

The Career Paths of Mutual Fund Managers: The Role of Merit

Gary E. Porter and Jack W. Trifts

This study provides evidence that merit—specifically, performance relative to peers measured on a style-adjusted basis—plays a significant role in the length of a mutual fund manager’s career. Managers who underperform their peers are more likely to lose their jobs. However, surviving managers of any tenure—even those who manage their funds for 10 or more years—generally do not outperform the market or their style benchmarks and do not display consistently superior performance.

Although there is extensive literature on the performance of mutual funds, there is much less research on the performance of managers who run actively managed funds. There is substantial evidence that as a whole, actively managed mutual funds do not outperform passive strategies. Indeed, French (2008) provided evidence that typical investors could improve their annual returns by an average of 67 bps by moving from an active strategy to a passive strategy. There is, however, evidence that a very small proportion of mutual fund managers may possess superior stock-picking ability.

In this study, we sought to extend the literature on the performance of managers by addressing a simple question: What is the role of merit in the careers of mutual fund managers? If the labor market for mutual fund managers functions as it does for other professionals—for example, professional athletes and cardiac surgeons—one should expect that managers with greater skill will outperform those with less skill and enjoy longer careers. However, although it is obvious that professional athletes and cardiac surgeons possess specialized skills that far exceed those of the general population, it is less clear whether mutual fund managers possess superior skills in stock selection. The literature suggests that a very small subset of managers may possess skills that enable them to consistently outperform the market or their peers, but most managers do not possess such skills. How does the labor market function given that the majority

of managers do not possess particular skill at their jobs? Do managers keep their jobs because of random superior performance, while managers with random inferior performance lose theirs? Further, do managers with superior performance early in their careers develop reputations that protect them from dismissal for poorer performance later in their careers?

We address these questions by focusing on the careers of mutual fund managers who are in sole control of their funds. We examine their funds’ performance during the time they are listed as being in sole control and look for changes in performance that might explain why they lose sole control.

Literature

Much of the literature focuses on the aggregate performance of mutual funds themselves, without regard to their managers. Fama and French (2007) studied mutual fund performance from 1984 to 2006 and documented that mutual funds underperformed the broad market by an amount approximately equal to their expense ratios. They noted that if there are managers with superior skill, they are almost impossible to identify in a universe of managers with insufficient skill. Other studies, however, have suggested that a very small subset of managers do possess superior skills. Kosowski, Timmermann, Wermers, and White (2006) documented performance persistence for a small but significant minority of funds. Barras, Scaillet, and Wermers (2010) noted that some funds may appear to have significant alphas as a result of random performance, and they developed a model to distinguish true positive alphas from randomly occurring ones. They found evidence of an extremely small number of funds with true positive alphas.

Gary E. Porter is associate professor of finance at the Boler School of Business, John Carroll University, University Heights, Ohio. Jack W. Trifts is professor of finance at the College of Business, Bryant University, Smithfield, Rhode Island.

There are a limited number of studies that focus on the performance of individual managers. Khorana (1996) found an inverse relationship between manager performance and the probability of manager replacement. In a subsequent study, Khorana (2001) found that the replacement of underperforming managers resulted in a significant improvement in fund performance compared with pre-replacement fund performance. He also documented a reduction in fund riskiness following the replacement of managers—a change that is consistent with underperforming managers attempting to make up for poor prior performance and to avoid losing their jobs by taking on more risk. Kempf, Ruenzi, and Thiele (2009) studied this phenomenon by looking at the incentives faced by mutual fund managers. They explained that mutual fund managers face two types of incentives—compensation incentives and employment incentives. That is, managers want to maximize their compensation, but they also want to keep their jobs. Kempf et al. noted that the combination of these two incentives results in managers taking different levels of risk, depending on their performance. Underperforming managers whose employment may be at risk have incentives to increase the riskiness of their portfolios in an attempt to catch up. In contrast, outperforming managers may be more conservative to protect their positions. Kempf et al. assigned winner or loser status to managers on the basis of their relative performance (rank) rather than absolute performance.

Porter and Trifts (2012) documented that there are a small number of very skilled managers who are able to outperform the market and their peers over long periods of time. However, they also found evidence of an inverse relationship between average annual performance and tenure. Their evidence suggests that managers with longer tenure are likely to be those with randomly occurring positive results early in their careers. The longer they manage, the greater the opportunity for mean reversion—thus the inverse relationship between overall performance and tenure. Porter and Trifts (1998) also found evidence of mean reversion at play in the performance ranks of 93 “solo” managers over a 10-year period. Using style-adjusted rankings, they found that successful performance in the first five years is not predictive of success in the subsequent five years. Top-ranked funds in the first period tended to become lower ranked in the second period, and vice versa. The one exception was the low-ranked funds with the highest expense ratios, which showed persistently low rankings.

Some studies have focused on the labor market for managers. Chevalier and Ellison (1999) studied the careers of mutual fund managers over the period 1992–1994. They found that managers who were early in their careers were more likely to be terminated for poor performance than managers with longer tenure. They also found that young managers were more likely to be terminated if their sector weightings or nonsystematic risk levels deviated significantly from those of the fund group. They explained that this phenomenon leads managers to “herd” into popular sectors to avoid performance that differs significantly from that of their peers. Their results show that relative performance versus a fund’s peer group is more important than absolute performance or performance relative to the overall market. This finding is consistent with the results of Brown, Goetzmann, and Park (2001), who examined the careers of hedge fund and commodity trading advisers over the period 1989–1998. They found that although these managers have a compensation structure that typically differs from that of mutual fund managers, relative performance was still more important than absolute performance in explaining fund survival and the continued employment of these managers.

Data and Methodology

Our dataset was provided by Morningstar, and it includes the population of mutual fund managers and funds for which return data were available from 1928 through 2008. Because our dataset covers all managers and funds for which Morningstar has data, including closed and merged funds, it should be survivorship bias free. However, Elton, Gruber, and Blake (2001) noted that owing to missing and incomplete data, particularly in earlier periods, the data may still be subject to survivorship bias that affects performance measurement. Brown, Goetzmann, Ibbotson, and Ross (1992) demonstrated that studies with samples that contain only funds (or, by implication, managers) that survived over the sample period could appear to show performance persistence where none actually existed. Additionally, Barras et al. (2010) found systematic differences in performance in data before 1996. Therefore, we restricted our sample to returns after 1995,¹ although our sample includes managers whose careers began prior to 1996. For each fund in the sample, we eliminated all but the oldest share class and removed bond funds, index funds, specialty funds, and target date funds. We used only the oldest share class because Morningstar lists returns for each share class individually and most

funds are offered in a variety of configurations of sales loads, fees, and so on. The sample contains 2,846 funds and 1,825 managers.

Our dataset includes the returns of both active and closed/merged funds. Linnainmaa (2013) argued that the circumstances that lead to the disappearance of funds result in reverse survivorship bias. He asserted that funds disappear when their estimated alphas decline to a level that causes investors to abandon them. Because the true alpha is unobservable, investors estimate alpha on the basis of fund returns. Funds with randomly occurring poor short-term performance may be abandoned by investors even though their true, unobservable alphas are higher than the threshold that should result in their demise. As a result, the inclusion of closed funds may result in an underestimation of the true average alpha for all funds. Traditional survivorship bias and reverse survivorship bias operate in opposite directions, and Linnainmaa noted that there is no simple resolution to the problem. We acknowledge this potential bias but did not control for it. Furthermore, Elton et al. (2001) discussed the potential for an omission bias that may result if poor-performing funds have a higher rate of missing return data. Because the impact of nonexistent missing data is impossible to measure, we acknowledge but do not otherwise address this potential bias. Restricting our sample to post-1995 data may lessen its effects. Our test sample includes only the nine Morningstar styles and consists of 2,651 solo-managed funds whose tenure ended within 9 years and 195 solo-managed funds with tenure of 10 or more years—a total sample size of 2,846. We included only the nine styles because prior research has shown that relative performance is more important than absolute performance in measuring the success or failure of mutual fund managers, and as a result, our primary measure of performance in this study is relative performance against other managers in the same style of fund. Restricting our sample to the nine styles also allowed us to avoid including recently created specialty funds with shorter tenures.

