Private Equity: Small Funds Outperform

Cheng Wang, FRM

Alignment Capital Group
6615 Vaught Ranch Road
Suite #101
Austin, TX 78730
512-744-4458 (Phone)
512-744-4496 (Fax)
www.alignmentcapital.com

April, 2005

INTRODUCTION

Many studies have been done on the returns of the public equity markets with regard to "style investments," e.g., growth versus value, large cap versus small cap and so on. Specifically, there has been an ongoing controversy over whether the stocks of small firms offer better returns than those of large firms over long periods of time and, if so, what are the potential reasons. In the private equity market, investors ask similar questions: do small funds outperform the large funds? If so, must they over-weight commitments to small funds in order to obtain a top quartile portfolio?

In this research brief, we review a major sub-set of all private equity funds in the Thompson Publishing Group's Venture Economics database. After studying the performance data of these funds, we conclude that small private equity funds as a group do indeed outperform large funds over long periods of time.

DATASET

For this research brief, we analyzed the funds in the Venture Economics database. As of 12/31/2003, there were 1709 stand-alone (i.e. not fund-of-funds) private equity funds included in the database. The database contained each fund's vintage year, fund size, cash flows since inception and residual valuation information. We focused on funds in the 1998 vintage year or earlier - 1252 funds in all. The funds in those vintages have several characteristics in common:

- They are almost fully invested.
- After five or more years of investment history, the general partner of each of these funds can reasonably forecast its ultimate performance and thus report its valuations with relative accuracy if the fund is not yet fully liquidated.
- The data are not biased by the substantial changes in the private equity market after 1999.

We believe that analysis of this sub-set of the Venture Economics database gives us a fair view of its characteristics relative to the topic under consideration.

METHODOLOGY

We categorized 1252 funds mature funds in the Venture Economics database from vintage 1998 and prior as large (over $400 million) or small ($400 million or less). (We established this cut-off line in a separate research project with regard to small versus large funds The statistics weakly suggest a $400 million break point over alternatives from $250 million to $ 550 million.)

We then calculated the performance of each fund as of 12/31/2003 in three dimensions. The first was the total multiple on invested capital, defined as the sum of all cash distributions plus the residual valuation divided by the sum of all paid-in capital. The second was the cash multiple on invested capital (the so-called cash on cash return), defined as the sum of all cash distributions divided by the sum of all paid-in capital. The third was the internal rate of return (IRR), defined as the annualized rate of return that sets the present value of all cash flows together with the present value of the reported residual valuation to zero.

Next, we grouped the performance measures of these funds by size category. Finally, we calculated the minimum, 25th percentile, median, 75th percentile and maximum values for each group and compared the large funds' performance with that of the small funds. We then used these results to determine the likelihood that a large or small fund will exhibit top-quartile performance.

RESULTS

Of the 1,252 funds under analysis, 164 (or 13%) were large funds and 1,088 (or 87%) were small funds. Quartile statistics are shown in the Exhibits below.

Exhibit 1: Total Multiples of Private Equity Funds

Source: Alignment Capital Group

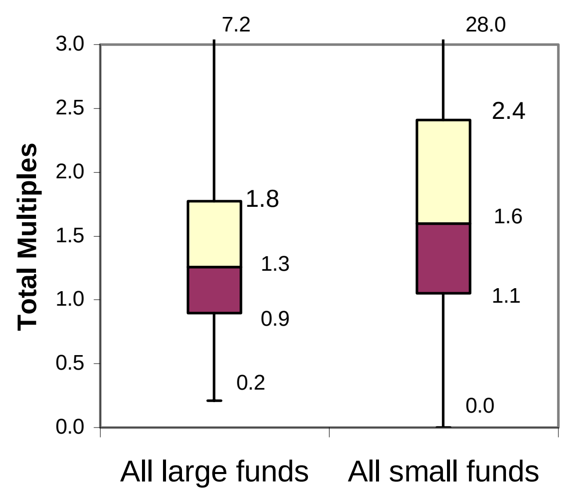


Exhibit 2: Cash Multiples of Private Equity Funds

Source: Alignment Capital Group

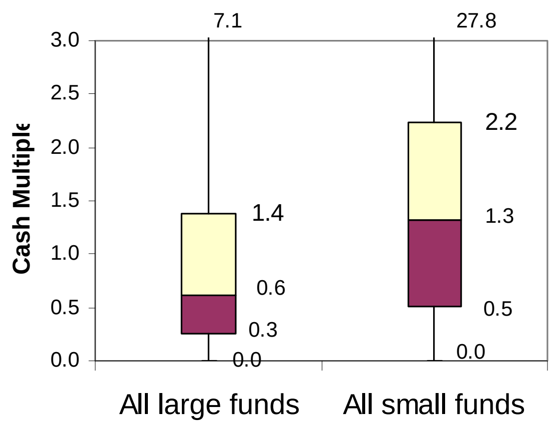
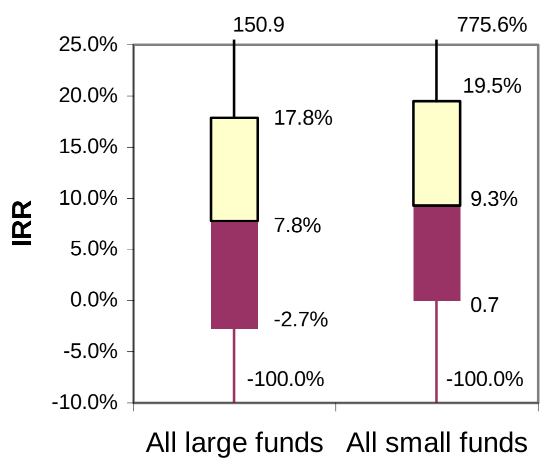


Exhibit 3: IRRs of Private Equity Funds

Source: Alignment Capital Group



These results are summarized in the table below.

