Preliminary and incomplete

Do mutual funds time their benchmarks?

by

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Abstract

We investigate whether mutual funds time their self-designated benchmark indexes. Using data on fund portfolio holdings, we consider two possible sources of timing attempts: variation in cash holdings and variation in the benchmark beta of the fund portfolio. The results are mixed. Inconsistent with timing, funds do not successfully time the benchmark by varying their cash holdings. If anything, funds are more likely to increase cash or maintain high levels of cash before the benchmark goes up, not down. At the same time, consistent with timing ability, increases in the benchmark beta of fund portfolios are positively associated with future benchmark excess returns at horizons of 3, 6, and 12 months. The relation is driven by changes in the benchmark beta of the equity portion of fund portfolios rather than changes in portfolio weights on equity.

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Introduction

With some regularity, articles in the popular press suggest that equity mutual funds are able to time the stock market. In particular, it is alleged that such funds accumulate large cash positions when future returns are likely to be particularly low or negative.[1] Funds also might also be able to time the market by holding stocks that are more sensitive to the market in up-markets and less sensitive to the market in down-market.

In this paper, we consider whether equity mutual funds are able to time their self-designated benchmark indexes, such as the S&P 500 (an index of large companies) or the Russell 2000 (an index of small companies). Our work extends and complements the literature on mutual fund timing in three main ways.

First, we consider whether funds are able to time their benchmarks by varying their cash holdings. As noted above, many practitioner accounts suggest that funds attempt to do just that. In related work, Graham and Harvey (1996) study 237 investment newsletters, and find that their suggested allocations between equity and cash have no predictive power for future market returns. Becker, Ferson, Myers, and Schill (1999) study the equity weights of 93 asset allocation mutual funds, and find that variation in the weights has no predictive power for future S&P 500 returns. As far as we know, ours is the first study to test, in a large sample, whether variation in cash holdings has predictive power.

Second, we conduct holdings-based tests of timing ability. Most prior work, beginning with Treynor and Mazuy (1966) and Henrikkson and Merton (1981), has used returns-based tests. That work generally finds no evidence of timing ability.[2] Jiang, Yao, and Yu (2004), however, document that returns-based tests are less powerful than holdings-based tests. They conduct holdings-based tests and conclude that funds are able to time the overall stock market by varying the market betas of their portfolios. Jiang, Yao, and Yu do not consider variations in cash holdings nor do they consider performance relative to a fund's benchmark.

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[1] See, for example, "Value Managers are Flush With Cash," by Tom Lauricella, *Wall Street Journal*, April 25, 2005, and "Safe Harbour of Cash Senses Storm Brewing," by Stephen Schurr, *Financial Times*, August 2, 2004.

Third, we consider benchmark-timing, not market-timing. There are several reasons why a fund's benchmark may be a more relevant reference portfolio than the market. Each fund reports its returns alongside those of its benchmark index, not those of the overall stock market, in its prospectus. Moreover, fund marketing materials often compare fund returns to those of the benchmark. Consistent with this, Sensoy (2005) finds that investors appear to care about performance relative to the benchmark – a fund's benchmark-adjusted return is a significant determinant of its subsequent inflow of new investment, even controlling for other performance measures. Fund managers, therefore, should care about beating the benchmark. Successful benchmark-timing is one way to do this. Finally, because funds are often specialized, for example, investing in small cap stocks or large cap value stocks, fund managers might have more information about the future returns of their benchmark than the overall market. Our study is the first to consider whether funds can time their benchmarks.

We begin by analyzing whether funds are able to time the benchmark by varying their cash holdings. We find no evidence that funds increase their cash holdings or hold unusually high levels of cash before benchmark declines. If anything, funds seem to increase their cash holdings before the benchmark goes up, though these results are generally not statistically significant. For example, when the percentage of cash held by a fund increases from one observation of the fund's portfolio to the next (typically a period of six months), the benchmark index's return in excess of the riskfree rate over the following one (six) months is positive 48.4% (65.2%) of the time, versus 43.9% (64.0%) of the time when the fund decreases its weight on cash. We find similar results when we condition on the level of cash holdings rather than changes.

There are at least two reasons, however, why funds might have timing ability in the sense of being able to forecast the returns of their benchmarks, but might not be able to alter their portfolio weights on cash to take advantage of this information. First, as Edelen (1999) points out, the level of an open-ended mutual fund's cash holdings is not entirely under the control of the fund manager. Inflows and outflows initiated by fund investors also contribute to variation in cash, at least to the extent that there

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[2] One exception is Bollen and Busse (2001), who use daily returns and find evidence of positive timing ability.

is some lag before the manager can invest new money in stocks or sell stocks to replenish cash balances. Second, and probably more importantly, many fund companies prohibit their managers from holding more cash than is necessary for fund operations. The motivation is a belief that the job of equity mutual funds is to invest in stocks, not to allocate between stocks and cash.

Therefore, we also consider another possible source of benchmark-timing: changes in the fund portfolio's return covariance with the benchmark, i.e. its benchmark beta, which we define as the portfolio weight on equity times the benchmark beta of the equity portion of the portfolio. The intuition is simple. If a fund manager forecasts that the excess return of the benchmark is positive, he could take advantage of this by increasing his portfolio beta. He would then capture more of the upswing than he would if he had not altered his beta. Similarly, compared to not changing beta, decreases in benchmark beta prior to negative benchmark excess returns would avoid more of the downswing.

Consistent with timing ability, we find that changes in the benchmark betas of fund portfolios are positively related to future benchmark excess returns. For example, when a fund's benchmark beta increases from one observation of the fund's portfolio to the next, the benchmark index's excess return over the following three (six) months is positive 58.4% (72.7%) of the time, versus 40.1% (47.7%) of the time when the fund decreases its benchmark beta. Regression analysis reveals patterns in timing ability. We consider timing horizons of 1, 3, 6, and 12 months, and find that timing is weakest the 1-month horizon.

When we distinguish between benchmarks, funds with value/growth neutral or growth-oriented benchmarks display timing ability while funds with value-oriented benchmarks (the Russell 1000 Value, Russell Midcap Value, and Russell 2000 Value) do not.

To better understand the source of timing ability, we decompose changes in portfolio benchmark betas into their two components: changes in the portfolio weight on equity and changes in the benchmark beta of the equity portion of the portfolio. We find that successful timing stems from changes in the benchmark beta of the equity portion of the portfolio. Changes in the portfolio weight on equity do not contribute to successful timing, which is consistent with the lack of any timing ability attributable to changes in cash.

Overall, then, mutual fund managers appear to have timing ability in one sense, but not in another. The results are consistent with at least two explanations. First, it is possible that most mutual fund managers do not have enough discretion over cash holdings for cash holdings to be predictive. I.e., most mutual fund managers cannot hold a lot of cash even when they believe their benchmark will perform poorly. When they believe their benchmark will perform well (poorly) they buy stocks that are sensitive (insensitive) to the benchmark. Alternatively, it is possible that the changes in the portfolio benchmark beta do not represent conscious timing, but are the product of active management. That is, mutual fund managers may tend to buy stocks that are sensitive (insensitive) to the benchmark in up (down) markets.