We restricted our sample to funds with one manager in order to isolate individual performance. We did include managers with more than one fund under management, so the sample size represents the number of solo-managed funds, not unique managers. **Table 1** shows the distribution of the sample based on years of tenure. Longevity is clearly not a hallmark of the career of the typical solo mutual fund manager; 18.80% of all solo managers managed their funds for one year or less, and more than three-quarters (76.95%) lasted no more than five years. Only 6.85% of managers in

the sample continued to manage their funds after 10 years.

Table 1. Distribution of Sample Based on Number of Years (or Partial Years) of Tenure as Manager

Years as Solo Manager	No. of Managers/Funds	Proportion
1	535	18.80%
2	551	19.36
3	492	17.29
4	364	12.79
5	248	8.71
6	183	6.43
7	124	4.36
8	90	3.16
9	64	2.25
10 or more years	195	6.85
Total	2,846	100.00%

Our focus is on solo managers and the point in time when they cease to be listed by Morningstar as being in sole control of their funds. We acknowledge that the loss of sole control by a manager of a fund can be a function of many factors, including but not limited to performance. We addressed the issue of manager reassignment in this study and eliminated departures caused by merged or closed funds, but other factors may include retirement, a board's change in investment strategy, and reasons not related to performance—including manager health, a change in career, or a switch from solo management to team management. Our objective was to investigate strictly the impact of performance. Future studies may investigate the role of performance while controlling for other factors.

As previously noted, our primary performance measure was performance relative to other managers of the same style of fund. We obtained this measure by comparing each fund's monthly return with the average return of all funds with the same Morningstar style and calculating a style-adjusted monthly return. We geometrically accumulated returns over periods of one year or longer from these style-adjusted monthly returns. We recognized, however, that the results may have been affected by the performance metric selected, and therefore, for robustness, we repeated our tests with performance measured using the Carhart (1997) four-factor model and the Jensen (1968) single-factor model.

Long-run performance can be driven by large gains or losses in one or more months or years. That is, a higher cumulative style-adjusted return does not imply consistently higher performance over time because exceptionally high returns in a single

month could account for most of the superior performance. Because we also wanted to observe the consistency of performance over time, we included our second metric: monthly relative performance. We measured monthly relative performance for each manager by ranking all managers in a given month by their style-adjusted monthly return and then assigned each return a decile rank from 1 to 10, with 1 being the poorest relative performance in that month and 10 being the best. The biggest impact of this second metric was that it shortened the tails of the distribution. Because the best or worst a manager can achieve in a given month is a ranking in the 10th or 1st decile, respectively, the impact of outliers—that is, exceptionally high or low returns—on the performance of a group in a given month was reduced.

Results

Table 2 and **Table 3** show the performance of all solo-managed mutual funds based on manager tenure. **Table 2** shows the average style-adjusted return in each year for managers whose tenure was greater than T years and less than or equal to $T + 1$ years and compares it with the average style-adjusted return in the same year for managers whose careers lasted at least 10 years (10-year+ managers). For example, the 535 solo-managed funds whose managers' tenure was no longer than 1 year earned an average style-adjusted return of -0.074% , which is a statistically significant 0.273% less than the first-year style-adjusted earnings of managers who went on to manage their funds for at least 10 years. The performance of the 551 solo-managed funds whose managers' tenure exceeded 1 year but was no longer than 2 years was statistically significantly less than that of the 10-year+ managers during both their first and second (last) years, and the level of underperformance increased from a significant 0.247% in Year 1 to 0.611% in their final year. For managers whose careers lasted more than 2 years but no more than 3 years, the underperformance was statistically significantly less than that of the 10-year+ managers in each of the first 3 years.

The results in **Table 2** show a clear pattern. Management turnover seems, at least in part, related to performance. In every case, the performance of 10-year+ managers exceeds the performance of managers in their final year of tenure by a statistically significant amount. Chevalier and Ellison (1999) found that managers who were early in their careers were more likely to be terminated for poor performance than those with longer tenures. Our findings provide additional insight into the early careers of mutual fund managers.

Consistent with Chevalier and Ellison, we found a high rate of early-career turnover, as shown in **Table 1**. Note, however, that there seems to be a grace period during which underperformance is tolerated for at least some early-career managers. As shown in **Table 2**, 2-year managers, as a group, underperformed the 10-year+ managers by statistically significant amounts in both their first and second years. Similarly, 3-year managers, as a group, significantly underperformed the 10-year+ managers in each of their first 3 years. Furthermore, note that in seven of the nine rows in **Table 2**, the shorter-term managers underperformed the 10-year+ managers in their last 2 years. Our methodology does not directly address whether performance is the result of skill or luck, but it is clear that avoiding multiple years of poor performance is an important determinant of longevity for a mutual fund manager.

Table 3 shows the proportion of positive style-adjusted monthly returns for each group of managers for each year of their tenure. It shows how often during each year of tenure each group outperformed their peers and whether each group was more successful than the 10-year+ group. The performance of managers without superior skill should be random, and thus, in any time period, they should be equally likely to outperform or underperform their peers. Therefore, the expected proportion of positive style-adjusted returns is 50%. However, skilled managers should outperform more than 50% of the time and significantly more often than their peers. Without exception, the proportions of positive style-adjusted monthly returns for managers in their final year of tenure were below 50%, and all but one- and five-year managers' proportions were statistically significant at the 0.05 level (indicated in bold), based on a binomial test. Also, in their final year as solo manager, except for managers whose tenure lasted 1 year or less, managers with tenure of 9 years or less underperformed managers whose careers lasted 10 years or more by a statistically significant amount.

Perhaps the most interesting observation from **Table 3** is the relative lack of consistent positive performance by the 10-year+ managers. The bottom of **Table 3** shows the style-adjusted performance for each of the first 9 years of the 195 10-year+ managers. If there are managers with superior ability, one might expect them to be disproportionately represented in the group with the greatest longevity and, thus, the performance of these managers to result in a greater proportion of positive months than negative months. However, although the 10-year+ managers

Table 2. Differences in Style-Adjusted Monthly Performance: 10-Year+ Managers vs. Shorter-Tenure Managers, 1 January 1996–31 December 2008

