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C A M B R I D G E A S S O C I A T E S L L C

FIRING MANAGERS:
SHOULD PERFORMANCE
BE YOUR GUIDE?

April 2000

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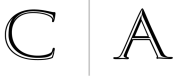
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SUMMARY

1. To achieve excellent relative performance within an asset class over the long term investors must make two decisions well: hire managers that are likely to have good long-term records and fire those less likely to succeed. Unfortunately, it is difficult to identify excellent managers in advance, but all too easy to subvert the success of a good hiring decision by firing a top-performing manager at the wrong time. For example, investors with perfect foresight in hiring top-quartile U.S. equity managers at the beginning of the decade ending December 31, 1999, would have fired nearly all of them for underperformance if their tenure was based purely on remaining in the top quartile during all 12-quarter or 20-quarter periods.
2. Investors generally recognize the randomness associated with short-term returns (i.e., quarterly or annual returns), and commonly evaluate their managers over rolling three- or five-year periods, so as not to be influenced by short-term noise in the performance numbers. In many cases, however, those terminating managers after a bad three or five years may miss some of the very best performance. For example, for the ten years through December 31, 1999, we found that nearly all large-cap managers with top-quartile ten-year records spent at least one three-year period in the bottom half of their peer group. A majority of those firms experienced at least one 12-quarter period in the bottom quartile, and a meaningful subset of those were in the bottom *decile* for a 12-quarter period. Furthermore, these periods of underperformance were often followed by top-quartile returns in subsequent three-year periods—performance that would be missed by investors that fire managers based solely on three years of underperformance.
3. For managers skillful (or lucky) enough to be in the top quartile for a decade, hot streaks most often continued for multiple three-year periods. Among top-quartile managers for the ten-year period ending December 31, 1999, a substantial number with three-year returns in the top half or top quartile experienced above-median returns in the subsequent three-year period. However, even within this successful group of managers, approximately a half of top growth and diverse managers and a fifth of top value managers fell to the bottom half of their peer group following a three-year period of top quartile performance. One should not make too much of these statistics, as the percentage of repeaters varies by style and by period. For example, as shown in Exhibits 5 and 6, moving the ten-year time frame back just one quarter results in a dramatic increase in the percentage of top growth managers experiencing top-quartile performance following a three-year period of bottom and top quartile performance.

4. Investors who pursue active management generally expect to accomplish two goals: to provide exposure to a given asset class, and to earn excess return over and above what that asset class would provide a passive investor. In short, they expect to beat the market. Unfortunately, to outperform a benchmark or a peer group requires taking a position that is different from the consensus. To do so creates benchmark risk—the possibility of underperforming a peer group or market index in the short term.

5. The fallibility of interim performance numbers as predictors of long-term success argues strongly for the importance of investigating prospective managers very thoroughly, and sticking with preferred choices through thick and thin. Otherwise, even an investor successful in identifying top-quartile managers in advance might erode portfolio alpha by firing one or several after a period of underperformance. This course would have the effect of locking in relative losses, when the future outperformance of the fired manager's replacement is far from certain. Having enough patience to stick with a manager requires understanding both why and to what extent a given manager might be expected to add (or detract) value relative to an appropriate benchmark *before* hiring, and how much tolerance one has for prolonged periods of sub-par performance.



