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## Review of Financial Economics

journal homepage: [www.elsevier.com/locate/rfe](http://www.elsevier.com/locate/rfe)

## Mutual fund corporate culture and performance

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## ARTICLE INFO

## Article history:

Received 1 June 2011

Received in revised form 8 December 2011

Accepted 28 February 2012

Available online 14 March 2012

## Keywords:

Corporate culture

Mutual fund performance

Morningstar

Governance

Survivorship bias

## ABSTRACT

In this paper we test if a mutual fund's own corporate culture predicts fund performance. To do this we use Morningstar's corporate culture ratings for mutual funds and then examine the ability of these corporate culture ratings to predict risk-adjusted performance of domestic equity funds over the period 2005–2010. Using methods that are robust to survivorship bias, we find there is little significant evidence that corporate culture predicts better fund performance. Indeed, we find that no individual component of the Morningstar stewardship rating including board quality, fees, manager incentives and regulatory issues is able to consistently predict fund performance.

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## 1. Introduction

On December 22, 2006, Deutsche Bank agreed to pay \$208 million in order to end federal investigations into their late-trading and market-timing activities in their mutual fund accounts.<sup>1</sup> Amazingly, this was the 21st settlement with a mutual fund company made by the Office of the New York Attorney General over the three preceding years. The list of indicted fund companies included some of the most well-known firms in the country such as Alliance Capital, Bank of America, Bank One, Janus, Prudential, Putnam and Strong funds.<sup>2</sup>

To investors, the news that mutual funds were committing such abuses was a shock as fund companies were thought to be free of the abuses so common in other parts of the financial industry. Indeed, in March 2003, Paul G. Haaga, Jr., the chairman of the Investment Company Institute, summed up this belief by stating: “under the S.E.C.’s watchful eye, mutual funds have remained free of a major scandal for more than 60 years.”<sup>3</sup> That streak ended on September

3, 2003, when the late-trading and market-timing scandals were first revealed to the public by the New York Attorney General.

For the public, the impact of the crisis was severe. Since so many investors own mutual funds,<sup>4</sup> the scandal touched many more investors than did the earlier Enron and World.com scandals. In fact, Arthur Levitt, the former Securities and Exchange Commission chairman, called the mutual fund scandal “the worst scandal we’ve seen in 50 years.”<sup>5</sup> The public perception of mutual funds was greatly damaged as well. In a CNN/USA Today/Gallup poll that was taken in October 2003, a few weeks after the scandal was first announced, 26% of fund investors said they were less likely to invest in funds because of the scandals, and 71% of respondents said they would “definitely or probably” move their money if their mutual fund companies came under investigation.<sup>6</sup>

In light of these scandals there has been growing interest in fund governance by both practitioners and academics. Among practitioners maybe the single best example of the interest in mutual fund governance is that Morningstar, the well-known mutual fund data provider, created a mutual fund stewardship rating in August 2004 to complement its well-known star rating system. Unlike the star ratings, which focus only on past fund performance, the stewardship ratings examine five governance factors of the fund company itself: board quality, corporate culture, fees, manager incentives, and regulatory issues. The stewardship ratings essentially allow an

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E-mail addresses: [agottesman@pace.edu](mailto:agottesman@pace.edu) (A. Gottesman), [mmorey@pace.edu](mailto:mmorey@pace.edu) (M. Morey).<sup>1</sup> See “Deutsche Bank Settles Some Cases”, *Wall Street Journal*, December 22, 2006, page A1.<sup>2</sup> The Morningstar Stewardship ratings, including the corporate culture ratings, were not published by Morningstar until August 2004. Hence, during the time of the scandals (the Spitzer complaint was issued in September 2003) these fund companies did not yet have a corporate culture rating. As of December 31, 2004, when most of these fund companies had a corporate culture rating, Alliance Capital, Janus, and Putnam were all rated as poor, and Strong was rated as very poor.<sup>3</sup> See Gretchen Morgenstern, “Will Investors Stampede out of Mutual Funds?” *New York Times*, November 9, 2003, page B1.<sup>4</sup> As of 2009, 51% of U.S. households owned mutual funds according to the 2010 Investment Company Factbook (2009), Investment Company Institute, 50th edition, chapter 1.<sup>5</sup> See Paul Krugman “Funds and Games”, *New York Times*, November 18, 2003, page A24.<sup>6</sup> See Gretchen Morgenstern, “Will Investors Stampede out of Mutual Funds?” *New York Times*, November 9, 2003, page B1.

investor to determine how well the fund company is taking care of its fiduciary responsibilities.

Academics have also shown interest in fund governance, particularly after the scandal. For example, a number of recent papers have investigated the quality of the board of directors at mutual and pension funds (e.g. Tufano and Sevick (1997), Ambachtsheer, Capelle, and Scheibelhut (1998), Del Guercio, Dann, and Partch (2003), Khorana, Tufano, and Wedge (2007), Cremers, Driessen, Maenhout, and Weinbaum (2009), Ding and Wermers (2009)). These papers have generally found that funds with better boards have better performance, lower fees, and are more likely to replace poorly performing managers. Another stream of research examines the proxy voting decisions of mutual funds. Chou, Ng, and Wang (2009) found that mutual funds with better governance tend to use their proxy votes to protect shareholder's rights as opposed to siding with management. Additionally they also found that better governed mutual funds are more likely to hold better governed firms in their portfolios. Finally, another branch of research has started to examine the predictive ability of the Morningstar stewardship ratings themselves. In an unpublished working paper Wellman and Zhou (2007) found some evidence that funds with better stewardship ratings have better risk-adjusted performance.

In this paper we examine another aspect of fund governance, corporate culture, which heretofore has not been explicitly examined in the literature. Specifically we examine how well a mutual fund's corporate culture predicts mutual fund performance. The reason we choose corporate culture is that it is the single fund feature that is most directly related to the overall governance of the fund family. Indeed, our belief is that corporate culture sets the tone for the entire operation of the fund and may influence the performance of the fund.

For example, a fund's corporate culture tells us whether the fund is sales driven or investor driven. That is, it indicates whether the fund always acts in the interest of the investors. The corporate culture of the fund also tells us about the fund's ability to attract and retain top employees. Funds with strong corporate cultures are generally able to keep top people from switching to other firms. They invest in their employees and nurture them. Conversely, funds with poor corporate cultures often have significant managerial turnover which presumably could affect the performance of the fund.

Our views that fund corporate culture is the seminal issue to understanding its governance is also shared by Morningstar. In 2007 Morningstar changed their methodology to make corporate culture the most important criterion in the stewardship rating. Hence, rather than making up just 20% of the stewardship rating, as was the case before 2007, a fund's corporate culture now comprises 40% of the stewardship rating, an amount double that of any other criterion used in determining the rating. Laura Lutton, a Morningstar analyst stated: "we got feedback from mutual fund companies that corporate culture sets the tone. For example, if a family focuses on its investors and lets that focus drive its corporate culture, then it also tends to have strong board oversight, fair fees, and few regulatory mishaps and earns good long-term returns for its shareholders."<sup>7</sup>

Using the corporate culture ratings from Morningstar, we investigate whether fund corporate culture predicts future mutual fund performance. In our study we use an out-of-sample approach in which we put ourselves in the shoes of an investor who makes a mutual fund choice on each of three dates (January 1, 2005, January 1, 2007, or January 1, 2009) and then holds the fund for 12 months, 24-months, or 60 months (for the sample starting on January 2005 only). We then measure performance using a battery of risk-adjusted performance metrics that are adjusted for survivorship bias.

The rest of this paper is organized as follows. Section 2 describes the related literature and also explains how fund corporate culture

influences fund performance. Section 3 describes our data. Section 4 provides our methodology. Sections 5 and 6 explain our results and we conclude with Section 7.

## 2. Related literature

### 2.1. General research on the relationship between corporate culture and performance

The popular press has placed a great deal of attention on the idea that firms with strong corporate cultures have better performance than other firms. Each year Fortune magazine comes out with the "100 Best Companies to Work for list", which describes how these 100 firms benefit from highly motivated employees dedicated to common goals. Moreover, there are numerous references made about a company's specific corporate culture, such as the IBM Way or 3M Value, that speak to the advantages that these firms derive from their corporate culture.

Academic studies have also found that firms with strong corporate cultures have better firm performance. Denison (1984), Gordon and DiTomaso (1992), Kotter and Heskett (1992), and Sorensen (2002) all have found, across many different industries, that strong corporate culture is positively related to firm performance. These studies, when matched with qualitative studies by Peters and Waterman (1982), Deal and Kennedy (1982) and Collins and Porras (1994), further cement the notion that a strong corporate culture is crucial to a firm's long-run success.

As stated by Sorensen (2002), the reasons why a strong corporate culture improves firm performance are threefold. First, there is enhanced coordination and control within the firm. For example, strong corporate culture enhances agreement that certain behaviors are more appropriate than others. Hence, breaches of behavioral norms may be discovered and corrected more quickly than is the case when corporate culture is weak. Second, the strong culture improves goal alignment between the firm and its employees. Consequently, employees will understand and take the proper course of action when faced with unexpected situations. Third, and perhaps most importantly, a strong corporate culture produces increased employee effort and motivation, as employees feel they are recognized for their contributions and are involved in decision making. In essence, they work harder because they feel they are making a difference at the firm.

Of course, there are also arguments against having a strong corporate culture. Namely, it is very expensive to implement as employees must be developed, mentored and nurtured. Indeed, during the financial crisis of 2008–2009 several companies known for strong corporate culture had to severely cut back their policies as they were too expensive.<sup>8</sup>

Another limitation discussed by Sorensen (2002) is that during periods of crisis, when volatility is substantial, there is some evidence that firms with strong corporate cultures are not able to change quickly. When employees are committed to a certain way of doing things they may be less able to carry out the types of changes needed to adjust to high volatility. Indeed, Sorensen finds that as industry volatility increased, firms with stronger corporate cultures underperformed relative to other firms.