The paper proceeds as follows. Section 1 describes the data. Section 2 considers whether funds time the benchmark by changing their portfolio weights on cash. Section 3 considers whether funds time the benchmark by changing their portfolio benchmark betas. Section 4 concludes.

1. Data

The primary data come from Morningstar, Inc, and contain benchmark information for 2,901 U.S.-based equity mutual funds. For this paper, we remove all index funds, sector funds, balanced funds, and funds whose primary purpose is not to invest in U.S stocks, because their investment behavior is likely to be different from the rest of the sample. Of the remaining 2,024 funds, we restrict our attention to the 91.8% (1,858 funds) that have one of the following benchmarks: S&P 500, Russell 1000, Russell 1000 Value, Russell 1000 Growth, S&P Midcap 400, Russell Midcap, Russell Midcap Value, Russell Midcap Growth, S&P Smallcap 600, Russell 2000, Russell 2000 Value, or Russell 2000 Growth.

The database also contains holdings data for the vast majority of these funds over the period 1994-2004. Holdings data are typically semiannual, the statutory reporting requirement during the sample period, and are available through June, 2004. To compute excess returns, we use the Fama-

French riskfree rate, Rf. Finally, we obtain historical returns on Russell and S&P/Barra indices from the web sites of their parent companies.

The benchmark data are available as a result of the SEC requirement introduced in 1998 that mutual funds self-designate a benchmark by presenting their historical returns alongside those of a comparison index in the prospectus. Some, but not all, funds voluntarily did so prior to 1998. Each fund must designate one benchmark. We do not have information on benchmark changes, but conversations with Morningstar and Thomson Financial (who have similar data) indicate that they are rare as the SEC frowns upon benchmark flip-flopping. Therefore, any biases induced by this lack of information are likely to be small. Table 1 shows summary statistics on the use of benchmarks in this sample.

The sample covers 1,858 funds consisting of a total of 23,222 fund portfolio observations over the period January 1994-June 2004. The funds collectively held $993.7 billion in assets on June 30, 2004. The S&P 500 is by far the most popular benchmark choice, representing 52.4% of funds and 67.8% of June 2004 assets. The Russell 2000 and S&P 400 account for a further 12.9% and 5.5% of funds, bringing the share for the top three of the twelve benchmarks we consider to almost 71%.

2. Timing tests – cash

In this section, we analyze whether funds are able to use their cash holdings to time their benchmarks. First, we consider changes in the portfolio weight on cash. To fix the intuition, consider a fund that can invest in two assets, the benchmark index and cash. Assume that cash earns the riskfree rate and that the goal of the fund manager is to beat the benchmark. If the manager is able to increase (decrease) the portfolio weight on cash in advance of periods of negative (positive) benchmark returns in excess of the riskfree rate, he will achieve his goal. Moreover, the manager will do even better if he is able to increase (decrease) the portfolio weight on cash *more* in advance of periods of *more* negative (positive) benchmark excess returns.

Second, we analyze whether, as practitioner accounts often suggest, the level (as opposed to changes) of fund portfolio weights on cash is negatively related to future benchmark excess returns.

A. Basic results

Panel A of table 2 provides the basic results for changes in cash. The table shows statistics on future benchmark excess returns conditional on a fund having increased or decreased its portfolio weight on cash from the previous to the current fund portfolio observation (usually a period of 6 months). If funds successfully time their benchmarks by varying their cash holdings, we should see that decreases in the portfolio weight on cash are more likely to be followed by positive benchmark excess returns.

Panel A suggests that, if anything, the opposite is the case. Taking all benchmarks together, at future return horizons of 1, 3, 6, and 12 months, increases in cash are followed by positive benchmark excess returns 48.4%, 48.1%, 65.2%, and 61.4% of the time; whereas decreases in cash are followed by positive benchmark excess returns 43.9%, 46.6%, 64.0%, and 59.4% of the time.

Panel A also shows that the average future benchmark excess return is greater following increases in cash than it is following decreases in cash. Taking all benchmarks together, at horizons of 1, 3, 6, and 12 months, increases in cash are followed by an average benchmark total excess return of -0.26%, -1.33%, 3.39%, and 6.21%; whereas decreases in cash are followed by an average benchmark total excess return of -0.75%, -1.98%, 2.58%, and 5.31%. These statistics are also inconsistent with successful timing achieved by varying cash.

Panel A also breaks out these statistics by benchmark, and shows that the overall lack of successful timing stemming from variation in cash is quite uniform across benchmarks, and certainly is not driven by any particular benchmark. Future excess benchmark returns are more likely to be positive following increases in cash (rather than decreases, which is what successful timing predicts) in 35 of the 48 benchmark-return horizon pairs (12 benchmarks times 4 return horizons), and future excess benchmark returns are greater following increases in cash than decreases in 44 of the 48.

It is possible that cash holdings are informative about fund manager beliefs only when the level of cash holdings reaches an unusually high level. Accordingly, panel B of table 2 looks at future benchmark excess returns as a function of the level of cash holdings.

Consistent with panel A, panel B suggests that if anything, higher levels of cash are more likely to be associated with higher benchmark excess returns. For example, when a fund's cash position exceeds 5%, future benchmark excess returns are positive at the 12-month horizon 61.3% of the time, versus 63.3% when a fund's cash position exceeds 15%. The corresponding average benchmark excess returns are 6.26% and 7.38%.

Panel C looks at future benchmark excess returns conditional on the monthly cross-sectional average level of cash of all funds with a given benchmark. The results are consistent with panels A and B. While months with high average levels of cash are not common, when they do occur they are usually followed by high benchmark excess returns not low ones.

B. Regressions

Table 3 further explores the patterns shown in table 2. In panel A, we present the results of weighted time-series OLS regressions:

(1) $$Fr.\left(BenchmarkExcess\,\mathrm{Re}turn\left(t \to t+n\right) > 0\right) = a + b * Fr.\left(CashChange\left(t\right) > 0\right) + e\left(t+n\right).$$

The dependent variable is the fraction of fund portfolio observations at month t for which the future excess return of the benchmark (over month t to month t+n) is positive (n = 1, 3, 6, or 12 months). The independent variable is the fraction of fund portfolio observations at time t for which the weight on cash (at time t) is greater than it was at the fund's previous portfolio observation (generally six months earlier). We weight the months by the number of fund portfolio observations that are used to compute the independent variable for that month. We do this because our fund portfolio observations are not evenly distributed across the months of the year and we want the regression coefficients to reflect the average fund, not the average month.

By collapsing the cross-section in each month t, we focus entirely on variation in the time series, which is the main dimension we want to explore. Because we have overlapping benchmark excess return observations, the residuals are correlated over time (e.g. the benchmark excess return from February-April is more likely to be positive if the benchmark excess return from January-March is positive, because two of the months overlap), so OLS standard errors are too low. We therefore report Newey-West standard errors, which correct for autocorrelation up to a lag of n-1 months.

