

PracticeNote

APRIL 23, 2004

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Small Hedge Fund Firms: Why do they produce better alpha?

ISSUE

Small firms are prevalent among hedge funds. Research by Russell and other firms suggests that these types of firms outperform their larger counterparts. Why do small firms appear to have an advantage?

RESPONSE

Swensen (1998) emphasizes over and over again that investors won't get paid for doing what is "comfortable." To achieve consistently high returns, managers must take risks and investors must be willing to hire managers who take risks. Smaller firms, often young startups, have a distinct edge in their ability to invest in less liquid, less efficiently priced securities. Moreover, we posit that small firms have greater motivation to produce superior performance. These advantages are more than sufficient to offset the greater resources available to larger hedge fund firms. Taking the initiative to research and diversify among a wisely chosen collection of smaller firms may increase the alpha of any hedge fund program. Restricting one's choice set to well known, well resourced, more "comfortable" institutions may result in mediocre returns.

BACKGROUND

We find support for our assertion in published hedge fund data. In Exhibit 1 we observe higher average returns for the smaller third of firms in several styles. Moreover, we observe, in Exhibit 2, that the cross-sectional volatility of the smaller third of firms is higher. A higher cross-

sectional volatility means two things. First, choosing among smaller firms randomly is a risky business and investing among small firms is not for the faint of heart or the ingenuous. Second, for the savvy investor who can identify skill among small firms, the reward can be substantial. In Exhibit 3, we show the results of a regression of hedge fund returns on firm size, fund size, and asset growth. Firm size generally produces a negative slope coefficient, though significance is not robust to the inclusion of other correlated variables. In particular, fund size, which is correlated with firm size, is negative and significant for both sample periods and the combined sample periods. The sample period most consistent with our expectations is Sep-02 to Aug-03. When we restrict the sample to the managers with above-median returns, in Exhibit 4, we find that the coefficients are both larger and more often significant for firm size. By evaluating above-median returns, we (a) assume that manager skill *is identifiable to the discerning investor* and (b) take advantage of the higher upside volatility of the smaller firms. Finally, in Exhibit 5, we evaluate the 75th percentile of returns by firm size and find that smaller is often better.¹ Indeed, the savvy investor can best leverage his search time and skill evaluating smaller firms.

¹ The returns are ranked from lowest to highest. Therefore the 75th percentile return is above the median return, but lower than the maximum return.

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Business Risk

Small, younger firms have a higher likelihood of financial failure. However, much of this small firm business risk can be diversified easily by employing multiple hedge funds. Ineichen (2003) suggests that the business risk of hedge funds can be divided into systematic and non-systematic components. Generally, we think of systematic risk as market risk. However, business risk may also be systematic (or correlated) in the sense of contagion or event risk. Systematic business risk is difficult to diversify away. Conversely, the non-systematic, or idiosyncratic, business risk of a firm is unrelated to that of other firms and is highly diversifiable when a reasonably large number of firms is hired.

Relative to larger hedge funds, a greater proportion of the business risk of small hedge funds will be idiosyncratic. Larger hedge funds more apt to have common influences on business risk:

- investors, such as large funds of hedge funds (FOHF)
- investments, because liquidity limitations reduce the pool of investable securities;
- information sources (for example, large brokerage houses for long/short equity firms or large legal firms for merger arbitrage firms)
- service providers such as lenders.

Therefore, adverse events are more likely to have contagious effects on the businesses of larger hedge funds than on smaller funds.

The high proportion of idiosyncratic risk makes smaller funds particularly appropriate for FOHFs. Indeed, we argue that a FOHF comprising primarily smaller managers can actually present less business risk than one comprising larger managers. While the average business risk of the smaller firms is higher, the correlation of business risk between those small firms is lower. As a result, in the proper portfolio context, the total risk of the FOHF using more small firms can actually be lower.

WHAT DOES IT TAKE?

Besides the sheer talent it takes to produce a viable hedge fund business model, hedge fund managers benefit from opportunity, personal drive, and resources. For differing hedge fund managers and styles, what provides these attributes may vary.

Opportunity

A primary advantage of small firms is that their products typically have smaller asset bases. A smaller asset base allows them to invest in less liquid and much less efficiently priced parts of the market, where competition for information generally is less intense and manager skill is best rewarded. As an efficiency proxy, consider the median number of I/B/E/S estimates for the companies in the Russell 2000® and Russell 1000® Indexes as of December 31, 2003. For the Russell 1000 Index, a median of 21 analysts follow each stock. Conversely, for the Russell 2000 Index the median drops to 6. Christopherson, Ding, and Greenwood (2001) demonstrate the advantage of a small asset base for small cap firms. Essentially, both the absolute level of and growth in assets under management are inversely related to the ability of small cap managers to generate excess returns. As managers' asset bases become larger, the transactions costs incurred in establishing positions begin to overwhelm the informational or other advantages that the managers possess in these attractive, but less liquid stocks. Finally, size may imply the dilution of lead investors' insights and less efficient decision making.

