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Mutual Fund Performance and Manager Style

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A NUMBER OF RECENT STUDIES have looked for evidence of persistence in mutual fund performance. These studies are trying to determine whether there are certain funds that consistently outperform (or underperform) other mutual funds.¹ Although the evidence is mixed, the general conclusion from these articles is that a few fund managers do tend to regularly appear near the top of the annual return rankings. There is stronger evidence that some managers consistently appear near the bottom of the rankings. For investors, the main implication of these studies is the small likelihood of consistently earning abnormal returns by selecting individual fund managers.

In contrast to earlier studies, this article looks at the relation between fund performance and manager style. Two specific issues are addressed. First, does any particular investment style reliably deliver abnormal performance? Second, when funds with similar styles are compared, is there any evidence of performance persistence? The styles investigated in this article are classified along two general dimensions: value versus growth and small-cap versus large-cap. The results indicate that none of the styles included in the study are able to generate positive abnormal returns, compared to the Fama-French (1993) benchmark. Value funds generate negative abnormal returns during the 1965-1998 sample period.

There is some evidence of performance persistence during the sample period, but the abnormal performance tends to die out fairly quickly. The best performing growth managers tend to continue to perform well during the year after they are

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¹ For example, see Carhart (1997), Elton, Gruber, Das, and Blake (1996), Goetzmann and Ibbotson (1994), Grinblatt and Titman (1992), Gruber (1996), and Hendricks, Patel and Zeckhauser (1993).

identified as good performers, and the worst performing small-cap managers continue to generate negative abnormal returns after they are identified as poor performers. Overall, the results of this study cast doubt on the economic value of active fund management.

Data and Methodology

Data Sources

The primary data source for this article is the mutual fund database maintained by the Center for Research in Security Prices (CRSP) at the University of Chicago. This database, which covers the period from 1962 through 1998, is essentially free of the survivorship bias that plagues most studies of mutual fund performance. Since data for funds that died during the sample period are included in the database, the resulting fund performance statistics provide a clear picture of performance for the various investment styles. See Carhart (1997) for a discussion of the construction of this database.

In addition to the data from the CRSP mutual fund database, this study also uses the monthly factor realizations from the Fama-French (1993) three-factor model. These factor realizations are calculated using the Davis, Fama and French (2000) database.

Sample Selection

The tests in this study examine the performance of equity mutual funds. Two criteria are used to select equity funds from the more general set of mutual funds in the CRSP database. If a fund's stated objective is growth, growth and income, maximum capital gains, small capitalization growth, or aggressive growth, it is classified as an equity fund and included in the sample. A fund is also included if its objective is not listed, but its policy statement indicates that it invests primarily in common stock.

The sample includes 4,686 funds, covering 26,564 fund-years from 1962 to 1998. In other words, there are 26,564 instances where a fund is classified as an equity fund and has at least one valid monthly return during the calendar year. The median of the equity weights for these 26,564 fund-years is 93%, so the sample selection process does identify funds that are primarily equity portfolios.

Style Identification

The Fama-French three-factor model is used to infer a fund's investment style. For each fund, thirty-six monthly returns are used to estimate the following regression:

$$R_{it} - R_{ft} = a_i + b_i (R_{mt} - R_{ft}) + s_i \text{SMB}_t + h_i \text{HML}_t + e_{it},$$

where R_{it} is the return (in percent) to fund i for month t , R_{ft} is the T-Bill return for month t , R_{mt} is the return to the CRSP value weighted index for month t , SMB_t is

the realization on the capitalization factor (small-cap return minus large-cap return) for month t , and HML_t is the realization on the value factor (value return minus growth return) for month t . Small stocks tend to have a positive loading on SMB (a positive slope, s_i) and big stocks tend to have a negative loading. Similarly, a positive estimate of h_i indicates sensitivity to the value factor, and a negative estimate indicates a growth tilt. Thus, funds are identified as small-cap or large-cap based on their estimated SMB slopes, s_i , and funds are sorted into value and growth based on their HML slopes, h_i . The intercept, sometimes referred to as Alpha, is a measure of performance relative to the three-factor benchmark.

