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AN EVALUATION OF U.S. EQUITY MANAGER STRUCTURES (REVISED)

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CONTENTS

ABSTRACT

1. Embedded in almost all diversified growth/value active manager structures is a systematic bet against the largest stocks in the market. There are two reasons for this: first, active managers generally seek to add value by investing in stocks not included in their benchmark, which are almost by definition smaller-cap issues; second, actively managed portfolios tend to be more equally weighted than are cap-weighted benchmark indexes, and this also results in a systematic underweighting of the largest issues. Although the extent of this bias may vary with active managers' perception of valuations, it is structural and perpetual rather than tactical and ephemeral.

2. For institutions employing the diversified growth/value manager structure, the primary driver of performance will therefore be the capitalization bet embedded in the portfolio. As a result, the portfolio will likely lag the index when the mega-cap companies outperform the broader index and outperform the index when the mega-cap companies lag the broader index.

3. A persistent capitalization bet against a capitalization-weighted benchmark increases the tracking error of the portfolio and almost guarantees periods of underperformance by both the aggregate portfolio and the individual managers. Intolerant of such underperformance, most investors set about firing managers, further burdening their funds with the substantial costs associated with manager turnover, while failing to recognize that the real problem is with their benchmarking.

4. In addition to being mis-benchmarked, diversified growth/value manager structures are often too diversified to overcome the hurdles facing active managers. For example, if we assume active manager fees and expenses of 100 basis points (bps), and an overlap of 50% between the manager's portfolio and that of the benchmark index, the stocks picked by the manager have to outperform the stocks not picked by 2% simply to match the return of the index, net of all costs. In the highly efficient large-cap U.S. equity market, it is highly improbable for one broadly diversified portfolio of stocks to consistently outperform another broadly diversified portfolio of stocks by 200 bps. If we use the same example, but up the ante by setting a goal of outperforming the benchmark by 1% after all costs, the stocks held by the active managers must now outperform those not held by 4% annually (again, assuming total costs of 1%).

5. A manager structure comprised of a passive, low-cost fund and a small number of concentrated managers would seem to combine the best of both worlds: low-cost diversification and potential for outperformance from the best ideas of active management. Simple in theory, however, such a structure is less simple to implement. First, investors should understand the relative merits and defects of various index constructs before investing blindly in a standard cap-weighted market index fund. Second, they should also recognize that few managers run concentrated portfolios, and are often hard to live with since their results are likely to deviate widely from those of the market and those of other, more conventional managers.

SUMMARY

Introduction

In the five years ended December 31, 1999, the S&P 500 staged a remarkable, unprecedented performance, rising over 20% each year for a cumulative return of more than 250%. Few actively managed U.S. equity portfolios kept pace, however, and many lagged the index by a substantial margin. For example, an institution whose U.S. equity portfolio had been evenly divided between the median large-cap institutional growth manager and the median large-cap institutional value manager would have lagged the S&P 500 Index by 2.7 percentage points annually during these five years *before* management fees, assuming quarterly rebalancing.

Part of the underperformance can be attributed to the usual culprits: cash holdings and transaction costs. While cash holdings have been particularly painful given the wide performance gap between the S&P 500 Index and cash equivalents, most of the shortfall can be attributed to manager structures whose design ensured their underperformance in the market environment of the last five years.

Most institutions adopt a "diversified growth/value" (a.k.a. "complementary") manager structure composed of more-or-less equally weighted growth and value managers each managing a diversified portfolio of 50 to 100 (or more) stocks. This structure results in systematic deviations from the benchmark at the total portfolio level. If these deviations are unwanted, the manager structure is obviously flawed. However, if investors want to maintain such deviations, they can do so more efficiently through an alternative structure. Hence, a diversified growth/value manager structure is never optimal.

The Real Bet of Diversified Growth/Value Manager Structure

The goal of most actively managed large-cap U.S. equity portfolios is to outperform a representative, large-cap capitalization-weighted U.S. market index, net of management fees and trading expenses, by *x* bps, with *x* generally ranging from 50 to 200. Because the index is capitalization-weighted, its performance is largely determined by the performance of its largest components. For example, at year-end 1999, the two largest companies (Microsoft and General Electric) comprised a greater portion of the S&P 500 than did the smallest 268 companies.