	Year as Solo Manager								
	1	2	3	4	5	6	7	8	9
10+	0.199%								
$T \leq 1$	-0.074%								
Difference	0.273%								
<i>p</i> -Value	(0.0073)								
10+	0.199%	0.311%							
$1 < T \leq 2$	-0.048%	-0.300%							
Difference	0.247%	0.611%							
<i>p</i> -Value	(0.0145)	(0.0001)							
10+	0.199%	0.311%	0.075%						
$2 < T \leq 3$	-0.044%	-0.143%	-0.169%						
Difference	0.243%	0.454%	0.244%						
<i>p</i> -Value	(0.0152)	(0.0001)	(0.0101)						
10+	0.199%	0.311%	0.075%	0.173%					
$3 < T \leq 4$	0.003%	-0.043%	-0.098%	-0.294%					
Difference	0.196%	0.354%	0.173%	0.467%					
<i>p</i> -Value	(0.1070)	(0.0004)	(0.0644)	(0.0001)					
10+	0.199%	0.311%	0.075%	0.173%	0.119%				
$4 < T \leq 5$	0.001%	-0.030%	-0.085%	-0.118%	-0.117%				
Difference	0.198%	0.341%	0.160%	0.291%	0.236%				
<i>p</i> -Value	(0.4327)	(0.0023)	(0.0985)	(0.0025)	(0.0179)				
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%			
$5 < T \leq 6$	0.193%	0.142%	0.115%	0.003%	-0.150%	-0.395%			
Difference	0.006%	0.169%	-0.040%	0.170%	0.269%	0.408%			
<i>p</i> -Value	(0.9573)	(0.1307)	(0.6915)	(0.0818)	(0.0012)	(0.0001)			
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%	0.020%		
$6 < T \leq 7$	0.009%	0.050%	0.075%	0.003%	-0.138%	-0.140%	-0.211%		
Difference	0.190%	0.261%	0.000%	0.170%	0.257%	0.153%	0.231%		
<i>p</i> -Value	(0.1121)	(0.0336)	(0.9977)	(0.1319)	(0.0051)	(0.0762)	(0.0255)		
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%	0.020%	0.061%	
$7 < T \leq 8$	-0.024%	-0.137%	0.116%	0.108%	0.012%	-0.251%	-0.301%	-0.216%	
Difference	0.223%	0.448%	-0.041%	0.065%	0.107%	0.264%	0.321%	0.277%	
<i>p</i> -Value	(0.1603)	(0.0032)	(0.7628)	(0.6302)	(0.3503)	(0.0167)	(0.0060)	(0.0178)	
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%	0.020%	0.061%	0.033%
$8 < T \leq 9$	0.345%	0.281%	0.380%	-0.063%	-0.049%	0.090%	-0.108%	-0.239%	-0.459%
Difference	-0.146%	0.030%	-0.305%	0.236%	0.168%	-0.077%	0.128%	0.300%	0.492%
<i>p</i> -Value	(0.4354)	(0.8959)	(0.1326)	(0.1968)	(0.2595)	(0.5832)	(0.3046)	(0.0027)	(0.0001)

Notes: *p*-Values from a *t*-test are shown in parentheses. The "Difference" rows show the difference between the average monthly Morningstar style-adjusted returns of 195 managers with 10 or more years as solo manager and those of solo managers who left the sample after *T* years. Results that are statistically significant at the 0.05 level are in bold.

recorded proportions greater than 50% in 7 of the 9 years, they exceeded the 50% level by a statistically significant amount in only 3 of those years.

These results suggest that in a given year, even the longest-surviving solo managers are unlikely to produce significantly more positive style-adjusted

Table 3. Proportion of Months with Positive Style-Adjusted Returns: 10-Year+ Managers vs. Shorter-Tenure Managers, 1 January 1996–31 December 2008

	Year as Solo Manager								
	1	2	3	4	5	6	7	8	9
10+	51.43%								
$T \leq 1$	49.31%								
p -Value	(0.2905)								
10+	51.43%	55.37%							
$1 < T \leq 2$	48.50%	43.95%							
p -Value	(0.1270)	(0.0001)							
10+	51.43%	55.37%	52.73%						
$2 < T \leq 3$	49.13%	47.17%	46.83%						
p -Value	(0.2351)	(0.0001)	(0.0001)						
10+	51.43%	55.37%	52.73%	53.58%					
$3 < T \leq 4$	47.58%	47.85%	47.08%	44.50%					
p -Value	(0.0539)	(0.0001)	(0.0005)	(0.0001)					
10+	51.43%	55.37%	52.73%	53.58%	52.76%				
$4 < T \leq 5$	52.16%	49.02%	47.36%	48.14%	47.97%				
p -Value	(0.7981)	(0.0007)	(0.0019)	(0.0006)	(0.0067)				
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%			
$5 < T \leq 6$	53.57%	51.61%	52.07%	49.15%	46.77%	44.58%			
p -Value	(0.3312)	(0.0558)	(0.7195)	(0.0092)	(0.0003)	(0.0007)			
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%	49.26%		
$6 < T \leq 7$	48.37%	50.50%	50.38%	50.44%	45.20%	47.66%	43.37%		
p -Value	(0.2038)	(0.8535)	(0.2487)	(0.1004)	(0.0001)	(0.0571)	(0.0075)		
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%	49.26%	50.81%	
$7 < T \leq 8$	50.92%	49.74%	52.64%	51.63%	51.84%	46.81%	45.38%	44.67%	
p -Value	(0.8451)	(0.0184)	(0.9697)	(0.3571)	(0.6514)	(0.0338)	(0.0461)	(0.0101)	
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%	49.26%	50.81%	49.89%
$8 < T \leq 9$	55.87%	53.08%	54.72%	52.22%	46.90%	53.17%	48.27%	43.84%	40.60%
p -Value	(0.1409)	(0.3943)	(0.4329)	(0.5756)	(0.0140)	(0.3531)	(0.7175)	(0.0010)	(0.0006)

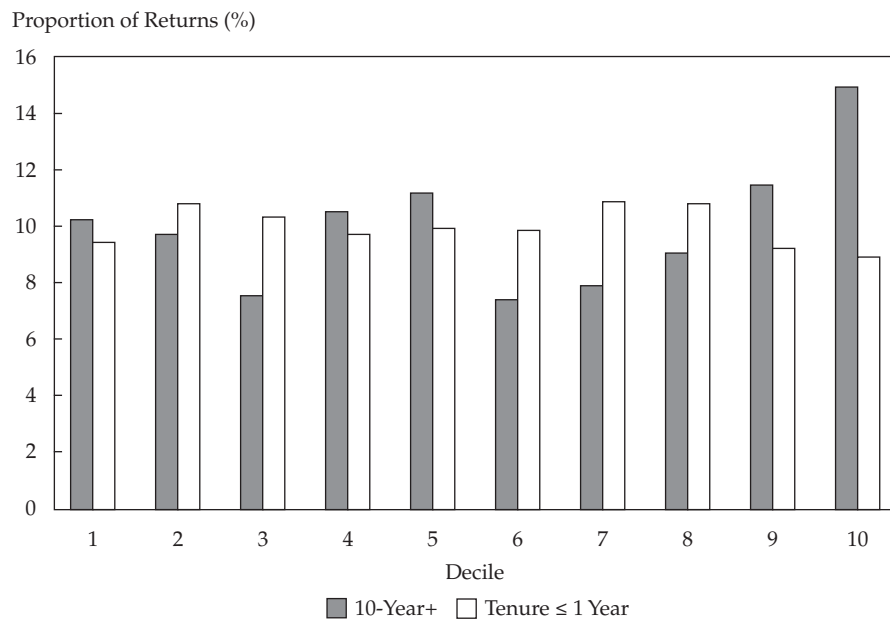
Notes: Percentages represent the ratio of positive monthly Morningstar style-adjusted returns to the total number of monthly observations for each group. For each group, significant differences from 50% at the 0.05 level are in bold. p -Values from a chi-square test of differences between groups are in parentheses; results that are significant at the 0.05 level are in bold.

monthly returns than negative ones. This record is hardly stellar. These results are strong support for the “herd” argument of Chevalier and Ellison (1999). To survive as a mutual fund manager, not underperforming your peers is more important than outperforming them.

To further delve into performance differences between the 10-year+ managers and their shorter-tenure peers, we examined the distribution of monthly style-adjusted returns. Figure 1 shows the frequency distribution of the monthly performance ranks (deciles) of the managers whose careers lasted no more than 1 year compared with the first-year performance of the managers whose

careers lasted 10 or more years. If the returns are random, the expected value for each decile is 10%. To test whether each group’s performance differed from a uniform distribution, we used a chi-square test with expected values equal to 10% for each decile.² The tests showed that the distribution of monthly performance of the one-year managers is consistent with random variation from a uniform distribution. The value of chi was 13.77, well below critical values for significance at either the 0.05 or the 0.10 level. Taken together with the results of Tables 2 and 3, this is evidence that although the 1-year managers underperformed their peers who would go on to manage

Figure 1. Decile Ranks of Monthly Style-Adjusted Returns: Managers with Tenure ≤ 1 Year vs. First Year for 10-Year+ Managers



Note: 1 = worst; 10 = best.

for 10 or more years, their underperformance was not due to an unusually high proportion of very low-performance months or a low proportion of high-performance months.