This relationship between firm size and excess returns should hold for hedge funds as well. Firms with smaller assets can behave more opportunistically than firms with larger asset bases in areas of the market where active security selection may result in the highest expected returns. Moreover, because hedge funds 1) typically have higher turnover than long-only funds, and 2) selling stocks short presents additional transactional hurdles, small asset bases should be even more conducive to good performance for hedge funds than for their long-only counterparts. Indeed, Ross (2003) finds the same inverse relationship between the asset bases and performance of hedge funds.

Motivation

The leadership structures of smaller firms usually provide them with an advantage over their larger counterparts. Small firms are much more often majority owned and run by the investment professionals. Producing stellar investment returns, for reasons of personal and professional pride, is typically more important than at larger firms, where practicing portfolio managers and analysts tend to have less ownership and control. Not surprisingly, different utility functions on the part of hedge

fund leaders usually lead to disparate outcomes. This is particularly meaningful when firms are faced with decisions resulting in tradeoffs between investment success and business success (e.g. when to close a fund).

Greenwood [1999] documents how long-only managers evolve along predictable dimensions that usually lead to lower returns. One dimension noted by Greenwood is the adoption of a “guardian” mentality, where managers become less concerned with producing great returns and increasingly concerned with protecting the value of their now successful money management businesses. Guardian theory is consistent with the behavioral theory of declining marginal utility of wealth. Managers may begin to take less investment risk, fearing that adverse results will cost them client assets. We posit a hedge fund extension to the guardian mentality, whereby the management fee becomes relatively more important and the incentive fee becomes relatively less important as the size of the firm increases.

Resources

In general, more resources, in the form of research analysts and access to information, are preferred to less. More resources are especially useful for strategies benefiting from greater breadth and depth of research or where manager access or clout is particularly important. For example, very small convertible arbitrage managers may find it difficult to receive attractive new issues from the underwriters. Fixed income arbitrage managers may benefit from the credit and other research of broader credit research of larger firms. Larger merger arbitrage managers may acquire useful information about the regulatory prospects for a particular transaction by spending large sums on legal advice. However, our experience suggests that in other strategies, such as long/short equity, the advantages of greater research capacity can be more than offset by the associated disadvantages of a larger staff.

WHICH STYLES BENEFIT MOST FROM SMALL FIRM SIZE?

Though our Exhibits do not categorically demonstrate an advantage to smaller firms, we argue that all hedge fund styles benefit from being small. The additional motivation and opportunity to exploit less efficient segments of the market can accrue to managers of all styles. Conversely, the benefits associated with increased research and other resources tend to favor larger firms. While a minimum

resource constraint probably exists for many fixed income arbitrage strategies, convertible arbitrageurs, and merger arbitrageurs, the benefits of exploiting the less efficient investment opportunities along with combining ownership and control far outweigh any marginal advantage past a critical resource mass. When it comes to FOHFs, the additional legwork involved in finding, evaluating, and funding smaller firms is well worth the effort.

RELATED READING

Berk, J.B., and R.C. Green (2002) “Mutual Fund Flows and Performance in Rational Markets,” Working Paper, Haas School of Business, University of California at Berkeley.

Christopherson, J.A., Z. Ding, and P. Greenwood (2001) “The Perils of Success: The Impact of Asset Growth on Small Capitalization Manager Performance” *Russell Research Commentary*, Frank Russell Company (July).

Greenwood, P (1999) “The Evolution of Investment Process,” *Russell Research Commentary*, Frank Russell Company (June).

Ineichen, A. M. (2003) “Fireflies before the Storm” *Global Equity Research*, UBS Warburg (June).

Ross, L. B. (2003), “Threading a Rope through a Needle,” *Russell Research Commentary*, Frank Russell Company (July).

Swensen, D. F. (2000), *Pioneering Portfolio Management*, Free Press, New York.

EXHIBITS

Exhibit 1. Average returns of small, medium, and large hedge fund firms. Returns are average monthly returns of both sample periods.