Embedded in almost all diversified growth/value manager structures, however, is a systematic bet *against* the largest stocks in the index. There are two reasons for this: non-benchmark holdings and equal-weighted portfolios.

[1] In the analysis that follows, we have focused on the S&P 500. However, the conclusions are only slightly mitigated if one assumes the benchmark to be a broader large capitalization index.

Non-benchmark Holdings

Very few institutions write guidelines restricting their managers to investing only in companies within their benchmark. Hence, managers typically invest in stocks not included in the benchmark, presumably under the assumption that the non-benchmark holdings will outperform. Since the S&P 500 Index includes virtually all the largest companies, non-benchmark holdings are predominantly mid-cap companies.

We examined the U.S. large-cap portfolios of six institutions that use a diversified growth/value manager structure to determine the extent of non-benchmark holdings. The large-cap portfolios contained 158 holdings on average, but only 93 of these holdings were in the S&P 500 Index. These companies comprised about three-fourths of the value of the portfolio, with a range of 56% to 85%. For these institutions then, more than one-third of the stocks in the portfolio were non-S&P 500 issues, they comprised about one-fourth of the portfolio, and they were mostly mid-cap companies.

Equal-weighted Portfolios

Whereas the stocks in the index are weighted strictly by market capitalization, those in actively managed portfolios tend to be more equally weighted. The effect this can have on a portfolio is best illustrated by reference to the style subindexes of the S&P 500, the S&P/Barra Growth and S&P/Barra Value Index. Suppose Hewlett-Packard is 2% of the S&P 500 Barra Value Index while 3Com has only a 0.2% weighting, although value managers that like both companies might hold more of Hewlett-Packard because it is bigger, they are unlikely to invest ten times more in Hewlett-Packard than in 3Com. As this sizing effect is applied across the portfolio, it results in a systematic underweighting of larger companies, like Hewlett-Packard, and overweighting of companies the size of 3Com.

This tendency is particularly acute for large-cap growth managers, because the growth index has become so concentrated. At year-end 1999, the 20 largest companies in the S&P/Barra Growth Index comprised 61% of its market value. Suppose a large-cap growth manager invests in ten of these 20 companies. Unless these ten companies comprise 61% of the portfolio, this manager will be underweight the largest companies in the index. Of course, few managers are inclined to run such concentrated portfolios, and even fewer institutions are likely to give half their large-cap assets to such a manager. In fact, most institutions actually prohibit a manager from investing more than 5% of the assets in a single company, thus precluding our hypothetical manager from even matching the weighting of the largest stocks in the growth index. Anecdotal evidence suggests that a typical manager holds from eight to 12 of these 20 companies, constituting about one-third of the portfolio, or about one-half their weight in the

[2] We focused only on the large-cap portfolios. Four of these institutions employed dedicated small-cap managers with a total allocation to small-cap managers ranging from 17% to 27% of the U.S. equity portfolio. These managers were excluded from the analysis. None of these institutions employed dedicated mid-cap managers.

index. This systematic underweighting of the largest-cap stocks will likely be the most significant bet in the portfolio and the primary driver of short-term performance.

The extent of these capitalization bets from holding smaller stocks and underweighting the largest issues can be illustrated by looking again at the large-cap portfolios of the same six representative institutions.

Table A

MARKET CAPITALIZATION DISTRIBUTION OF LARGE-CAP U.S. EQUITY PORTFOLIOS
As of June 30, 1999

	As a Percentage of Total Market Capitalization		
	Average of Six Institutions	Range	S&P 500 Index
Over $20B	47.6	30.9 - 62.6	76.0
$10B - $20B	15.0	9.4 - 21.9	11.9
$5B - $10B	15.8	9.2 - 21.6	8.2
$1B - $5B	20.3	11.2 - 31.5	3.8
Less than $1B	1.2	0.0 - 3.2	0.1

All six institutions significantly underweight companies with market capitalizations over $20 billion and significantly overweight companies with market capitalizations of $1 billion to $10 billion (i.e., mid-cap stocks). On average, the portfolio weight of mid-cap stocks is over three times their weight in the S&P 500 Index.

