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The Advantage of Persistence

How the Best Private-Equity Firms "Beat the Fade"

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Note to the Reader

This report is the first product of an ongoing joint research project on the performance of the private equity sector conducted by The Boston Consulting Group and the IESE Business School of the University of Navarra in Spain. It presents initial findings based on the analysis of a variety of data sources, including a unique BCG-IESE database of some 1,750 private-equity deals that took place from 2000 through 2006. (For a more detailed discussion of the data used in this report, see the Appendix.)

The report compares the value creation performance of private equity funds with that of public companies and analyzes divergences and performance within the private equity sector itself. As our research progresses, we will extend and amplify the findings in this report with additional publications.

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Executive Summary

Despite the recent worldwide credit crunch, private equity is here to stay. Ample committed but not-yet-invested equity capital is available. Although the cost of debt has risen, it is still only at levels reached in 2005 (when private equity was already booming), and many financial institutions are still willing and able to provide debt. Finally, the way private equity creates value is increasingly shifting toward fundamental value creation. As this shift continues, private equity will become an even more robust alternative to the public capital markets.

On a risk-adjusted basis, private equity does not outperform the public capital markets; nevertheless, it remains an attractive asset class for investors. The reason: there are indications that the best private-equity firms consistently "beat the fade"—that is, they avoid the reversion to average returns, which, over time, afflicts the vast majority of investment opportunities. In other words, some private-equity firms do have a strong likelihood of outperforming the market over time—something rarely witnessed in other asset classes, such as mutual funds or individual public companies.

Superior value creation at private equity's top performers is the result of distinctive organizational capabilities. Traditional structural factors associated with scale and scope have relatively little to do with the success of the best private-equity players. Rather, top performers have developed a set of distinctive capabilities that have differentiated them from their rivals—whether they are public companies or other private-equity firms.

There are two scenarios for private equity's future. Either the capabilities of the top performers will turn out to be the source of sustainable competitive advantages that drive the consolidation of the private equity sector or they will simply define a new and higher standard of performance that—as public companies and other private-equity firms learn how to copy those capabilities—will stimulate a new round in the global competition for capital.

Why Private Equity Is Here to Stay

Since the onset of the global credit crunch in the summer of 2007, many observers have raised questions about the future of private equity.[1] In particular, the recent cancellation of some high-profile private-equity deals has led to doubts about the sector's ability to sustain its current high levels of growth. "The private-equity gravy train has jumped the tracks," the *New York Times* reported in September 2007, in an article that reflects the recent conventional wisdom. "The buyout bubble has burst," the *Times* added in October.[2]

We believe this pessimism is unwarranted. Despite recent troubles, the basic elements of the private equity business model remain very much in place. Although the credit crunch has caused a drop in the largest private-equity deals, it is unlikely to significantly retard the long-term growth of the sector. Indeed, another recent BCG report estimates that the private equity sector will grow by 15 to 20 percent per year until 2011.[3] The fact is that private equity is here to stay.

Ample Funds for Investment

There are still substantial amounts of money available for investment. Through 2006 the private equity sector in the United States and Europe accumulated nearly $300 billion in uninvested capital. (See Exhibit 1.) This committed capital will be a powerful impetus to future deals.

What's more, new capital continues to flow into private equity. In a recent survey conducted by Citigroup, 50 pension managers from the United States and Europe reported that they intend to raise their allocation in "alternative" investments, such as private equity and hedge funds, from 14 percent to nearly 20 percent by 2010. In September 2007, for example, the $112.5 billion Teacher Retirement System of Texas announced that it would increase its allocation to alternatives from 8.5 percent to 29 percent over the next three years.[4] And three months later,

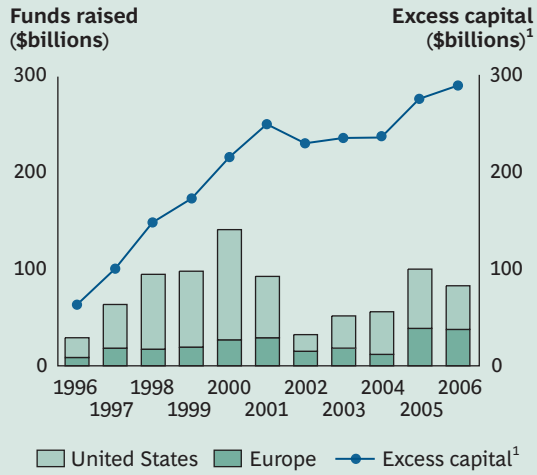
1. By *private equity,* we mean that portion of the industry that engages in leveraged buyouts (LBOs). The analyses in this report do not address the performance of other sectors of the industry, such as distressed funds, venture capital, or mezzanine funds.

2. Andrew Ross Sorkin, "The Ranks of the Comfortable Are Still Thinning," *New York Times,* September 9, 2007, and "After the Party," *New York Times,* October 3, 2007.

3. *The Growth Dilemma: Global Asset Management 2007,* BCG report, November 2007.

4. Jenny Anderson, "For Private Investment, the Party Isn't Over," *New York Times,* October 10, 2007.

Exhibit 1. Private Equity Continues to Enjoy Ample Access to Capital



Sources: Thomson VentureXpert; Thomson Financial; BCG-IESE analysis.
[1]Excess capital is defined as the cumulative total of funds raised minus funds invested per region.

in December, the California Public Employees Retirement System (CalPERS), the largest U.S. public-pension fund, with assets totaling more than $250 billion, announced that it was increasing its private-equity investments, as a proportion of its total portfolio, from 6 percent to 10 percent.[5]

New categories of investors are also showing up on the horizon. Recently, for example, government-owned sovereign wealth funds (SWFs) have discovered private equity. In addition to investing in private equity funds, they are taking ownership stakes in private equity firms.

In May 2007 the new $200 billion SWF of the government of China announced that it was acquiring a 10 percent stake in The Blackstone Group for $3 billion. And in September, Abu Dhabi's SWF acquired a 7.5 percent stake in The Carlyle Group. With SWFs expected to grow to more than $5 trillion in the next five years, these ownership stakes represent another vote of confidence in private equity as an attractive asset class.

Debt: More Expensive but Still Available

Typically, private equity deals are highly leveraged. It is true that the credit crunch has made debt more expensive, thus posing a potential obstacle to future private-equity deals. But the recent sudden rise in the cost of debt should not be exaggerated.