A negative coefficient b in regression (1) would indicate that, consistent with successful timing by altering portfolio weights on cash, negative benchmark excess returns are more likely to follow increases in the weight on cash. However, the point estimates shown in panel A are all positive, though generally insignificant. These results indicate that positive benchmark excess returns are, if anything, more likely following increases in fund cash positions. The results are consistent with the statistics shown in table 2, but offer no evidence in favor of timing achieved by varying cash.

In panel B, we consider weighted time-series OLS regressions:

(2) $$AverageBenchmarkExcess\,\mathrm{Re}\,turn(t \rightarrow t+n) = a + b * AverageCashChange(t) + e(t+n).$$

Again, the dependent and independent variables are cross-sectional averages of fund portfolio observations, and the weight for month t is the number of fund portfolio observations used to compute the independent variable for that month. Standard errors are Newey-West with n-1 lags. A negative coefficient on *AverageCashChange* would indicate that, consistent with timing, benchmark excess returns are higher when cash decreases more. Again, the point estimates are positive but insignificant, which is inconsistent with timing achieved by varying cash.

Overall, the results in tables 2 and 3 offer no support for the hypothesis that funds are able to time their benchmarks by altering their portfolio weights on cash.

3. Timing tests – benchmark betas

That funds do not appear to be able to time their benchmarks by varying their cash holdings does not imply that they have no ability to time the benchmark, for at least two reasons. First, as Edelen (1999) points out, the level of an open-ended mutual fund's cash holdings is not entirely under the control of the fund manager. Inflows and outflows initiated by fund investors also contribute to variation in cash, at least to the extent that there is some lag before the manager can invest new money in stocks or sell stocks to replenish cash balances. Second, and probably more importantly, many fund companies prohibit their managers from holding more cash than is necessary for fund operations, under a belief that the job of equity mutual funds is to invest in stocks, not to allocate between stocks and cash.

Accordingly, in this section we consider another possible source of benchmark-timing: changes in the fund portfolio's return covariance with the benchmark, i.e. its benchmark beta, which we define as the portfolio weight on equity times the benchmark beta of the equity portion of the portfolio. This definition assumes that the benchmark betas of other components of the portfolio, such as cash and bonds, are zero. We measure the benchmark beta of the equity portion of each fund portfolio using our data on the weights of each individual stock in the portfolio. We form a hypothetical portfolio using those weights, normalized to sum to one. The estimated benchmark beta of the equity portion of the fund portfolio is the coefficient from a regression of the hypothetical portfolio's excess returns on the benchmark index's excess returns over the previous 36 months.

The intuition behind the tests is simple. If a fund manager forecasts that the excess return of the benchmark is positive, he could take advantage of this by increasing his portfolio beta. He would then capture more of the upswing than if he had not altered his beta. Similarly, compared to not changing beta, decreases in benchmark beta prior to negative benchmark excess returns would avoid more of the downswing. Moreover, the manager will do even better if he is able to increase (decrease) the portfolio benchmark beta *more* in advance of periods of *more* positive (negative) benchmark excess returns. These are the two timing tests we consider.

A. Basic results

Table 4 provides the basic results, similar to those in table 2 for changes in cash. The table shows statistics on future benchmark excess returns conditional on a fund having increased or decreased its portfolio benchmark beta from the previous to the current fund portfolio observation (usually a period of 6 months). If funds successfully time their benchmarks by varying their portfolio benchmark beta, we should see that increases in the portfolio benchmark beta are more likely to be followed by positive benchmark excess returns.

The evidence in table 4 is consistent with this behavior. Taking all benchmarks together, at future return horizons of 1, 3, 6, and 12 months, increases in benchmark beta are followed by positive benchmark excess returns 52.3%, 58.4%, 72.7%, and 70.9% of the time; whereas decreases in benchmark beta are followed by positive benchmark excess returns 42.9%, 40.1%, 47.7%, and 46.5% of the time.

Table 4 also shows that the average future benchmark excess return is greater following increases in portfolio benchmark beta than it is following decreases in beta. Taking all benchmarks together, at horizons of 1, 3, 6, and 12 months, increases in benchmark beta are followed by an average benchmark total excess return of 0.14%, -0.28%, 5.10%, and 9.18%; whereas decreases in cash are followed by an average benchmark total excess return of -0.94%, -3.49%, -0.48%, and 1.58%. These statistics are also consistent with successful timing achieved by varying portfolio benchmark beta.

Table 4 also breaks out the results by benchmark, and suggests that successful timing stemming from variation in portfolio benchmark beta is uniform across benchmarks, and is not driven by any particular benchmark. Future excess benchmark returns are more likely to be positive following increases in portfolio benchmark beta in 41 of the 48 benchmark-return horizon pairs, and future excess benchmark returns are greater following increases in portfolio benchmark beta in 41 of the 48. The exception is funds with value-oriented benchmarks – the Russell 1000 Value, Russell Midcap Value, and Russell 2000 Value. Among these funds, the corresponding figures are respectively, 5 out of 12, and 5 out of 12.

B. Regressions

Table 5 further explores the patterns shown in table 4. In panel A, we present the results of weighted time-series OLS regressions:

(3) $$Fr.\left(BenchmarkExcess\,\mathrm{Re}\,turn(t \to t+n) > 0\right) = a + b * Fr.\left(BetaChange(t) > 0\right) + e(t+n).$$

These regressions are the analog of (1). The dependent variable is the fraction of fund portfolio observations at month t for which the future excess return of the benchmark (over month t to month t+n) is positive (n = 1, 3, 6, or 12 months). The independent variable is the fraction of fund portfolio observations at time t for which the portfolio benchmark beta is greater than it was at the fund's previous portfolio observation (generally six months earlier). We weight month t by the number of fund portfolio observations that are used to compute the independent variable for that month. We report Newey-West standard errors, which account for residual autocorrelation up to n-1 lags.

The regressions test whether positive benchmark excess returns are more likely following increases or decreases in fund portfolio benchmark betas. The coefficients in panel A are mostly positive, consistent with successful timing achieved by altering benchmark beta. Two patterns stand out. The results for 3, 6, and 12-month horizons are stronger than those for a 1-month horizon. The coefficients are generally larger and more significant. This is consistent with the idea that short-term stock price movements are harder to forecast than longer-term movements. Also, timing appears fairly robust across different benchmarks, except value-oriented benchmarks. Funds benchmarked to the Russell 1000 Value, Russell Midcap Value, and Russell 2000 Value display no timing ability at any horizon.

In panel B of table 5, we consider whether managers are able to increase (decrease) the portfolio benchmark beta *more* in advance of periods of *more* positive (negative) benchmark excess returns. We run weighted time-series OLS regressions:

(4) $$AverageBenchmarkExcess\,\mathrm{Re}\,turn(t \rightarrow t+n) = a + b * AverageBetaChange(t) + e(t+n).$$

As before, we collapse the cross-section by taking averages at each month t, run a time-series regression on the cross-sectional averages, weighting each month by the number of portfolio observations giving rise to the average, and report Newey-West standard errors with n-1 lags.

Consistent with successful timing, the coefficients are generally positive and significant. The patterns in panel A are again apparent. Timing is weakest at a 1-month horizon, and there is no evidence of timing ability among funds with value-oriented benchmarks.