Active managers will *always* invest some portion of the portfolio outside of the S&P 500 Index, resulting in a systematic bias towards mid- and small-cap issues, and the vast majority are unwilling to hold portfolio positions relative to their weighting in the index (i.e., invest ten times as much money in Hewlett Packard as in 3Com), or to concentrate their portfolio in a handful of mega-cap companies. Although the *extent* of these bets may vary with the portfolio managers' perception of valuations, they are structural and perpetual rather than tactical and ephemeral.

The historical performance of active managers illustrates this last point: the majority of large-cap managers have outperformed the S&P 500 Index when mid-cap stocks have beaten large-cap stocks and have lagged the S&P 500 Index when large-cap stocks have beaten mid-cap stocks (see Exhibit 1). Most managers have also beaten the S&P 500 when the average stock has beaten the index (i.e., an equal-weighted S&P 500 Index has beaten the capitalization-weighted index), and have lagged when the average stock has lagged the index (see Exhibit 2).

For institutions employing the diversified growth/value manager structure, the primary driver of performance will be the capitalization bet embedded in the portfolio. As a result, the portfolio will likely lag the index when the mega-cap companies outperform the broader index (e.g., 1995-99) and outperform the index when the mega-cap companies lag the broader index (e.g., 1991-93).

The Consequences of a Structural Bias Against Large-Cap Stocks

This is not to say that a perpetual capitalization bet against the largest companies in the market is necessarily "bad." However, it should not be unintended and the performance of such a portfolio should not be measured against that of an inappropriate index like the S&P 500. Moreover, any institution explicitly choosing a perpetual underweight in large-cap and particularly mega-cap stocks should recognize that there are implications for asset allocation, tracking error and manager turnover, and active versus passive investing.

Asset Allocation

Most institutions determine their long-term asset allocation target for U.S. equities on the basis of expected risk and return characteristics derived from the historical performance of capitalization-weighted indexes like the S&P 500. When they *implement* their allocation to U.S. equities by establishing a diversified growth and value manager structure, however, they create portfolios with characteristics that may be systematically different from those of the index they have used as a proxy for the asset class. If, for example, they have used efficient frontier analysis in the portfolio construction process, their *actual* portfolio may be significantly less efficient than the *policy* portfolio they have created because the capitalization structure of their actual U.S. equity portfolio is markedly different from that of the index. More specifically, a portfolio with an overweight to mid-cap securities may be more susceptible to an economic slowdown, causing the actual U.S. equity portfolio to be more highly correlated with emerging markets and high-yield bonds (particularly in a down market) than would the theoretically optimal portfolio.[3]

[3] For example, most large-cap portfolios lagged the S&P 500 Index during the August 1998 global economic crisis, a time when emerging markets and high-yield bonds also fell significantly.

Tracking Error and Manager Turnover

A perpetual capitalization bet against a capitalization-weighted benchmark increases the tracking error of the portfolio and almost guarantees periods of underperformance by both the aggregate portfolio and the individual managers. In 1998, for example, the median large-cap manager lagged the S&P 500 Index by 700 bps before fees, in part because of this capitalization bet (the S&P 500 Index beat the S&P Midcap 400 Index by 950 bps in 1998). Most investors find such underperformance intolerable and set about firing managers, further burdening their funds with the substantial costs associated with manager turnover, while failing to recognize that the portfolio's performance may be exactly as should be expected in such an environment and that the real problem is the benchmarking.

The Active Versus Passive Debate

One of the most common criticisms against indexing is that index funds are heavily concentrated in a small number of companies. For example, as of July 31, 2000, the 20 largest companies in the S&P 500 Index comprised 39% of the index. Some institutions may prefer a portfolio with a mid-cap bias, and/or a more equally-weighted portfolio. However, such a strategy does not preclude indexing, it simply precludes indexing to the S&P 500 Index. Given the multitude of index funds available today, one can readily replicate any capitalization structure through some combination of index funds. For example, one could combine a capitalization-weighted S&P 500 index fund, an S&P Mid-Cap index fund, and an equal-weighted S&P 500 index fund to create a portfolio systematically biased towards mid- and smaller-cap stocks. And the various style and sector index funds now available can also be used to tilt portfolios towards a specific style or sector. The attraction, of course, is management fees ranging from 2 bps to 10 bps, no cash drag, and lower turnover and transaction costs than are typical of most actively managed portfolios.