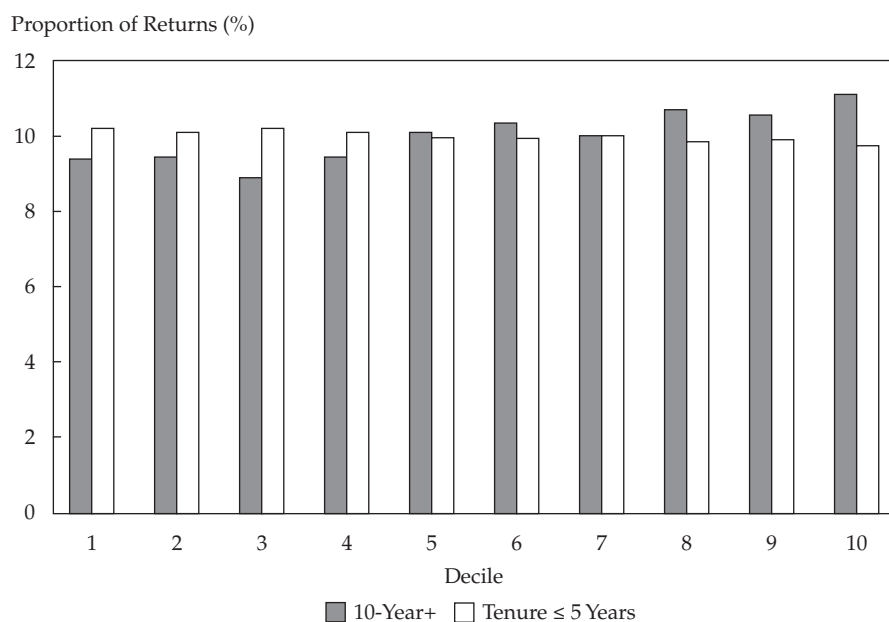
The return distribution of one-year managers appears uniform, but the distribution of monthly returns in the first year for 10-year+ managers is not; the value of chi for this long-tenure group was a highly significant 35.53, compared with the critical value of 16.92 at the 0.05 level. Figure 1 shows that the returns that most contributed to this significant chi value were from the 10th (best) decile. These managers' overall performance seems to be driven by a higher proportion of very good months. This result helps explain the results in Tables 2 and 3 that show the first-year performance of 10-year+ managers exceeded the performance of managers whose careers ended in their first year. Note that the 10-year+ managers did not avoid returns in the lower deciles and, in fact, had a slightly higher proportion of first-decile returns than the 1-year managers (10.26% versus 9.46%). The driver of long-term success appears to be a higher proportion of months with returns in the top decile.

To test whether the distributions observed in Figure 1 reflect a short-term phenomenon, we also examined the distribution of monthly performance for all managers whose tenure lasted 5 or fewer years and compared their performance with the first 5 years' performance for the 10-year+ managers. We did so because if 1 or

more years of superior performance are necessary to keep one's job, then managers with tenure of several years may display performance attributes similar to those of managers with tenure of 10 or more years. Figure 2 presents results that resemble the patterns observed in the first year. For solo managers with tenure of five or fewer years, the distribution of returns is not statistically different, at the 0.05 level, from a uniform distribution (chi = 16.22). However, as before, the distribution of the returns over the first 5 years for 10-year+ managers is not consistent with a uniform distribution, as indicated by a highly significant chi value of 61.47. Figure 2 shows that 10-year+ managers produced a greater percentage of returns than expected in the best deciles and a lower percentage than expected in the worst deciles. For example, 10-year+ managers have values of 11.90%, 10.35%, and 10.70% in the 10th, 9th, and 8th deciles, respectively, versus 9.41%, 9.45%, and 8.88% in the 1st, 2nd, and 3rd deciles, respectively.

In a simple world, one manager would manage one fund over his or her career, making it easy to track and compare individual performance. In reality, however, many managers are responsible for multiple funds. Our sample includes only funds identified by Morningstar as being managed by a single individual, but we did not restrict our sample to individuals who manage only one fund, which creates a potential challenge in interpreting the results. When a manager of a

Figure 2. Decile Ranks of Monthly Style-Adjusted Returns: Managers with Tenure \leq 5 Years vs. First 5 Years for 10-Year+ Managers



Note: 1 = worst; 10 = best.

single fund ceases to manage that fund, it is reasonable to believe that the change was, in part, a consequence of poor performance. However, when a manager of multiple funds ceases to manage one fund, that change may be unrelated to performance and could be the result of increasing demands at the other funds. In our sample of 2,651 solo-managed funds whose managers' careers lasted less than 10 years, 999 managers who ceased to be solo managers of one fund either continued to solo manage other funds or subsequently became the solo manager of one or more other funds. To test whether our initial results are affected by these changes, we reran our tests excluding these managers.

Table 4 and **Table 5** show the performance of all mutual fund managers by tenure, excluding managers who lost their solo management roles at a fund but were assigned to other funds within our sample period. Table 4 shows the average style-adjusted return in each year of tenure and compares, for each year of tenure, the average style-adjusted return of solo managers with tenure less than or equal to T with that of managers whose careers lasted 10 or more years. The results are qualitatively the same as those presented in Table 2. The only material difference is that, as expected, the performance of managers with less than 10 years' tenure is slightly worse in most cases. For example, Table 2 shows that managers with tenure of one year or less produced a style-adjusted return of -0.074% in the

full sample, compared with -0.099% for managers not assigned to other funds. This result occurs in the terminal years in six of the nine groups. Overall, the pattern of significant differences between the two groups is almost identical in Tables 2 and 4. The results in Table 5 are also qualitatively the same as the results in Table 3. In six of nine cases, the exclusion of managers with subsequent assignments strengthens the results shown in Table 3. The results in Tables 4 and 5 suggest that the removal of the managers with subsequent assignments had little effect on the material results of the study.

Porter and Trifts (2012) studied the performance of solo managers with tenure of 10 or more years and identified the top 50 managers over the period 1928–2008. In their study of 355 long-tenure managers, they found that only 47.6% (169 of 355) earned positive market-adjusted compound returns over their careers and that most of the truly outstanding performance was clustered among the few managers at the very top of the rankings. These findings suggest that the results we have shown in this article may be driven by the success of a very small number of managers. Of the 50 managers that Porter and Trifts (2012) identified, 30 managed funds in the post-1995 time frame. To test the impact of these managers, we reran our tests after eliminating their returns.³

Table 4. Differences in Style-Adjusted Monthly Performance: 10-Year+ Managers vs. Shorter-Tenure Managers Not Assigned to Other Funds, 1 January 1996–31 December 2008