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EXHIBITS

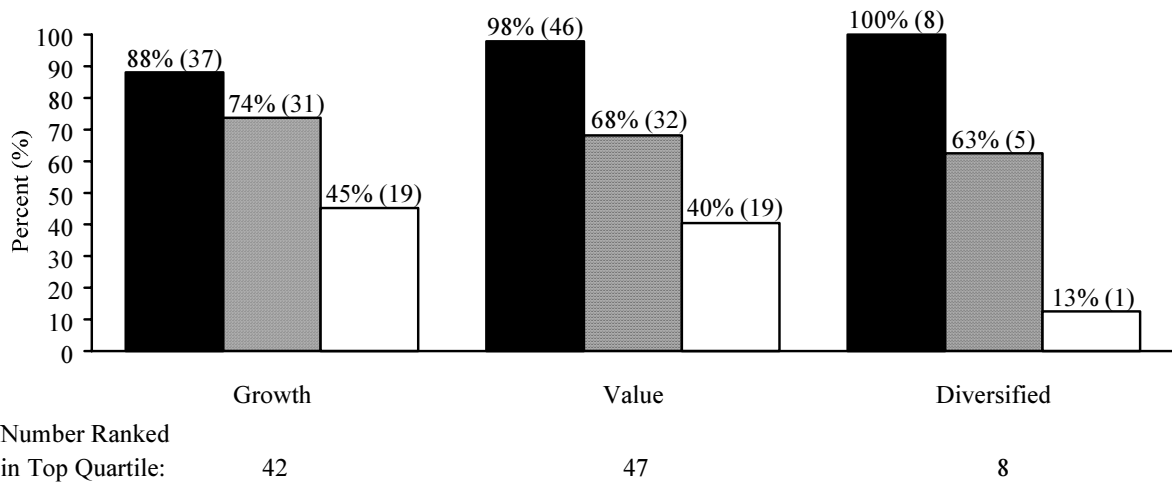
Exhibit 1

**HOW MANY TOP U.S. EQUITY EX SMALL-CAP MANAGERS UNDERPERFORM?
(12-QUARTER PERIODS)**

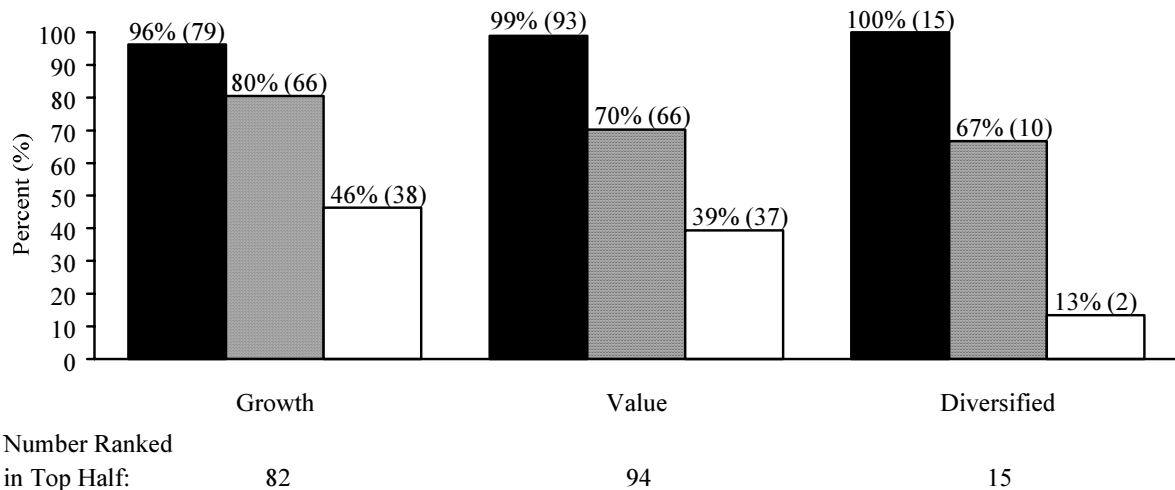
January 1, 1990 - December 31, 1999

Percentage (Number) of Top Managers Whose Rolling 12-Quarter Ranking Fell at Least Once into the Bottom of the Manager Distribution

Top Quartile Over Ten Years



Top Half Over Ten Years



■ Bottom Half ■ Bottom Quartile □ Bottom Decile

Source: Cambridge Associates, Inc. Investment Manager Database.