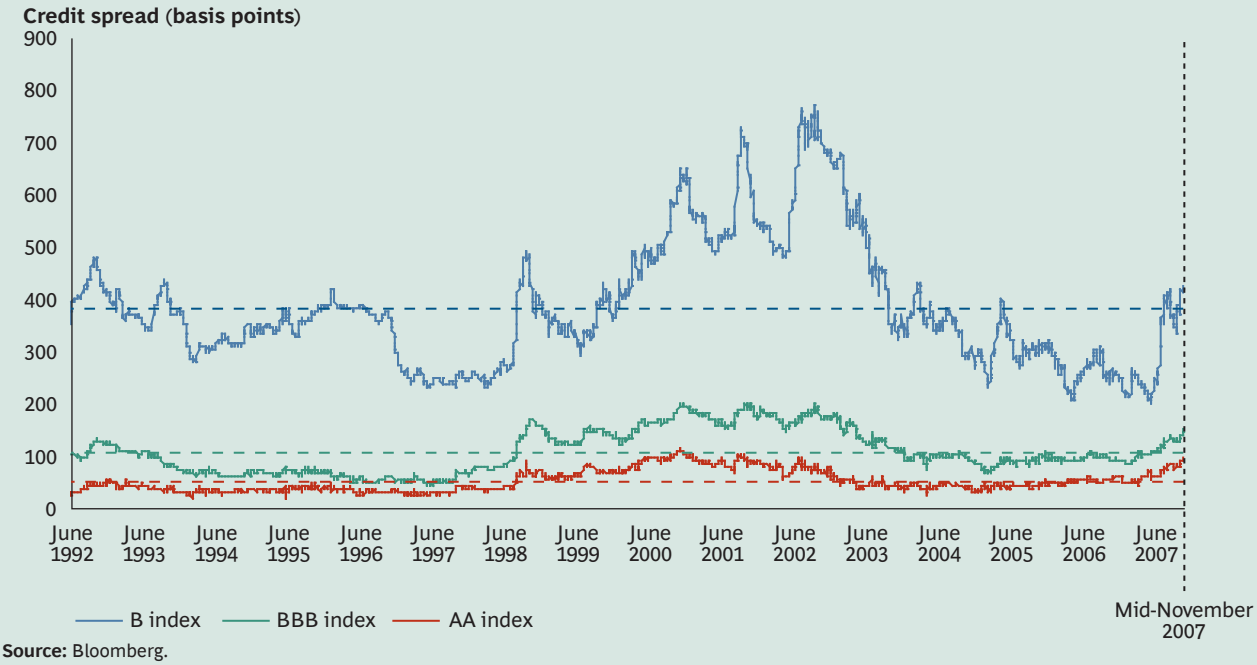
Exhibit 2 charts five-year credit spreads between the U.S. government interest rate and three common categories of debt (AA, BBB, and B) from June 1992 through mid-November 2007.[6] The graph shows that although the cost of debt began to rise in the middle of 2007, the increase only

5. "CalPERS Adopts New Asset Allocation Mix—Equalizes U.S., International Stocks; hikes private equity, real estate," December 17, 2007, http://www.calpers.ca.gov/index.jsp?bc=/about/press/pr-2007/dec/calpers-adopts-new-asset-allocation-mix.xml.

6. The debt categories refer to the quality of the underlying corporate bonds: AA indicates a strong capacity to meet financial commitments; BBB indicates a weakened capacity owing to adverse economic conditions; B indicates significant speculative characteristics.

Exhibit 2. Although the Cost of Debt Has Risen, It Remains Near the Long-Term Historical Average

Credit spreads relative to the U.S. government interest rate, June 1992 through mid-November 2007



Source: Bloomberg.
Note: Credit spreads are measured by using benchmark bond indexes five years to maturity. The dotted lines indicate the historical average for the period shown.

brought prices more in line with long-term historical averages. In effect, credit spreads have merely returned to levels reached in 2005—when private equity was already booming. The cost of debt is nowhere near its historical highs.

To be sure, an increased cost of debt will probably increase default rates for highly leveraged loans. Historically, default rates have closely tracked the fluctuation in credit spreads, so although current default rates remain low, they are likely to rise in the near future. (See Exhibit 3.)

This trend should put a stop to large, so-called megadeals with doubtful risk profiles. But the overall impact on private equity is likely to be modest. There remain many financial institutions that have relatively small exposure to the current debt write-down. They are more than willing to provide debt for financially sound small and midsize deals with stable cash flows and clear opportunities for creating value.

A Growing Emphasis on Fundamental Value

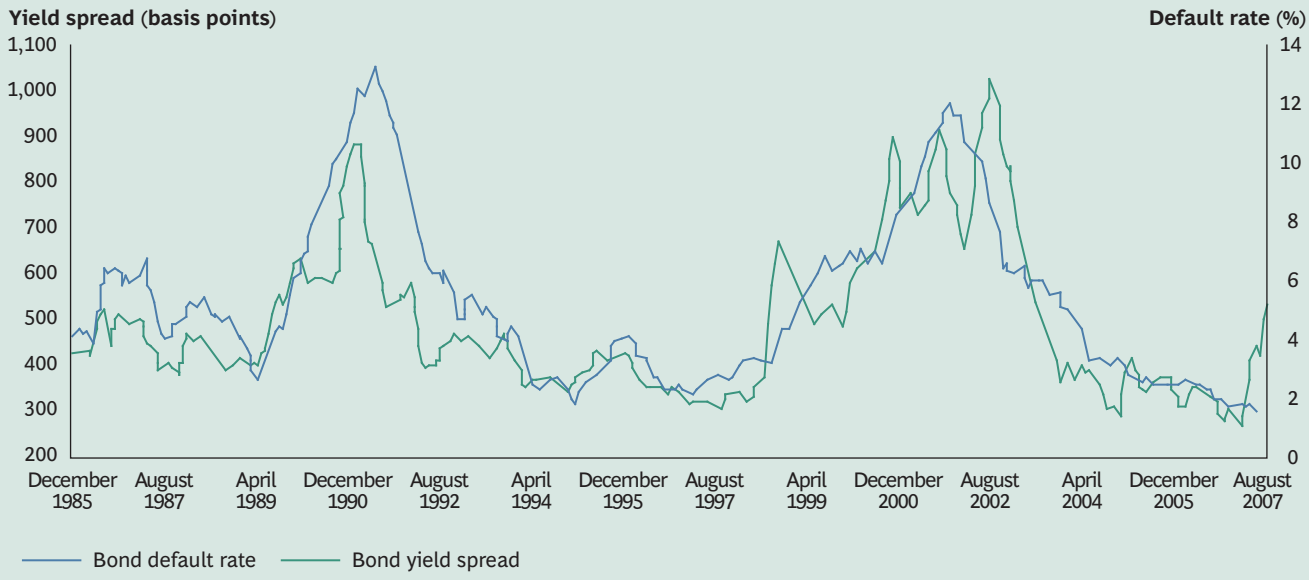
Even more important, the value created by private equity firms is less and less the result of debt arbitrage. Increasingly, private equity firms are creating value not through high leverage but through increases in fundamental value as a result of operational improvement and profitable growth.

Private equity firms are creating value through operational improvement and profitable growth.

For example, we analyzed the sources of value at 32 companies in the portfolios of seven European private-equity firms. We compared the enterprise value of the businesses at the time they were purchased with the value realized upon exit, and quantified the relative contribution of key value drivers. (See Exhibit 4.) Almost half the value created (22 percentage points out of a total average internal rate of return, or IRR, of 48 percent) was attributable to sales growth, and an additional 5 percentage points to improvement in margins. What's more, another 10 percentage

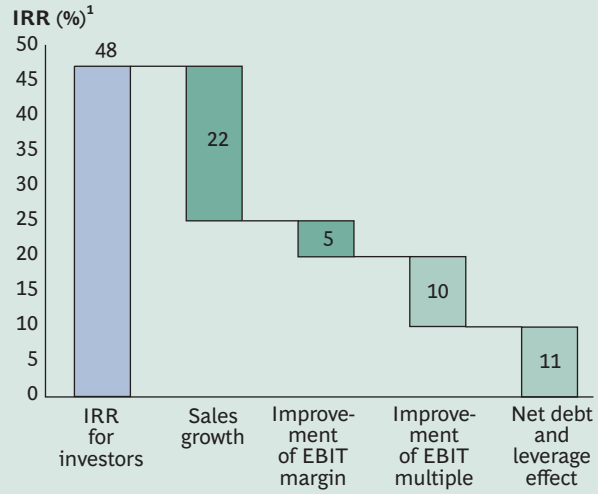
Exhibit 3. Historically, Default Rates Have Closely Tracked Credit Spreads

Spread and default rates for U.S. speculative-grade bonds, December 1985 through August 2007