	Year as Solo Manager								
	1	2	3	4	5	6	7	8	9
10+	0.199%								
$T \leq 1$	-0.099%								
Difference	0.298%								
<i>p</i> -Value	(0.0049)								
10+	0.199%	0.311%							
$1 < T \leq 2$	-0.043%	-0.321%							
Difference	0.242%	0.632%							
<i>p</i> -Value	(0.0219)	(0.0001)							
10+	0.199%	0.311%	0.075%						
$2 < T \leq 3$	-0.050%	-0.159%	-0.152%						
Difference	0.249%	0.470%	0.227%						
<i>p</i> -Value	(0.0178)	(0.0001)	(0.0240)						
10+	0.199%	0.311%	0.075%	0.173%					
$3 < T \leq 4$	0.068%	-0.020%	-0.106%	-0.333%					
Difference	0.132%	0.331%	0.181%	0.506%					
<i>p</i> -Value	(0.2283)	(0.0014)	(0.0641)	(0.0001)					
10+	0.199%	0.311%	0.075%	0.173%	0.119%				
$4 < T \leq 5$	0.123%	-0.072%	-0.100%	-0.188%	-0.110%				
Difference	0.076%	0.383%	0.175%	0.361%	0.229%				
<i>p</i> -Value	(0.5288)	(0.0019)	(0.0913)	(0.0003)	(0.0346)				
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%			
$5 < T \leq 6$	0.153%	0.217%	0.130%	0.092%	-0.139%	-0.457%			
Difference	0.046%	0.094%	-0.055%	0.081%	0.258%	0.470%			
<i>p</i> -Value	(0.7386)	(0.4512)	(0.6129)	(0.4411)	(0.0046)	(0.0001)			
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%	0.020%		
$6 < T \leq 7$	0.002%	0.059%	0.045%	-0.029%	-0.116%	-0.111%	-0.209%		
Difference	0.197%	0.252%	0.030%	0.202%	0.235%	0.124%	0.229%		
<i>p</i> -Value	(0.1140)	(0.0438)	(0.7584)	(0.0804)	(0.0148)	(0.1828)	(0.0415)		
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%	0.020%	0.061%	
$7 < T \leq 8$	-0.161%	-0.134%	0.052%	0.178%	-0.024%	-0.337%	-0.405%	-0.229%	
Difference	0.360%	0.445%	0.023%	-0.005%	0.143%	0.350%	0.425%	0.290%	
<i>p</i> -Value	(0.0322)	(0.0077)	(0.8720)	(0.9714)	(0.2434)	(0.0046)	(0.0026)	(0.0309)	
10+	0.199%	0.311%	0.075%	0.173%	0.119%	0.013%	0.020%	0.061%	0.033%
$8 < T \leq 9$	0.291%	0.246%	0.417%	0.027%	-0.048%	-0.006%	-0.136%	-0.245%	-0.505%
Difference	-0.092%	0.065%	-0.342%	0.146%	0.167%	0.019%	0.156%	0.306%	0.538%
<i>p</i> -Value	(0.6705)	(0.8090)	(0.1189)	(0.2324)	(0.3101)	(0.8990)	(0.2452)	(0.0054)	(0.0001)

Notes: Shorter-tenure managers include only the 1,652 managers leaving the sample after T years who were not assigned to other funds during their tenure. *p*-Values from a *t*-test are in parentheses. Results that are statistically significant at the 0.05 level are in bold.

Table 6 and Table 7 show the results excluding the best 30 managers. As expected, removal of these managers' returns from those of the 10-year+ managers weakens the results. However, in every

case, the performance of managers whose tenure was less than 10 years was lower in their final year than that of the 10-year+ managers, although only four of the nine differences are statistically

Table 5. Proportion of Months with Positive Style-Adjusted Returns: 10-Year+ Managers vs. Shorter-Tenure Managers Not Assigned to Other Funds, 1 January 1996–31 December 2008

	Year as Solo Manager								
	1	2	3	4	5	6	7	8	9
10+	51.43%								
$T \leq 1$	47.94%								
<i>p</i> -Value	(0.0990)								
10+	51.43%	55.37%							
$1 < T \leq 2$	48.50%	44.11%							
<i>p</i> -Value	(0.1379)	(0.0001)							
10+	51.43%	55.37%	52.73%						
$2 < T \leq 3$	48.60%	47.88%	46.05%						
<i>p</i> -Value	(0.1616)	(0.0001)	(0.0003)						
10+	51.43%	55.37%	52.73%	53.58%					
$3 < T \leq 4$	48.74%	48.49%	46.59%	43.47%					
<i>p</i> -Value	(0.1960)	(0.0002)	(0.0003)	(0.0001)					
10+	51.43%	55.37%	52.73%	53.58%	52.76%				
$4 < T \leq 5$	51.73%	46.60%	47.14%	47.90%	47.43%				
<i>p</i> -Value	(0.8937)	(0.0001)	(0.0026)	(0.0009)	(0.0061)				
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%			
$5 < T \leq 6$	54.20%	53.64%	53.05%	50.01%	46.40%	49.03%			
<i>p</i> -Value	(0.2521)	(0.4261)	(0.8768)	(0.0669)	(0.0005)	(0.2987)			
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%	49.26%		
$6 < T \leq 7$	48.35%	49.94%	49.60%	51.74%	45.59%	47.34%	42.41%		
<i>p</i> -Value	(0.2342)	(0.0209)	(0.1571)	(0.3767)	(0.0003)	(0.0253)	(0.0055)		
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%	49.26%	50.81%	
$7 < T \leq 8$	50.31%	48.82%	52.68%	53.20%	53.47%	46.72%	43.51%	44.84%	
<i>p</i> -Value	(0.6997)	(0.0134)	(0.9832)	(0.8715)	(0.7533)	(0.0496)	(0.0073)	(0.0260)	
10+	51.43%	55.37%	52.73%	53.58%	52.76%	51.06%	49.26%	50.81%	49.89%
$8 < T \leq 9$	55.31%	51.33%	54.77%	52.72%	46.30%	53.05%	48.99%	44.68%	40.12%
<i>p</i> -Value	(0.2420)	(0.1665)	(0.4612)	(0.7479)	(0.0104)	(0.4175)	(0.9081)	(0.0076)	(0.0007)

Notes: For each group, significant differences from 50% at the 0.05 level are in bold. *p*-Values from a chi-square test of differences between groups are in parentheses; results that are significant at the 0.05 level are in bold.

significant. Table 7 shows that removing the best 30 solo managers from the data results in poorer performance for the 10-year+ managers but does not materially alter the results.

Although the exclusion of the top 30 managers does not change the conclusions of this study, it does change the return pattern for the remaining 165 10-year+ managers. Note that at the bottom of Table 6, the remaining 10-year+ managers, as a group, earned negative style-adjusted average returns in 5 of 9 years, and they actually underperformed the shorter-tenure managers by statistically insignificant amounts in 4 of the 9 years. The bottom of Table 7 shows that elimination of the top 30 managers results in the remaining

10-year+ managers recording positive style-adjusted returns more than 50% of the time at a 5% significance level in only 1 of 10 years. In fact, the proportion of positive style-adjusted returns was less than 50% for this group in five of nine years, although none of those results are statistically significant. These data suggest that longevity as a mutual fund manager is more related to the ability to not underperform one's peers than to the ability to outperform the market.