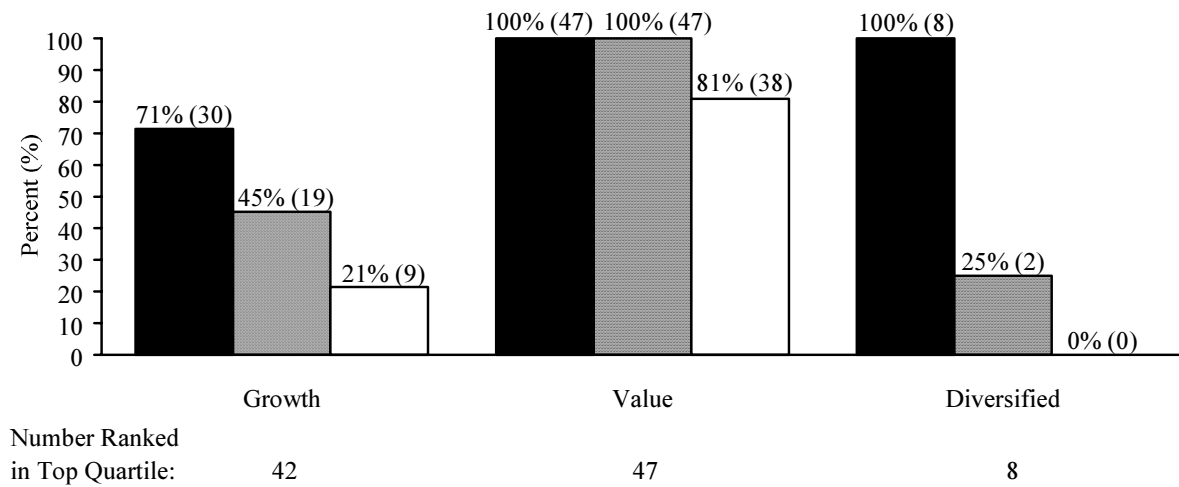
Exhibit 2

**HOW MANY TOP U.S. EQUITY EX SMALL-CAP MANAGERS UNDERPERFORM?
(20-QUARTER PERIODS)**

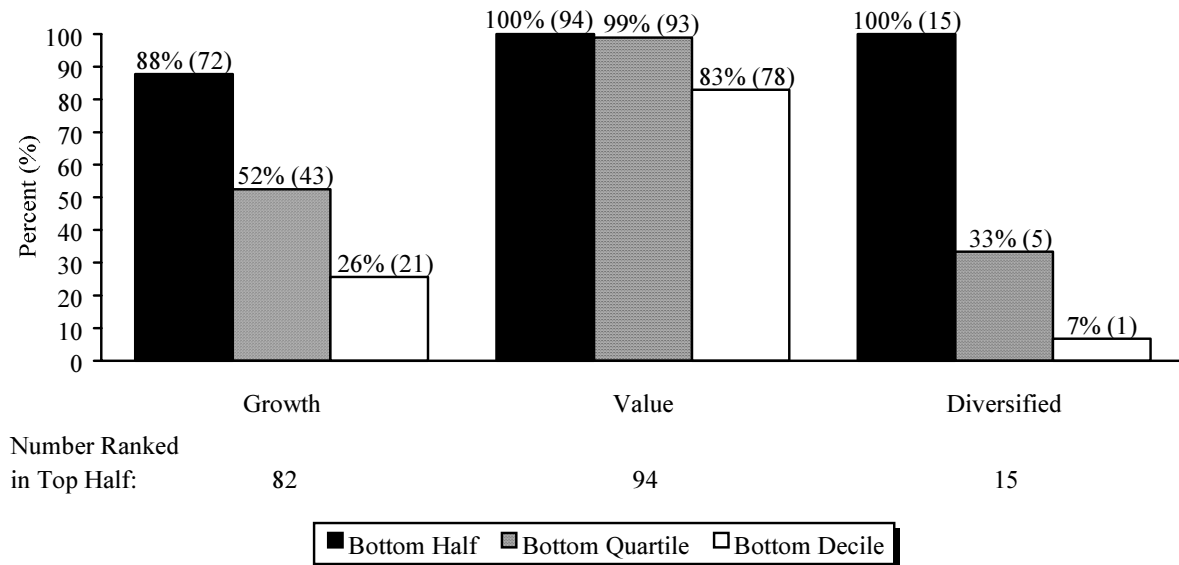
January 1, 1990 - December 31, 1999

Percentage (Number) of Top Managers Whose Rolling 20-Quarter Ranking Fell at Least Once into the Bottom of the Manager Distribution