Changing the capitalization structure of the portfolio in this way is, of course, an active bet. In addition, cap-weighted index funds are not rebalanced; consequently, their risk exposure can rise dramatically if they become highly concentrated in a few stocks or in one market segment. Thus, investors who assume that investing in a cap-weighted index like the S&P 500 is a low-risk strategy may at times find themselves hugely exposed to, say, oil stocks before their collapse in the early 1980s, Japan (within the MSCI EAFE index) right before its collapse in the 1990s, or technology (broadly defined) in recent months. The only way to address this criticism is to create a passive vehicle designed on some other principle than market capitalization.

A diversified growth/value manager structure can create problems at the asset allocation level, can create tracking error resulting in manager turnover, and embeds a capitalization bias that (if wanted) can be reasonably replicated at much lower costs with passively managed funds. The only reason to incur these various risks and costs is a belief that the active managers one hires have sufficient stock selection skill to overcome the hurdles of active management. Is there any credible basis for such a belief?

Active Management's Hurdles

The diversified growth/value manager structure generally displays the following characteristics at the total large-cap portfolio level:

High Management Fees. Management fees vary with asset size and number of managers, but generally average 40 bps to 80 bps.

Cash Drag. Cash holdings vary widely across managers. However, most large institutions with separately managed accounts address cash holdings in their guidelines, usually limiting managers to a maximum of 5% or 10% in cash. Anecdotally, we believe most institutions average 2% to 6% in cash in their U.S. large-cap equity portfolios. A cash position of 2% to 6% implies a long-term expected opportunity cost of 12 bps to 36 bps annually, assuming a long-term nominal performance gap of 6% between equities and cash equivalents.

High Turnover and Transaction Costs. A U.S. large-cap portfolio comprised entirely of active managers will typically have an annual turnover of 50% to 100%, with each trade generating brokerage commissions and possibly having a negative impact on the purchase or sale price. One recent study estimated average annual commission and market impact costs of 23 bps for large-cap value managers and 31 bps for large-cap growth managers.[4]

The obvious challenge is to develop a portfolio that will overcome these hurdles. To better understand their magnitude, we turned again to the U.S. large-cap portfolios of the six institutions discussed earlier.

[4] See "Analyzing Transaction Costs: Part 1" by Wayne Wagner and Steven Glass in the June 1999 issue of *The Journal of Investment Consulting*.

Table B

SUMMARY OF PORTFOLIO CHARACTERISTICS
As of June 30, 1999

	Average	Range
Size of U.S. Large-Cap Portfolio	$190 million	$70 million - $430 million
Total U.S. Large-Cap Managers	----	2 - 4
Weighted Average Management Fees	0.60%	0.42% - 0.71%
Percentage of Total Portfolio in Cash Equivalents	3.7%	1.5% - 5.6%
Total Portfolio Weighted Average Annual Turnover	65%	29% - 153%
Number of Holdings	158	66 - 271
Number of Holdings in S&P 500 Index	93	41 - 153
Percentage of S&P 500 Total Market Value These Companies Comprise*	37%	16% - 63%

* On average, 93 companies in the portfolio are also in the S&P 500 Index. The Index companies that are also in the portfolio comprise on average 37% of the total market value of the S&P 500 Index.

With average fees of 60 bps, average cash of about 4% and average annual turnover of 65% at the total U.S. large-cap equity portfolio level, a reasonable assumption is that management fees, cash drag, and transaction costs total about 100 bps annually.

Can one reasonably expect a diversified, large-cap U.S. equity portfolio to outperform its benchmark by at least 100 bps so that its net performance at least matches that of the index? The typical diversified growth/value manager structure results in a total portfolio with 100 to 200 holdings, which also comprise about 25% to 50% of the S&P 500. For example, the six institutions examined in Table A and Table B held 158 companies on average. The total portfolio held, on average, 93 of the companies that were also in the S&P 500 Index and these "overlap" companies comprised, on average, 37% of the

market capitalization of the S&P 500 Index.