Portfolio Formation

Funds are placed in style portfolios at the beginning of each year from 1965-1998. At the beginning of 1965, for example, returns for the previous 36 months (1962-1964) are used to estimate pre-formation slopes on the HML and SMB factors. Based on these pre-formation slopes, funds with similar styles are allocated into portfolios, and then equally weighted portfolio returns are calculated for each month of 1965. The portfolios are re-formed each year.

Univariate SMB and HML sorts are used to form decile portfolios, and bivariate sorts are used to form portfolios based on the intersection of the HML and SMB rankings. In these bivariate sorts, a 3x3 partitioning of the funds is created: Funds are divided into thirds based on their SMB ranking (low, medium, and high SMB sensitivity), and into thirds based on their HML ranking. This 3x3 partitioning produces nine portfolios at the beginning of the year. For example, a fund that is in the top third of the SMB ranking and the bottom third of the HML ranking is placed in the high SMB, low HML (small growth) portfolio.² The portfolios do not change during the year, except for funds that cease to exist during the year. Repeating this process for each year yields a time series of 408 equally weighted monthly returns (1965-1998) for each portfolio.

The tests for performance persistence use portfolios that are formed from bivariate sorts on HML and Alpha, and on SMB and Alpha. In each case, a 3x3 partitioning of the funds is created, with each of the independent sorts divided into thirds. Then portfolios are formed based on the intersections of these independent rankings. For example, the low HML, low Alpha portfolio consists of funds that are in the bottom third of the pre-formation HML ranking and the bottom third of the pre-formation Alpha (intercept) ranking. This portfolio would then consist of funds that had a growth emphasis during the pre-formation period and performed relatively poorly, when compared to the three-factor benchmark.

² The main advantage of using independent SMB and HML sorts (instead of conditional sorts) is the simultaneous dispersion that is attained in both of the sorts. The disadvantage of this procedure is the fact that the nine portfolios do not all contain the same number of funds. On average, the low HML, high SMB portfolio is the largest, with an average of 77.6 funds. The medium HML, high SMB portfolio tends to be the smallest, with an average of 45.3 funds.

Tests for Abnormal Returns

In addition to being used on pre-formation returns to infer fund style, the Fama-French three-factor model is also used on post-formation returns to identify abnormal performance. The time series of equally weighted returns for each portfolio is used in the three-factor regression model, with the intercept measuring abnormal performance. A positive intercept suggests superior performance and a negative intercept suggests under-performance, relative to the three-factor benchmark.

The three-factor model is chosen as the performance benchmark for two reasons. First, Davis, Fama and French (2000) provide evidence that the three factors have explanatory power for security returns because they are associated with risk. If the factors do measure risk, then they should be compensated in the average returns earned by fund managers. Second, regardless of one's beliefs about what HML and SMB measure, the premiums associated with these factors can be earned by a passive strategy of buying a diversified portfolio of stocks with a desired level of sensitivity to the factors. If active fund management has economic value, active managers should be able to outperform such a passive strategy.

Results for Style-Based Portfolios*Portfolios Formed by Univariate Sorts*

Table 1 reports three-factor regression results for funds sorted by pre-formation HML slopes. Panel A shows average pre-formation slopes for each HML decile, and Panel B shows regression results for equally weighted decile returns. In Panel B, the high values for R^2 , coupled with the magnitudes of the t-statistics on the regressors, indicate that the three-factor model captures much of the variation in decile returns. Since the regression coefficients are measured with error, the spread on the HML slopes between extreme deciles is much smaller in the post-formation regressions than in the pre-formation averages. However, post-formation HML coefficients are still monotonic across deciles, suggesting that the sorting procedure is able to identify the funds that tend to have a value or growth emphasis. It should be noted that the post-formation HML coefficient for decile 10 is only 0.20. This indicates that even the funds in the top HML decile do not have much of an exposure to the value factor. Funds appear to be reluctant to fill their portfolios with value stocks.³

The intercepts in Table 1 indicate that growth funds tend to perform better than value funds during the 1965-1998 sample period, relative to the three-factor benchmark. In both panels, the intercepts for the first five deciles are mostly positive, while the intercepts for deciles 6-10 are nearly all negative. The only post-formation intercept that is reliably different from zero is the estimate of -0.23 for decile 10.