### 2.2. Definition of strong mutual fund culture and the possible consequences of this culture on fund performance

We define a mutual fund with a strong corporate culture as having two qualities. First, funds with strong cultures mentor their employees, reward performance and hard work, and listen to employee

<sup>7</sup> David J. Drucker, "Fiduciary Funds", *Research Magazine*, October 31, 2007.

<sup>8</sup> SAS for example had to cut a number of their benefits for employees during the recession of 2008–2009.

views. As a consequence, these funds are able to attract and retain top employees and get those employees to work harder than they would at funds with weaker corporate cultures. Conversely, funds with poor corporate cultures do not mentor employees appropriately, reward performance and consider employees views. Consequently, they often have high employee turnover that presumably could negatively affect the performance of the fund.

The second quality of a strong culture is that decisions and practices are investor driven rather than sales driven. As a consequence funds with strong cultures pursue policies that always have the best interests of the investor in mind, e.g., closing funds that are too large, keeping fees fair, not using soft dollars, and implementing redemption fees to stop market timing; such policies should improve fund performance. Another way of putting investors first is to communicate clearly in shareholder letters that explain in-depth what the fund is buying, and what went well as well what did not work out. This kind of communication should help investors place the current investing environment into perspective, thereby helping them think in the long term and avoid making rash decisions. A fund can benefit through an investor base with a long-term perspective as long-term investors are less likely to engage in market-timing strategies. As a result fund performance may increase as they do not have to hold as much cash to deal with redemptions.

### 2.3. Related literature on Morningstar stewardship ratings

While there has been no academic study that has explicitly examined the relationship between fund company corporate culture and mutual fund performance, the closest in spirit to this paper is an unpublished paper by Wellman and Zhou (2007). Using domestic equity funds, they examine the linkage between the Morningstar stewardship ratings and fund performance as well as the individual components of the stewardship rating, including corporate culture. They find that funds receiving good stewardship ratings outperformed funds with poor ratings by 10 to 16 basis points per month over the period September 2004–December 2006. Moreover, they find that a fund's corporate culture is not significantly related to fund performance. Indeed, of the five factors that make up the stewardship rating, they find that only board quality and fees are positively and significantly related to future performance.

Our paper differs from Wellman and Zhou in the following respects. First, and foremost, our paper focuses on corporate culture whereas Wellman and Zhou examine the stewardship ratings themselves. More specifically, in our paper we determine how funds are chosen, the survivorship bias methodology, and how the results are compiled, all by using a fund's corporate culture. Conversely, Wellman and Zhou only examine corporate culture because it happens to be one of the five components of the stewardship rating (the others are board structure, fees, manager incentives, and regulatory issues). Indeed, there is no motivation in their paper as to why corporate culture should matter to fund performance.

Second, our paper examines performance over a six year horizon (2005–2010) and then examines performance over bull and bear market periods while Wellman and Zhou only examine the relatively short period of 28 months (September 2004–December 2006). Third, our paper uses several different methods to account for survivorship bias. Wellman and Zhou make no adjustment for survivorship bias and thus rely on those funds that survived the sample.

Another paper that is related to ours is Chen and Huang (2011). Similar to Wellman and Zhou, they examine the relationship between fund performance and the Morningstar stewardship ratings, but use more recent data than did Wellman and Zhou. They find somewhat mixed results. Specifically, they find the stewardship ratings are positively and significantly related to fund performance when using a 3-year Sharpe ratio yet no significant relationship existed when using a 3-year single-index alpha. They also generally find that

corporate culture is not a significant predictor of fund performance. However, similar to Wellman and Zhou they do not control for survivorship bias. Since they look at a relatively long horizon period of three years, this is a significant omission as funds that dropped out of the sample during the three year period are omitted from the study.

## 3. Data

### 3.1. The Morningstar corporate culture rating

Starting in August 2004, Morningstar has provided a corporate culture rating for mutual funds. The corporate culture rating is assigned as part of the overall stewardship ratings. As mentioned in the introduction, the corporate culture rating was originally 20% of the overall stewardship rating but was raised to 40% in the fall of 2007 as Morningstar realized the importance of corporate culture in governance of the fund.

The corporate culture ratings are based on Morningstar analysts' impressions of funds. The analyst gathers information on the fund through four methods.<sup>9</sup>

- 1) An assessment over time of experience with fund managers and their practices;
- 2) In-person interviews with fund management and boards of directors;
- 3) The analysis of years of data and SEC filings;
- 4) Field visits to fund management offices.

The actual corporate culture ratings are then based on Morningstar analysts' answers to the following questions:

- 1) Is the fund manager sales oriented (trendy funds) to gather assets or is it investment oriented to serve shareholders?
- 2) Are shareholders treated like owners?
- 3) Are candid explanations of the investment process and results included in shareholder communications?
- 4) Are key investment personnel maintained and long tenured?
- 5) Are funds closed at the appropriate size or are they allowed to balloon to increase advisory fees?
- 6) Are redemption fees used to discourage rapid trading?
- 7) Are "soft dollars" prohibited?

Based on the answers to these questions, Morningstar assigns one of five possible corporate culture ratings to each fund: excellent, good, fair, poor, and very poor. For each fund, the corporate culture ratings along with the other sub-ratings that make up the overall stewardship rating are updated once a year, hence, even if there are immediate changes in the fund culture this may not be reflected the culture ratings for some time.<sup>10</sup> Note also that in late 2007 Morningstar changed their corporate culture ratings from excellent, good, fair, poor, and very poor to four specific ratings (A, B, C and D). Hence, our analysis using the 2009 sample uses only these four ratings as opposed to the five ratings used in the 2005 and 2007 samples.

### 3.2. Fund selection

To select funds for 2005, 2007 and 2009 we use the January Morningstar Principia Mutual Funds Data Disk for the respective year. These disks provide data for funds as of January 1 of that year. From these disks we then select all domestic equity funds (which includes funds in the following Morningstar categories: large value, large blend, large growth, medium value, medium blend, medium growth, small value, small blend, small growth) with a Morningstar corporate culture rating.

<sup>9</sup> See Haslem (2008) and Morningstar (2004) for more information on the calculation of the Stewardship ratings.

<sup>10</sup> We thank Laura Lutton, research analyst at Morningstar, for this information.

**Table 1**

Descriptive statistics

Panel A–C below presents descriptive statistics for the samples that were formed as of January 1 of 2005 (panel A), 2007 (panel B) and 2009 (panel C). All domestic equity funds that have a Morningstar corporate culture rating are included. Number is the number of funds. The net assets, turnover ratio, expense ratio, manager tenure, corporate culture ratings are as of January 1 of 2005 (panel A), 2007 (panel B) and 2009 (panel C). In panel A, dropouts are the number of funds that dropped out of the sample for the 60-month out-of-sample period 2005–2009 and the mean monthly returns and the standard deviation of monthly returns are based on the 60-month out-of-sample period 2005–2009. In panels B and C, dropouts are the number of funds that dropped out of the sample for the 24-month out-of-sample periods 2007–2008 (panel B) and 2009–2010 (panel C), respectively, and the mean monthly returns and the standard deviation of monthly returns are based on the 24-month out-of-sample periods 2007–2008 (panel B) and 2009–2010 (panel C), respectively.

Category	Number	Dropouts	Net assets (\$MM)	Turnover ratio	Expense ratio	Manager tenure	Mean monthly returns	St. Dev. of monthly returns	Corporate culture grade excellent	Corporate culture grade good	Corporate culture grade fair	Corporate culture grade poor	Corporate culture grade very poor
<i>Panel A: description statistics for 2005 sample</i>													
All observations	376	82	1.1616	67.5718	1.1857	5.9729	(0.0084)	5.3345	74	136	115	41	10
Corporate culture grade													
Excellent	74	3	1.1388	51.3784	0.8684	7.7378	(0.0266)	5.4149	74	0	0	0	0
Good	136	25	2.1034	74.1029	1.1795	5.8772	(0.0085)	5.3675	0	136	0	0	0
Fair	115	34	0.4969	60.8696	1.2673	5.2904	(0.0191)	5.2537	0	0	115	0	0
Poor	41	15	0.1725	84.9024	1.5005	4.8707	0.0507	5.3489	0	0	0	41	0
Very poor	10	5	0.2206	104.6000	1.3900	6.5800	0.0088	5.1591	0	0	0	0	10
<i>Panel B: description statistics for 2007 sample</i>													
All observations	441	49	1.1461	70.6757	1.0977	5.7506	0.4741	2.8643	87	159	161	33	1
Corporate culture grade													
Excellent	87	2	2.0129	50.4828	0.8149	7.1310	0.5389	2.7471	87	0	0	0	0
Good	159	25	1.5935	86.1069	1.1706	5.3189	0.4702	2.8507	0	159	0	0	0
Fair	161	19	0.3933	66.6770	1.1329	5.7273	0.4283	2.9066	0	0	161	0	0
Poor	33	3	0.3516	70.1212	1.3185	4.2242	0.5335	2.9987	0	0	0	33	0
Very poor	1	0	2.0190	36.0000	1.1700	8.4000	0.8735	3.9566	0	0	0	0	1
Category	Number	Dropouts	Net assets (\$MM)	Turnover ratio	Expense ratio	Manager tenure	Mean monthly returns	St. Dev. of monthly returns	Corporate culture grade A	Corporate culture grade B	Corporate culture grade C	Corporate culture grade D	
<i>Panel C: descriptive statistics for 2009 sample</i>													
All observations	365	29	0.5897	71.6795	0.9853	5.7545	1.7939	6.2993	52	145	96	72	
Corporate culture grade													
A	52	0	1.8757	40.2115	0.7446	7.7135	2.0110	6.3394	52	0	0	0	
B	145	7	0.5525	79.1655	0.9061	6.0269	1.8395	6.2877	0	145	0	0	
C	96	14	0.0897	84.8854	1.2653	5.4281	1.6369	6.2318	0	0	96	0	
D	72	8	0.4023	61.7222	0.9453	4.2264	1.7544	6.3835	0	0	0	72	

We then narrow the sample for each year by eliminating replicate funds. Replicate funds are funds that are identical to another fund in our sample except that they are sold as different share classes. Since we do not want to over count the number of funds in each sample, we include only one of the fund's share classes. To choose the one share class that is included in the sample, we use a rule of selecting the fund share class that has the earliest inception date. By eliminating these replicate funds, we attain a sample of 376 funds for 2005, 441 funds for 2007, and a sample of 365 funds for 2009.