C. Decomposing changes in portfolio benchmark betas

In table 6, we decompose the change in portfolio benchmark betas into its two components, the change in the portfolio weight on equity and the change in the benchmark beta of the equity portion of the portfolio, and investigate each component's relation with future benchmark excess returns.

(5) $$AverageBenchmarkExcess\,\mathrm{Re}\,turn(t \rightarrow t+n) = a + b * AverageEquityWeightChange(t) + c * AverageEquityBetaChange(t) + e(t+n).$$

As before, we collapse the cross-section by taking averages at each month t, run a time-series regression on the cross-sectional averages, weighting each month by the number of portfolio observations giving rise to the average, and report Newey-West standard errors with n-1 lags.

The evidence in table 6 says that successful timing stems from changes in the benchmark beta of the equity portion of the portfolio. The coefficients on *AverageEquityWeightChange* are generally positive and significant at horizons of 3, 6, and 12 months, excepting funds with value-oriented benchmarks. Changes in the portfolio weight on equity do not contribute to successful timing, which is consistent with the lack of any timing ability attributable to changes in cash. In fact, the coefficients on *AverageEquityWeightChange* are generally negative, sometimes significantly so.

D. Future benchmark excess returns and benchmark beta levels

The tests so far focus on whether funds alter their cash holdings or portfolio benchmark betas in the right direction given future benchmark excess returns. These are tests of timing in a relative sense: do funds capture more of benchmark upswings and less of downswings than they would if they did not alter their holdings? We now consider a different question, namely whether funds time in an absolute sense, rising more than the benchmark when the benchmark rises, and falling less than the benchmark when the benchmark falls.

An example will make the intuition clear. Suppose a fund's beta at time t-1 is 0.9, its beta at time t is 0.95, and the benchmark excess return from time t to t+1 is 2%. The tests we have considered so far consider this successful timing; benchmark beta adjusts in the right direction. However, even with a beta of 0.95, the equity portion of the fund will rise less than the benchmark. The tests we consider now do not consider this successful timing.

Specifically, we run weighted time-series OLS regressions:

(6) $$BenchmarkExcess\,\mathrm{Re}turn(t \rightarrow t+n) = b * (AverageEquityBeta(t) - 1) + e(t+n).$$

These regressions include no constant term, which means that the coefficient b will be positive only if *AverageEquityBeta* is greater than 1.0 in advance of positive benchmark excess returns. As before, we collapse the cross-section by taking averages at each month t, run a time-series regression on the cross-sectional averages, weighting each month by the number of portfolio observations giving rise to the average, and report Newey-West standard errors with n-1 lags.

Table 7 displays the results. The coefficients at 1, 3, and 6-month horizons are generally positive, but not significant as often as in tables 5 and 6. At a twelve month horizon, the coefficients are mostly negative. Taking all funds together, the coefficient is only significantly positive at the 3-month horizon.

4. Conclusion

We investigate whether mutual funds can time their self-designated benchmark indexes. Using data on fund portfolio holdings, we consider two potential sources of timing attempts: variation in cash holdings and variation in the benchmark beta of the fund portfolio. Funds do not successfully time the benchmark by varying their cash holdings. If anything, funds are more likely to increase cash or hold high levels of cash before the benchmark goes up, not down. However, consistent with timing ability, increases in the benchmark beta of the portfolio are positively associated with future benchmark excess returns. The relation is driven by changes in the benchmark beta of the equity portion of fund portfolios, rather than changes in portfolio weights on equity.

Overall, then, mutual fund managers appear to have timing ability in one sense, but not in another. The results are consistent with at least two explanations. First, it is possible that most mutual fund managers do not have enough discretion over cash holdings for cash holdings to be predictive. I.e., most mutual fund managers cannot hold a lot of cash even when they believe their benchmark will perform poorly. When they believe their benchmark will perform well (poorly) they buy stocks that are sensitive (insensitive) to the benchmark. Alternatively, it is possible that the changes in the portfolio benchmark beta do not represent conscious timing, but are the product of active management. I.e., mutual fund managers tend to buy stocks that are sensitive (insensitive) to the benchmark in up (down) markets.

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Table 1 - Benchmark Usage Summary

Summary statistics on mutual fund benchmarks. The sample period is 1994-2004. The sample excludes index funds, sector funds, balanced funds, and funds that invest primarily in securities other than U.S. stocks. Rank is relative to all benchmarks in the Morningstar database. Percentages are based on all funds with benchmark data.

Benchmark	Style	# funds rank	# funds	% of funds	# portfolio observations	% of portfolios	total mutual fund assets 6/30/2004 ($ billion)	% of assets 6/30/2004
S&P 500	Large cap blend	1	1,061	52.4	13,915	55.7	710.1	67.8
Russell 2000	Small cap blend	2	261	12.9	3,416	13.7	97.4	9.3
S&P Midcap 400	Mid cap blend	3	111	5.5	1,386	5.5	59.9	5.7
Russell 2000 Growth	Small cap growth	4	74	3.7	929	3.7	12.7	1.2
Russell 1000 Value	Large cap value	5	63	3.1	618	2.5	21.3	2.0
Russell 1000 Growth	Large cap growth	6	58	2.9	674	2.7	16.3	1.6
Russell 1000	Large cap blend	7	55	2.7	506	2.0	16.6	1.6
Russell 2000 Value	Small cap value	8	46	2.3	417	1.7	14.4	1.4
Russell Midcap Growth	Mid cap growth	9	39	1.9	485	1.9	8.1	0.8
S&P Smallcap 600	Small cap blend	10	38	1.9	343	1.4	8.1	0.8
Russell Midcap Value	Mid cap value	12	27	1.3	265	1.1	11.4	1.1
Russell Midcap	Mid cap blend	13	25	1.2	268	1.1	17.4	1.7
		Total:	1,858	91.8	23,222	92.9	993.7	94.8

Table 2 - Cash and Future Benchmark Returns: Summary Statistics

In panel A, we provide statistics describing the future returns of a fund's benchmark in excess of the riskfree rate conditional on that fund having increased or decreased its cash holdings from the previous to the current fund portfolio observation. "% > 0" is the percentage of future excess returns that are greater than 0. "Mean" is the mean future excess return, in percent. If funds successfully time their benchmarks by altering their cash holdings, we would expect the numbers in the "increase" rows to be less than the numbers in the "decrease" rows. In Panel B, we provide statistics conditioned on various levels of cash holdings at the fund level. In panel C, we condition on monthly cross-sectional average levels of cash.