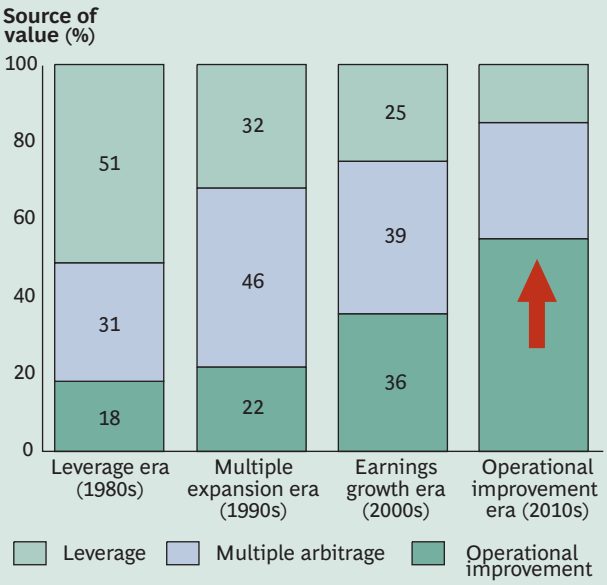
Source: Moody's.
Note: The y-axis on the left-hand side of the chart tracks the spread in yields between U.S. speculative-grade bonds and government bonds. The y-axis on the right-hand side of the chart tracks the default rate for these speculative-grade bonds.

Exhibit 4. At Many Private-Equity Firms, Fundamental Value Is the Main Source of Value Creation



Source: BCG analysis.
Note: The analysis is based on financial data from 32 private-equity companies in the portfolios of seven European private-equity firms; the analysis compares enterprise value at the time of purchase with the value realized upon exit.
[1]The y-axis shows the contribution of each factor in percentage points of the internal rate of return, or IRR.

Exhibit 5. Over Time, the Way Private Equity Creates Value Has Shifted



Sources: Goldman Sachs; BCG-IESE estimate.

points of the total return were due to increases in valuation multiples (in part, caused by improved performance prospects at the time of exit, but primarily the result of systematic increases in multiples across the capital markets). Change in leverage was responsible for only 11 percentage points of total return—half as much as sales growth and less than a quarter of the total return.

This performance reflects a broad historical trend. When one looks at the sources of value from private equity over time, it's clear that there has been a long-term historical shift away from leverage and toward operational improvement as a key source of value. (See Exhibit 5.) This trend is certain to continue. And the more private equity focuses on delivering improvements in fundamental value, the more likely it will remain an attractive asset class for investors.

Ample equity capital, the continuing availability of debt, a focus on creating fundamental value—all these factors suggest that private equity is here to stay. But is private equity relatively more attractive than other asset classes, such as public companies? To answer this question, it is necessary to compare the performance of private equity with that of the public capital markets.

Private Equity Versus the Public Capital Markets

Many people assume that the reason why so much money has been flowing—and continues to flow—into private equity funds is that they outperform the public capital markets. The reality is more complicated. Adjusted for risk, the returns from private equity are roughly equal to those from the public markets. However, there are indications that the best private-equity firms tend to "beat the fade" to average performance that occurs over time in the vast majority of public companies.

Adjusting for Risk in the Analysis of Private Equity Returns

It is to be expected that, on average, private equity would generate higher returns than the public capital markets because private equity investments carry higher risks. The real question is, How do these returns compare with the public-market average once the risks are taken into account?

There are at least three critical factors that need to be addressed in order to develop a more accurate risk-adjusted analysis of private equity's returns.[7] First, the portfolio companies of a private equity firm are far more highly leveraged than public companies typically are. This leverage increases returns to owners, but it also increases risk because companies must pay their interest and principal obligations to debt holders (and even run the risk of default) before investors enjoy any returns. Think of this as private equity's *leverage discount.*

Second, unlike investments in public companies, investments in private equity are illiquid. In other words, investors do not have access to their capital during the lifetime of the fund, nor can they sell their shares on a liquid capital market. This lack of liquidity adds an element of risk to private equity investments that is not found in investments in public companies: it forecloses investors' options for quickly and easily redirecting their capital to other investments should better opportunities arise. This additional risk is private equity's *illiquidity discount.*

Both these risks, however, are offset to a certain extent by a third factor. The portfolio of companies in which private equity firms invest is structurally different from that of the public capital markets. Precisely because private equity investments are so highly leveraged, firms tend to search out companies that are relatively stable performers—that is, either they already consistently generate cash or they have the potential to do so. Thus, the overall portfolio of private equity investments has less business risk than the market-average portfolio of public companies. We call this private equity's *stability premium.*

As a preliminary approach to creating a more accurate comparison of private-equity and public-market returns, we created a model that takes the three factors into account. The first step was to develop a comparison of private equity and public companies. We examined cash flow data drawn from Preqin, a provider of financial information for the private equity sector. Our sample consisted of 218 private-equity funds with start dates (or, in industry terminology, "vintage years") between 1979 and 2002. To ensure that our data were meaningful, we se-

7. See, for example, Alexander Peter Groh and Oliver Gottschalg, "The Risk-Adjusted Performance of US Buyouts," November 14, 2006, http://ssrn.com/abstract=876273.

lected only funds that had reached a residual-value-to-paid-in (RVPI) ratio of no more than 20 percent. RVPI is a measure of investors' remaining interest in the unrealized portfolio as a percentage of the original capital paid in. In other words, in these funds, the vast majority of returns (that is, initial capital plus the profits on that capital) had already been paid out to investors. We have found this 20 percent RVPI threshold to be a surprisingly strong predictor of eventual total fund performance. (For an explanation, see the Appendix.)

To calculate fund performance, we used data on the funds' net IRR from 1979 to 2002. We then weighted the result by fund size and the length of the fund's investment period. This gave us an average net IRR of about 13 percent over the period studied. Next we calculated the returns of the identical cash flows as if they had been invested in the MSCI World Index (a commonly used index of global public companies) during the same period. The result of this calculation was a net IRR of about 10 percent.

To account for the three factors, we used a variety of approaches drawn from the academic literature. We used the standard capital-asset-pricing model to calculate the impact of private equity's increased leverage. And we used an approach described in the *Journal of Financial Economics* to calculate the impact of illiquidity in private equity.[8] Quantifying the effect of private equity's less risky portfolio is far more difficult. Here we followed the lead of another recent academic approach to come up with an estimate.[9]

We've tested our analysis using other methodologies and obtained similar results.

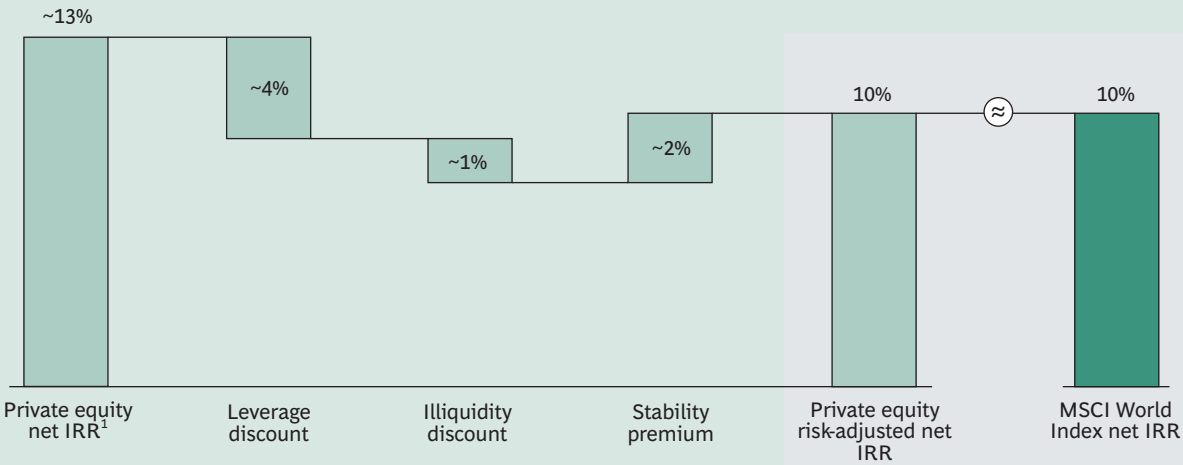
The results of this analysis are portrayed in Exhibit 6. It shows that on a risk-adjusted basis, the returns of private equity are roughly equivalent to returns from the public capital market. Although the results of our model are approximations, we are confident that our conclusion is valid. We have tested it using other risk-adjustment methodologies and obtained similar results. And it echoes the findings of other researchers.[10]

8. Viral V. Archarya and Lasse Heje Pederson, "Asset pricing with liquidity risk," *Journal of Financial Economics,* 77 (2005): 375–410.