Statistics	Total Multiple		Cash Multiple		IRR	
	Large funds	Small funds	Large funds	Small funds	Large funds	Small funds
Minimum	0.2	0.0	0.0	0.0	-100.0%	-100.0%
25th percentile	0.9	1.1	0.3	0.5	-2.7%	0.7%
median	1.3	1.6	0.6	1.3	7.8%	9.3%
75th percentile	1.8	2.4	1.4	2.2	17.8%	19.5%
maximum	7.2	28.0	7.1	27.8	150.9%	775.6%

We can observe the following results:

First, performance of small funds exhibits a much larger dispersion than the performance of large funds. Put another way, the difference between maximum and minimum performance is much larger for small funds than for large funds. Thus, the total multiple for large funds ranges from 0.2x to 7.2x, while the total multiple for small funds ranges from 0.0x to 28.0x. Similarly, IRRs for large funds range from –100% to 150.9% while IRRs for small funds range from –100% to 755.6%.

Second, for every performance measure small funds outperform large funds at the top three quartile cut-off points. For example, the 25th, 50th and 75th percentile total multiples for large funds are 0.9x, 1.3x and 1.8x, respectively; while the corresponding statistics for small funds are 1.1x, 1.6x and 2.4x. Similarly, the 25th, 50th and 75th percentile IRR for large funds are –2.7%, 7.8%, and 17.8%, respectively; while the corresponding statistics for small funds are 0.7%, 9.3% and 19.5%.

Third, we calculated the average top quartile total multiple and cash multiple. The results are shown in the following tables.

Average total multiple			
Quartile	Large Fund	Small Fund	Differ-ence
1	3.5	4.7	1.1
2	1.9	1.9	0.0
Mean	2.4	3.3	0.9

Average cash multiple			
Quartile	Large Fund	Small Fund	Differ-ence
1	3.4	4.3	1.0
2	1.6	1.6	0.1
Mean	2.2	3.0	0.8

The data in these tables indicate that small funds outperform large funds: for every $100 invested in top-quartile private equity funds, small funds generated $80 more in cash and $10 more in residual value than investments in large funds.

We omitted IRR calculations in this portion of our analysis because fund IRRs cannot be averaged in the same way fund multiples can. The term “average IRR” therefore has no real meaning. The closest analogue involves calculating a pooled IRR by adjusting the cash flows of a pool of funds on either an equal-weighted or actual-weighted basis using either actual or zero-based time. We avoided this confusion by not computing IRR statistics comparable to those of earnings multiples.

Finally, we calculated the number of large funds versus small funds in each quartile as measured by total multiple and IRR. The results are shown below:

Number of funds					
Fund size	TME quartile				
	1	2	3	4	All
large	18	35	57	54	164
small	295	278	256	259	1088
All	313	313	313	313	1252

Number of funds					
Fund size	IRR quartile				
	1	2	3	4	All
large	35	40	36	53	164
small	278	273	277	260	1088
All	313	313	313	313	1252

We translated the above table into the percentage measurements shown below in order to make the relationship between small fund performance and large fund performance clearer:

% number of funds					
Fund size	total multiple quartile				
	1	2	3	4	All
large	6%	11%	18%	17%	13%
small	94%	89%	82%	83%	87%
All	100%	100%	100%	100%	100%

% number of funds					
Fund size	IRR quartile				
	1	2	3	4	All
large	11%	13%	12%	17%	13%
small	89%	87%	88%	83%	87%
All	100%	100%	100%	100%	100%

These statistics suggest that while large funds make up 13% of all funds, on a total multiple basis only 6% of the top quartile is composed of large funds, and on an IRR basis only 11% of the top quartile is composed of large funds. While the IRR results are not so obvious as the total multiple results, these statistics suggest that small funds outperform large funds, whether performance is viewed on a total multiple basis or on an IRR basis.

CONCLUSION

Managers of private equity portfolios should take a proactive view of portfolio creation and management. That is, as limited partners investors should aggressively attempt to build a portfolio in which all of the funds are at least above average when compared to their peer groups and/or vintages. When a private equity portfolio is made up only of large funds, even if each individual fund in the portfolio is above average for its peer group and/or vintage, there is a substantial probability that such a portfolio will return less than the return to an above-average private equity portfolio that is diversified by size. From a different point of view, if a private equity portfolio manager's goal is to invest only in top-quartile funds, it will be approximately twice as difficult to do so by investing only in large funds, since only 6% of the top quartile is composed of large funds, while large funds make up 13% of the total market.

In summary, small private equity funds are a requirement in maximizing the return potential of a private equity portfolio.

Alignment Capital Group is a full-service private equity consulting firm based in Austin, Texas. The firm's mission is to understand private equity as an asset class in a portfolio context, and thus to assist our clients in making optimal investment decisions.

Cheng Wang is an Associate with Alignment Capital Group. His responsibilities include performing due diligence on investment managers, providing strategic portfolio management advice, and conducting ongoing research.

www.alignmentcapital.com