging strategies. Instead, these funds take advantage of their unregulated nature to undertake much riskier strategies that result in a beta greater than 1 or less than -1.

The mean age for this sample was between 10 and 11 years, with a standard deviation of 105 months. The mean age is rather high despite significant entry into the industry. This suggests that either the entry over the period was insufficient or many of the new entrants fail. In addition, the new entrants may seek to differentiate their product by pursuing much riskier strategies to attract investors.

Unfortunately, this means that small drops in the market will cause hedge funds to incur large losses. This leads to the demise of many hedge funds in their earlier years. The number of hedge funds that have failed as a result of the sub-prime mortgage crisis is a good example of this. Finally, mean hedge fund size ranged between \$789 million in the first regression to over \$1 billion in the third regression, with a standard deviation of around \$1.5 billion. Therefore, it is apparent that hedge funds require a large asset base to pursue their strategies, and could have a large impact on the market.

Table 2 displays the results from three regressions: (1) uses data from Q_1 to Q_6 , (2) uses data from Q_1 to Q_9 and (3) uses data from Q_4 to Q_9 . Tests showed no evidence of heteroskedasticity.

In the initial regression, all of the variables were significant at a 95 per cent level of confidence. As predicted, age and size had a negative effect on hedge fund returns in excess



Table 2: Regression results

Regression variable	(1)	(2)	(3)
Constant	165.0464***	81.48805***	157.7779***
	(41.83379)	(12.33877)	(44.94443)
AGE	-1.302319***	-0.6397526***	-1.212333***
	(0.3416174)	(0.0973115)	(-0.3162462)
SIZE	− 0.0066 * *	− 0.00225 * *	-0.00509
	(0.00281)	(0.00146)	(0.00226)
BETA	22.00247***	17.45982***	19.28518***
	(4.691858)	(3.241205)	(3.682787)
REG	11.56365***	5.481181***	0.5710909
	(3.223096)	(1.47784)	(3.152632)
	n=287	n=434	n=294
	$R^2 = 0.1437$	$R^2 = 0.2358$	$R^2 = 0.3463$
	F=9.82	F=29.39	F=31.92
	Pr>F=0.0000	Pr>F=0.0000	Pr> <i>F</i> =0.0000

Standard errors in parentheses.

of the S&P 500, whereas registration increased hedge fund returns. A one-month increase in age resulted in a 1.3 percentage point decrease in hedge fund returns above the S&P 500; a \$1 000 000 increase in assets reduced returns by .007 percentage point; and enforced registration increased returns by 11.6 percentage point. The largest effect was observed by beta, for which a one-point rise resulted in a 22 percentage point increase in returns.

To determine the long-run effects of the regulation, we ran the same specification as in column (1) but added observations to the data set for three quarters following the removal of the 2006 regulation. Once these new data were added, the variable for size was no longer significant in determining hedge fund returns. While registration was still significant, the

coefficient decreased to 5.5. Age and beta still caused returns to increase, although both coefficients experienced a slight decrease. A one-month increase in the age of a hedge fund reduced returns by .64 percentage point while a one-point increase in beta increased returns by 17.5 percentage point.

Finally, a third regression was performed using only the data during enforced registration and the three quarters after the registration requirement was lifted. Once again, size was not significant; however, registration was also no longer significant in determining hedge funds returns. Age and beta remained significant factors in determining hedge fund returns, and we observed coefficients consistent with the estimates reported for the first specification: -1.2 and 19.3, respectively.

^{**}significant at 0.05; ***significant at 0.01.



CONCLUSION

We found that the registration required under Rule 203 (b)(3) -2 caused hedge fund returns to rise 11.6 percentage points in a comparison of the period prior to registration and the period during which the registration requirement was in effect. Comparing the registration period against both the period prior to the registration period and the period following the lifting of the registration requirement, we find that registration produced a 5.5 percentage point increase in hedge fund returns. Although both fund size and enforced registration were not significant in the third regression, the reasons for this insignificance may be related. The ability of hedge funds to rely on a stable asset base should allow them to practice a greater number of strategies, and make more efficient use of their assets (by taking a more leveraged position and keeping less cash on hand). As a result, it is not the size of a hedge fund's asset base that determines its returns, but rather the quality of its investors. Indeed, the qualifications for an accredited investor have become outdated since the mid-twentieth century. By requiring hedge funds to register with the SEC, the net worth requirement was effectively raised to \$1.5 million, supplying hedge funds with a more educated investor and a more stable asset base. This explains the positive relationship between the registration variable and returns. During the last three quarters analyzed, most of the hedge funds remained voluntarily registered with the SEC. By July 2007, 1990 hedge fund advisers were still registered with the SEC (of the just over 2700 advisers who were registered in July 2006). 13 This amounted to 10 446 individual firms. Therefore, these hedge funds would still produce high returns in the last three quarters even though disclosure was no longer required.

This would make it seem as though 2006 registration was not significant in increasing hedge fund returns, even though most hedge funds retained a \$1.5 million net worth requirement by remaining registered with the SEC.

From this analysis, it is also apparent that age and beta are both important factors in determining hedge fund returns in excess of the S&P 500. Although a larger beta increased hedge fund returns, this is mainly because the S&P 500 achieved positive returns during this 27-month time period. From the mean and standard deviation of beta in this data set, we observed that hedge fund managers pursue risky strategies that are much more volatile than the market. Therefore, negative returns by the S&P 500 would have resulted in huge losses for investors. Age has a negative relationship with hedge fund returns. As a fund's age increases, its managers suffer from style drift, leading to lower returns.

As a result of the risk and volatility involved with hedge funds, it is imperative for hedge fund advisers to ensure that they cater to knowledgeable investors, so that they can secure a stable asset base. This is especially true with the significant losses experienced by hedge funds in the past year. By raising the net worth requirement, hedge funds can increase the probability that they are attracting experienced investors who will not redeem their funds when their portfolio experiences the slightest decline.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge Subarna Samanta, Andrew Carver and Herbert Mayo, who provided valuable comments and advice.



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