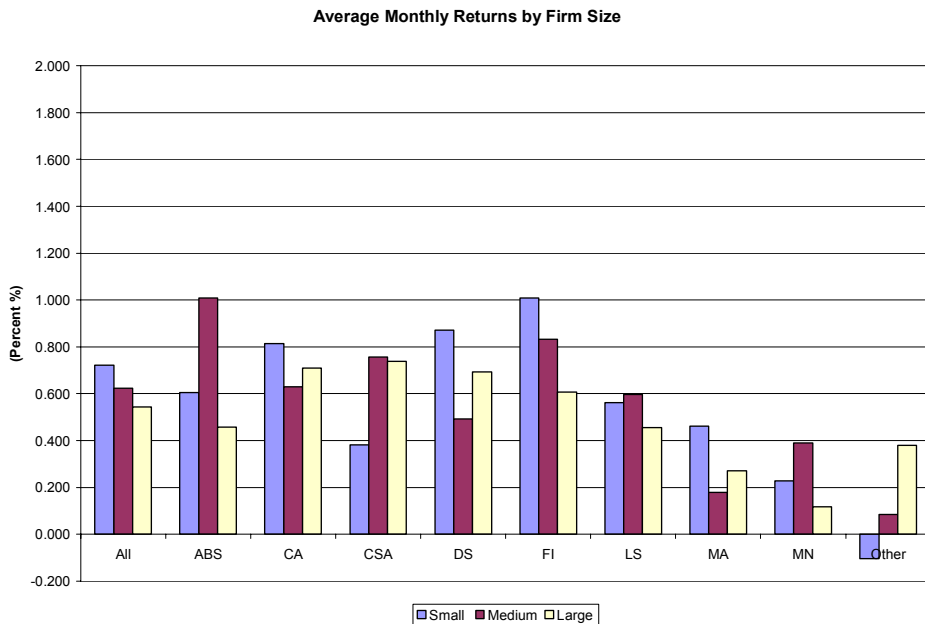


Exhibit 2. Cross-sectional volatility of small, medium, and large hedge fund firms. Returns are average monthly returns of both sample periods.

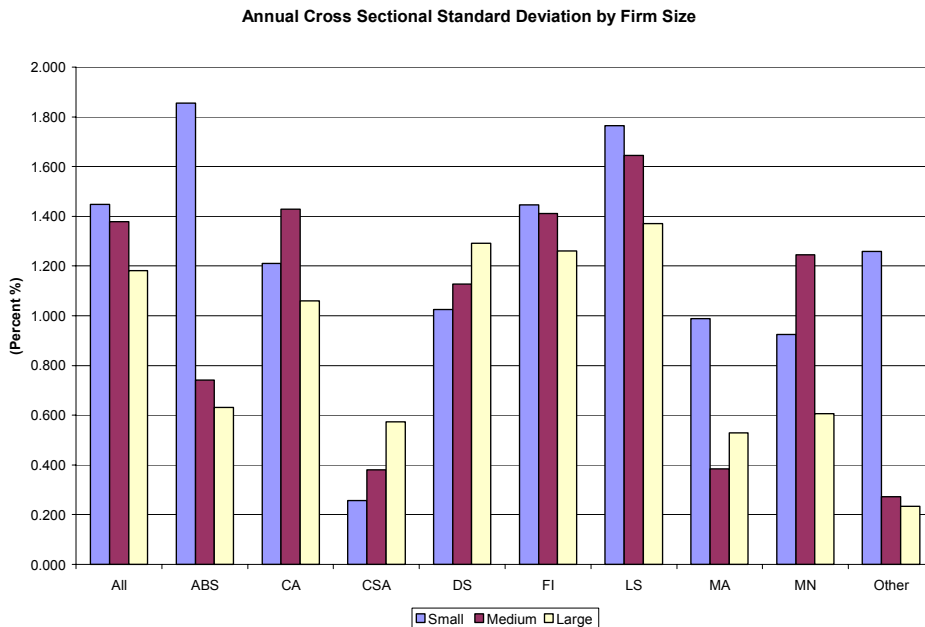


Exhibit 3. Slope coefficients from the regression of all manager returns on firm size. The dependent variable is the Winsorized mean of twelve months of returns from Oct-01 to Sep-02, Sep-02 to Aug-03, or both periods. The independent variables are firm tritile ranks, fund quintile ranks, and lagged growth quintile ranks (from growth periods Oct-00 to Sep-01, Sep-01 to Aug-03, or both) and dummy variables for each style. In Model 1, we focus on Firm Rank only, with controls for style. We add Fund Rank and Growth Rank to Models 2 and 3, respectively. By adding these variables step-wise, we are able to evaluate the changes in explanatory power that result. Note that adding Fund Rank often renders Firm Rank insignificant. The insignificance of Firm Rank in the presence of Fund Ranks is likely a result of the high correlation between these two variables – e.g. we cannot find a small firm with a large fund, so small firm rather implies small fund. We use tritiles and quintiles rather than levels to avoid problems associated with skewness in independent variables. We lag the growth quintiles to avoid a simultaneity issue.