³ Chan, Chen, and Lakonishok (1999) also report a tendency for mutual funds to favor growth stocks.

This intercept indicates that the funds in HML decile 10 underperformed the three-factor benchmark by about 2 3/4% per year, on average. So, Table 1 does provide at least some evidence of abnormal performance, but it is negative performance on the part of funds with the most value tilt.

Table 1

**Three-Factor Results for Deciles of Mutual Funds
Formed from HML Sorts
1965-1998
(*t*-statistics in parentheses)**

Panel A: Pre-formation averages by decile

HML Decile	Intercept	Rm-Rf	SMB	HML
1	0.17	0.83	0.46	-0.81
2	0.08	0.90	0.31	-0.43
3	0.07	0.90	0.24	-0.29
4	0.03	0.91	0.22	-0.18
5	0.02	0.89	0.17	-0.09
6	-0.01	0.89	0.14	-0.01
7	-0.05	0.85	0.16	0.07
8	-0.05	0.87	0.16	0.16
9	-0.07	0.85	0.18	0.28
10	-0.30	0.91	0.28	0.75

Panel B: Post-formation regression coefficients

HML Decile	Intercept	Rm-Rf	SMB	HML	R-Sq
1	0.13 (1.76)	1.03 (56.59)	0.45 (17.43)	-0.45 (-15.08)	0.94
2	0.04 (0.80)	0.98 (71.18)	0.29 (14.61)	-0.31 (-13.59)	0.96
3	0.04 (0.86)	0.95 (91.22)	0.23 (15.71)	-0.25 (-14.64)	0.97
4	0.03 (0.76)	0.94 (95.99)	0.23 (16.11)	-0.16 (-10.17)	0.97
5	-0.05 (-1.41)	0.92 (96.97)	0.17 (12.93)	-0.10 (-6.73)	0.97
6	-0.04 (-1.03)	0.93 (109.39)	0.16 (13.43)	-0.05 (-3.49)	0.98
7	-0.03 (-0.89)	0.87 (90.30)	0.17 (12.55)	0.02 (1.54)	0.97
8	0.01 (0.35)	0.87 (84.34)	0.20 (13.60)	0.04 (2.59)	0.96
9	-0.04 (-1.12)	0.86 (93.76)	0.22 (17.05)	0.15 (9.94)	0.97
10	-0.23 (-2.75)	0.83 (40.20)	0.40 (13.52)	0.20 (5.95)	0.86

Table 2 shows regression results for funds sorted by pre-formation SMB slopes. As in Table 1, the explanatory variables are strongly related to decile returns, and the R^2 values are close to 1. Most of the post-formation intercepts are negative, and none are reliably different from zero. There is no evidence of abnormal performance for any of these portfolios. The three-factor model does a good job explaining the returns to these deciles.

Table 2

**Three-Factor Results for Deciles of Mutual Funds
Formed from SMB Sorts
1965-1998
(*t*-statistics in parentheses)**

Panel A: Pre-formation averages by decile

SMB Decile	Intercept	Rm-Rf	SMB	HML
1	0.05	1.00	-0.44	0.08
2	0.02	0.88	-0.15	-0.02
3	0.01	0.87	-0.05	-0.03
4	0.01	0.87	0.03	-0.03
5	-0.01	0.88	0.11	-0.03
6	-0.01	0.88	0.20	-0.07
7	0.02	0.90	0.32	-0.08
8	0.01	0.89	0.47	-0.11
9	0.00	0.86	0.66	-0.16
10	-0.21	0.78	1.14	-0.08