To further test the robustness of our results, we replicated our analysis using two additional performance metrics. First, we reran our tests measuring performance using the four-factor model developed by Carhart (1997). Although

Table 6. Differences in Style-Adjusted Monthly Performance Excluding the Top 30 10-Year+ Managers, 1 January 1996–31 December 2008

	Year as Solo Manager								
	1	2	3	4	5	6	7	8	9
10+	0.050%								
$T \leq 1$	-0.074%								
Difference	0.124%								
<i>p</i> -Value	(0.2604)								
10+	0.050%	0.274%							
$1 < T \leq 2$	-0.048%	-0.300%							
Difference	0.098%	0.574%							
<i>p</i> -Value	(0.3690)	(0.0001)							
10+	0.050%	0.274%	0.018%						
$2 < T \leq 3$	-0.044%	-0.143%	-0.169%						
Difference	0.094%	0.417%	0.187%						
<i>p</i> -Value	(0.3846)	(0.0001)	(0.0580)						
10+	0.050%	0.274%	0.018%	-0.008%					
$3 < T \leq 4$	0.030%	-0.043%	-0.098%	-0.294%					
Difference	0.020%	0.317%	0.116%	0.286%					
<i>p</i> -Value	(0.8643)	(0.0019)	(0.2336)	(0.0051)					
10+	0.050%	0.274%	0.018%	-0.008%	-0.034%				
$4 < T \leq 5$	0.110%	-0.030%	-0.085%	-0.118%	-0.117%				
Difference	-0.060%	0.304%	0.103%	0.110%	0.083%				
<i>p</i> -Value	(0.6261)	(0.0075)	(0.3051)	(0.2242)	(0.4191)				
10+	0.050%	0.274%	0.018%	-0.008%	-0.034%	-0.099%			
$5 < T \leq 6$	0.193%	0.142%	0.115%	0.003%	-0.150%	-0.395%			
Difference	-0.143%	0.132%	-0.097%	-0.011%	0.116%	0.296%			
<i>p</i> -Value	(0.2593)	(0.2453)	(0.3579)	(0.9107)	(0.1826)	(0.0038)			
10+	0.050%	0.274%	0.018%	-0.008%	-0.034%	-0.099%	-0.064%		
$6 < T \leq 7$	0.009%	0.050%	0.075%	0.003%	-0.138%	-0.140%	-0.211%		
Difference	0.041%	0.224%	-0.057%	-0.011%	0.104%	0.041%	0.147%		
<i>p</i> -Value	(0.7447)	(0.0721)	(0.6210)	(0.9223)	(0.2762)	(0.6484)	(0.1712)		
10+	0.050%	0.274%	0.018%	0.008%	-0.034%	-0.099%	-0.064%	-0.021%	
$7 < T \leq 8$	-0.024%	-0.137%	0.116%	0.108%	0.012%	-0.251%	-0.301%	-0.216%	
Difference	0.074%	0.411%	-0.098%	-0.116%	-0.046%	0.152%	0.237%	0.195%	
<i>p</i> -Value	(0.6509)	(0.0074)	(0.4822)	(0.3799)	(0.6927)	(0.1832)	(0.0492)	(0.1094)	
10+	0.050%	0.274%	0.018%	-0.008%	-0.034%	-0.099%	-0.064%	-0.021%	0.003%
$8 < T \leq 9$	0.345%	0.281%	0.380%	-0.063%	-0.049%	0.090%	-0.108%	-0.239%	-0.459%
Difference	-0.295%	-0.007%	-0.362%	0.055%	0.015%	-0.189%	0.044%	0.218%	0.462%
<i>p</i> -Value	(0.1249)	(0.9755)	(0.0775)	(0.7590)	(0.9230)	(0.1894)	(0.7317)	(0.0392)	(0.0002)

Notes: *p*-Values from a *t*-test are in parentheses. The top 30 10-year+ managers are those with the greatest market-adjusted compound average return over their tenure. Results that are statistically significant at the 0.05 level are in bold.

many investors and mutual fund managers measure performance against the Morningstar style-adjusted benchmarks, the Carhart model is more rigorous and controls for different levels of underlying performance on the basis of size

and style. We estimated each Carhart alpha over the 24-month period prior to the reporting date. Because of this data restriction, we did not include performance measures for managers whose tenure lasted less than one year owing to the limited

Table 7. Proportion of Months with Positive Style-Adjusted Returns Excluding the Top 30 10-Year+ Managers, 1 January 1996–31 December 2008

	Year as Solo Manager								
	1	2	3	4	5	6	7	8	9
10+	49.35%								
$T \leq 1$	49.31%								
p -Value	(0.9849)								
10+	49.35%	55.01%							
$1 < T \leq 2$	48.50%	43.95%							
p -Value	(0.7050)	(0.0001)							
10+	49.35%	55.01%	52.02%						
$2 < T \leq 3$	49.13%	47.17%	46.83%						
p -Value	(0.9202)	(0.0001)	(0.0056)						
10+	49.35%	55.01%	52.02%	51.27%					
$3 < T \leq 4$	47.58%	47.85%	47.08%	44.50%					
p -Value	(0.4431)	(0.0003)	(0.0064)	(0.0002)					
10+	49.35%	55.01%	52.02%	51.27%	51.32%				
$4 < T \leq 5$	52.16%	49.02%	47.36%	48.14%	47.97%				
p -Value	(0.2432)	(0.0042)	(0.0142)	(0.0682)	(0.0720)				
10+	49.35%	55.01%	52.02%	51.27%	51.32%	49.55%			
$5 < T \leq 6$	53.57%	51.61%	52.07%	49.15%	46.77%	44.58%			
p -Value	(0.0915)	(0.1185)	(0.9774)	(0.2427)	(0.0009)	(0.0124)			
10+	49.35%	55.01%	52.02%	51.27%	51.32%	49.55%	48.52%		
$6 < T \leq 7$	48.37%	50.50%	50.38%	50.44%	45.20%	47.66%	43.77%		
p -Value	(0.7130)	(0.0567)	(0.4536)	(0.6799)	(0.0015)	(0.3141)	(0.0228)		
10+	49.35%	55.01%	52.02%	51.27%	51.32%	49.55%	48.52%	49.83%	
$7 < T \leq 8$	50.92%	49.74%	52.64%	51.63%	51.84%	46.81%	45.38%	44.67%	
p -Value	(0.5838)	(0.0400)	(0.7931)	(0.8701)	(0.8077)	(0.1886)	(0.1189)	(0.0380)	
10+	49.35%	55.01%	52.02%	51.27%	51.32%	49.55%	48.52%	49.83%	49.35%
$8 < T \leq 9$	55.87%	53.08%	54.72%	52.22%	46.90%	53.17%	48.47%	43.84%	40.60%
p -Value	(0.0439)	(0.4981)	(0.3091)	(0.7071)	(0.0645)	(0.1226)	(0.9798)	(0.0058)	(0.0013)

Notes: For each group, significant differences from 50% at the 0.05 level are in bold. p -Values from a chi-square test of differences between groups are in parentheses; results that are significant at the 0.05 level are in bold.

number of monthly observations for these managers, but we did include results for managers with more than one but less than two years of data. **Table 8** shows manager performance as measured by Carhart alphas. Compared with the results in **Table 2**, these results are significantly weaker. Only managers whose careers ended in their seventh or ninth year of tenure showed statistically significant underperformance compared with 10-year+ managers.

The performance of 10-year+ managers, shown at the bottom of **Table 8**, provides even more conclusive evidence about the ability, or lack thereof, of even long-term mutual fund managers to beat the market on a risk-adjusted basis. When measured

against the Carhart four-factor model, the 10-year+ managers actually earned negative average alphas in 7 of their first 9 years.