Top Quartile Over Ten Years



Top Half Over Ten Years



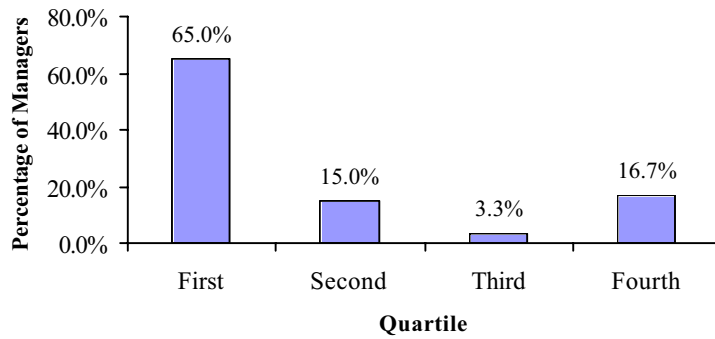
Source: Cambridge Associates, Inc. Investment Manager Database.

Exhibit 3

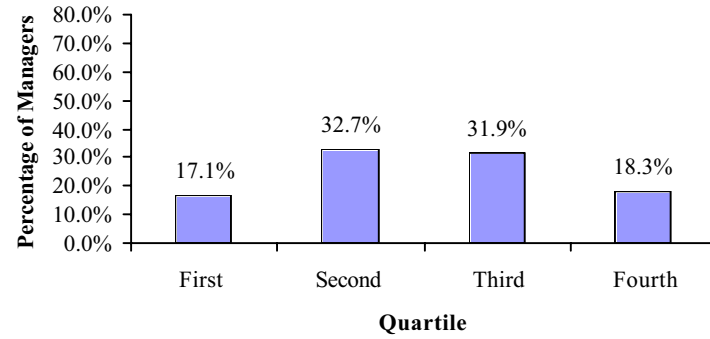
CAMBRIDGE ASSOCIATES' DIVERSE MANAGER UNIVERSE

**Analysis of Top-Quartile Managers
January 1, 1990 - December 31, 1999**

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **BOTTOM** Quartile of All Diverse Managers

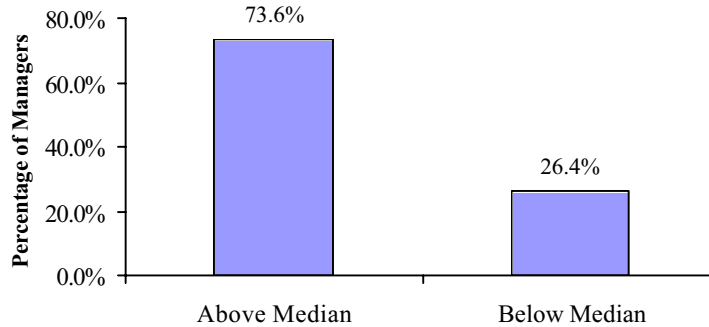


12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **TOP** Quartile of All Diverse Managers

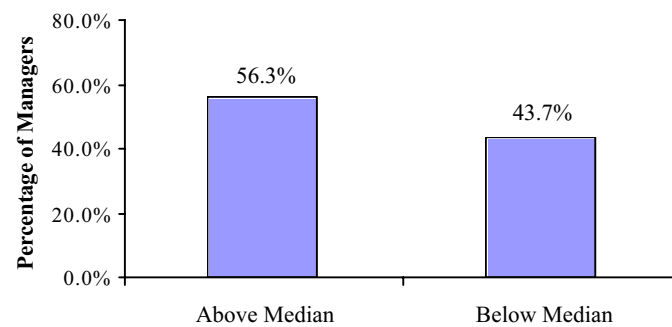


**Analysis of Above-Median Managers
January 1, 1990 - December 31, 1999**

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **BOTTOM** Half of All Diverse Managers



12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **TOP** Half of All Diverse Managers



Source: Cambridge Associates, Inc. Investment Manager Database.