### 3.3. Survivorship bias adjustment

For the funds in each of the three samples (2005, 2007, 2009) we obtain the out-of-sample returns. Specifically, for the 2005 sample we obtain the 12-month, 24-month and 60-month out-of-sample returns. For the 2007 and 2009 samples, we obtain the 12-month and 24-month out-of-sample returns.

For a large majority of funds, obtaining the out-of-sample returns is simply a matter of following the fund's future performance. However, a small but significant percentage of the funds disappear due to mergers and liquidations before the end of the out-of-sample period. For example, 82 of the 376 funds in the 2005 sample disappear before the end of the 60-month out-of-sample period. For the 2007 sample 49 of the 441 funds disappear before the end of the 24-month out-of-sample period, and for the 2009 sample 29 of the 365 funds disappear before the end of the 24-month out-of-sample period.

If we were to simply reduce our sample to include only the funds that survived the entire out-of-sample period, we would subject our study to a survivorship bias. To include those funds that fail to survive the out-of-sample period, we use two distinct survivorship bias methodologies.

#### 3.3.1. Survivorship bias method 1

Before the fund disappears we simply use the out-of-sample returns of the fund in question. After the fund disappears we find a surviving fund from the original sample that closely matches the fund that has disappeared. To find the matching fund we use an approach similar to Loughran and Ritter (1997). Specifically, we use an algorithm, detailed in Appendix A, that uses the corporate culture rating, Morningstar style category, expense and turnover ratios to find the matching fund. Hence, in this method the out-of-sample

returns from the month of disappearance onward are the returns of the matching surviving fund.

#### 3.3.2. Survivorship bias method 2

As with method 1, before a fund disappears we use the out-of-sample returns of the fund in question. After the fund disappears, we assume the investor randomly re-invests into the other surviving funds (from the original sample) of the same Morningstar corporate culture rating. Hence the out-of-sample returns from the month of disappearance onward are the equally weighted average returns of all the other surviving funds in our sample with the same corporate culture rating.

## 4. Methodology

### 4.1. Performance metrics

To measure out-of-sample performance we use four risk-adjusted performance metrics: a Sharpe ratio, a single-index alpha, a 4-index alpha, and a conditional alpha. We now briefly explain the four performance metrics:

The Sharpe ratio is:

$$\text{Sharpe}_i = \frac{\overline{R_i - R_{ft}}}{\sigma_i} \quad (1)$$

where  $R_{it} - R_{ft}$  are the monthly returns, in excess of the 30-day T-bill rate,  $R_{ft}$ , of the  $i$ th mutual fund during the out-of-sample period, and  $\sigma_i$  is the standard deviation of  $R_i - R_{ft}$ .

The single-index alpha is defined as:

$$R_{it} - R_{ft} = \alpha_i + \beta_{i1}RMRF_t + \varepsilon_{it} \quad (2)$$

where  $RMRF_t$  is the value weighted market return on all NYSE/AMEX/NASDAQ firms in excess of the risk-free rate.

For the 4-index alpha (Carhart (1997)), the following time-series regression model is used:

$$R_{it} - R_{ft} = \alpha_i + \beta_{i1}RMRF_t + \beta_{i2}SMB_t + \beta_{i3}HML_t + \beta_{i4}UMD_t + \varepsilon_{it} \quad (3)$$

where  $SMB_t$  is the difference in returns across small and big stock portfolios controlling for the same weighted average book-to-

**Table 2**

Predicting fund performance with corporate culture over a 12-month out-of-sample period. This table presents the results of Eq. (5)

$$S_i = \alpha_0 + \beta_1 \text{CorporateCulture}_i + \beta_2 \text{NetAssets}_i + \beta_3 \text{TurnoverRatio}_i + \beta_4 \text{ExpenseRatio}_i + \beta_5 \text{ManagerTenure}_i + u_i$$

where  $S_i$  is the 12-month out-sample performance metric for fund  $i$ . There are three samples (2005, 2007, 2009). The 2005 sample starts in January 1, 2005 and measures out-of-sample performance for the year 2005. The 2007 sample starts in January 1, 2007 and measures out-of-sample performance for the year 2007. The 2009 sample starts in January 1, 2009 and measures out-of-sample performance for year 2009. *CorporateCulture<sub>i</sub>*, is a variable that quantifies the in-sample corporate culture rating for fund  $i$ . *NetAssets<sub>i</sub>*, *TurnoverRatio<sub>i</sub>*, *ExpenseRatio<sub>i</sub>*, and *ManagerTenure<sub>i</sub>* are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ . Number is the number of funds in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\* and \*\* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Corporate culture	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
2005	12-month Sharpe ratio (survivorship method 1)	0.07448***	0.01082					0.00538	376
2005	12-month Sharpe ratio (survivorship method 2)	0.0359	0.02046***					0.01736	376
2005	12-month Sharpe ratio (survivorship method 1)	0.09083***	0.00944	0.00184	0.00027**	-0.02073	-0.00124	0.02404	376
2005	12-month Sharpe ratio (survivorship method 2)	0.05853	0.01892**	0.00183	0.00025	-0.02227	-0.00161	0.02738	376
2007	12-month Sharpe ratio (survivorship method 1)	0.12212***	-0.0124					0.00327	441
2007	12-month Sharpe ratio (survivorship method 2)	0.1188***	-0.01142					0.00247	441
2007	12-month Sharpe ratio (survivorship method 1)	0.1672***	-0.01547	-0.00058	0.00030**	-0.04084***	-0.00163	0.02892	441
2007	12-month Sharpe ratio (survivorship method 2)	0.16001***	-0.01444	-0.00064	0.00034***	-0.04100***	-0.00149	0.03179	441
2009	12-month Sharpe ratio (survivorship method 1)	0.36247***	0.0123					0.00463	365
2009	12-month Sharpe ratio (survivorship method 2)	0.41265***	0.00127					-0.00265	365
2009	12-month Sharpe ratio (survivorship method 1)	0.35269***	0.01408	0.00007	0.00001	0.00837	-0.00092	-0.00412	365
2009	12-month Sharpe ratio (survivorship method 2)	0.40823***	0.00421	0.00040	0.00002	0.00574	-0.00234	-0.00428	365

**Table 3**  
Predicting fund performance with corporate culture over a 24-month out-of-sample period.  
This table presents the results of Eq. (5)

$$S_i = \alpha_0 + \beta_1 \text{CorporateCulture}_i + \beta_2 \text{NetAssets}_i + \beta_3 \text{TurnoverRatio}_i + \beta_4 \text{ExpenseRatio}_i + \beta_5 \text{ManagerTenure}_i + u_i$$