9. Groh and Gottschalg, "Risk-Adjusted Performance."

10. See, for example, Christoph Kaserer and Christian Diller, "Investing in Private Equity—Fundamental Principles, Return and Risk Characteristics," Center for Entrepreneurial and Financial Studies, Technical University of Munich, June 2007, www.rwb-ag.de/downloads/7x_downloads/Schriftenreihe_3.pdf.

Exhibit 6. Adjusting for Risk, Private Equity's Returns Are Roughly Equivalent to Those of the Public Capital Markets



Sources: Preqin; Archarya and Pedersen (2005); Groh and Gottschalg (2006); BCG-IESE analysis.
Note: All values are approximate and for illustrative purposes only.
[1]The calculation of private equity net IRR is based on an average, weighted for fund size and investment period, of 218 funds in the period from 1979 through 2002; all funds have a residual-value-to-paid-in (RVPI) ratio of no more than 20 percent.

(For a more detailed discussion of our risk-adjustment model, see the Appendix.)

But if private equity funds are not outperforming the public capital markets on a risk-adjusted basis, why are so many supposedly savvy investors putting increasing amounts of capital into them? An answer begins to emerge when we de-average private equity's performance.

Does Private Equity Beat the Fade?

Over time, the value creation performance of the vast majority of public companies fades toward the market average. In other words, those companies that, over a given period, have generated above-average returns eventually decline to average performance. And those companies that have generated below-average returns generally improve to the average.

For an illustration of this fade phenomenon, consider the analysis in Exhibit 7, which charts the performance of 66 public large-cap mutual funds in the five-year period from 2002 through 2006. The chart divides the funds into four quartiles on the basis of their 2002 performance. So, for example, the top-quartile funds generated about three times the sample average in 2002. But by 2006, those funds that were in the top quartile in 2002 had faded to the average.

This trend can also be seen in individual industries. Exhibit 8 shows the equivalent data for selected public companies in four industry sectors: consumer goods, retail, technology, and pharmaceuticals and health care.

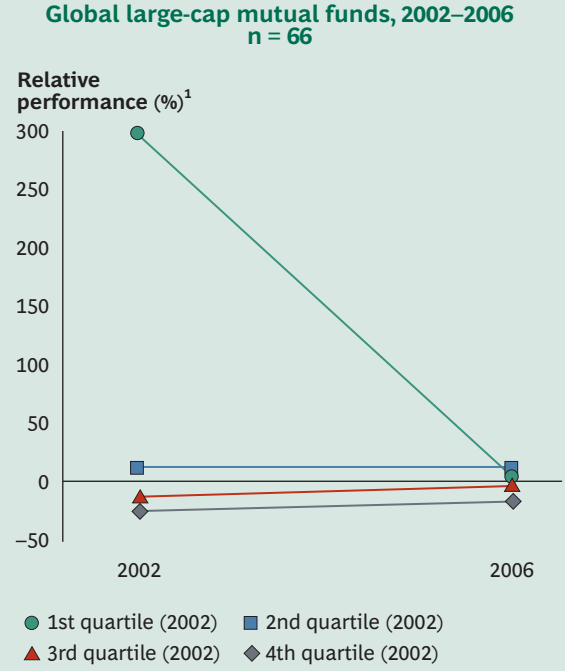
No matter how much the companies in the first quartile outperformed the average in 2002 (and those in consumer goods did so by nearly 2,000 percent), by 2006 they were generating only average returns (and, in some cases, below-average returns). Clearly, for any high-performing company or portfolio of companies, it is extremely difficult to beat the fade.

For investors, the high odds against beating the fade mean that it is extremely difficult to predict future performance based on a company's historical track record. Our research, however, has produced some data that seem to indicate that private equity firms with funds that generate above-average returns tend to sustain that above-average performance over time. Put another way, they are less apt to fade to the average.

Using data from Preqin, we identified 75 pairs of funds—a "first" fund and a subsequent "follow-up" fund from the same firm—with vintage years ranging from 1979 through 2000.[11] As we did in the risk-adjusted analysis described in the previous section, we selected only funds with an RVPI of no more than 20 percent. We divided the 75 first funds into four quartiles on the basis of each fund's relative performance compared with the vintage-year average. Then we calculated the fade of the firms in those four quartiles on the basis of the relative performance of their subsequent follow-up funds.

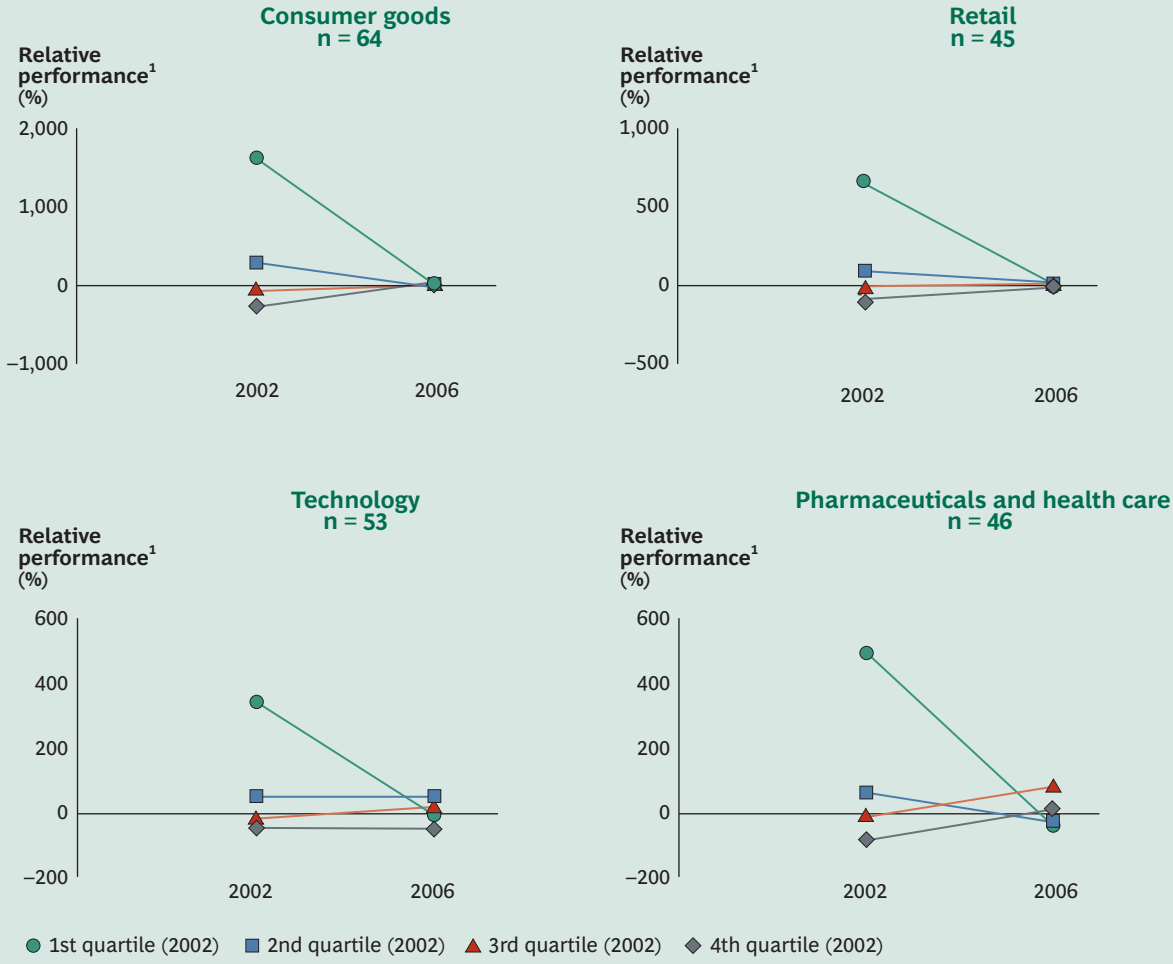
11. In the sample, a firm with three consecutive funds is treated as two pairs of funds, with the follow-up fund in the first pair becoming the first fund in the second pair.