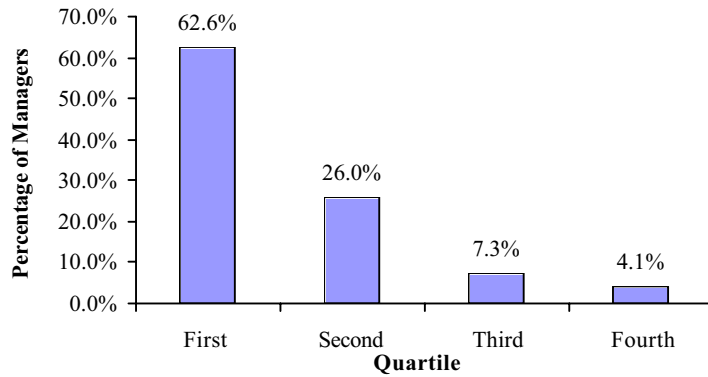
Exhibit 4

CAMBRIDGE ASSOCIATES' VALUE MANAGER UNIVERSE

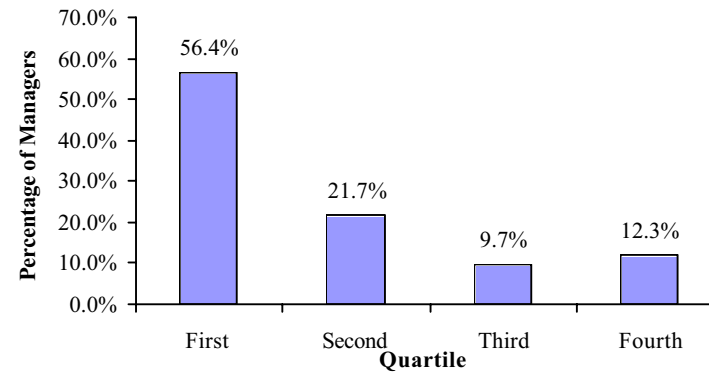
Analysis of Top-Quartile Managers

January 1, 1990 - December 31, 1999

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the BOTTOM Quartile of All Large-Cap Value Managers



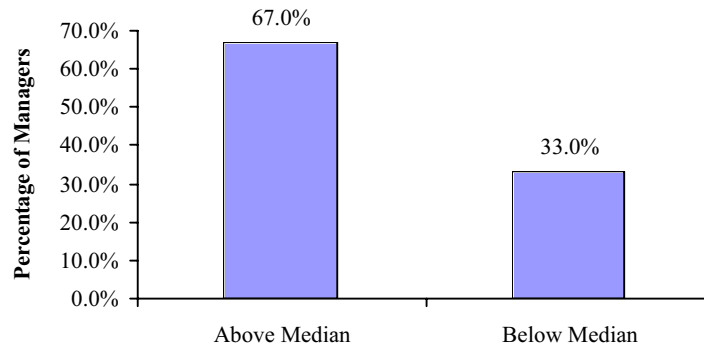
12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the TOP Quartile of All Large-Cap Value Managers



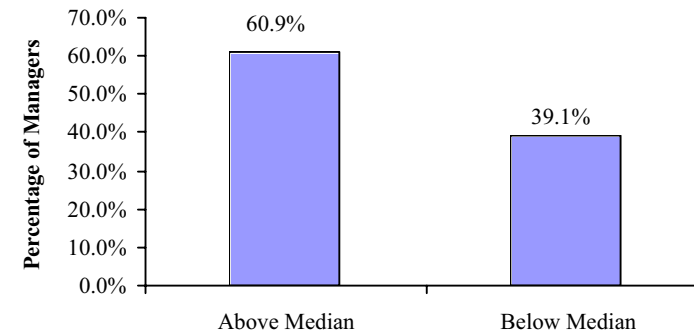
Analysis of Above-Median Managers

January 1, 1990 - December 31, 1999

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the BOTTOM Half of All Large-Cap Value Managers