Panel B: Post-formation regression coefficients

SMB Decile	Intercept	Rm-Rf	SMB	HML	R-Sq
1	-0.12 (-1.69)	0.91 (53.95)	-0.03 (-1.15)	0.01 (0.09)	0.90
2	-0.05 (-1.52)	0.89 (100.47)	0.01 (0.10)	-0.03 (-2.31)	0.97
3	-0.03 (-0.79)	0.89 (110.97)	0.05 (4.02)	-0.04 (-3.03)	0.98
4	-0.02 (-0.67)	0.90 (103.19)	0.08 (6.77)	-0.04 (-2.76)	0.97
5	-0.02 (-0.65)	0.91 (111.18)	0.12 (10.02)	-0.07 (-5.16)	0.98
6	0.01 (0.20)	0.90 (95.49)	0.19 (14.30)	-0.08 (-5.33)	0.97
7	-0.01 (-0.25)	0.92 (86.34)	0.31 (20.31)	-0.12 (-6.66)	0.97
8	0.01 (0.15)	0.92 (73.56)	0.44 (24.74)	-0.15 (-7.25)	0.96
9	0.02 (0.35)	0.96 (67.91)	0.56 (27.61)	-0.19 (-8.38)	0.96
10	-0.06 (-0.76)	0.97 (50.11)	0.76 (27.66)	-0.19 (6.09)	0.93

Portfolios Formed by Independent HML and SMB Sorts

Regression results for portfolios formed by independent HML and SMB sorts are shown in Table 3. The first row in each panel shows results for funds that have low sensitivity to both the SMB and HML factors. This portfolio corresponds to a large growth style. The bottom row shows results for funds that have high sensitivity to both factors. The inferred style for these funds is small value. The other rows show different combinations of sensitivities to these two factors.

Table 3

**Three-Factor Results for Portfolios of Mutual Funds
Formed from Independent SMB and HML Sorts
1965-1998
(*t*-statistics in parentheses)**

Panel A: Pre-formation averages

SMB Decile	HML Ranking	Intercept	Rm-Rf	SMB	HML
low	low	0.20	0.89	-0.18	-0.41
low	med	0.03	0.89	-0.16	-0.05
low	high	-0.11	0.92	-0.22	0.36
med	low	0.12	0.92	0.17	-0.42
med	med	-0.01	0.87	0.16	-0.05
med	high	-0.10	0.85	0.16	0.28
high	low	0.03	0.85	0.73	-0.55
high	med	-0.02	0.90	0.64	-0.06
high	high	-0.20	0.82	0.75	0.43

Panel B: Post-formation regression coefficients

SMB Decile	HML Ranking	Intercept	Rm-Rf	SMB	HML	R-Sq
low	low	0.01 (0.21)	0.94 (76.81)	0.03 (1.96)	-0.22 (-10.89)	0.96
low	med	-0.05 (-1.59)	0.90 (107.93)	-0.02 (-1.73)	-0.04 (-2.96)	0.97
low	high	-0.09 (-1.86)	0.85 (68.29)	0.04 (2.48)	0.15 (7.50)	0.93
med	low	0.08 (1.61)	0.96 (76.03)	0.20 (11.33)	-0.32 (-15.29)	0.96
med	med	-0.03 (-0.92)	0.91 (104.98)	0.15 (12.04)	-0.08 (-5.41)	0.98
med	high	-0.02 (-0.66)	0.86 (96.68)	0.16 (12.88)	0.12 (8.50)	0.97
high	low	0.05 (0.80)	1.01 (60.27)	0.57 (23.90)	-0.37 (-13.48)	0.95
high	med	-0.03 (-0.66)	0.95 (76.40)	0.53 (29.60)	-0.13 (-6.33)	0.96
high	high	-0.08 (-1.20)	0.87 (51.24)	0.56 (23.25)	0.08 (2.83)	0.92