Exhibit 7. Over Time, Value Creation "Fades" Toward the Market Average



Sources: Bloomberg; Thomson Financial; BCG-IESE analysis.
[1]Relative performance measures the percentage by which each quartile's average total shareholder return (TSR) either outperforms or underperforms the sample-average TSR for a given year. Data points for 2006 measure the performance of identified 2002 quartiles.

Exhibit 8. The Fade Phenomenon Can Be Found Across Industries

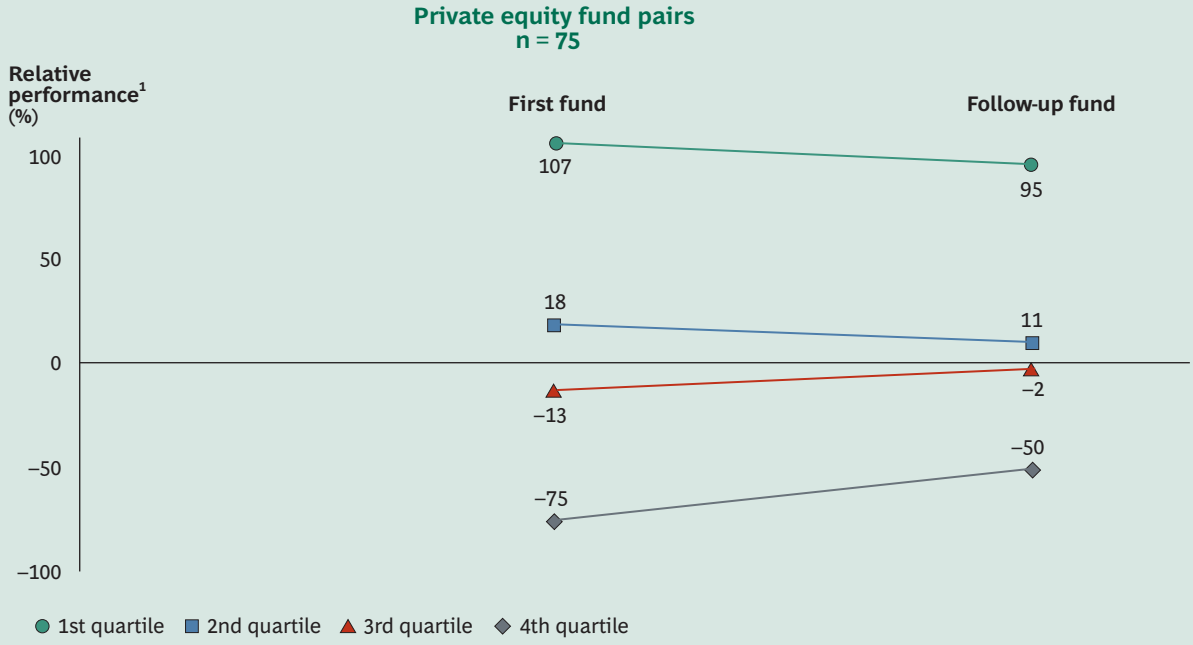


Sources: Bloomberg; Thomson Financial; BCG-IESE analysis.
[1]Relative performance measures the percentage by which each quartile's average total shareholder return (TSR) either outperforms or underperforms the sample-average TSR for a given year. Data points for 2006 measure the performance of identified 2002 quartiles.

The results of this analysis are portrayed in Exhibit 9. Not only did the firms with first funds in the top quartile fade considerably less than the top quartiles in the mutual-fund and public-company samples shown in Exhibits 7 and 8, they barely faded at all. The first funds in the top quartile had returns that were more than double the sample average: they outperformed the average by 107 percent. And their subsequent funds did nearly as well, outperforming the sample average by 95 percent. This suggests that over time, the top private-equity firms consistently outperform both their public-company and private-equity rivals—and, thus, do represent an extremely attractive investment vehicle.

But how is it that the most successful private-equity funds consistently outperform their rivals? In the next section, we look at what distinguishes the most successful private-equity firms from the rest.

Exhibit 9. Top Private-Equity Funds Appear to "Beat the Fade"



Sources: Preqin; BCG-IESE analysis.
Note: The sample consists of 75 private-equity funds, started between 1979 and 2000, and their subsequent follow-up funds; all funds have an RVPI ratio of no more than 20 percent.
[1]Relative performance measures the percentage by which each quartile either outperforms or underperforms the sample average for a given vintage year.

Lessons from the Top Private-Equity Performers

What is it that allows the best private-equity firms to sustain their superior performance over time? Many observers point to structural factors such as the size of a firm's funds and deals, and the degree of its geographic and industry diversification. But our initial research suggests that such factors are relatively unimportant.

Rather, the most successful private-equity firms seem to be those that have gone the farthest in implementing a new, more sophisticated model of value creation. This model is allowing the best firms to develop what may be sustainable competitive advantages that will be the foundation for superior value creation over the long term.

The Relative Unimportance of Structural Factors

There is a clear trend in the private equity sector toward bigger, more global, and more diversified firms. Some observers have even argued that these structural factors are key requirements for success in private equity today. To test this assumption, we used Preqin data to identify 20 private-equity firms that were among the 35 largest in the industry and 51 funds from those firms with RVPIs of 20 percent or less.

We then used a combination of Preqin data and data on individual deals from those firms collected in the BCG-IESE database to analyze the correlation between firm performance and four structural factors: average fund and deal size, and degree of geographic and industry diversification. What we found was that there is relatively little correlation between those structural factors and each firm's performance.

Take fund size. The average fund size ranges from less than $250 million to almost $2.5 billion, but some of the most successful firms in the group have some of the smallest average fund sizes. (See Exhibit 10.) So, too, deal size. Although the average size of deals in the 20 firms ranges from $200 million to $1.1 billion, once again there is no clear correlation between deal size and a firm's overall performance. (See Exhibit 11.)

To assess geographic diversification, we used our deal database to assign each of the 20 private-equity firms a ranking in a geographic-diversification index. We found that many of those firms are now investing globally. But a number of quite successful firms in the sample have significantly less geographic diversification. (See Exhibit 12.)