A simple example illustrates the dilemma for diversified portfolios with total costs of 1%:

- Assume an index consists of 20 companies each comprising 5% of the total.
- An active manager picks ten of these companies, putting 10% of portfolio assets into each company (i.e., twice the index weight).
- The ten companies *not picked* each return 8% and the ten companies *picked* each return 10%. In other words, the manager has picked nothing but winners.
- The index has therefore returned 9% and the manager's portfolio has also returned 9%, net of fees and expenses.
- In other words, the companies picked by the manager have to outperform the companies not picked by 2% simply to tie the index after fees and other costs.

The same math applies if we extend this logic to real world portfolios: if an actively managed portfolio owns 100 stocks that comprise 50% of the S&P 500 and includes no stocks not also included in the index, then the companies held in the portfolio have to outperform the index companies not held in the portfolio by 2% simply to keep pace with the benchmark after total costs. In the highly efficient U.S. large-cap market, with thousands of U.S. and global investment managers trying to identify winners, it is highly improbable for one broadly diversified portfolio of stocks to consistently outperform another broadly diversified portfolio of stocks by 200 bps. In addition, of course, most institutions do not (and should not) incur the risks inherent in active management in order to achieve the same returns as the index, but do so with a view to outperforming the benchmark by some considerable margin. If we use the same example, but up the ante by setting a goal of outperforming the benchmark by 1% after all costs, the stocks held by the active managers must now outperform those not held by 4% annually (again, assuming total costs of 1%). This leads to the unfortunate conclusion that diversified growth/value manager structures are usually too diversified to overcome the hurdles facing active managers.

Some larger institutions exacerbate the problem by employing several diversified growth and value managers, which further dilutes the possibility of outperforming the benchmark through stock selection and incorporates a capitalization bet even more easily replicated by a combination of indexes.

[5] The 50 largest holdings of the S&P 500 comprise over 60% of the total market capitalization of this index. Since many of these companies also appear in the portfolio, a portfolio with far less than one-half of the stocks in the index can comprise one-half of the value of the index.

[6] For example, if the portfolio companies rise 12% and the non-portfolio companies rise 8%, the index is up 10% and the manager is ahead by 2% before total costs and 1% after total costs.

(Contrary to conventional wisdom, a portfolio of many managers *does not* usually create a "closet index fund." Instead it often results in a portfolio that actually has nothing more than a capitalization bet *against* mega-cap stocks.)

In summary, the argument against the diversified growth/value manager structure is that it is too diversified to overcome the costs of active management in the long term and has a systematic capitalization bet against the largest stocks that, if desired, can be replicated more cheaply with index funds or other approaches.

Alternative Manager Structures

Start with Concentrated Managers

For investors committed to active management, the deficiencies of the diversified complementary structure make the case for concentrated managers. The first supporting argument is mathematical. Recall that a portfolio whose holdings comprise 50% of the index has to outperform the rest of the index by 2% just to break even assuming 1% in total costs. Yet a portfolio whose holdings comprise only 10% of the index has to outperform the rest of the index by only 1.11% to break even. The second argument is intuitive. If one believes in active management, then one should expect a manager's best ideas to outperform the rest of the portfolio over the long term.

Rewrite the Guidelines and Change Investor Expectations

Managers naturally focus exclusively on their particular slice of an investor's portfolio while the investor must focus on the whole pie. Since managers know that significant short-term underperformance may result in their being fired, they often seek to reduce tracking error by holding many securities. The result is too much diversification at the total portfolio level. The solution is for investors to write guidelines restricting managers' holdings so that the total portfolio does not become over-diversified in this way. At the same time, however, the program's success must be measured at the total portfolio level, with a high tolerance for tracking error among individual managers-a tolerance that must be conveyed to the managers.

Add an Index Fund [7]

Often lost in the debate over the relative merits of active management and indexing is the point that index funds can play a useful role in almost any portfolio because they provide cheap diversification, allowing investors to employ concentrated managers in a satellite role and tolerate the ensuing tracking error.

The diversified growth/value manager structure employed by most institutions is actually a compromise between active and passive management. An institution hires active managers in the hope that they will outperform the index (a tilt towards active management), but employs several managers and writes guidelines that heavily constrain each one (a tilt towards passive management) such that if they fail to add value, the damage is minimized. The result is expensive diversification.