12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the TOP Half of All Large-Cap Value Managers



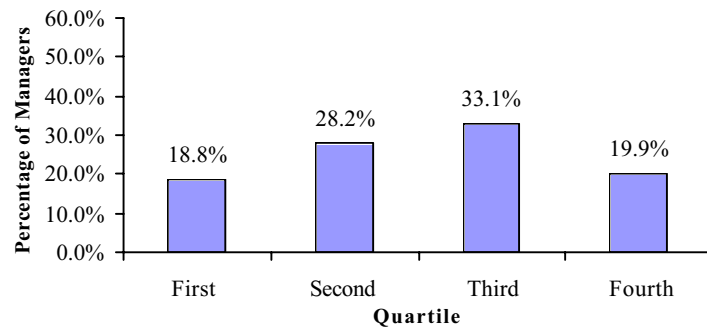
Source: Cambridge Associates, Inc. Investment Manager Database.

Exhibit 5

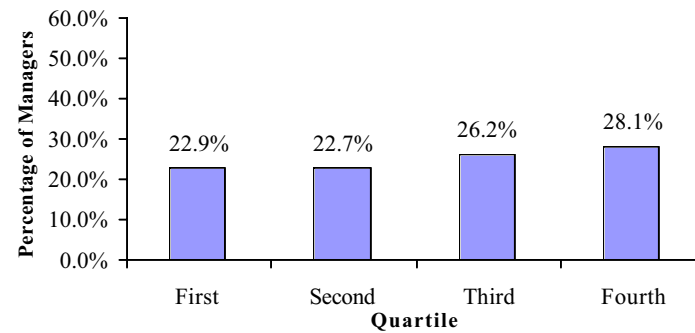
CAMBRIDGE ASSOCIATES' GROWTH MANAGER UNIVERSE

**Analysis of Top-Quartile Managers
January 1, 1990 - December 31, 1999**

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **BOTTOM** Quartile of All Large-Cap Growth Managers

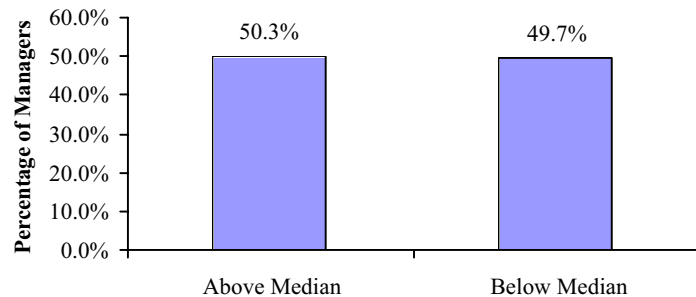


12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **TOP** Quartile of All Large-Cap Growth Managers

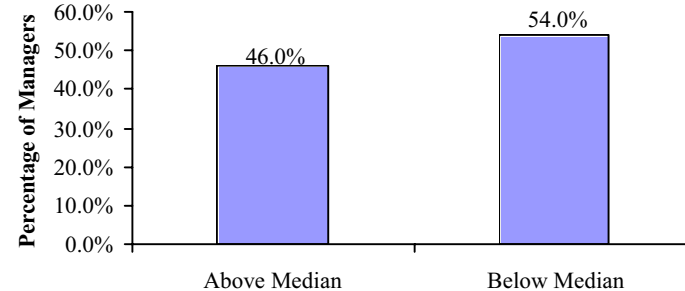


**Analysis of Above-Median Managers
January 1, 1990 - December 31, 1999**

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **BOTTOM** Half of All Large-Cap Growth Managers



12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **TOP** Half of All Large-Cap Growth Managers