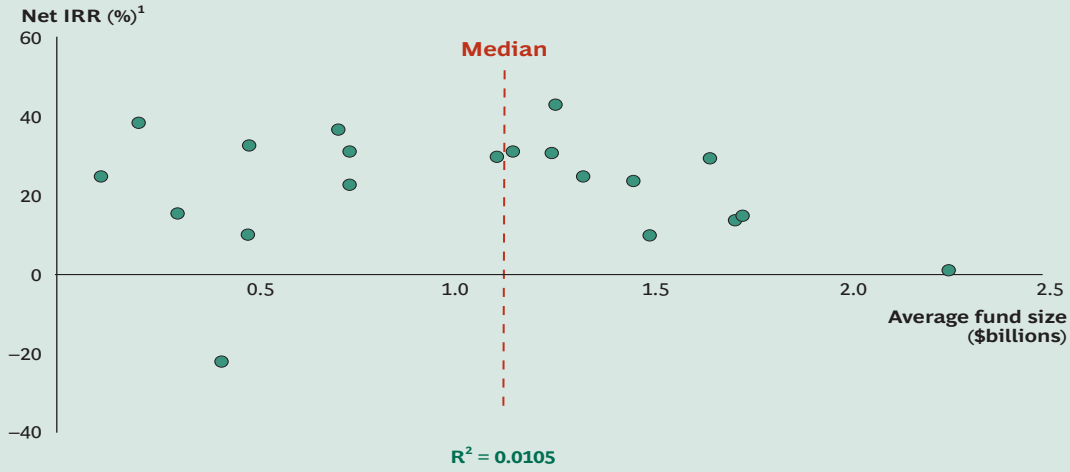
Nor does industry diversification seem to drive firm performance. When we plotted the 20 above-average firms by degree of industry diversification, we found that all but 1 had invested in many different industries. And yet the performance within these highly diversified players was widely dispersed. (See Exhibit 13.)

In summary, private equity firms can generate above-average returns whether they are big or small, diversified or focused. To understand what characterizes the most successful firms, we have to dig deeper.

Capabilities-Based Value Creation

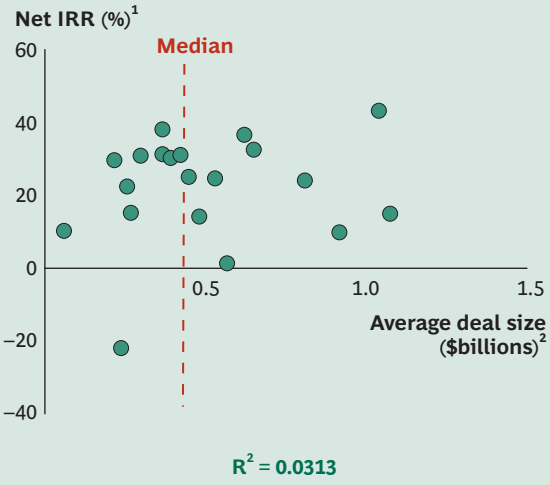
If structural factors such as size, scale, and diversification do not explain the performance of the most successful private-equity firms, what does? To answer this question, we supplemented our quantitative research with a series of interviews with leading private-equity executives, as

Exhibit 10. Average Fund Size Does Not Predict Firm Performance



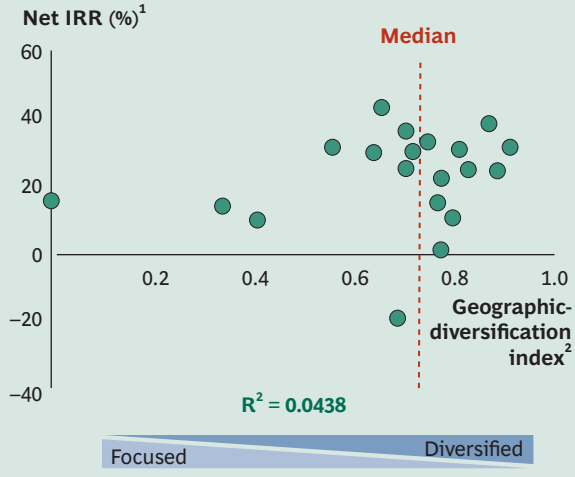
Sources: Preqin; Mergermarket; BCG-IESE analysis.
Note: The sample consists of 20 private-equity firms with 51 funds with an RVPI of no more than 20 percent and with vintage years between 1980 and 2000. R^2 stands for multiple regression correlation coefficient.
[1]IRR was calculated from the fund cash flows of each firm.

Exhibit 11. Average Deal Size Does Not Predict Firm Performance



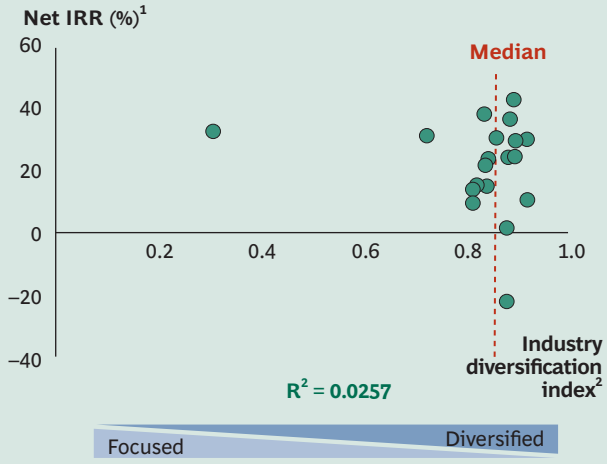
Sources: Preqin; Mergermarket; BCG-IESE database; BCG-IESE analysis.
Note: The sample consists of 20 private-equity firms with 51 funds with an RVPI of no more than 20 percent and with vintage years between 1980 and 2000. R^2 stands for multiple regression correlation coefficient.
[1]IRR was calculated from the fund cash flows of each firm.
[2]Based on deals (weighted by stake) between 2000 and 2006.

Exhibit 12. Geographic Diversification Does Not Predict Firm Performance



Sources: Preqin, Mergermarket; BCG-IESE database; BCG-IESE analysis.
Note: The sample consists of 20 private-equity firms with 51 funds with an RVPI of no more than 20 percent and with vintage years between 1980 and 2000. R^2 stands for multiple regression correlation coefficient.
[1]IRR was calculated from the fund cash flows of each firm.
[2]The geographic-diversification index was based on the location of approximately 1,000 deals of the sample of 20 private-equity firms between 2000 and 2006.

Exhibit 13. Diversification Does Not Predict Firm Performance



Sources: Preqin; Mergermarket; BCG-IESE database; BCG-IESE analysis.
Note: The sample consists of 20 private-equity firms with 51 funds with an RVPI of no more than 20 percent and with vintage years between 1980 and 2000. R^2 stands for multiple regression correlation coefficient.
[1]IRR was calculated from the fund cash flows of each firm.
[2]The industry diversification index was based on approximately 1,000 deals of the sample of 20 private-equity firms between 2000 and 2006.

well as with the experience drawn from BCG's extensive work with the portfolio companies of private equity clients. What we learned is that private equity's model for creating value is becoming more complex and more sophisticated.

In the past, creating value in private equity was primarily about doing deals and exploiting leverage. But as our earlier analysis makes clear, today it is far more about creating fundamental value. With this shift, there has been considerable attention to the organizational aspects that distinguish the private equity business model from that of the traditional public company—for example, more sophisticated investors, engaged and effective boards, and better alignment between management incentives and value creation goals.[12]

In our experience, however, the most successful private-equity firms bring something else to the game as well, something that differentiates them not only from public companies but also from their private-equity rivals: distinctive organizational capabilities that allow them to identify the best deals, bid competitively, and then transform the performance of their portfolio companies.[13] Three such capabilities in particular seem especially important.