None of the post-formation intercepts in Panel B of Table 3 are reliably different from zero. The largest intercept in absolute terms is the estimate of -0.09 for the large value style (high HML sensitivity coupled with low SMB sensitivity). This point estimate corresponds to under-performance of about 1.1% per year, but since the intercept is only 1.86 standard errors from zero, the abnormal performance is not consistent. Although none of the style portfolios in Table 3 show evidence of reliable abnormal performance, there is a clear tendency for value funds to underperform growth funds, when SMB sensitivity is held constant. For all three levels of SMB sensitivity, the post-formation intercept for the high-HML portfolio is at least 10 basis points below the intercept for the corresponding low-HML portfolio.

The main result from Tables 1-3 is the poor performance of value funds over the past 30-plus years. The performance of HML decile 10 is dismal when compared to the three-factor benchmark.

Portfolios formed by SMB/Alpha and HML/Alpha Sorts

Table 4 reports three-factor regression results for the nine portfolios formed from independent sorts on pre-formation HML slopes and pre-formation intercepts. Panel A contains the pre-formation averages for each portfolio, while Panel B presents the post-formation regression coefficients. Panel C shows regression results for the portfolios one year after formation. (For example, the returns to the nine portfolios for 1966 are based on portfolio composition at the beginning of 1965.) By comparing the three panels of Table 4, the reader can assess the magnitude and duration of performance persistence for different levels of HML sensitivity.

Table 4

**Three-Factor Results for Portfolios of Mutual Funds
Formed by Independent HML and Alpha Sorts
1965-1998
(*t*-statistics in parentheses)**

Panel A: Pre-formation averages

HML Ranking	Alpha Ranking	Intercept	Rm-Rf	SMB	HML
low	low	0.20	0.89	-0.18	-0.41
low	low	-0.65	0.79	0.43	-0.48
low	med	-0.01	0.92	0.24	-0.40
low	high	0.65	0.93	0.30	-0.50
med	low	-0.50	0.90	0.24	-0.05
med	med	-0.01	0.88	0.09	-0.05
med	high	0.50	0.89	0.20	-0.06
high	low	-0.72	0.85	0.27	0.42
high	med	-0.01	0.85	0.12	0.26
high	high	0.64	0.90	0.25	0.41

Panel B: Post-formation regression coefficients

HML Ranking	Alpha Ranking	Intercept	Rm-Rf	SMB	HML	R-Sq
low	low	-0.07 (-1.18)	0.97 (61.68)	0.34 (15.32)	-0.26 (-9.98)	0.94
low	med	0.08 (1.73)	0.98 (81.42)	0.25 (14.27)	-0.31 (-15.64)	0.97
low	high	0.14 (2.30)	0.99 (65.28)	0.37 (17.17)	-0.36 (-14.56)	0.95
med	low	-0.10 (-2.29)	0.93 (86.87)	0.21 (13.93)	-0.07 (-3.82)	0.97
med	med	-0.01 (-0.34)	0.91 (124.18)	0.11 (10.02)	-0.06 (-5.21)	0.98
med	high	0.01 (0.18)	0.91 (87.04)	0.25 (16.93)	-0.11 (-6.18)	0.97
high	low	-0.11 (-1.87)	0.86 (59.58)	0.30 (14.65)	0.16 (6.64)	0.93
high	med	-0.03 (-0.79)	0.85 (102.03)	0.14 (11.67)	0.11 (8.28)	0.97
high	high	-0.08 (-1.32)	0.85 (54.74)	0.34 (15.38)	0.07 (2.91)	0.92