Table 9 shows the proportion of positive four-factor alphas for each group by year. Note that managers with less than 10 years of tenure generated lower proportions of positive alphas in all terminal years, although only five of the eight differences are significant at the 0.05 level. Perhaps more interesting is that the proportions of positive alphas are significantly different from 50% for each group in each year, with the exception of the two-year alpha for managers with between eight and nine years of tenure. These results show that mutual fund

Table 8. Differences in Two-Year Carhart Alphas, 1 January 1996–31 December 2008

	Year as Solo Manager							
	2	3	4	5	6	7	8	9
10+	-0.276%							
1 < T ≤ 2	-0.288%							
Difference	0.012%							
p-Value	(0.9326)							
10+	-0.276%	0.032%						
2 < T ≤ 3	-0.343%	-0.344%						
Difference	0.067%	0.376%						
p-Value	(0.6413)	(0.0564)						
10+	-0.276%	0.032%	-0.360%					
3 < T ≤ 4	-0.393%	-0.448%	-0.468%					
Difference	0.012%	0.480%	0.108%					
p-Value	(0.3573)	(0.0088)	(0.3631)					
10+	-0.276%	0.032%	-0.360%	-0.335%				
4 < T ≤ 5	-0.199%	-0.357%	-0.400%	-0.341%				
Difference	-0.077%	0.389%	0.040%	0.006%				
p-Value	(0.7043)	(0.0330)	(0.7449)	(0.9418)				
10+	-0.276%	0.032%	-0.360%	-0.335%	-0.359%			
5 < T ≤ 6	-0.088%	-0.296%	-0.285%	-0.441%	-0.538%			
Difference	-0.188%	0.328%	-0.0075	0.106%	0.179%			
p-Value	(0.2452)	(0.0797)	(0.5622)	(0.1608)	(0.0621)			
10+	-0.276%	0.032%	-0.360%	-0.335%	-0.359%	-0.197%		
6 < T ≤ 7	-0.289%	-0.213%	-0.046%	-0.337%	-0.508%	-0.475%		
Difference	0.013%	0.245%	-0.314%	0.002%	0.149%	0.278%		
p-Value	(0.9286)	(0.1883)	(0.2057)	(0.9803)	(0.2117)	(0.0369)		
10+	-0.276%	0.032%	-0.360%	-0.335%	-0.359%	-0.197%	-0.369%	
7 < T ≤ 8	-0.246%	-0.340%	-0.230%	-0.428%	-0.598%	-0.595%	-0.557%	
Difference	-0.030%	0.372%	-0.130%	0.093%	0.239%	0.398%	0.188%	
p-Value	(0.8713)	(0.5866)	(0.3735)	(0.4600)	(0.1104)	(0.0329)	(0.1816)	
10+	-0.276%	0.032%	-0.360%	-0.335%	-0.359%	-0.197%	-0.369%	-0.270%
8 < T ≤ 9	0.029%	-0.110%	-0.227%	-0.481%	-0.349%	-0.429%	-0.523%	-0.566%
Difference	-0.305%	0.142%	-0.133%	0.146%	-0.010%	0.232%	0.154%	0.296%
p-Value	(0.1597)	(0.5357)	(0.4911)	(0.2027)	(0.9355)	(0.0879)	(0.1959)	(0.0122)

Notes: p-Values from a t-test are in parentheses. Results that are statistically significant at the 0.05 level are in bold.

managers, as a whole, underperform the market on a risk-adjusted basis.

Taken alone, the results in Table 8 provide only weak evidence that merit, based on performance, plays a role in the replacement of mutual fund managers. However, Table 9 provides evidence of the role of merit because it shows that short-tenure managers do perform worse than long-tenure managers. Table 9 also reinforces the finding that the overall performance of mutual fund managers on a risk-adjusted basis is poor.

Whereas the Carhart model gets little or no attention from typical investors, alphas based on the Jensen (1968) model are much more widely reported. We hypothesized that, because Jensen's alpha is much more widely reported, investors and mutual fund companies would be much more likely to consider performance based on this metric when evaluating mutual fund managers. Therefore, we reran the tests using this performance metric. As with the Carhart alphas, the Jensen alphas were based on 24-month trailing returns, and we eliminated the

Table 9. Proportion of Positive Two-Year Carhart Alphas, 1 January 1996–31 December 2008

	Year as Solo Manager							
	2	3	4	5	6	7	8	9
10+	33.33%							
1 < T ≤ 2	22.32%							
p-Value	(0.0373)							
10+	33.33%	33.64%						
2 < T ≤ 3	18.35%	19.31%						
p-Value	(0.0049)	(0.0038)						
10+	33.33%	33.64%	30.08%					
3 < T ≤ 4	22.22%	13.14%	17.58%					
p-Value	(0.0423)	(0.0001)	(0.0056)					
10+	33.33%	33.64%	30.08%	28.47%				
4 < T ≤ 5	20.48%	20.35%	17.65%	22.98%				
p-Value	(0.0243)	(0.0124)	(0.0087)	(0.2274)				
10+	33.33%	33.64%	30.08%	28.47%	24.18%			
5 < T ≤ 6	28.76%	21.95%	21.84%	14.36%	14.75%			
p-Value	(0.4518)	(0.0320)	(0.1011)	(0.0023)	(0.0312)			
10+	33.33%	33.64%	30.08%	28.47%	24.18%	21.56%		
6 < T ≤ 7	24.47%	28.43%	23.36%	15.79%	17.50%	14.52%		
p-Value	(0.1829)	(0.4159)	(0.5250)	(0.0135)	(0.1816)	(0.1274)		
10+	33.33%	33.64%	30.08%	28.47%	24.18%	21.56%	25.56%	
7 < T ≤ 8	34.29%	27.78%	28.21%	19.75%	11.25%	16.67%	13.33%	
p-Value	(0.8995)	(0.4075)	(0.7747)	(0.1502)	(0.0099)	(0.3620)	(0.0126)	
10+	33.33%	33.64%	30.08%	28.47%	24.18%	21.56%	25.56%	21.54%
8 < T ≤ 9	38.64%	31.91%	28.00%	16.36%	20.69%	24.19%	12.50%	17.19%
p-Value	(0.5470)	(0.8350)	(0.7853)	(0.0789)	(0.5938)	(0.6717)	(0.0148)	(0.4560)

Notes: For each group, significant differences from 50% at the 0.05 level are in bold. *p*-Values from a chi-square test of differences between groups are in parentheses; results that are significant at the 0.05 level are in bold.

one-year managers owing to data limitations. **Table 10** shows the results. For five of eight groups of managers, shorter-tenure managers underperformed their 10-year+ peers in their final year by amounts that are statistically significant at the 0.05 level (3-year manager underperformance is significant at the 0.10 level). Although these results are weaker than the initial findings based on style-adjusted returns, they are consistent with the overall results and are stronger than the results using the four-factor model. As with the results based on Carhart alphas, however, the bottom of Table 10 shows negative average alphas for 10-year+ managers in 8 of 9 years. Managers who underperform their peers are likely to be replaced even though those peers are not outperforming the market on a risk-adjusted basis.

Table 11 shows the proportion of managers with positive Jensen alphas. In every case, the proportion of positive alphas for managers in their

terminal year was less than that of the 10-year+ managers, and the difference is significant at the 0.05 level for 6 of the 8 years. As with the Carhart alphas, for every group in every year, the proportion of positive alphas was less than 50% and all but one observation are statistically significant. These results provide further evidence that merit, based on performance, is an important determinant of manager turnover and that mutual fund managers, as a whole, underperform the market on a risk-adjusted basis.

How can one reconcile the results based on style-adjusted returns with those based on the four-factor model? Perhaps the difference can be explained on the basis of which benchmark investors actually use to measure performance. Style-adjusted returns, whether those of Morningstar or Lipper, are widely reported. A search of mutual fund company websites and the popular (i.e., nonacademic) media