A manager structure comprised of an index fund broader than the S&P 500 Index and a small number of unshackled concentrated managers combines the best of both worlds: it has the low-cost diversification of index funds and the potential for outperformance from the best ideas of active management. For example, consider an institution that currently employs two active managers and imposes sector restrictions on each manager of 0.5 to 1.5 times the benchmark's sector weight. An alternative structure with 50% of the assets in an index fund and the remaining assets split equally between two managers with sector weights of 0 to 2 times the benchmark's sector weight results in the same sector weight restrictions as the all-active portfolio but at a lower cost. Similarly, guidelines restricting each manager's ten largest holdings to 25% of the portfolio in an all-active portfolio can be replicated by using an index fund for one-half of the assets and allowing two concentrated managers with different investment approaches to put 50% of their assets in the ten largest positions.

Find the Appropriate Mix

What is an appropriate mix between index funds (or, if preferred, other highly diversified funds) and concentrated managers? How concentrated should the managers be? Although there is no one right answer, the determination is dependent upon three factors:

· the relative return objective of the portfolio;
· the investor's belief in the ability of the active managers to outperform over the long term; and
· the investor's tolerance for manager and portfolio tracking error relative to the benchmark.

[7] or, if preferred, other highly diversified funds. Alternatives include passive funds constructed differently (e.g., not capitalization-weighted) or actively managed funds with low tracking error, sometimes referred to as quasi-index funds. While the management fees and transaction costs for semi-active core funds will be higher than for an index fund, these costs will likely be lower than for a diversified growth/value manager structure.

Investors who believe the U.S. large-cap markets are very efficient and have little tolerance for manager and portfolio tracking error should allocate a high percentage of the assets to an index fund and hire managers that develop less concentrated portfolios. Alternatively, investors with more aggressive return objectives, greater faith in active management, and high tolerance for significant tracking error should place only a small amount of assets in an index fund and allocate most of the portfolio to a handful of highly concentrated managers.

Conclusion

As the ancient proverb says, "There's many a slip 'twixt the cup and the lip." Too often investors subvert their long-term objectives by implementing portfolio structures with characteristics different from those on which their policy allocations are predicated. Having determined an allocation of *x*% to U.S. equities, selected a suitable benchmark, and declared in favor of active management, they often proceed to select individual managers without regard to the composition of the aggregate portfolio, and are frequently disappointed when their (unrealistic) expectations of value added are not realized. There are several antidotes we would recommend:

- Understand in what ways and by how much the aggregate portfolio is likely to differ permanently and systematically from the benchmark index as a consequence of the manager structure.
- If these are regarded as desirable deviations, reconstruct the benchmark (e.g., by combining several indexes) so that the actively managed portfolio is measured against a comparable and appropriate benchmark.
- Measure how much the aggregate portfolio holdings overlap with those of the benchmark. From this, one can then compute the extent to which manager holdings not included in the index (both different securities and over- or underweightings) must outperform index holdings to ensure the expected level of value added, net of all fees and expenses.
- Assess whether this level of outperformance is realistic. If so, fine.
- If not, re-think the manager structure, including perhaps some index funds or alternatives to provide diversification at a low cost, and more concentrated managers that are more likely to help the portfolio realize its objectives.
- Recognize the following conundrum, however. On the one hand, a portfolio composed of more diversified active managers is unlikely to add value consistently, because excessive diversification dilutes the managers' ability to generate sufficient excess returns from stock selection to outperform the benchmark, net of all fees and expenses. Nevertheless, investors often find diversified active managers more comfortable and less "risky" (if risk is measured

in terms of deviation in performance from the benchmark) despite the nagging failure of the portfolio to achieve the hoped-for level of value added over time. On the other hand, more concentrated managers are harder to live with because their performance is more likely to deviate from that of their benchmarks by far wider margins. Consequently, although a portfolio of such managers has a higher probability of realizing value-added objectives over time, "bad" concentrated managers will also bomb far worse than their more diversified peers.

All active manager selection involves uncertainty. Hiring concentrated managers requires an even greater leap into the unknown. Nevertheless, given the difficulty of adding value through a diversified manager structure, concentrated managers seem to make sense.