Networked Access. One critical capability that is proving especially important is what we call *networked access.* The most successful private-equity firms have become real insiders in the sectors in which they operate. Firm partners include not just dealmakers but also professionals from within the industry. And such firms are extremely well connected with industry players who serve as senior advisors and often sit on the boards of the firms' portfolio companies. These extensive industry networks give the top performers an advantaged deal flow that allows them to identify the most promising deals. They also help firms identify untapped value, devise innovative strategies, bid more aggressively, and win over a company's current executives (who often play a critical role in the sales process).

To grasp the power of networked access, consider one of the most successful of the recent private-equity deals in Europe: the March 2006 acquisition by EQT Funds of the off-highway diesel-engine manufacturer Tognum (formerly MTU Friedrichshafen) from DaimlerChrysler. EQT was able to draw on a highly knowledgeable roster of internal and external advisors, including a former president and CEO of Mitsubishi Motors Corporation and former senior executives from Atlas Copco and ABB. Because the firm had an active network of veteran industry executives, it was able to learn about the Tognum sale months before the official bidding process began. The extra time allowed EQT to develop a detailed market analysis of the industry, a "pre–due diligence" of Tognum's prospects, and a comprehensive future strategy for the company.

The fact that EQT entered the bidding process with a detailed plan for the company and proposed that its senior advisors serve on the Tognum board impressed Tognum's board of directors. It also convinced the company's union

12. "What Public Companies Can Learn from Private Equity," BCG Opportunities for Action, June 2006.

13. For the classic treatment of the concept of capabilities-based competition, see George Stalk Jr., Philip Evans, and Lawrence E. Shulman, "Competing on Capabilities: The New Rules of Corporate Strategy," *Harvard Business Review,* March 1992.

representatives of EQT's credibility and distinguished the firm from traditional buyout houses. This credibility, combined with the firm's readiness to swiftly process a transaction with DaimlerChrysler, proved critical in winning the deal. It also helped the firm gain internal support for the changes it was proposing once the acquisition was completed.

Domain Expertise. Having a well-connected industry network is closely related to another key capability: *domain expertise.* The most successful private-equity firms have developed highly specialized knowledge of the sectors in which they participate. For some firms—for example, relatively small boutique private-equity players—domain expertise is largely a function of focus on a single industry, a small subset of industries, or a particular type of business. The more a firm is focused on a particular type of deal or deals in a particular sector, the faster it moves up the experience curve and the sooner it can build a competitive advantage over less focused rivals.

New capabilities can separate the best private-equity firms from the rest.

But large private-equity players are also building domain expertise. Some, for example, have begun to organize themselves around largely autonomous practice areas, each one focused on a different industry. And they are investing considerable resources to build their knowledge and capabilities in their chosen industries.

Operational Improvement. A third key capability is *operational improvement,* or the capacity to come in and turn around the operations of a portfolio company once a deal is done. As private equity increasingly focuses on creating value through increases in fundamental value, operational-improvement capabilities are becoming critical. In response, the best firms are not only recruiting the traditional dealmakers—with their backgrounds in investment banking—who characterized the early years of the sector; these firms are also bringing in more people with backgrounds in consulting and operational management who have considerable experience in managing companies and systematically improving their performance. And these firms are working closely with the management of their portfolio companies to set the improvement agenda, develop a turnaround program, and install operating-metric "dashboards" to measure performance against goals. At a time when improvements in fundamental value have become the key source of value creation in private equity, these kinds of interventions can go a long way toward separating the best firms from the rest.

For a striking example of how private equity firms can create value through deep capabilities in operational improvement, consider the 2000 acquisition of the German packaging company Schmalenbach-Lubeca by a consortium led by Allianz Capital Partners. Working closely with the company's senior management, in particular the CFO, the new owners conducted a comprehensive benchmarking exercise comparing the company's P&L and balance sheet with those of its industry peers. The goal was to identify opportunities for quick improvements that would create new value without putting too much pressure on the company's organization.

The benchmarking process identified a previously overlooked area for value creation: working-capital productivity. Before being taken private, the company had always had easy access to internal loans from its public-company parent, Viag, to finance its working capital. Because this money was readily available, managers had never really focused on working capital as an expense to be actively managed.

The company's new private-equity owners and senior management made two changes to address this situation. First, as part of the original purchase agreement with Viag, they replaced the existing loans with external bank debt. Second, they shortened the company's working-capital cycle. The pressure of regular debt repayments and the need to reengineer business processes to accommodate faster working-capital cycles helped create an urgent focus on improving operational efficiency. The unprecedented savings created substantial new value that, among other things, helped fund the company's growth through the acquisition of several European beverage-can plants. This combination of increased efficiency and new growth allowed Allianz Capital and its partners to sell the company at an attractive price in 2002.

What our research to date, both quantitative and qualitative, suggests is that although private equity is here to stay, what makes for success in the private equity sector

may indeed be changing. What it takes to create value in private equity is becoming more complex. The private equity business model is becoming more sophisticated. And there appears to be consistent divergence over time between the performance of the best firms and that of the rest.

This may represent a virtuous circle for private equity's top performers. As they continue to invest in their capabilities, they may well be creating sustainable competitive advantages that serve as a foundation for long-term success. And as these firms continue to beat the fade, they are likely to be rewarded with more and more capital to invest, driving the consolidation of the private equity industry.

But such a scenario raises key unanswered questions: To what degree can other private-equity firms and public companies themselves imitate this capabilities-based business model? In other words, are private equity's top performers carving out truly sustainable competitive advantages? Or are they simply defining a new and higher standard of performance, one that other private-equity firms and public companies can replicate—thus stimulating a new round in the global competition for capital? We intend to explore these and other questions in subsequent reports.

Appendix: Methodology

The findings in this report rely on analysis of a variety of data sources.

The *trend analysis* in Exhibits 1 through 5 draws from publicly available sources, including Thomson Financial and Bloomberg. It also includes data from an internal BCG study of value creation at 32 companies in the portfolios of seven European private-equity firms.

The *risk-adjustment analysis* in Exhibit 6 is based on a proprietary model developed by the BCG-IESE research team. We constructed an average net IRR, weighted for fund size and investment period, for 218 funds in the period 1979 through 2002. To adjust for the impact of leverage on private equity returns, we assumed an industry standard debt-to-equity ratio of three to one.[14] However, we adjusted that to a more conservative two-to-one ratio to account for redemptions during the holding period. We then used the standard capital-asset-pricing model to calculate the resulting increase in the cost of equity capital—and, therefore, the decrease in risk-adjusted private-equity returns.

To adjust for the effect of private equity's relatively greater illiquidity, we used an adjustment developed by Archarya and Pedersen.[15] And to estimate the impact of private equity's less risky portfolio, we used an approach developed by Groh and Gottschalg, who assign to private equity a lower unlevered beta (a measure of systematic risk) of 0.67.[16]

The *quartile analysis* of large-cap mutual funds and publicly traded global companies (Exhibits 7 and 8) is based on public data and on proprietary BCG data.[17] We calculated the relative performance above and below the sample average in 2002. Then we divided the sample into quartiles and measured the relative performance of each group five years later, in 2006.

To replicate this quartile analysis for private equity (Exhibit 9), we drew on net IRR performance data from Preqin for 75 fund pairs, each from the same firm—a first fund and a follow-up fund, with vintage years between 1979 and 2000. This allowed us to estimate the fade rate for the firms that had established the funds.

The *structural analysis* in Exhibits 10 through 13 combines two data sources. The performance data (net IRR) come from 20 of the 35 largest private-equity firms (in terms of funds raised in the most recent five years) in the Preqin database. We ranked these firms against a set of four structural factors—average fund and deal size and the degree of geographic and industrial diversification—based, in part, on Preqin data but primarily on data collected in a proprietary database that we are developing in the BCG-IESE research project. This database consists of roughly 1,750 acquisitions between 2000 and 2006 at the 35 largest private-equity firms. (Over time, we intend to develop detailed financial data for each of the deals in the BCG-IESE database and will present analyses of these data in subsequent reports.)