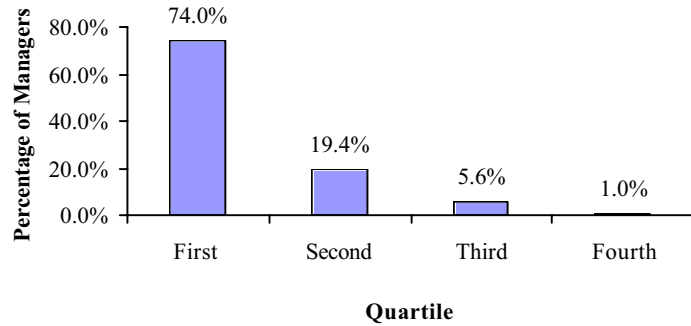
Source: Cambridge Associates, Inc. Investment Manager Database.

Exhibit 6

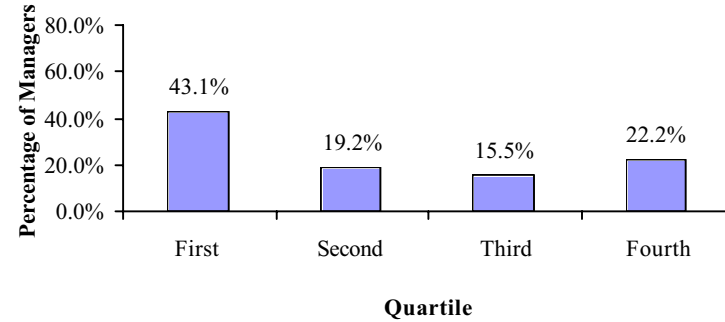
CAMBRIDGE ASSOCIATES' GROWTH MANAGER UNIVERSE

**Analysis of Top-Quartile Managers
September 30, 1989 - September 30, 1999**

12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **BOTTOM** Quartile of All Large-Cap Growth Managers

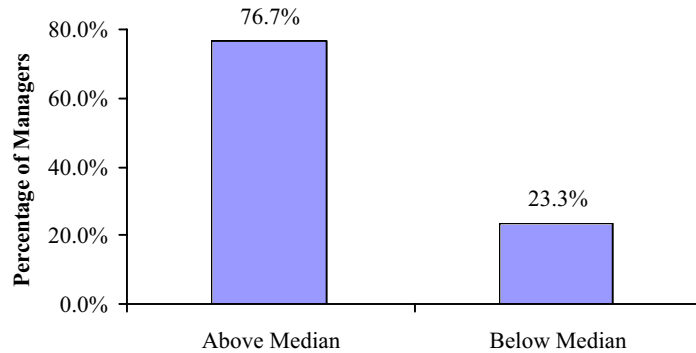


12-Quarter Returns for top Managers Whose Previous 12-Quarter Returns Placed Them in the **TOP** Quartile of All Large-Cap Growth Managers

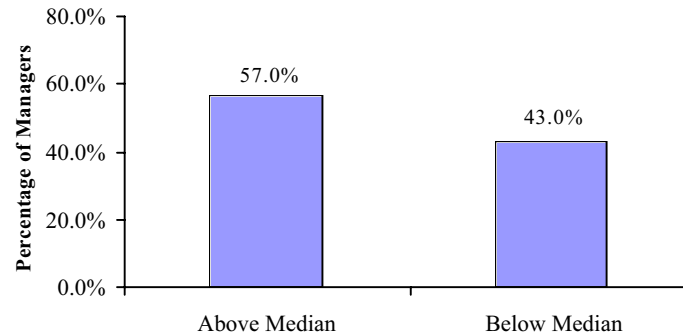


**Analysis of Above-Median Managers
September 30, 1989 - September 30, 1999**

12-Quarter Returns for top Managers Whose Previous 12-Quarter Returns Placed Them in the **BOTTOM** Half of All Large-Cap Growth Managers



12-Quarter Returns for Top Managers Whose Previous 12-Quarter Returns Placed Them in the **TOP** Half of All Large-Cap Growth Managers



Source: Cambridge Associates, Inc. Investment Manager Database.