where  $S_i$  is the 24-month out-sample performance metric for fund  $i$ . There are three samples (2005, 2007, 2009). The 2005 sample starts in January 1, 2005 and measures out-of-sample performance for the period 2005–2006. The 2007 sample starts in January 1, 2007 and measures out-of-sample performance for the period 2007–2008. The 2009 sample starts in January 1, 2009 and measures out-of-sample performance for the period 2009–2010. *CorporateCulture<sub>i</sub>* is a variable that quantifies the in-sample corporate culture rating for fund  $i$ . *NetAssets<sub>i</sub>*, *TurnoverRatio<sub>i</sub>*, *ExpenseRatio<sub>i</sub>* and *ManagerTenure<sub>i</sub>* are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ . Number is the number of funds in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\* and \*\* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Corporate culture	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
2005	24-month Sharpe ratio (survivorship method 1)	0.24875***	0.00127	-0.00034	-0.00018	-0.04622***	0.00084	0.06095	376
2005	24-month Sharpe ratio (survivorship method 2)	0.21625***	0.01031	-0.00034	-0.00021	-0.04634***	0.00056	0.05135	376
2005	24-month Jensen's alpha (survivorship method 1)	-0.02618	0.00486	0.00094	-0.00081***	-0.12562***	0.00032	0.06237	376
2005	24-month Jensen's alpha (survivorship method 2)	-0.44897	0.06869	-0.00626	-0.00037	-0.04282	0.01266	0.0002	376
2005	24-month 4-index alpha (survivorship method 1)	-0.05234	0.02923	0.00424	-0.00020	-0.03669	-0.00721**	0.02317	376
2005	24-month 4-index alpha (survivorship method 2)	-0.65010	0.02892	0.03120	-0.00566	0.34450	0.01074	-0.0015	376
2005	24-month conditional alpha (survivorship method 1)	-0.0596	0.00358	0.00045	-0.00059	-0.12964***	0.00333	0.04788	376
2005	24-month conditional alpha (survivorship method 2)	-0.44584	0.06931	-0.00684	-0.00029	-0.04884	0.01269	-0.00059	376
2007	24-month Sharpe ratio (survivorship method 1)	0.29899***	-0.00233	0.00109	-0.00027**	-0.06201***	0.0007	0.07162	441
2007	24-month Sharpe ratio (survivorship method 2)	0.29489***	-0.00159	0.00111	-0.00028**	-0.06039***	0.00073	0.07208	441
2007	24-month Jensen's alpha (survivorship method 1)	0.60356***	-0.02174	0.00349	-0.00114***	-0.20695***	0.00402	0.09312	441
2007	24-month Jensen's alpha (survivorship method 2)	0.43910***	-0.01972	-0.00049	-0.00051	-0.14519***	0.00146	0.05853	441
2007	24-month 4-index alpha (survivorship method 1)	1.19771***	-0.02603	0.00182	0.00033	-0.19708***	-0.00136	0.03765	441
2007	24-month 4-index alpha (survivorship method 2)	0.69381***	-0.01622	-0.00057	0.00004	-0.15548***	-0.0004	0.03909	441
2007	24-month conditional alpha (survivorship method 1)	0.61388***	-0.02718	0.00093	-0.00138***	-0.20505***	0.00613	0.08855	441
2007	24-month conditional alpha (survivorship method 2)	0.48001***	-0.01448	-0.00136	-0.00052	-0.15975***	0.00266	0.06301	441
2009	24-month Sharpe ratio (survivorship method 1)	0.27934***	0.01426**	-0.00015	0.00006	0.00722	-0.00056	0.00581	365
2009	24-month Sharpe ratio (survivorship method 2)	0.32527***	0.00436	-0.00001	0.0001	0.00599	-0.00109	0.00327	365
2009	24-month Jensen's alpha (survivorship method 1)	0.26708	0.09182	-0.01502	0.00002	-0.01657	-0.02463	-0.0045	365
2009	24-month Jensen's alpha (survivorship method 2)	-0.0042	0.03156	-0.00303	0.00079	0.05257	-0.00818	0.01262	365
2009	24-month 4-index alpha (survivorship method 1)	0.1441	0.09821	-0.02599	-0.00085	0.08317	-0.02244	-0.00902	365
2009	24-month 4-index alpha (survivorship method 2)	-0.06054	0.00773	-0.00011	0.0002	0.01758	-0.00525	-0.00202	365
2009	24-month conditional alpha (survivorship method 1)	0.23037	0.09372	-0.01829	-0.00024	0.01321	-0.02398	-0.00562	365
2009	24-month conditional alpha (survivorship method 2)	-0.01265	0.02848	-0.00296	0.00054	0.05128	-0.00685	0.00751	365

**Table 4**  
Predicting fund performance with corporate culture over a 60-month out-of-sample period.  
This table presents the results of Eq. (5)

$$S_i = \alpha_0 + \beta_1 \text{CorporateCulture}_i + \beta_2 \text{NetAssets}_i + \beta_3 \text{TurnoverRatio}_i + \beta_4 \text{ExpenseRatio}_i + \beta_5 \text{ManagerTenure}_i + u_i$$

where  $S_i$  is the 60-month out-sample performance metric for fund  $i$ . There is one sample (2005). The 2005 sample starts in January 1, 2005 and measures out-of-sample performance for the period 2005–2009. *CorporateCulture<sub>i</sub>* is a variable that quantifies the in-sample corporate culture rating for fund  $i$ . *NetAssets<sub>i</sub>*, *TurnoverRatio<sub>i</sub>*, *ExpenseRatio<sub>i</sub>* and *ManagerTenure<sub>i</sub>* are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ . Number is the number of funds in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\* and \*\* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Corporate culture	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
2005	60-month Sharpe ratio (survivorship method 1)	0.00252	-0.00185	0.00028	0.00009**	-0.00318	-0.00012	0.00908	376
2005	60-month Sharpe ratio (survivorship method 2)	-0.0378	0.0093**	0.00025	0.00007	-0.0038	-0.00039	0.00243	376
2005	60-month Jensen's alpha (survivorship method 1)	0.0057	-0.01387	0.00131	0.00047**	-0.01871	-0.0014	0.01325	376
2005	60-month Jensen's alpha (survivorship method 2)	-0.44897	0.06869	-0.00626	-0.00037	-0.04282	0.01266	0.0002	376
2005	60-month 4-index alpha (survivorship method 1)	-0.0123	-0.0141	0.0027	0.00069***	-0.01817	-0.00192	0.03315	376
2005	60-month 4-index alpha (survivorship method 2)	-0.6501	0.02892	0.0312	-0.00566	0.3445	0.01074	-0.0015	376
2005	60-month conditional alpha (survivorship method 1)	0.00627	-0.01508	0.00164	0.00056***	-0.01295	-0.00161	0.0207	376
2005	60-month conditional alpha (survivorship method 2)	-0.44584	0.06931	-0.00684	-0.00029	-0.04884	0.01269	-0.00059	376

market equity in the two portfolios;  $HML_t$  is the difference in returns between high and low book-to-market equity portfolios;  $UMD_t$  is the momentum factor, the average return on two high prior return portfolios minus the average return on two low prior portfolios.<sup>11</sup>

To estimate the conditional alpha we use the form specified by Christopherson, Ferson, and Glassman (1998). We use the following regression model:

$$R_{it} - R_{ft} = \alpha_i + \beta_{i1} RMRF_t + \beta_{i2} (RMRF_t * TB_{t-1}) + \beta_{i3} (RMRF_t * TS_{t-1}) + \epsilon_{it} \quad (4)$$

where  $TB_{t-1}$  is the lagged one-month T-Bill rate and  $TS_{t-1}$  is the lagged Treasury Slope Measure (10-year Treasury yield minus the

<sup>11</sup> The data for the 4-index alpha were obtained from Kenneth French's webpage.

3-month Treasury Bill yield). The conditional alpha is a measure that compares a fund's return with the return of a dynamic strategy that attempts to match the fund's risk exposures.

4.2. Regression methodology

To capture the linear effect of corporate culture on future risk-adjusted performance we first run a simple linear model:

$$S_i = \alpha_0 + \beta_1 CorporateCulture_i + \beta_2 NetAssets_i + \beta_3 TurnoverRatio_i + \beta_4 ExpenseRatio_i + \beta_5 ManagerTenure_i + u_i \quad (5)$$

where  $S_i$  is out-sample performance metric for fund  $i$  and  $CorporateCulture_i$  is a variable that quantifies the  $i$ th fund's corporate culture rating, i.e., excellent is a 5; good is 4; fair is a 3; poor is 2, and very poor is a 1.  $NetAssets_i$ ,  $TurnoverRatio_i$ ,  $ExpenseRatio_i$  and  $ManagerTenure_i$  are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ . We use these as controls as these variables have been found to be related to fund performance in other papers. More specifically, Chen, Hong, Huang, and Kubik (2004) found that there is an inverse relationship between mutual fund size and fund performance. Carhart (1997), among others, has found that turnover and expense ratios are negatively related to fund performance. Finally Golec (1996) has found that longer-tenured fund managers have better performance than shorter-tenured managers.

Note also that we estimated Eq. (5) without any of the control variables, or using just some of the control variables, and acquired the same general results as those reported in the paper. We also tried other controls such as the in-sample Morningstar star rating and the style of the fund (defined by the Morningstar category) and always found results that are very similar to those reported here. Thus our results are robust to different specifications of control variables.

To further examine the out-of-sample predictive performance we next use a dummy variable regression. Specifically, we estimate the following equation:

$$S_i = \alpha_0 + \beta_1 Excellent_i + \beta_2 Good_i + \beta_3 Poor_i + \beta_4 Verypoor_i + \beta_5 NetAssets_i + \beta_6 TurnoverRatio_i + \beta_7 ExpenseRatio_i + \beta_8 ManagerTenure_i + u_{i8} \quad (6)$$

where:

- $excellent_i$  1 if the fund  $i$  received an excellent corporate culture rating, 0 if not,
- $good_i$  1 if the fund  $i$  received a good corporate culture rating, 0 if not,
- $poor_i$  1 if the fund  $i$  received a poor corporate culture rating, 0 if not, and
- $verypoor_i$  1 if the fund  $i$  received a very poor corporate culture rating, 0 if not.

In the above equation, the fair rating fund group is the reference group, as this is the median level of corporate culture. If better corporate culture accurately predicts out-of-sample performance we should see positive and significant coefficients for  $\beta_1$  and  $\beta_2$  and negative and significant coefficients for  $\beta_3$  and  $\beta_4$ .

Note also that the 2009 sample uses the ratings A, B, C, and D instead of using excellent, good, fair, poor and very poor for corporate culture (see Section 3). Hence, in our estimation of Eq. (6) using the 2009 sample, the C rated funds are the reference group.