Panel C: Regression coefficients one year after ranking

HML Ranking	Alpha Ranking	Intercept	Rm-Rf	SMB	HML	R-Sq
low	low	-0.12 (-2.04)	0.96 (67.51)	0.33 (16.09)	-0.22 (-9.33)	0.95
low	med	-0.03 (-0.67)	0.99 (84.34)	0.21 (12.52)	-0.29 (-14.84)	0.97
low	high	0.05 (0.85)	0.99 (68.78)	0.33 (16.06)	-0.35 (-14.82)	0.96
med	low	-0.04 (-0.76)	0.92 (81.05)	0.22 (13.25)	-0.10 (-5.53)	0.96
med	med	0.01 (0.33)	0.91 (121.73)	0.11 (10.22)	-0.07 (-5.36)	0.98
med	high	-0.01 (-0.24)	0.90 (90.90)	0.23 (16.32)	-0.11 (-6.91)	0.97
high	low	-0.06 (-0.90)	0.86 (56.53)	0.31 (14.13)	0.10 (4.20)	0.92
high	med	0.01 (0.11)	0.86 (108.92)	0.14 (12.22)	0.10 (7.74)	0.98
high	high	-0.04 (-0.78)	0.84 (63.36)	0.28 (14.63)	0.04 (1.92)	0.94

In Panel A, the spread in intercepts between low Alpha and high Alpha portfolios is at least one percent per month for all three levels of HML sensitivity. In Panel B, the spreads narrow dramatically, although the ranking across Alpha portfolios is preserved for both the low HML portfolios and the medium HML portfolios. For the high HML portfolios, all three intercepts in Panel B are negative, confirming the fact that value funds have not done well in recent years. Two of the intercepts

in Panel B are more than two standard errors from zero, and one of these is positive. The point estimate of 0.14 for the low HML, high Alpha portfolio corresponds to abnormal performance of about 1.7% per year. Although this abnormal performance disappears in Panel C, the evidence from Table 4 suggests that some growth managers have been able to maintain good performance over short horizons.

Results for the nine SMB/Alpha portfolios are shown in Table 5. Similar to Table 4, the spreads in average pre-formation intercepts are large for all three levels of SMB sensitivity. In Panel B, only the high SMB portfolios maintain the same ordering of intercepts across Alpha portfolios. Although the ranking for these portfolios remains the same, the spread in intercepts falls dramatically. In Panel A, there is a difference of nearly 1.5% between the high SMB, high Alpha portfolio and the high SMB, low Alpha portfolio. In Panel B, that spread falls to less than 25 basis points. One year later (Panel C), the spread is less than 10 basis points. So, while there is some evidence of persistence among funds with a small-cap emphasis, the persistence dies out fairly quickly. Further, the only intercept in Panel B that is reliably different from zero is the estimate of -0.13 for the high SMB, low Alpha portfolio. This estimate indicates that much of the persistence among small-cap managers is due to persistence among the poor performers.⁴ It is also worth noting that the best performing portfolio in Panel C has an intercept of 0.01.

Table 5

**Three-Factor Results for Portfolios of Mutual Funds
Formed by Independent SMB and Alpha Sorts
1965-1998
(*t*-statistics in parentheses)**

Panel A: Pre-formation averages

SMB Ranking	Alpha Ranking	Intercept	Rm-Rf	SMB	HML
low	low	0.20	0.89	-0.18	-0.41
low	low	-0.55	0.92	-0.21	0.14
low	med	-0.01	0.88	-0.14	-0.01
low	high	0.54	0.90	-0.21	-0.10
med	low	-0.50	0.90	0.17	0.02
med	med	-0.01	0.88	0.15	-0.04
med	high	0.51	0.86	0.17	-0.15
high	low	-0.79	0.79	0.77	-0.05
high	med	-0.01	0.89	0.62	-0.13
high	high	0.69	0.93	0.70	-0.15

⁴ At least part of the performance persistence for the worst performing small-cap funds is due to the high expense ratios for these funds. Of the nine portfolios in Table 5, the high SMB, low Alpha portfolio has the highest average expense ratio (1.33%). The next highest average expense ratio is 1.18% for the medium SMB, low Alpha portfolio. See Carhart (1997) for an analysis of the relationship between performance persistence and expense ratios.