To create our geographic and industry diversification indexes, we used a modified version of the Herfindahl In-

14. Citigroup Global Markets Equity Research, "European Portfolio Strategist," November 16, 2006.

15. Archarya and Pederson, "Asset pricing."

16. Groh and Gottschalg, "Risk-Adjusted Performance."

17. *Avoiding the Cash Trap: The Challenge of Value Creation When Profits Are High,* the 2007 Value Creators report, September 2007.

dex (HI), a frequently used measure of concentration in markets.[18] In its standard form, the HI for each firm's portfolio is the sum of the square of the percentage of portfolio companies in each industry or geographic area. The index has an upper boundary of 1 for a firm with investments in only 1 industry or geography segment, a lower boundary of 0.043 for a firm with investments in 23 industry segments (with a 4.3 percent investment in each segment), and a lower boundary of 0.023 for a firm with investments in 43 geographic areas (with a 2.3 percent investment in each segment).[19] However, because we were interested in measuring the degree of diversification rather than of concentration, we inverted the index by subtracting the standard HI from 1. This left us with a diversification scale ranging from 0 (minimum diversification) to 1 (maximum diversification).

To rank the private equity firms on our industry diversification index, we categorized the deals from each firm in our deals database according to the first two digits of their North American Industrial Classification System (NAICS) code. We then calculated the total deal value invested in each industry by firm, using the index described above. For the geographic-diversification index, we repeated the same process by using the total deal value invested by country, as defined by the headquarters of the portfolio company.

One final point: for all the analyses of private equity performance in this report, the samples consist exclusively of funds that have an RVPI ratio of no more than 20 percent. We chose this threshold because it proved to be a strong predictor of a fund's actual final returns. For example, we analyzed the net IRR of 21 private-equity funds with start dates between 1980 and 1997 that had RVPIs of no more than 20 percent in November 2005 and that were completely liquidated by September 2007. We found that for 86 percent of those funds, the deviation in final IRR was less than 1.5 percentage points above or below the 2005 estimate. And for all the funds, the deviation was less than 3 percentage points. (See Exhibit 14.)

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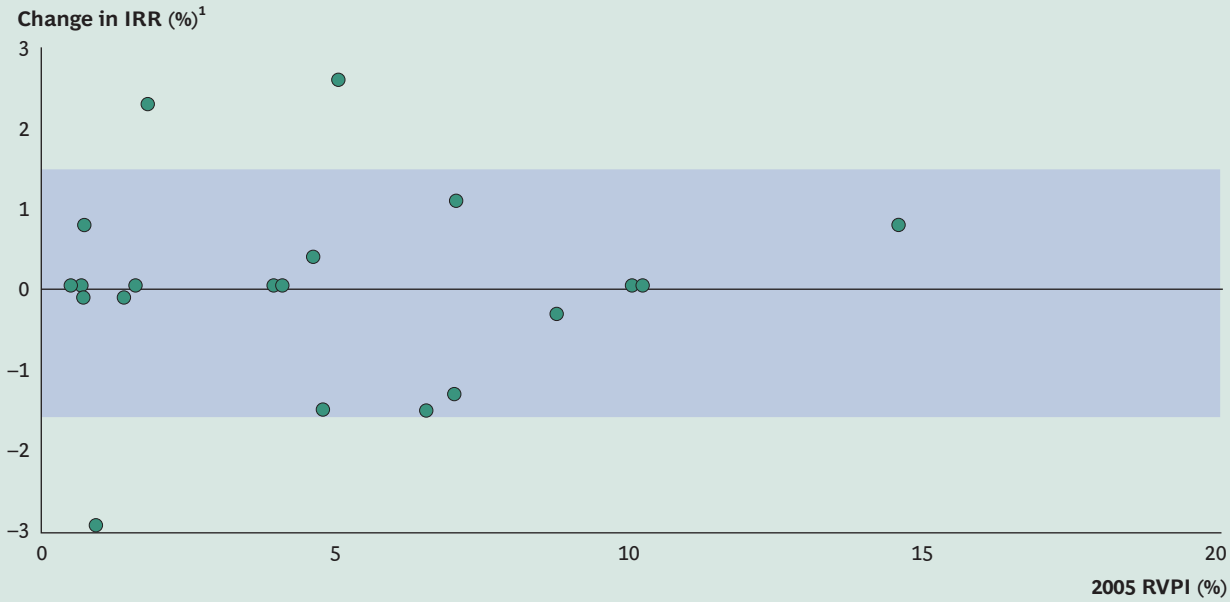
18. The mathematical definition of the Herfindahl Index (HI) is $F_i = \sum_{j=1}^{8} p_{ij}^2$.

19. A company's HI takes into account not only the number of industries in which a firm is investing but also the size of the investment in each one of those industries. The score decreases nonlinearly with the number of industries, holding constant the variance of industry share, and declines with the variance of industry share, holding constant the number of industries. Thus, a portfolio with equally distributed investments in two industries is ranked as less focused than a portfolio with two unequal investments in two industries.

Exhibit 14. An RVPI of No More than 20 Percent Is a Good Proxy for Estimating Final IRR



Sources: Preqin; BCG-IESE analysis.
Note: The sample consists of 20 private-equity funds, with start dates between 1980 and 1997, that had RVPIs of no more than 20 percent in November 2005 and were liquidated by September 2007.
[1]Change in percentage points of IRR from an estimate made in November 2005 to the final IRR in September 2007.

For Further Reading

The Boston Consulting Group has published many reports and articles on corporate development and corporate finance that may be of interest to senior executives. Recent examples include:

Avoiding the Cash Trap: The Challenge of Value Creation When Profits Are High
The 2007 Value Creators report, September 2007

The Brave New World of M&A: How to Create Value from Mergers and Acquisitions
A report by The Boston Consulting Group, July 2007

Powering Up for PMI: Making the Right Strategic Choices
A Focus by The Boston Consulting Group, June 2007

"Managing Divestitures for Maximum Value"
Opportunities for Action in Corporate Development, March 2007

"A Matter of Survival"
Opportunities for Action in Corporate Development, February 2007

Managing for Value: How the World's Top Diversified Companies Produce Superior Shareholder Returns
A report by The Boston Consulting Group, December 2006

Spotlight on Growth: The Role of Growth in Achieving Superior Value Creation
The 2006 Value Creators report, September 2006

"What Public Companies Can Learn from Private Equity"
Opportunities for Action in Corporate Development, June 2006

"Return on Identity"
Opportunities for Action in Corporate Development, March 2006

"Successful M&A: The Method in the Madness"
Opportunities for Action in Corporate Development, December 2005

"Advantage, Returns, and Growth—in That Order"
BCG Perspectives, November 2005

Balancing Act: Implementing an Integrated Strategy for Value Creation
The 2005 Value Creators report, November 2005

The Role of Alliances in Corporate Strategy
A report by The Boston Consulting Group, November 2005

"Integrating Value and Risk in Portfolio Strategy"
Opportunities for Action in Corporate Development, July 2005

"Winning Merger Approval from the European Commission"
Opportunities for Action in Corporate Development, March 2005

The Next Frontier: Building an Integrated Strategy for Value Creation
The 2004 Value Creators report, December 2004

"The Right Way to Divest"
Opportunities for Action in Corporate Development, November 2004

Growing Through Acquisitions: The Successful Value Creation Record of Acquisitive Growth Companies
A report by The Boston Consulting Group, May 2004

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