5. Results of the impact of corporate culture on performance

The results in this section are presented in seven tables. Table 1 provides descriptive statistics for our samples while Tables 2–4 provide

Table 5

Predicting fund performance with corporate culture over a 12-month out-of-sample period using dummy variables. This table presents the results of Eq. (6)

$$S_i = \alpha_0 + \beta_1 Excellent_i + \beta_2 Good_i + \beta_3 Poor_i + \beta_4 Verypoor_i + \beta_5 NetAssets_i + \beta_6 TurnoverRatio_i + \beta_7 ExpenseRatio_i + \beta_8 ManagerTenure_i + u_i$$

where  $S_i$  is the 12-month out-sample performance metric for fund  $i$ . There are three samples (2005, 2007, 2009). The 2005 sample starts in January 1, 2005 and measures out-of-sample performance for the year 2005. The 2007 sample starts in January 1, 2007 and measures out-of-sample performance for the year 2007. The 2009 sample starts in January 1, 2009 and measures out-of-sample performance for the year 2009.  $Excellent_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was excellent.  $Good_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was good.  $Poor_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was poor.  $Verypoor_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was very poor. The reference group is funds with fair rated corporate culture. Note also that the 2009 sample instead of using excellent, good, fair, poor and very poor for corporate culture uses instead the ratings A, B, C, and D. In our regression the C rated funds are the reference group.  $NetAssets_i$ ,  $TurnoverRatio_i$ ,  $ExpenseRatio_i$  and  $ManagerTenure_i$  are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ .  $Number$  is the number of funds examined in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\*, \*\*, and \* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Corporate culture excellent	Corporate culture grade good	Corporate culture grade poor	Corporate culture very poor	Corporate culture grade A	Corporate culture grade B	Corporate culture grade D	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
2005	12-month Sharpe ratio (survivorship method 1)	0.12537***	0.00223	0.00421	0.00416	-0.12036***				0.00173	0.00003***	-0.02434	-0.00074	0.03744	376
2005	12-month Sharpe ratio (survivorship method 2)	0.13099***	-0.00186	0.00376	0.00700	-0.27089***				0.00161	0.00031**	-0.03028**	-0.00048	0.09589	376
2007	12-month Sharpe ratio (survivorship method 1)	0.11084***	-0.02253	0.0145	0.06838**	-0.09647				-0.00109	0.00027**	-0.04546***	-0.0013	0.03692	441
2007	12-month Sharpe ratio (survivorship method 2)	0.1063***	-0.01939	0.01264	0.06834**	-0.09524				-0.0011	0.00032**	-0.04503***	-0.00118	0.03874	441
2009	12-month Sharpe ratio (survivorship method 1)	0.36589***					0.00845***	0.14012	0.31371	-0.00035	0.00007	0.01324	-0.00064	0.00100	365
2009	12-month Sharpe ratio (survivorship method 2)	0.39826***					0.03079**	0.64205	0.19084	-0.00007	0.00009	0.00938	-0.00209	0.00510	365



**Table 6**  
Predicting fund performance with corporate culture over a 24-month out-of-sample period using dummy variables.  
This table presents the results of Eq. (6).

$$S_t = \alpha_0 + \beta_1 \text{Excellent}_t + \beta_2 \text{Good}_t + \beta_3 \text{Poor}_t + \beta_4 \text{VeryPoor}_t + \beta_5 \text{NetAssets}_t + \beta_6 \text{TurnoverRatio}_t + \beta_7 \text{ExpenseRatio}_t + \beta_8 \text{ManagerTenure}_t + u_t$$

where  $S_t$  is the 24-month out-of-sample performance metric for fund  $i$ . There are three samples (2005, 2007, 2009). The 2005 sample starts in January 1, 2005 and measures out-of-sample performance for the period 2005–2006. The 2007 sample starts in January 1, 2007 and measures out-of-sample performance for the period 2007–2008. The 2009 sample starts in January 1, 2009 and measures out-of-sample performance for the period 2009–2010. *Excellent<sub>t</sub>* is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was excellent. *Good<sub>t</sub>* is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was good. *Poor<sub>t</sub>* is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was poor. *VeryPoor<sub>t</sub>* is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was very poor. The reference group is funds with fair rated corporate culture. Note also that the 2009 sample instead of using excellent, good, fair, and very poor for corporate culture uses instead the ratings A, B, C, and D. In our regression the C rated funds are the reference group. *NetAssets<sub>t</sub>*, *TurnoverRatio<sub>t</sub>*, and *ManagerTenure<sub>t</sub>* are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ . Number is the number of funds in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\*, \*\*, and \* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Corporate culture excellent	Corporate culture grade good	Corporate culture grade poor	Corporate culture very poor	Corporate culture grade A	Corporate culture grade B	Corporate culture grade D	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
2005	24-month Sharpe ratio (survivorship method 1)	0.25127***	0.01175	-0.00463	-0.00749	0.03099				-0.0001	-0.00018	-0.04401***	0.00059	0.0584	376
2005	24-month Sharpe ratio (survivorship method 2)	0.25566***	0.00549	-0.00565	-0.00007	-0.1329***				-0.00022	-0.00017	-0.04905***	0.00101	0.06323	376
2005	24-month Jensen's alpha (survivorship method 1)	-0.00849	0.02665	-0.0219	-0.06533	0.12839				0.00169	-0.00081***	-0.11722***	-0.00051	0.06467	376
2005	24-month Jensen's alpha (survivorship method 2)	-0.21277	0.07431	0.04134	-0.16469	-0.20209				-0.00657	-0.00032	-0.0449	0.01334	-0.00687	376
2005	24-month 4-index alpha (survivorship method 1)	0.03945	0.07235	-0.0078	-0.0095	-0.13691				0.00517	-0.00015	-0.03459	-0.0073**	0.02323	376
2005	24-month 4-index alpha (survivorship method 2)	-0.37863	-0.08014	-0.43884	-0.79582	0.16244				0.03861	-0.00518	0.39727	0.00839	-0.0038	376
2005	24-month conditional alpha (survivorship method 1)	-0.05002	0.02368	-0.00702	-0.05199	0.13807				0.00088	-0.0006	-0.12281***	0.00258	0.0471	376
2005	24-month conditional alpha (survivorship method 2)	-0.21019	0.07671	0.04881	-0.15487	-0.20776				-0.00727	-0.00025	-0.05178	0.01342	-0.00784	376
2007	24-month Sharpe ratio (survivorship method 1)	0.28399***	0.00528	0.01306	0.03731	0.02462				0.00079	-0.00028**	-0.06386***	0.00084	0.07006	441
2007	24-month Sharpe ratio (survivorship method 2)	0.28164***	0.00739	0.01464	0.0386	0.02534				0.0008	-0.00029**	-0.06234***	0.00087	0.07119	441
2007	24-month Jensen's alpha (survivorship method 1)	0.49921***	0.01893	0.02182	0.17017**	0.46911				0.00249	-0.00112***	-0.20952***	0.00431	0.09698	441
2007	24-month Jensen's alpha (survivorship method 2)	0.3468***	-0.00193	0.05322	0.16823***	0.09378				-0.00188	-0.00056**	-0.15461***	0.00212	0.06942	441
2007	24-month 4-index alpha (survivorship method 1)	1.08874***	0.02764	-0.06707	0.11033	0.68857				0.00228	0.00048	-0.18468***	-0.00185	0.04571	441
2007	24-month 4-index alpha (survivorship method 2)	0.62399***	-0.00141	0.0123	0.10516	0.09422				-0.00114	0.00003	-0.15814***	-0.00012	0.0368	441
2007	24-month conditional alpha (survivorship method 1)	0.48619***	0.01477	0.03809	0.19843**	0.72742				-0.00057	-0.00138***	-0.21025***	0.00648	0.09588	441
2007	24-month conditional alpha (survivorship method 2)	0.39957***	0.02164	0.04687	0.16611***	0.29412				-0.00263	-0.00054	-0.16617***	0.00314	0.07194	441
2009	24-month Sharpe ratio (survivorship method 1)	0.29476***				0.00075**	0.02911**	0.21845		-0.00051	0.00012	0.01186	-0.00031	0.01606	365
2009	24-month Sharpe ratio (survivorship method 2)	0.31461***				0.00071***	0.27077	0.02812**		-0.00044	0.00016**	0.00988	-0.00084	0.03146	365
2009	24-month Jensen's alpha (survivorship method 1)	0.21449				0.05122	0.10486	0.19409		-0.0183	0.00052	0.04013	-0.02188	-0.00097	365
2009	24-month Jensen's alpha (survivorship method 2)	-0.06376				0.00051***	0.26649	0.03148**		-0.00589	0.00122**	0.07776	-0.00655	0.04117	365
2009	24-month 4-index alpha (survivorship method 1)	0.2189				0.1482	0.7276	0.60081		-0.031	-0.00009	0.11803	-0.01988	-0.00099	365
2009	24-month 4-index alpha (survivorship method 2)	-0.08364				0.05646	0.84189	0.26043		-0.0012	0.00036	0.02488	-0.0047	0.00554	365
2009	24-month conditional alpha (survivorship method 1)	0.2158				0.05699	0.22362	0.28054		-0.02209	0.00034	0.06339	-0.02129	-0.00371	365
2009	24-month conditional alpha (survivorship method 2)	-0.06753				0.00018***	0.40662	0.02739**		-0.00589	0.00098**	0.07384	-0.00529	0.04455	365

the results from estimating Eq. (5) using the 12-month, 24-month and 60-month out-of-sample periods. Similarly, Tables 5–7 present the results from estimating Eq. (6) using the 12-month, 24-month and 60-month out-of-sample periods.

The descriptive statistics are presented in Table 1, panels A–C. Panel A provides information on the 2005 sample, while panels B and C show information on the 2007 and 2009 samples respectively. In each panel we show the number of funds in each sample and the breakdown of funds by corporate culture rating. We also present the number of funds that dropped out of the sample before the end of the longest out-of-sample period (for the 2005 sample, this date is December 31, 2009; for the 2007 sample, this date is December 31, 2008; and for the 2009 sample it is December 31, 2010). We also provide the in-sample average net assets, expense and turnover ratios, and managerial tenure. Furthermore, we provide the mean and standard deviation for the monthly out-of-sample returns. Again, for the 2005 sample the out-of-sample returns are based on the period 2005–2009, while the out-of-sample returns for the 2007 and 2009 samples are based on 2007–2008 and 2009–2010, respectively.