Panel A - Increases and decreases in cash

		Benchmark excess return								
		Next month		Next 3 months		Next 6 months		Next 12 months		
Benchmark:	*Cash position:*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*N. Obs.*
All	Increase	48.4	-0.26	48.1	-1.33	65.2	3.39	61.4	6.21	7,864
	Decrease	43.9	-0.75	46.6	-1.98	64.0	2.58	59.4	5.31	8,748
S&P 500	Increase	49.5	-0.14	47.9	-1.51	62.5	2.53	61.1	4.79	4,736
	Decrease	44.1	-0.54	46.4	-1.98	62.0	2.15	59.9	4.42	5,289
Russell 1000	Increase	48.9	-0.12	51.1	-1.78	61.2	2.47	58.5	3.98	178
	Decrease	44.4	-0.60	48.7	-2.30	61.4	1.66	56.0	2.12	189
Russell 1000 Value	Increase	43.2	-0.45	63.0	-0.87	66.5	3.84	67.0	7.54	227
	Decrease	47.0	-0.37	64.7	-1.16	65.6	4.07	64.5	7.09	215
Russell 1000 Growth	Increase	45.4	-0.22	43.1	-2.38	67.1	1.51	71.9	5.20	216
	Decrease	41.6	-0.34	42.9	-2.77	65.4	0.86	66.0	1.82	231
S&P Midcap 400	Increase	52.7	0.05	54.9	0.64	76.1	6.75	75.7	12.30	452
	Decrease	39.5	-1.10	47.3	-1.51	71.7	4.29	67.6	8.82	537
Russell Midcap	Increase	41.9	-0.46	46.2	-0.87	71.0	5.56	68.8	9.54	93
	Decrease	44.4	-0.80	54.4	-0.84	65.6	4.74	71.6	8.38	90
Russell Midcap Value	Increase	51.2	-0.31	58.1	0.55	79.1	7.00	66.7	12.46	86
	Decrease	42.6	-0.72	58.2	-0.90	72.1	5.91	66.7	11.22	122
Russell Midcap Growth	Increase	45.1	-0.37	50.6	-0.94	72.2	3.81	68.3	8.39	162
	Decrease	45.8	-0.82	48.6	-2.42	67.2	3.51	71.6	8.75	177
S&P Small Cap 600	Increase	49.2	-0.27	52.5	-0.47	77.5	6.62	70.1	11.82	120
	Decrease	48.8	-0.85	50.4	-0.98	69.1	3.16	63.6	7.16	123
Russell 2000	Increase	45.1	-0.69	44.6	-1.54	67.5	4.43	52.4	7.68	1,144
	Decrease	44.4	-1.20	45.2	-1.83	67.2	3.38	50.2	6.87	1,291
Russell 2000 Value	Increase	58.3	0.31	61.2	1.50	82.0	8.63	72.2	15.26	139
	Decrease	42.9	-1.59	46.3	-1.05	76.2	5.76	64.2	11.50	147
Russell 2000 Growth	Increase	42.4	-1.12	35.0	-2.48	61.4	3.92	53.0	4.70	311
	Decrease	43.0	-1.99	35.6	-4.27	56.7	0.62	54.2	3.08	337

Table 2 - continued

Panel B - Levels of cash

		Benchmark excess return								
		Next month		Next 3 months		Next 6 months		Next 12 months		
Benchmark:	*Cash position:*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*N. Obs.*
All	> 5%	49.1	-0.16	51.6	-1.12	64.8	3.24	61.3	6.26	7,061
	> 7.5%	50.3	-0.06	52.4	-0.92	65.2	3.37	62.0	6.61	4,244
	> 10%	51.5	0.00	53.5	-0.78	65.9	3.36	62.9	6.86	2,660
	> 15 %	51.5	0.09	53.8	-0.67	66.6	3.50	63.3	7.38	1,241
Large cap	> 5%	51.5	0.16	53.4	-0.98	63.8	2.90	63.8	6.05	4,450
	> 7.5%	53.5	0.30	54.9	-0.60	64.9	3.22	65.6	6.84	2,609
	> 10%	54.8	0.39	55.9	-0.39	66.4	3.41	67.6	7.54	1,641
	> 15 %	52.7	0.28	54.4	-0.52	67.6	3.45	66.6	7.50	814
Mid cap	> 5%	46.5	-0.22	53.7	-0.77	70.9	4.95	69.8	9.10	735
	> 7.5%	45.7	-0.18	54.7	-0.78	70.4	4.55	69.1	8.27	446
	> 10%	48.4	-0.12	57.0	-0.93	69.0	4.03	65.7	7.35	258
	> 15 %	51.8	0.35	62.5	-0.48	74.1	5.04	67.0	8.95	112
Small Cap	> 5%	44.4	-0.89	46.4	-1.59	64.7	3.37	51.7	5.65	1,876
	> 7.5%	45.1	-0.82	45.9	-1.66	64.0	3.24	51.3	5.48	1,189
	> 10%	45.2	-0.79	47.0	-1.56	63.6	3.04	51.7	5.21	761
	> 15 %	48.3	-0.48	49.2	-1.13	61.3	3.08	53.8	6.53	315

Table 2 - continued

Panel C - Monthly cross-sectional average levels of cash

	Average	Benchmark excess return								
		Next month		Next 3 months		Next 6 months		Next 12 months		
Benchmark:	*Cash position:*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*N. Obs.*
S&P 500	> 5%	62.7	0.80	68.7	2.73	70.1	4.33	74.6	9.39	67
	> 10%	25.0	-1.20	50.0	1.20	50.0	1.09	50.0	0.13	4
	> 15 %	.	.	.	.	.	.	.	.	0
Russell 1000	> 5%	73.3	2.97	66.7	5.07	53.3	2.62	57.1	7.08	15
	> 10%	100.0	5.61	100.0	14.02	66.7	9.89	100.0	27.14	3
	> 15 %	100.0	5.91	100.0	18.42	100.0	13.69	100.0	35.28	1
Russell 1000 Value	> 5%	54.5	0.72	54.5	1.14	63.6	0.83	90.0	9.45	11
	> 10%	66.7	3.35	66.7	6.49	33.3	2.12	100.0	14.39	3
	> 15 %	0.0	-0.97	0.0	-2.54	0.0	-0.54	.	.	1
Russell 1000 Growth	> 5%	69.2	0.88	76.9	4.61	76.9	4.58	84.6	13.17	13
	> 10%	0.0	-3.41	0.0	-0.70	100.0	5.05	100.0	21.63	1
	> 15 %	0.0	-3.41	0.0	-0.70	100.0	5.05	100.0	21.63	1
S&P Midcap 400	> 5%	57.4	0.87	66.0	1.95	72.3	5.99	78.7	11.07	47
	> 10%	70.0	2.66	70.0	3.38	90.0	7.68	90.0	13.17	10
	> 15 %	75.0	3.74	100.0	7.42	100	11.09	75.0	12.22	4
Russell Midcap	> 5%	46.2	0.36	65.4	2.55	69.2	4.26	62.5	3.96	26
	> 10%	83.3	3.87	83.3	7.25	83.3	8.76	83.3	15.87	6
	> 15 %	75.0	1.82	75.0	4.47	75.0	6.27	75.0	18.10	4
Russell Midcap Value	> 5%	75.0	2.23	87.5	4.43	87.5	7.90	100.0	12.98	8
	> 10%	60.0	0.98	80.0	4.11	80.0	5.28	100.0	11.06	5
	> 15 %	66.7	2.05	100.0	8.09	100.0	10.60	100.0	14.17	3
Russell Midcap Growth	> 5%	47.6	0.83	66.7	4.31	85.7	9.20	71.4	10.20	21
	> 10%	62.5	0.85	75.0	5.83	87.5	8.92	75.0	13.93	8
	> 15 %	100.0	1.33	100.0	10.58	100.0	20.06	100.0	26.01	1
S&P Small Cap 600	> 5%	76.5	2.22	52.9	3.46	70.6	2.91	70.6	6.83	17
	> 10%	100.0	3.38	66.7	3.46	33.3	-1.05	66.7	4.54	3
	> 15 %	100.0	5.03	100.0	5.35	50.0	2.51	100.0	14.24	2
Russell 2000	> 5%	61.0	0.97	61.0	2.76	64.9	3.96	58.7	6.22	77
	> 10%	70.6	2.51	64.7	5.21	76.5	7.96	68.8	13.75	17
	> 15 %	.	.	.	.	.	.	.	.	0
Russell 2000 Value	> 5%	70.0	1.22	76.7	4.18	76.7	6.61	71.4	10.93	30
	> 10%	66.7	-0.46	55.6	3.85	66.7	6.28	62.5	12.42	9
	> 15 %	62.5	-0.65	62.5	4.52	62.5	5.57	57.1	10.58	8
Russell 2000 Growth	> 5%	51.5	0.92	51.5	2.17	51.5	-0.56	42.4	-4.77	33
	> 10%	100	10.89	100	22.93	50	1.22	50.0	1.81	4
	> 15 %	100	9.68	100	23.63	100	26.62	100.0	37.21	1