EXHIBITS

Exhibit 1

PERFORMANCE OF ACTIVE MANAGERS: MID-CAP VERSUS LARGE-CAP

"Since 1983, the majority of active managers outperform the S&P 500 Index when mid-cap companies beat large-cap companies….."

	Total Return (%)			S&P 500 Minus	Manager Value-Added
Year	Cap-Weighted S&P 500	S&P 400 MidCap	Median Mid/Large-Cap Manager	S&P 400 (%)	vs. S&P 500 (%)
1991	30.5	50.1	33.8	-19.6	3.3
1988	16.6	20.9	16.9	-4.3	0.3
1992	7.6	11.9	9.5	-4.3	1.9
1985	31.6	35.6	32.2	-4.0	0.6
1993	10.1	14.0	13.5	-3.9	3.4
1989	31.7	35.5	29.0	-3.8	-2.7
1983	22.4	26.1	23.6	-3.7	1.2
Mean	21.5	27.7	22.7	**-6.2**	**1.2**

"…..and lag the Index when the large-cap companies beat mid-cap companies."

	Total Return (%)			S&P 500 Minus	Manager Value-Added
Year	Cap-Weighted S&P 500	S&P 400 MidCap	Median Mid/Large-Cap Manager	S&P 400 (%)	vs. S&P 500 (%)
1997	33.4	32.3	31.0	1.1	-2.4
1990	-3.1	-5.1	-2.1	2.0	1.0
1986	18.6	16.2	19.2	2.4	0.6
1996	23.0	19.1	22.7	3.9	-0.3
1994	1.3	-3.6	0.5	4.9	-0.8
1984	6.1	1.2	7.0	4.9	0.9
1995	37.6	30.9	35.0	6.7	-2.6
1987	5.1	-2.0	5.4	7.1	0.3
1998	28.6	19.1	21.6	9.5	-7.0
1999	21.0	14.7	19.6	6.3	-1.5
Mean	17.2	12.3	16.0	**4.9**	**-1.2**

Sources: Cambridge Associates LLC Investment Manager Database, Standard & Poor's, and Standard & Poor's Compustat.
Note: Manager Performance statistics are based primarily on gross-of-fees returns.

Exhibit 2

PERFORMANCE OF ACTIVE MANAGERS: CAP-WEIGHTED VERSUS EQUAL-WEIGHTED

" Since 1983, the majority of active managers outperform the S&P 500 Index when the average company beats the largest companies….."

Year	Total Return (%) Cap-Weighted S&P 500	Equal Weighted S&P 500	Median Mid/Large-Cap Manager	Cap-Weighted Minus Equal Weighted (%)	Manager Value-Added vs. S&P 500 (%)
1983	22.4	32.0	23.6	-9.6	1.2
1992	7.6	15.8	9.5	-8.2	1.9
1991	30.5	37.7	33.8	-7.3	3.3
1993	10.1	15.6	13.5	-5.5	3.4
1988	16.6	21.6	16.9	-5.1	0.3
1987	5.1	8.0	5.4	-2.9	0.2
1986	18.6	19.3	19.2	-0.7	0.7
1985	31.6	31.8	32.2	-0.2	0.6
1994	1.3	1.5	0.5	-0.2	-0.8
Mean	16.0	20.4	17.2	**-4.4**	**1.2**

"…..and lag the Index when the largest companies beat the average company"

Year	Total Return (%) Cap-Weighted S&P 500	Equal Weighted S&P 500	Median Mid/Large-Cap Manager	Cap-Weighted Minus Equal Weighted (%)	Manager Value-Added vs. S&P 500 (%)
1984	6.1	3.9	7.0	2.2	0.8
1996	23.0	20.5	22.8	2.4	-0.2
1997	33.4	30.2	31.0	3.2	-2.4
1995	37.6	33.0	35.0	4.6	-2.5
1989	31.7	26.9	29.0	4.8	-2.7
1990	-3.1	-10.5	-2.1	7.4	1.0
1998	28.6	13.7	21.6	14.9	-7.0
1999	21.0	12.2	19.6	8.8	-1.5
Mean	22.3	16.2	20.5	**6.1**	**-1.8**

Sources: Cambridge Associates LLC Investment Manager Database, Standard & Poor's, and Standard & Poor's Compustat.
Note: Manager performance statistics are based primarily on gross-of-fees returns.