The results show several interesting findings. First, funds with excellent corporate culture ratings have lower expense and turnover ratios than other funds across all three samples. This result is consistent with our expectations because funds with better corporate cultures work in the interest of investors (as explained earlier) which usually means keeping fees and trading costs low.

Second, we find that funds with better corporate culture ratings generally have substantially longer managerial tenure than other funds. This is not surprising as Morningstar's measure of corporate culture includes the question of whether "are key investment personnel maintained and long tenured". In the 2005 and 2009 samples, the funds with top-rated corporate culture have the highest average tenure. In the 2007 sample the top-rated rated funds have the second highest average manager tenure (only the very poor have a higher

average tenure). Again, this result is consistent with expectations as funds with better corporate cultures invest in, and nurture, their employees, which fosters greatly loyalty.

Third, we find that funds with top rated corporate culture ratings have a much lower chance of merging or liquidating before the end of the out-of-sample period. For example, in the 2005 sample only 3 of the 74 funds that drop out are top-rated funds. Comparatively, a large percentage of the funds rated fair or lower drop out before the end of the sample.

Fourth, Table 1 also provides the monthly mean returns and standard deviation of the out-of-sample (load-adjusted) returns for various groups of funds. The results show that funds rated as excellent in terms of corporate culture do not always have the highest mean monthly returns during the out-of-sample periods. Only in the 2009 sample do the top-rated funds have the highest mean monthly returns.

Table 2 provides the results from estimating Eq. (5) for the 12-month out-of-sample period for each of the three samples, 2005, 2007 and 2009. We provide the results using only the Sharpe ratio as the other performance metrics require longer samples for their estimation. Furthermore, we provide the results for each survivorship bias method separately. The results show that corporate culture is not a significant factor in predicting future performance. Indeed, in ten of the 12 regressions (four regressions for each sample) the coefficient on corporate culture is insignificant at traditional levels. Although we do not report the results, our findings in Table 2 are robust to deleting the control variables or adding other controls such as style or past fund performance.

Tables 3 and 4 provide the results for the 24-month and 60-month out-of-sample periods. We find similar results to those reported in Table 2, namely that corporate culture does not appear to be a significant factor in predicting future risk-adjusted performance. Indeed, in only one of the 24 regressions on Table 3 is the corporate culture coefficient significant. Similarly, in only one of the eight cases on Table 4 is the corporate culture coefficient significant at traditional levels.

Table 7

Predicting fund performance with corporate culture over a 60-month out-of-sample period using dummy variables. This table presents the results of Eq. (6)

$$S_i = \alpha_0 + \beta_1 \text{Excellent}_i + \beta_2 \text{Good}_i + \beta_3 \text{Poor}_i + \beta_4 \text{Verypoor}_i + \beta_5 \text{NetAssets}_i + \beta_6 \text{TurnoverRatio}_i + \beta_7 \text{ExpenseRatio}_i + \beta_8 \text{ManagerTenure}_i + u_i$$

where  $S_i$  is the 60-month out-sample performance metric for fund  $i$ . There is one sample (2005). The 2005 sample starts in January 1, 2005 and measures out-of-sample performance for the period 2005–2009.  $\text{Excellent}_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was excellent.  $\text{Good}_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was good;  $\text{Poor}_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was poor;  $\text{Verypoor}_i$  is a dummy variable that signifies that the in-sample corporate culture rating for fund  $i$  was very poor. The reference group is funds with fair rated corporate culture.  $\text{NetAssets}_i$ ,  $\text{TurnoverRatio}_i$ ,  $\text{ExpenseRatio}_i$  and  $\text{ManagerTenure}_i$  are the in-sample net assets, turnover ratio, expense ratio and manager tenure for fund  $i$ . Number is the number of funds in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\* and \*\* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Corporate culture grade excellent	Corporate culture grade good	Corporate culture grade poor	Corporate culture very poor	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
2005	60-month Sharpe ratio (survivorship method 1)	-0.0049	-0.00032	0.00016	0.01084	-0.00042	0.00029	0.00008**	-0.00338	-0.00013	0.00682	376
2005	60-month Sharpe ratio (survivorship method 2)	-0.00259	-0.00134	0.00292	0.01195	-0.15167***	0.00011	0.0001	-0.0085	0.00024	0.07442	376
2005	60-month Jensen's alpha (survivorship method 1)	-0.0471	-0.00942	0.00114	0.06332	0.01309	0.00127	0.00045**	-0.02001	-0.00143	0.01068	376
2005	60-month Jensen's alpha (survivorship method 2)	-0.21277	0.07431	0.04134	-0.16469	-0.20209	-0.00657	-0.00032	-0.0449	0.01334	-0.00687	376
2005	60-month 4-index alpha (survivorship method 1)	-0.06315	-0.02098	0.00377	0.07009	-0.03414	0.00245	0.00068***	-0.02191	-0.00165	0.03439	376
2005	60-month 4-index alpha (survivorship method 2)	-0.37863	-0.08014	-0.43884	-0.79582	0.16244	0.03861	-0.00518	0.39727	0.00839	-0.0038	376
2005	60-month conditional alpha (survivorship method 1)	-0.0482	-0.01251	-0.00663	0.06109	0.00637	0.00171	0.00056***	-0.01386	-0.00165	0.01758	376
2005	60-month conditional alpha (survivorship method 2)	-0.21019	0.07671	0.04881	-0.15487	-0.20776	-0.00727	-0.00025	-0.05178	0.01342	-0.00784	376

**Table 8**

Predicting fund performance with using other Morningstar stewardship components. The other Morningstar stewardship components include fees, board quality, regulatory issues, and manager incentives. Panel A shows the results of using 12-month out-of-sample periods, and Panel B shows the results of examining five year out-of-sample periods.

There are three samples (2005, 2007, 2009). Dependent is dependent variable. Hence, for the 2005 sample, the 12-month Sharpe ratio is the out-of-sample Sharpe ratio for each fund for the period January 2005 to December 2005. The independent variables are measured as of the period right before the beginning of the sample period (in-sample). Hence, for the 2005 sample, the independent variables are as of December 31, 2004. Number is the number of funds in each regression. For each performance metric we present the results using both survivorship bias method 1 (which uses a matching algorithm) and survivorship bias method 2 (which uses an equally weighted average of the surviving funds with the same corporate culture and broad investment style). \*\*\* and \*\* indicate significance at the one and five percent levels respectively.