Table 3 - Changes in Cash and Future Benchmark Returns: Regressions

Regressions to determine whether there is a relation between changes in funds' cash positions and the future excess returns of their benchmarks. Panel A presents weighted OLS regressions in which the dependent variable is the fraction of portfolio observations at month t for which the future excess return of the benchmark (over time t to t+n) is positive. The independent variable is the fraction of fund portfolio observations at time t for which the weight on cash at time t is greater than it was at the fund's previous portfolio observation. Panel B presents weighted OLS regressions in which the average future excess return of the benchmark is the dependent variable and the average change in portfolio weight on cash is the independent variable. In both panels, the months t are weighted by the number of fund portfolio observations that are used to compute the independent variable. Newey-West standard errors use n-1 lags. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Panel A- Weighted OLS: Fraction [Benchmark excess return (t->t+n) >0] = a + b * Fraction [Cash Change (t) > 0] + e (t+n)

Return horizon:		1 month	3 months	6 months	12 months
Benchmark:					
All	b	1.81**	0.75	0.53	0.72
	se[b]	(0.88)	(1.04)	(0.99)	(1.05)
	N	108	108	108	102
Large cap	b	1.94**	0.52	0.22	0.54
	se[b]	(0.78)	(0.94)	(0.93)	(0.93)
	N	107	107	107	101
Mid cap	b	1.06***	0.58	0.44	0.48
	se[b]	(0.39)	(0.47)	(0.56)	(0.52)
	N	95	95	95	90
Small cap	b	0.31	0.25	0.68	0.68
	se[b]	(0.68)	(0.68)	(0.58)	(0.61)
	N	108	108	108	102

Panel B - Weighted OLS: Average Benchmark excess return (t->t+n) = a + b * Average Cash Change (t)+ e (t+n)

Return horizon:		1 month	3 months	6 months	12 months
Benchmark:					
All	b	1.10*	1.67	1.28	0.48
	se[b]	(0.62)	(1.31)	(1.71)	(2.05)
	N	116	116	116	110
Large cap	b	0.74*	1.42	0.22	-0.24
	se[b]	(0.41)	(0.96)	(1.36)	(1.75)
	N	115	115	115	109
Mid cap	b	0.12	0.22	0.36	0.56
	se[b]	(0.16)	(0.33)	(0.38)	(0.67)
	n	98	98	98	93
Small cap	b	0.54	0.40	1.24	0.56
	se[b]	(0.66)	(0.97)	(0.99)	(0.95)
	N	114	114	114	108

Table 4 - Changes in Fund Portfolio Benchmark Beta and Future Benchmark Returns: Summary Statistics

We provide statistics describing the future returns of a fund's benchmark in excess of the riskfree rate conditional on that fund having increased or decreased its portfolio benchmark beta, defined as the portfolio weight on domestic stocks times the benchmark beta of the domestic stock portion of the portfolio. "% > 0" is the percentage of future excess returns that are greater than 0. "Mean" is the mean total future excess return, in percent. If funds successfully time their benchmarks by altering their portfolio benchmark betas, we would expect the numbers in the "increase" rows to be greater than the numbers in the "decrease" rows.

		Benchmark excess return								
	Portfolio	Next month		Next 3 months		Next 6 months		Next 12 months		
Benchmark:	*benchmark beta:*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*% > 0*	*Mean*	*N. Obs.*
All	Increase	52.3	0.14	58.4	-0.28	72.7	5.10	70.9	9.18	8,657
	Decrease	42.9	-0.94	40.1	-3.49	47.7	-0.48	46.5	1.58	7,411
S&P 500	Increase	53.3	0.20	58.7	-0.66	71.4	4.44	72.8	7.99	5,187
	Decrease	44.9	-0.54	41.2	-2.91	46.8	-0.49	46.8	1.18	4,569
Russell 1000	Increase	49.0	-0.32	59.4	-1.24	67.7	3.33	68.2	5.20	192
	Decrease	40.6	-0.90	39.1	-5.35	33.1	-2.62	31.5	-3.91	133
Russell 1000 Value	Increase	47.1	-0.70	53.8	-2.53	56.3	1.89	58.0	4.94	208
	Decrease	45.0	-0.60	56.7	-1.48	58.5	2.60	65.3	5.92	171
Russell 1000 Growth	Increase	50.2	-0.19	61.7	0.26	80.9	4.55	77.6	6.63	235
	Decrease	30.9	-0.83	21.3	-7.59	30.3	-5.98	50.0	-6.38	188
S&P Midcap 400	Increase	50.6	-0.12	59.7	0.53	77.3	6.34	77.8	12.57	534
	Decrease	43.7	-0.66	49.9	-1.36	64.0	3.70	63.3	8.21	467
Russell Midcap	Increase	51.1	0.22	60.9	0.69	80.4	7.57	87.0	15.04	92
	Decrease	35.4	-1.34	45.6	-3.88	35.4	-1.36	46.8	-0.34	79
Russell Midcap Value	Increase	51.2	-0.15	52.4	0.10	74.4	5.49	60.0	11.95	82
	Decrease	41.0	-1.53	43.6	-2.84	60.3	3.65	61.0	9.16	78
Russell Midcap Growth	Increase	51.1	0.60	63.8	2.26	82.2	8.97	74.7	14.97	174
	Decrease	28.9	-2.94	28.9	-9.49	29.7	-7.17	50.4	-4.11	128
S&P Small Cap 600	Increase	55.4	0.38	66.2	1.09	79.2	6.57	78.1	13.47	130
	Decrease	42.2	-1.71	38.9	-4.53	52.2	0.42	43.2	2.50	90
Russell 2000	Increase	51.8	0.25	57.6	0.53	76.7	6.77	63.1	11.77	1,362
	Decrease	40.5	-1.82	36.0	-4.28	50.5	-0.65	37.0	2.08	1,119
Russell 2000 Value	Increase	50.4	-0.71	57.5	-0.88	71.7	6.01	58.4	12.75	127
	Decrease	53.8	-0.54	56.2	-0.36	75.4	5.85	69.6	12.90	130
Russell 2000 Growth	Increase	48.2	0.27	50.0	0.70	66.5	6.13	66.0	10.15	334
	Decrease	30.5	-3.69	17.4	-9.87	29.7	-5.29	28.4	-4.64	259