Panel B: Post-formation regression coefficients

SMB Ranking	Alpha Ranking	Intercept	Rm-Rf	SMB	HML	R-Sq
low	low	-0.11 (-1.85)	0.90 (59.96)	0.05 (2.24)	0.04 (1.65)	0.92
low	med	-0.01 (-0.23)	0.89 (121.22)	-0.04 (-3.46)	-0.03 (-2.25)	0.98
low	high	-0.04 (-0.98)	0.90 (81.82)	0.04 (2.69)	-0.10 (-5.41)	0.96
med	low	-0.05 (-1.12)	0.88 (83.79)	0.19 (12.44)	-0.02 (-1.19)	0.96
med	med	-0.01 (-0.17)	0.92 (121.02)	0.14 (13.19)	-0.07 (-5.32)	0.98
med	high	-0.01 (-0.18)	0.92 (80.14)	0.21 (12.70)	-0.15 (-8.03)	0.96
high	low	-0.13 (-2.17)	0.94 (64.97)	0.58 (27.94)	-0.10 (-4.28)	0.95
high	med	0.01 (0.09)	0.95 (72.62)	0.49 (25.95)	-0.17 (-8.00)	0.96
high	high	0.10 (1.53)	0.96 (60.31)	0.59 (26.15)	-0.21 (-8.23)	0.95

Panel C: Regression coefficients one year after ranking

SMB Ranking	Alpha Ranking	Intercept	Rm-Rf	SMB	HML	R-Sq
low	low	-0.07 (-1.18)	0.88 (62.18)	0.09 (4.21)	0.03 (1.11)	0.93
low	med	-0.02 (-0.52)	0.89 (120.85)	-0.01 (-1.19)	-0.03 (-2.54)	0.98
low	high	-0.01 (-0.19)	0.89 (81.17)	0.06 (4.14)	-0.10 (-5.60)	0.96
med	low	-0.05 (-0.99)	0.90 (77.12)	0.18 (10.90)	-0.06 (-2.93)	0.96
med	med	-0.01 (-0.20)	0.92 (116.32)	0.13 (11.52)	-0.06 (-4.75)	0.98
med	high	0.01 (0.20)	0.91 (81.47)	0.19 (11.74)	-0.15 (-8.42)	0.96
high	low	-0.06 (-0.96)	0.94 (64.21)	0.53 (25.50)	-0.10 (-4.16)	0.95
high	med	-0.02 (-0.47)	0.96 (74.79)	0.45 (24.12)	-0.16 (-7.58)	0.96
high	high	0.01 (0.19)	0.98 (71.24)	0.52 (26.24)	-0.23 (-10.34)	0.96

Conclusions

The results of this study are not good news for investors who purchase actively managed mutual funds. No investment style generates positive abnormal returns over the 1965-1998 sample period. Although there is some evidence of performance persistence among the best performing growth funds, this abnormal performance is not sustainable beyond one year. The finding of performance persistence among poor performing small-cap managers is similar to the results of Quigley and Sinquefeld (2000) for unit trusts in the UK. Apparently, the persistence of poor performance among small-cap managers is not just a problem for U.S. investors.

In Tables 1-5, t-statistics are shown for 65 different regression intercepts. Even if fund managers are unable to add any value at all, we would still expect to see about three of these intercepts more than two standard errors from zero, just by chance. In fact, there are five. So, while there is not much evidence of abnormal performance, there is more than we would expect to see if the null hypothesis of no abnormal performance were absolutely true. For investors, the troubling aspect of these results is that four of the five “significant” intercepts are negative.

Perhaps the biggest disappointment over the past three decades is the inability (or unwillingness) of funds to capture the value premium that is observed in common stock returns during this period. When funds are ranked by their sensitivity to the value factor (HML), even the extreme decile does not have much of a value tilt. Further, these funds that have at least a small sensitivity to the value factor are the poorest performers. Two questions immediately come to mind. First, why were there not more fund managers who were willing to own value stocks during a period when value stocks had higher average returns? Second, why did the funds that had at least some value exposure perform so poorly? The answers to these questions are not obvious. Neither is the economic benefit to active fund management.

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