Sample	Dependent	Intercept	Fees	Net assets	Turnover ratio	Manager tenure	Adj R <sup>2</sup>	Number	Intercept	Board quality	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>
<i>Panel A: 12-month out-of-sample periods</i>															
2005	12-month Sharpe ratio (survivorship bias 1)	0.00689	0.02556	0.00095	0.00027**	-0.00101	0.08638	376	0.1044***	0.00592	0.00192	0.00028**	-0.02468**	-0.00095	0.02047
2005	12-month Sharpe ratio (survivorship bias 2)	0.01095	0.02488	0.00103	0.00026**	-0.00117	0.08312	376	0.10699***	0.00586	0.00194	0.00027**	-0.02534**	-0.00112	0.02087
2007	12-month Sharpe ratio (survivorship bias 1)	0.03876	0.00831	-0.00051	0.0003**	-0.00207	0.11436***	441	0.11436***	-0.0024	0.00129	0.00036**	-0.03897***	-0.00169	0.02887
2007	12-month Sharpe ratio (survivorship bias 2)	0.04218	0.00769	-0.00043	0.00029**	-0.00212	0.01692	441	0.11686***	-0.00366	-0.00109	0.00034**	-0.0355***	-0.00176	0.025
2009	12-month Sharpe ratio (survivorship bias 1)	0.44682***	-0.01056	0.00061	-0.00001	-0.00027	-0.00078	365	0.43367***	-0.00884	0.00039	0.00000	0.00485	-0.00031	-0.01137
2009	12-month Sharpe ratio (survivorship bias 2)	0.45561***	-0.00741	0.00062	0.00001	-0.00211	0.00356	365	0.43889**	-0.00438	0.00048	0.00002	0.00433	-0.00214	-0.00477
<i>Panel B: 24-month out-of-sample periods</i>															
2005	24-month Sharpe ratio (survivorship bias 1)	0.16584***	0.00919**	0.00016	-0.00023**	0.00114	0.02551	376	0.24269***	0.00204	-0.00036	-0.00017	-0.0459***	0.00113	0.06132
2005	24-month Sharpe ratio (survivorship bias 2)	0.16408***	0.00988**	0.00018	-0.00025**	0.00105	0.02983	376	0.23993**	0.00282	-0.00029	-0.00019	-0.04542***	0.00102	0.06283
2005	24-month Jensen (survivorship bias 1)	-0.24874***	0.02610**	0.000234	-0.00095**	0.00093	0.03471	376	-0.08575	0.01878	0.00099	-0.00079***	-0.12431***	0.00057	0.06426
2005	24-month Jensen (survivorship bias 2)	-0.32434***	0.04598	0.00076	0.00048	0.00218	0.0348	376	-0.26483***	0.04224**	0.00024	0.00053	-0.04616	0.00149	0.01366
2005	24-month 4-index (survivorship bias 1)	-0.16586**	0.0466	0.00276	-0.00022	-0.00576	0.05192	376	-0.12775	0.04723**	0.00435	-0.00018	-0.04169	0.00657**	0.02644
2005	24-month 4-index (survivorship bias 2)	-0.24192***	0.05381	0.00252	-0.00004	-0.0042	0.06113	376	-0.20775**	0.056	0.00043	0.00000	-0.04423	-0.00516	0.02882
2005	24-month conditional alpha (s.b. 1)	-0.28747***	0.02453	0.00212	-0.00073**	0.00397	0.02179	376	-0.12273	0.01826	0.00047	0.00055	-0.12915***	0.0036	0.05083
2005	24-month conditional alpha (s.b. 2)	-0.33056***	0.04324	0.00086	0.00100**	0.00367	0.03736	376	-0.29336***	0.04145	0.00251	0.00103**	-0.03196	0.00299	0.02082
2007	24-month Sharpe ratio (survivorship bias 1)	0.19188***	0.01057**	0.00255	-0.00037***	0.00041	0.03631	441	0.28677***	0.00172	0.00082	-0.00027**	-0.06566***	0.00069	0.08269
2007	24-month Sharpe ratio (survivorship bias 2)	0.19541***	0.00988**	0.00262	-0.00037***	0.00018	0.03472	441	0.28306***	0.00146	0.00107	-0.00028**	-0.0598***	0.00063	0.07269
2007	24-month Jensen (survivorship bias 1)	0.25753***	0.01857	0.00888	-0.00149***	0.00267	0.04614	441	0.58989***	-0.01382	0.00228	-0.00116**	-0.21889***	0.00437	0.10546
2007	24-month Jensen (survivorship bias 2)	0.15626***	0.01966	0.0026	-0.00071**	0.00009	0.01642	441	0.34035***	0.00559	-0.0013	-0.0005	-0.13841***	0.00105	0.05507
2007	24-month 4-index (survivorship bias 1)	0.91311***	-0.00309	0.00819	0.00008	-0.00172	-0.00561	441	1.23495***	-0.03746	0.00142	0.00034	-0.1942***	-0.00011	0.03944
2007	24-month 4-index (survivorship bias 2)	0.43088***	0.01469	0.00338	-0.00019	-0.00179	-0.00328	441	0.64338***	-0.0039	-0.00107	0.00004	-0.14857***	-0.0007	0.03597
2007	24-month conditional alpha (s.b. 1)	0.25547***	0.01788	0.00605	-0.00178***	0.00446	0.05246	441	0.54344***	-0.00381	-0.00065	-0.00146**	-0.21349***	0.00595	0.09949
2007	24-month conditional alpha (s.b. 2)	0.19033***	0.02263	0.00227	-0.00074**	0.00139	0.0185	441	0.36123***	0.0163	-0.00228	-0.0005	-0.15438***	0.00232	0.06286
2009	24-month Sharpe ratio (survivorship bias 1)	0.34793***	-0.00412	0.00022	0.00006	0.00005	-0.00658	365	0.36766***	-0.01067	-0.00017	0.00006	0.00361	0.00006	-0.00675
2009	24-month Sharpe ratio (survivorship bias 2)	0.35381***	-0.00245	0.00006	0.0001	-0.00085	0.00282	365	0.36862***	-0.00777	0.00007	0.00009	0.00454	-0.00084	0.00437
2009	24-month Jensen (survivorship bias 1)	0.67107**	-0.03112	-0.01142	-0.0001	-0.02066	-0.00454	365	1.41547***	-0.22637	0.01289	-0.00018	-0.04403	-0.02011	0.00259
2009	24-month Jensen (survivorship bias 2)	0.2047**	-0.01637	-0.0027	0.00083	-0.00642	0.01033	365	0.32163**	-0.05955	-0.00244	0.00075	0.04169	-0.00631	0.01492
2009	24-month 4-index (survivorship bias 1)	0.58816	-0.01351	-0.0244	-0.00076	-0.01837	0.00805	365	1.80822**	-0.36067**	-0.02366	-0.00118	0.05063	-0.0172	0.00069
2009	24-month 4-index (survivorship bias 2)	-0.00662	-0.00369	-0.00012	0.00021	-0.00477	-0.00118	365	0.13844	-0.04649**	0.00001	0.00015	0.01175	-0.00463	0.00751
2009	24-month conditional alpha (s.b. 1)	0.64632**	-0.02536	-0.0153	-0.0003	-0.01998	-0.00547	365	1.53273***	-0.26647**	-0.0161	-0.00048	-0.01577	-0.01924	0.00406
2009	24-month conditional alpha (s.b. 2)	0.15986	-0.00993	-0.00288	0.0006	-0.00526	0.00369	365	0.31204**	-0.06219	-0.00244	0.0005	0.0411	-0.0051	0.01206
<i>Panel C: 60 month out-of-sample periods</i>															
2005	60-month Sharpe ratio (survivorship bias 1)	-0.01355	0.00212	0.00016	0.0001***	-0.00001	0.00904	376	-0.02701**	0.00491	0.00025	0.0001***	-0.00017	-0.00013	0.0164
2005	60-month Sharpe ratio (survivorship bias 2)	-0.02264**	0.00331**	0.00013	0.00008**	0.00003	0.01314	376	-0.03070***	0.00639**	0.00028	0.00008**	-0.00267	-0.00009	0.01849
2005	60-month Jensen (survivorship bias 1)	-0.0874	0.01411	0.00044	0.00053***	-0.0009	0.01321	376	-0.16333**	0.0258	0.00096	0.00055***	-0.00203	-0.00166	0.01729
2005	60-month Jensen (survivorship bias 2)	-0.31784***	0.04138	0.00028	0.00053	0.00091	0.03232	376	-0.26483***	0.04224**	0.00024	0.00053	-0.04616	-0.00149	0.01366
2005	60-month 4-index (survivorship bias 1)	-0.13083**	0.02351	0.00138	0.00075***	-0.00136	0.0441	376	-0.15217**	0.01879	0.00231	0.00076**	-0.00522	-0.00196	0.03305
2005	60-month 4-index (survivorship bias 2)	-0.27471**	0.04792	0.00208	0.00001	-0.00472	0.06179	376	-0.20775**	0.056	0.00043	0.00000	-0.04423	-0.00516	0.02882
2005	60-month conditional alpha (s.b. 1)	-0.09192	0.01609	0.00071	0.00062***	-0.00129	0.02283	376	-0.17459**	0.02776	-0.00129	0.00054**	0.00529	-0.00213	0.02596
2005	60-month conditional alpha (s.b. 2)	-0.33275***	0.04066	0.00062	0.00102	0.0035	0.03278	376	-0.29386***	0.04145	0.00251	0.00103**	-0.03196	-0.00299	0.02082