Table 5- Changes in Portfolio Benchmark Beta and Future Benchmark Returns: Regressions

Regressions to determine whether there is a relation between changes in funds' portfolio benchmark betas and the future excess returns of their benchmarks. The regressions are analogous to those in table 3. Newey-West standard errors use n-1 lags. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Panel A- Weighted OLS: Fraction [Benchmark excess return (t->t+n) >0] = a + b * Fraction [Portfolio Benchmark Beta Change (t) > 0] + e (t+n)

Return horizon:		1 month	3 month	6 month	12 month
Benchmark:					
All	b	0.60	1.04***	1.42***	1.48***
	se[b]	(0.47)	(0.31)	(0.21)	(0.25)
	N	116	116	116	110
S&P 500	b	0.47	0.98***	1.38***	1.44***
	se[b]	(0.45)	(0.33)	(0.26)	(0.30)
	N	115	115	115	109
Russell 1000	b	0.25	0.61*	1.04***	1.17***
	se[b]	(0.42)	(0.32)	(0.17)	(0.18)
	N	41	41	41	38
Russell 1000 Value	b	0.11	-0.15	-0.12	-0.39
	se[b]	(0.35)	(0.32)	(0.37)	(0.32)
	N	54	54	54	51
Russell 1000 Growth	b	0.36	0.76***	0.95***	0.52
	se[b]	(0.30)	(0.18)	(0.11)	(0.33)
	N	51	51	51	47
S&P Midcap 400	b	0.40	0.57	0.78***	0.85***
	se[b]	(0.43)	(0.38)	(0.22)	(0.28)
	N	87	87	87	84
Russell Midcap	b	0.34	0.34	0.99***	0.88***
	se[b]	(0.32)	(0.31)	(0.11)	(0.16)
	N	39	39	39	39
Russell Midcap Value	b	0.53	0.46	0.74*	-0.05
	se[b]	(0.35)	(0.40)	(0.39)	(0.53)
	N	34	34	34	32
Russell Midcap Growth	b	0.41	0.64***	0.97***	0.45
	se[b]	(0.29)	(0.20)	(0.09)	(0.31)
	N	45	45	45	42
S&P Smallcap 600	b	0.37	0.77***	0.76***	0.99***
	se[b]	(0.34)	(0.26)	(0.21)	(0.16)
	N	39	39	39	36
Russell 2000	b	0.47	0.90***	1.09***	1.08***
	se[b]	(0.40)	(0.27)	(0.29)	(0.28)
	N	108	108	108	103
Russell 2000 Value	b	-0.14	0.06	-0.17	-0.55
	se[b]	(0.33)	(0.35)	(0.31)	(0.34)
	N	50	51	51	47
Russell 2000 Growth	b	0.44	0.81***	0.91***	0.93***
	se[b]	(0.34)	(0.23)	(0.18)	(0.19)
	N	63	63	63	60

Table 5 - continued

Panel B- Weighted OLS: Average benchmark excess return (t->t+n) = a + b * Average Portfolio Benchmark Beta Change (t) + e (t+n)

Return horizon:		1 month	3 month	6 month	12 month
Benchmark:					
All	b	24.05*	60.32***	96.10***	130.67***
	se[b]	(13.85)	(22.35)	(26.96)	(31.68)
	N	116	116	116	110
S&P 500	b	18.42	44.57*	84.47***	110.71***
	se[b]	(11.73)	(24.27)	(27.89)	(39.56)
	N	115	115	115	109
Russell 1000	b	16.30*	47.86***	58.09***	87.68***
	se[b]	(8.36)	(15.28)	(22.24)	(28.24)
	N	41	41	41	38
Russell 1000 Value	b	-10.60	-41.01	-20.72	-38.08
	se[b]	(8.93)	(14.03)	(19.25)	(31.43)
	N	54	54	54	51
Russell 1000 Growth	b	2.78	47.90***	52.93***	61.99**
	se[b]	(9.58)	(14.63)	(16.34)	(30.72)
	N	51	51	51	47
S&P Midcap 400	b	17.68	39.17*	44.47*	61.82***
	se[b]	(11.41)	(20.35)	(26.30)	(21.83)
	N	87	87	87	84
Russell Midcap	b	19.67**	46.07***	73.98***	106.19***
	se[b]	(9.27)	(15.82)	(14.85)	(21.03)
	N	39	39	39	39
Russell Midcap Value	b	7.14	19.31	7.70	30.43
	se[b]	(11.24)	(25.00)	(28.09)	(37.53)
	N	34	34	34	32
Russell Midcap Growth	b	12.88	55.48***	61.55***	74.16***
	se[b]	(10.12)	(8.95)	(10.51)	(23.16)
	N	45	45	45	42
S&P Smallcap 600	b	33.10*	71.48***	93.92***	133.17***
	se[b]	(18.16)	(20.34)	(24.80)	(29.51)
	N	39	39	39	36
Russell 2000	b	28.46**	61.85***	89.17***	109.33***
	se[b]	(12.57)	(18.58)	(19.25)	(21.36)
	N	108	108	108	103
Russell 2000 Value	b	-3.99	-16.68	-1.65	-17.58
	se[b]	(17.71)	(30.55)	(39.66)	(49.88)
	N	51	51	51	47
Russell 2000 Growth	b	27.76*	69.19***	67.86***	89.54***
	se[b]	(16.25)	(13.12)	(20.35)	(24.31)
	N	63	63	63	60

Table 6 - Changes in Portfolio Equity Weights, Changes in Benchmark Beta of Equity Portion of Portfolio, and Future Excess Benchmark Returns

Monthly weighted time series OLS regressions of cross-sectional average future benchmark excess returns on cross-sectional average changes in portfolio equity weight and cross-sectional average changes in the benchmark beta of the equity portion of the portfolio. The change for a fund is the difference between the variable at time t and the variable at the previous portfolio observation for that fund. The cross-sectional average values of these changes are the independent variables. For the benchmark-specfic regressions, the dependent variable is just the future excess return of that benchmark. Each month is weighted by the number of observations used in computing the cross-sectional average for that month. Standard errors are Newey West, with a lag equal to the return horizon minus 1. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Weighted OLS: Average benchmark excess return (t->t+n) = a+ b * Average Portfolio Equity Weight Change (t) + c * Average Benchmark Beta of Equity Portion of Portfolio Change (t) + e(t+n)