	Returns Oct-01 to Sep-02			Returns Sep-02 to Aug-03			Returns Both Periods		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<u>Estimates Across Styles</u>									
Firm Rank	-0.040	0.053	0.040	-0.174	-0.022	0.040	-0.088	0.010	-0.007
Fund Rank	.	-0.125	-0.114	.	-0.194	-0.254	.	-0.125	-0.109
Growth Rank	.	.	0.034	.	.	-0.155	.	.	0.044
<u>Style-Specific Estimates</u>									
Asset Backed Securities	1.005	1.160	1.084	1.418	1.661	2.077	0.786	0.938	0.835
Convertible Arbitrage	0.219	0.378	0.301	1.794	2.012	2.404	0.806	0.959	0.856
Corporate Structure Arbitrage	0.444	0.612	0.531	1.319	1.448	1.857	0.735	0.889	0.783
Distressed Securities	0.238	0.397	0.320	1.797	2.022	2.408	0.772	0.924	0.822
Fixed Income Arbitrage	0.648	0.807	0.730	1.956	2.189	2.601	0.904	1.057	0.954
Equity Long Short	0.037	0.193	0.117	1.952	2.181	2.579	0.627	0.778	0.676
Merger Arbitrage	0.116	0.273	0.197	0.968	1.197	1.595	0.386	0.542	0.438
Equity Market Neutral	0.369	0.532	0.456	1.007	1.298	1.655	0.332	0.487	0.384
Other	0.305	0.451	0.376	0.955	1.057	1.496	0.241	0.383	0.282
Adjusted R-Square	0.076	0.091	0.091	0.697	0.712	0.722	0.190	0.201	0.202

Significant at 90%. Significant at 95%.

Exhibit 4. Ilope coefficients from the regression of above median managers returns on firm size. The dependent variable is the Winsorized mean of twelve months of returns from Oct-01 to Sep-02, Sep-02 to Aug-03, or both periods. The independent variables are firm tritile ranks, fund quintile ranks, and lagged growth quintile ranks (from growth periods Oct-00 to Sep-01, Sep-01 to Aug-03, or both) and dummy variables for each style. . In Model 1, we focus on Firm Rank only, with controls for style. We add Fund Rank and Growth Rank to Models 2 and 3, respectively. By adding these variables step-wise, we are able to evaluate the changes in explanatory power that result. Note that adding Fund Rank often renders Firm Rank insignificant. The insignificance of Firm Rank in the presence of Fund Ranks is likely a result of the high correlation between these two variables – e.g. we cannot find a small firm with a large fund, so small firm rather implies small fund. We use tritiles and quintiles rather than levels to avoid problems associated with skewness in independent variables. We lag the growth quintiles to avoid a simultaneity issue. Here we focus on above median return managers to evaluate the advantages of selecting from groups of managers with differing levels of variation in their return generation abilities. By focusing on the “above median” managers, we implicitly assume that better managers are identifiable to the savvy investor.

	Returns Oct-01 to Sep-02			Returns Sep-02 to Aug-03			Returns Both Periods		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<u>Estimates across Styles</u>									
Firm Rank	-0.124	-0.024	-0.045	-0.632	-0.424	-0.311	-0.208	-0.090	-0.024
Fund Rank	.	-0.123	-0.102	.	-0.193	-0.254	.	-0.158	-0.212
Growth Rank	.	.	0.052	.	.	-0.207	.	.	-0.155
<u>Style-Specific Estimates</u>									
Asset Backed Securities	0.633	0.782	0.655	2.999	3.225	3.594	1.656	1.872	2.240
Convertible Arbitrage	1.283	1.428	1.303	2.597	2.910	3.326	1.746	1.935	2.311
Corporate Structure Arbitrage	0.970	1.110	0.987	0.596	0.789	1.676	1.243	1.366	1.811
Distressed Securities	1.199	1.344	1.220	2.731	2.887	3.235	1.743	1.929	2.293
Fixed Income Arbitrage	1.098	1.245	1.120	3.388	3.518	3.901	2.021	2.210	2.589
Equity Long Short	1.097	1.242	1.118	3.055	3.102	3.433	1.841	2.014	2.390
Merger Arbitrage	0.594	0.746	0.618	0.829	0.922	1.508	0.867	1.062	1.439
Equity Market Neutral	0.307	0.453	0.328	2.175	2.299	2.607	1.129	1.350	1.653
Other	0.195	0.331	0.208	1.413	1.800	2.335	0.883	1.047	1.422
Adjusted R-Square	0.343	0.351	0.353	0.839	0.846	0.855	0.687	0.698	0.709

Significant at 90%. Significant at 95%.

Exhibit 5. 75th percentile returns of Small, Medium, and Large hedge fund firms. Returns are average monthly returns of both sample periods.