Table 10. Differences in Two-Year Jensen Alphas, 1 January 1996–31 December 2008

	Year as Solo Manager							
	2	3	4	5	6	7	8	9
10+	-0.420%							
1 < T ≤ 2	-0.367%							
Difference	-0.053%							
p-Value	(0.7268)							
10+	-0.420%	0.007%						
2 < T ≤ 3	-0.003%	-0.344%						
Difference	-0.417%	0.351%						
p-Value	(0.5967)	(0.0697)						
10+	-0.420%	0.007%	-0.216%					
3 < T ≤ 4	-0.392%	-0.458%	-0.482%					
Difference	-0.028%	0.465%	0.266%					
p-Value	(0.8361)	(0.0103)	(0.0214)					
10+	-0.420%	0.007%	-0.216%	-0.252%				
4 < T ≤ 5	-0.004%	-0.333%	-0.364%	-0.356%				
Difference	-0.416%	0.340%	-0.148%	0.104%				
p-Value	(0.0428)	(0.0645)	(0.2200)	(0.3333)				
10+	-0.420%	0.007%	-0.216%	-0.252%	-0.281%			
5 < T ≤ 6	-0.005%	-0.167%	-0.263	-0.539%	-0.607%			
Difference	-0.415%	0.174%	0.047%	0.287%	0.326%			
p-Value	(0.0130)	(0.3559)	(0.7136)	(0.0092)	(0.0067)			
10+	-0.420%	0.007%	-0.216%	-0.252%	-0.281%	-0.110%		
6 < T ≤ 7	-0.325%	-0.115%	0.112%	-0.223%	-0.379%	-0.429%		
Difference	-0.095%	0.122%	-0.328%	-0.029%	0.098%	0.319%		
p-Value	(0.5320)	(0.5244)	(0.1834)	(0.8010)	(0.4120)	(0.0363)		
10+	-0.420%	0.007%	-0.216%	-0.252%	-0.281%	-0.110%	-0.231%	
7 < T ≤ 8	-0.296%	0.440%	-0.044%	-0.263%	-0.544%	-0.579%	-0.550%	
Difference	-0.124%	-0.433%	-0.172%	0.011%	0.263%	0.469%	0.319%	
p-Value	(0.5112)	(0.4481)	(0.2946)	(0.9410)	(0.1026)	(0.0151)	(0.0085)	
10+	-0.420%	0.007%	-0.216%	-0.252%	-0.281%	-0.110%	-0.231%	-0.199%
8 < T ≤ 9	0.018%	-0.108%	-0.090%	-0.326%	-0.110%	-0.285%	-0.530%	-0.651%
Difference	-0.438%	0.115%	-0.126%	0.074%	-0.171%	0.175%	0.299%	0.452%
p-Value	(0.0538)	(0.6979)	(0.5176)	(0.6650)	(0.2430)	(0.2449)	(0.0185)	(0.0002)

Notes: p-Values from a *t*-test are in parentheses. Results that are statistically significant at the 0.05 level are in bold.

did not yield a single reference to Carhart alphas, although they are widely used by academics.

Another possible reason why using the single-factor model rather than the four-factor model resulted in greater differences in performance is that the four-factor model essentially controls for the impact of style drift on performance. Wermers (2012) measured style drift and found evidence that managers with better career track records tend to have higher levels of style drift. However, Brooks and Porter (2013) showed that the Carhart model, which controls for both

size and style, takes away any performance gains earned by a manager through style-drifting reallocations of the portfolio toward better-performing styles. Fama and French (2007) argued that, for this reason, the style factors are not risk premiums and the alphas should not be used to reflect risk-adjusted performance. Thus, returns and differences in returns between groups are reduced because the Carhart factors, which control for style drift, capture most returns associated with the arrival of actionable information.

Table 11. Proportion of Positive Two-Year Jensen Alphas, 1 January 1996–31 December 2008

	Year as Solo Manager							
	2	3	4	5	6	7	8	9
10+	27.96%							
1 < T ≤ 2	21.42%							
p-Value	(0.1619)							
10+	27.96%	32.73%						
2 < T ≤ 3	21.31%	23.98%						
p-Value	(0.1898)	(0.0576)						
10+	27.96%	32.73%	34.59%					
3 < T ≤ 4	23.12%	19.43%	20.05%					
p-Value	(0.3369)	(0.0082)	(0.0020)					
10+	27.96%	32.73%	34.59%	39.58%				
4 < T ≤ 5	35.24%	28.76%	21.01%	27.02%				
p-Value	(0.2151)	(0.4583)	(0.0062)	(0.0098)				
10+	27.96%	32.73%	34.59%	39.58%	36.60%			
5 < T ≤ 6	39.22%	33.54%	28.16%	15.47%	15.85%			
p-Value	(0.0677)	(0.8895)	(0.2288)	(0.0001)	(0.0001)			
10+	27.96%	32.73%	34.59%	39.58%	36.60%	34.73%		
6 < T ≤ 7	32.98%	36.27%	32.73%	28.95%	23.33%	21.77%		
p-Value	(0.5320)	(0.5891)	(0.7612)	(0.0756)	(0.0183)	(0.0162)		
10+	27.96%	32.73%	34.59%	39.58%	36.60%	34.73%	33.33%	
7 < T ≤ 8	28.57%	45.83%	34.62%	35.80%	27.70%	13.10%	20.00%	
p-Value	(0.9318)	(0.0755)	(0.9966)	(0.5773)	(0.1635)	(0.0001)	(0.0165)	
10+	27.96%	32.73%	34.59%	39.58%	36.60%	34.73%	33.33%	33.85%
8 < T ≤ 9	45.45%	42.55%	44.00%	32.73%	31.03%	24.49%	17.19%	14.06%
p-Value	(0.0432)	(0.2419)	(0.2426)	(0.6650)	(0.4517)	(0.0456)	(0.0072)	(0.0005)

Notes: For each group, significant differences from 50% at the 0.05 level are in bold. *p*-Values from a chi-square test of differences between groups are in parentheses; results that are significant at the 0.05 level are in bold.

Conclusion

The results of this study provide evidence of the role of merit in mutual fund managers' careers and suggest that, consistent with prior studies, relative performance is an important determinant of career success for mutual fund managers. We showed that managers who underperform on a style-adjusted basis are at risk of losing their jobs. However, the evidence on the role of superior performance is less strong. Managers whose tenure was at least 10 years outperformed their shorter-tenure counterparts, but their performance was not consistently superior. Data on monthly style-adjusted returns show that solo managers with 10 or more years of tenure outperformed about as often as they underperformed. When performance is measured by Carhart or Jensen alphas, even long-term managers show no ability to beat the market on a risk-adjusted basis. The key to a long career in

the mutual fund industry seems to be related more to avoiding underperformance than to achieving superior performance.

The lack of significantly higher performance over time by long-tenure managers suggests that longevity is related to the avoidance of underperformance. Other factors may also be at work in impairing the overall record of long-tenure managers. For example, Ding and Wermers (2009) found evidence that some underperforming managers at smaller funds are able to retain their positions despite their performance. Additionally, Porter and Trifts (2012) observed that a significant proportion of the best mutual fund managers earned their reputations through achieving high rates of return early in their careers and had much less stellar performance later in their careers. Whether this early performance was due to luck or early superior skills that atrophied later is subject to conjecture and further research.

Many other opportunities for future research exist. For example, there are many potential reasons for a manager to lose sole control of a fund, from board-related or professional considerations to personal ones. Because employers seldom announce that an employee's demotion or departure is related to performance, it is difficult to isolate those cases where changes occurred for reasons not related to performance. We partially controlled and tested for this effect by isolating solo managers who left one fund and became solo manager of another fund. However, the robustness of our results suggests that better isolation

of nonperformance issues would strengthen rather than significantly weaken our findings.

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This article qualifies for 1 CE credit.

Notes

1. In an earlier version of this study, we conducted our tests on data drawn from the entire time period. The results were not materially different from those presented in this article and, for brevity, have not been included.
2. Chi-square tests are not appropriate for data expressed in proportions, so we compared the number of monthly observations by decile with the expected number, or 1/10 the number of observations per test group. For example, if there are 100 observations in the 10-year+ group in a given month, the test would determine whether the actual number of returns in each decile was significantly different from 10.

We present Figure 1 in proportions to control for the different number of observations in each group.

3. Porter and Trifts (2012) identified the top 50 managers using market-adjusted compound annual returns, whereas in this study, we measured performance using style-adjusted returns. Porter and Trifts (2012) noted that the method chosen to adjust for risk affects who is included in the top 50, particularly for those managers near the cutoff. We recognized this but chose to use the top 50 managers from their 2012 study for consistency.

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