Return horizon:		1 month	3 month	6 month	12 month
Benchmark:					
All	b	-0.02	-0.94	-1.24*	-1.67
	se [b]	(0.26)	(0.83)	(0.73)	(1.25)
	c	22.71*	63.90***	102.72***	139.57***
	se [c]	(13.16)	(21.87)	(16.95)	(29.01)
	N	116	116	116	110
S&P 500	b	0.11	-0.64	-0.73	-1.52
	se [b]	(0.23)	(0.88)	(0.83)	(1.63)
	c	16.06	49.65**	93.35***	128.12***
	se [c]	(11.27)	(25.14)	(25.49)	(47.23)
	N	115	115	115	109
Russell 1000	b	0.35*	0.07	0.07	-0.72
	se [b]	(0.18)	(0.29)	(0.36)	(0.78)
	c	12.35	48.78***	59.47***	96.28***
	se [c]	(8.52)	(14.63)	(22.23)	(26.02)
	N	41	41	41	38
Russell 1000 Value	b	-0.10	-0.22**	-0.30*	-0.79***
	se [b]	(0.07)	(0.10)	(0.15)	(0.15)
	c	-7.62	-64.45*	5.32	18.07
	se [c]	(18.86)	(36.24)	(67.47)	(81.51)
	N	54	54	54	51
Russell 1000 Growth	b	-0.08	-0.63	-1.06	-2.15
	se [b]	(0.43)	(0.66)	(1.43)	(2.86)
	c	2.13	46.87***	53.97***	64.87**
	se [c]	(8.97)	(13.01)	(14.38)	(28.40)
	N	51	51	51	47
S&P Midcap 400	b	-0.21	-0.57*	-0.70	-0.96**
	se [b]	(0.16)	(0.33)	(0.43)	(0.41)
	c	24.93**	56.67**	69.64***	97.59***
	se [c]	(12.28)	(24.20)	(24.98)	(22.07)
	N	87	87	87	84

Table 6 (cont.)

Return horizon:		1 month	3 month	6 month	12 month
Benchmark:					
Russell Midcap	b	-0.02	0.23	-0.07	0.24
	se [b]	(0.21)	(0.30)	(0.27)	(0.56)
	c	18.71**	46.30***	77.67***	112.18***
	se [c]	(9.35)	(15.34)	(12.58)	(20.08)
	N	39	39	39	39
Russell Midcap Value	b	0.36	0.66	-0.21	0.53
	se [b]	(0.37)	(0.77)	(0.96)	(0.98)
	c	-2.37	-0.26	21.12	27.80
	se [c]	(9.54)	(23.42)	(23.53)	(43.77)
	N	34	34	34	32
Russell Midcap Growth	b	-0.30	-0.47	-0.57	-0.74
	se [b]	(0.24)	(0.48)	(0.36)	(0.62)
	c	15.15*	59.39***	65.73***	80.48***
	se [c]	(8.02)	(10.43)	(9.81)	(26.30)
	N	45	45	45	42
S&P Smallcap 600	b	0.47	1.37*	0.03	1.30
	se [b]	(0.36)	(0.71)	(0.59)	(1.11)
	c	30.60*	70.95***	83.75***	120.36***
	se [c]	(16.68)	(17.83)	(20.40)	(26.74)
	N	39	39	39	36
Russell 2000	b	-0.22	-0.02	-0.38	0.16
	se [b]	(0.28)	(0.44)	(0.33)	(0.67)
	c	26.73**	57.68***	84.65***	101.43***
	se [c]	(11.41)	(16.93)	(15.01)	(20.41)
	N	108	108	108	103
Russell 2000 Value	b	-0.09	-0.36	-0.33	0.29
	se [b]	(0.24)	(0.44)	(0.46)	(0.48)
	c	8.41	17.93	43.19	-3.29
	se [c]	(20.67)	(36.21)	(51.62)	(68.01)
	N	51	51	51	47
Russell 2000 Growth	b	-0.83	-1.32**	-1.90***	-0.79
	se [b]	(0.62)	(0.58)	(0.51)	(0.98)
	c	28.93**	70.13***	69.85***	88.96***
	se [c]	(11.68)	(10.28)	(10.19)	(23.99)
	N	63	63	63	60

Table 7 - Future Benchmark Excess Returns and Benchmark Betas of Fund Equity Portfolios

Monthly weighted OLS regressions relating future benchmark excess returns to cross-sectional average benchmark betas of the equity portion of fund portfolios. Each month, we average the benchmark beta of the equity portion of the fund portfolio across funds to obtain the independent variable used in the regressions. The monthly observations are weighted by the number of fund portfolios giving rise to the cross-sectional average. Standard errors are Newey West, with a lag equal to the return horizon minus 1. In Panel A, the dependent variable is the fraction of portfolio observations for which the future benchmark excess return is positive. In Panel B, the dependent variable is the actual future benchmark excess return. For the benchmark-specfic regressions, the dependent variable is just the future excess return of that benchmark. *, **, and *** indicate significance at the 10%, 5%, and 1% levels.

Weighted OLS: Average benchmark excess return (t->t+n) = b * [Average Benchmark Beta of Equity Portion of Portfolio (t) - 1] + e (t+n)

Return horizon:		1 month	3 month	6 month	12 month
Benchmark:					
All	b	18.54	46.77**	17.80	-20.63
	se[b]	(12.60)	(20.17)	(27.39)	(50.46)
	N	126	126	126	120
S&P 500	b	12.77	31.20	5.92	-37.87
	se[b]	(12.46)	(23.09)	(25.56)	(43.98)
	N	126	126	126	120
Russell 1000	b	6.31	21.65	5.19	-7.22
	se[b]	(7.96)	(17.18)	(20.02)	(43.95)
	N	54	54	54	51
Russell 1000 Value	b	-4.49	-7.49	35.35	114.89
	se[b]	(12.29)	(23.55)	(49.19)	(77.76)
	N	62	62	62	59
Russell 1000 Growth	b	3.39	18.28*	-0.74	-22.87
	se[b]	(4.57)	(10.17)	(19.24)	(33.81)
	N	58	58	58	54
S&P Midcap 400	b	10.28*	29.23***	47.96***	80.06***
	se[b]	(5.43)	(9.87)	(11.94)	(18.75)
	N	108	108	108	105
Russell Midcap	b	4.93	18.40	8.29	-10.62
	se[b]	(7.20)	(13.57)	(12.95)	(24.02)
	N	47	47	47	47
Russell Midcap Value	b	0.30	0.08	23.20*	64.72**
	se[b]	(3.75)	(8.41)	(13.20)	(28.05)
	N	38	38	38	36
Russell Midcap Growth	b	6.72	25.14**	1.32	-23.79
	se[b]	(5.49)	(10.54)	(17.64)	(30.55)
	N	49	49	49	46
S&P Smallcap 600	b	26.00**	45.15**	12.42	-18.24
	se[b]	(13.26)	(18.15)	(29.28)	(49.55)
	N	47	47	47	44
Russell 2000	b	17.20*	36.10**	9.86	-19.63
	se[b]	(10.24)	(14.28)	(20.93)	(37.16)
	N	117	117	117	112
Russell 2000 Value	b	-5.81	-9.56	35.41	70.13
	se[b]	(9.17)	(16.71)	(23.86)	(45.91)
	N	59	59	59	55
Russell 2000 Growth	b	16.07	33.82**	4.84	-27.69
	se[b]	(9.78)	(14.92)	(22.50)	(40.88)
	N	70	70	70	67