Number	Intercept	Regulatory issues	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number	Intercept	Manager incentives	Net assets	Turnover ratio	Expense ratio	Manager tenure	Adj R <sup>2</sup>	Number
376	0.11058***	0.00439	0.00185	0.00027**	-0.02438**	-0.00111	0.02152	376	0.11939***	0.00341	0.002	0.00028**	-0.02645**	-0.00081	0.02028	376
376	0.11077***	0.00493	0.00186	0.00025**	-0.02482**	-0.00131	0.02261	376	0.12291***	0.00293	0.00201	0.00026**	-0.02702**	-0.00098	0.0204	376
441	0.10213***	0.00073	-0.00136	0.00036**	-0.03856***	-0.00174	0.02873	441	0.09963***	0.00176	-0.00132	0.00036**	-0.03867***	-0.00179	0.02891	441
441	0.09042**	0.00287	-0.00124	0.00034**	-0.03438**	-0.00187	0.02498	441	0.09772***	0.00167	-0.00115	0.00035**	-0.0351**	-0.00188	0.02479	441
365	0.31509***	0.02093**	0.00063	0.00001	0.00805	-0.00135	0.00269	365	0.34471***	0.01574**	0.00042	0.0001	0.00744	-0.00114	0.00043	365
365	0.35418***	0.01668**	0.00067	0.00002	0.00681	-0.00296**	0.00807	365	0.35914***	0.01774	0.00051	0.00013	0.0071	-0.00305**	0.01767	365
376	0.24997***	0.00021	-0.00036	-0.00017	-0.04626***	0.00116	0.06112	376	0.25663***	-0.00233	-0.0004	-0.00017	-0.04599***	0.00118	0.06181	376
376	0.24146***	0.00245	-0.00033	-0.00019**	-0.04514***	0.00092	0.06338	376	0.25776***	-0.00265	-0.00034	-0.00019**	-0.04562**	0.00109	0.06332	376
376	-0.00381	-0.00186	0.00097	-0.00079***	-0.12897***	0.00116	0.0625	376	0.00519	-0.00654	0.00081	-0.0008**	-0.12734***	0.00105	0.06301	376
376	-0.1367**	0.01002	0.00213	0.00048	-0.05158	0.00184	0.00516	376	-0.10266	0.00222	0.00237	0.0005	-0.05549	0.00252	0.00336	376
376	0.08259	-0.00577	0.00456	-0.0002	-0.05381	-0.00501	0.01071	376	-0.03148	0.03648	0.00514	-0.00017	-0.05717**	-0.00548	0.03545	376
376	-0.0154	0.0076	0.0044	-0.00004	-0.05344	-0.00431	0.00774	376	-0.03981	0.02176	0.00496	-0.00001	-0.05939**	-0.00383	0.01517	376
376	-0.06068	0.00264	0.00045	-0.00057	-0.1321***	0.00387	0.04943	376	-0.01079	-0.01577	0.00021	-0.00058	-0.13069***	0.00408	0.05223	376
376	-0.16486**	0.00901	0.00243	0.00099***	-0.03758	0.00339	0.01442	376	-0.12445	-0.00192	0.00256	0.001**	-0.04051	0.00402	0.01332	376
441	0.28249***	0.00241	0.0008	-0.00027**	-0.06512**	0.00089	0.0829	441	0.27791***	0.00467	0.00091	-0.00026**	-0.06554***	0.00076	0.08423	441
441	0.27089***	0.00397	0.00182	-0.00029**	-0.05879***	0.00059	0.07345	441	0.27392***	0.00446	0.00115	-0.00027**	-0.05967***	0.00049	0.07412	441
441	0.50977***	0.00638	0.00182	-0.00116**	-0.21592***	0.00403	0.10503	441	0.47012***	0.02079	0.00218	-0.00111**	-0.21655***	0.00034	0.10803	441
441	1.13537***	-0.00914	0.00081	0.00037	-0.19363***	-0.00055	0.03569	441	0.96583***	0.0394**	0.00098	0.00045	-0.18881**	-0.00212	0.04543	441
441	0.5924***	0.00818	-0.00136	0.00003	-0.14593***	-0.00091	0.03641	441	0.58345***	0.01385	-0.00101	0.00007	-0.14746**	-0.00126	0.03802	441
441	0.2998***	0.0028	-0.0008	-0.00146**	-0.21237***	0.00584	0.09949	441	0.50479***	0.00746	-0.00065	0.00042	-0.21274***	0.00563	0.0998	441
441	0.36674***	0.01249	-0.00223	-0.00052	-0.15221***	0.00237	0.06274	441	0.38454***	0.01152	-0.0018	-0.00048	-0.1551***	0.00217	0.06301	441
365	0.26169***	0.01623**	0.00035	0.00006	0.00619	-0.00076	0.00629	365	0.28748***	0.01142**	0.00019	0.00013	0.0056	-0.00055	-0.00178	365
365	0.28948***	0.01123	0.00021	0.0001	0.00649	-0.00146	0.01831	365	0.2915***	0.01354	0.00009	0.00017**	0.00677	-0.00154	0.03401	365
365	-0.5713	0.28072	-0.00977	-0.00003	0.00172	-0.03447	0.01716	365	-0.0942	0.18976**	-0.01261	0.00108	-0.00964	-0.03045	0.00947	365
365	-0.21314	0.07679**	-0.00158	0.00079	0.05415	-0.01023	0.02539	365	-0.21967	0.08986	-0.00229	0.0013***	0.05671	-0.01104	0.04377	365
365	-0.98889	0.3577***	0.01972	-0.00092	0.11085	-0.03574	0.0067	365	0.23231	0.19946	0.02341	0.00027	0.09005	-0.02849	-0.00248	365
365	-0.23328***	0.04883	0.00055	0.00018	0.01989	-0.00715	0.01544	365	-0.20693***	0.04863	0.00008	0.00046	0.02025	-0.00724**	0.02503	365
365	-0.69597	0.3037	-0.01274	-0.00029	0.0343	-0.03485	0.0171	365	-0.13796	0.19265**	-0.01583	0.00084	0.02012	-0.02987	0.00703	365
365	-0.22015	0.07381	-0.00162	0.00054	-0.0532	-0.00888	0.02256	365	-0.22227**	0.08521	-0.0023	0.00103**	0.05549	-0.0096	0.04226	365
376	-0.01379	0.00159	0.00022	0.00009***	-0.00065	-0.00012	0.0102	376	-0.00006	-0.00299	0.0002	0.00009***	-0.00077	-0.00001	0.01603	376
376	-0.01686**	0.00289**	0.00024	0.00007**	-0.003	-0.00013	0.01279	376	-0.0001	-0.00221	0.00026	0.00007**	-0.0037	0.00008	0.00693	376
376	-0.09202**	0.00788	0.00086	0.00052***	-0.00471	-0.00156	0.01134	376	0.01842**	0.01479	0.00067	0.00013***	-0.00479	-0.00098	0.02003	376
376	-0.1367**	0.01002	0.00213	0.00048	0.00518	0.00184	0.00516	376	-0.10266	0.00222	0.00237	0.0005	-0.05549	0.00052	0.00336	376
376	-0.10514**	0.00697	0.00222	0.00074**	-0.00673	-0.00198	0.03072	376	-0.02964	-0.01916**	0.00199	0.00073**	-0.00637	-0.00146	0.04014	376
376	-0.0154	0.0064	0.0044	-0.00004	0.05344	-0.00431	0.00774	376	-0.03981	0.02176	0.00496	-0.00001	-0.05939**	-0.00383	0.01517	376
376	-0.08979	0.00644	0.00123	0.00061***	0.00168	-0.00189	0.0183	376	-0.02204	-0.01176	0.00103	0.0006***	0.00189	-0.00141	0.02559	376
376	-0.16486**	0.00901	0.00243	0.00099***	-0.03758	0.00339	0.01442	376	-0.12445	-0.00192	0.00256	0.001**	-0.04051	0.00402	0.01332	376

A possible explanation for the results in Tables 2–4 is that we do not adequately control for expenses, size, and turnover. In a sense, these variables are endogenous to fund performance as funds with lower expenses, size and turnover have been shown in the literature to generally have better performance. Hence, the appropriate method for estimating the regressions would be a generalized least squares method to take account of the endogeneity of these control variables. Using this technique here is problematic as our data do not include appropriate instruments. For example, we could use the out-of-sample expense ratio, net assets and turnover ratio as the control variables and then use in-sample values of these variables as the instruments but we cannot always compute these for non-survivor funds.

Tables 5–7 provide the results from estimating Eq. (6). The results are similar to those in Tables 2–4 in that we find no consistent evidence that funds with better corporate culture outperform or that funds with weak culture underperform fair rated funds (the reference group). In Table 5, for the 12-month out-of-sample tests using on the Sharpe ratio, we find that only in the 2009 sample do funds with better corporate culture significantly outperform other funds. For the 2005 sample we find that very poor rated funds significantly underperform fair rated funds as expected. However, for the 2007 sample we actually find that poor rated funds significantly outperform fair rated funds. This result suggests that funds with lower rated cultures may actually have advantages that aid performance. As we mentioned earlier, funds with strong cultures are also tend to be rigid in their business operations. It is possible that this rigidity does not allow a fund to change quickly to deal with new circumstances and hence harms performance. However, we note we only find this result in the 2007 sample.

In Table 6, the results for the 24 month out-of-sample tests, provide little evidence that top-rated funds outperform or that very poor rated funds underperform relative to fair-rated funds. In fact we find that poor-rated funds significantly outperform fair-rated funds more frequently, than do excellent-rated funds. Finally, in Table 7, the results for the 60-month out-of-sample tests, we find almost no significant effects at all.

## 6. Results using other Morningstar stewardship components to predict performance

Although our study principally examines the impact of fund corporate culture on fund performance, in this section we also examine how the other components of the Morningstar stewardship rating namely board quality, fees, managerial incentives and regulatory issues are related to future fund performance.

To do this, first, just as we did with the corporate culture component, we create a variable which quantitatively measures the level of each of the other components.<sup>12</sup> Second, we use the same approach used in Tables 2–4. That is, for each of the other four components of the stewardship rating we examine the ability of the individual component to predict the out-of-sample 12-month, 24-month and 60-month risk-adjusted fund performance. We use the same two survivorship bias methods<sup>13</sup> and control for fund size, expenses, turnover, and manager tenure (the

only exception is that we do not control for expenses when examining the component, fees, as this raises the prospect of endogeneity).

The results are reported in Table 8, panels A–C. Panel A contains the 12-month results, panel B the 24-month results and panel C has the 60-month results. Hence panel A is similar to Table 2, panel B is similar to Table 3 and panel C is similar to Table 4. In each of the three panels we examine fees first, then board quality, followed by regulatory issues, and last manager incentives.

The results provide only slight evidence that the other components are better predictors of future fund performance than in corporate culture. We find that for the vast majority of the regressions the components do not significantly predict future fund performance. Indeed, we find that in only six of the possible 38 regressions are fees significant, five of which pertain to the 24-month sample period (panel B). Similarly the number of significant cases for board quality is seven, the number for regulatory issues is six and the number for manager incentives is seven. While these numbers are all larger than those for corporate culture, where only four of the cases, were significant, there still is not enough evidence to merit attention. Hence, unlike Wellman and Zhou (2007), who find that board quality and fees are positively and significantly related to fund performance, we find that no one component is able to consistently predict fund performance when using different performance metrics, time horizons, samples, and when adjusting for survivorship bias.

## 7. Conclusions

In the wake of the late-trading and market-timing scandals in 2003, there has been a great deal of interest in the governance of mutual fund companies. In response to this interest Morningstar, the well-known mutual fund data provider, created a stewardship rating in August 2004 to complement its well-known star rating. Arguably the most important component of the stewardship rating is fund corporate culture as it sets the tone for the entire operation of the fund. Indeed, the culture of the fund conveys how well employees are treated, how the fund treats its own investors, and how well the fund communicates with its shareholders. In fact for some fund companies, such as T. Rowe Price, corporate culture is the centerpiece of the fund. They list the corporate philosophies in their advertisements, and consistently make the argument that their corporate culture is responsible for their strong performance of their funds.

But does a fund's corporate culture predict its performance? In this paper we have begun to answer this question. We use Morningstar's corporate culture ratings for mutual funds for three different sample periods (2005, 2007 and 2009) and examine the ability of these corporate culture ratings to predict risk-adjusted performance over different out-of-sample periods that cover both bull and bear market periods. Using methods that are robust to survivorship bias we find that corporate culture is not a significant factor in predicting performance. This is somewhat surprising since we do find that funds with better corporate cultures have lower expense and turnover ratios which are usually related to better performance.

We also find that the other components of the Morningstar stewardship rating (board quality, fees, manager incentives and regulatory issues), are not able to consistently predict future fund performance.

What is the explanation for our results? It may be that a strong corporate culture may also be a rigid corporate culture. As a result, the presumed added benefits of the strong culture, i.e., more transparency, retaining workers, etc., may be canceled out by the fact that these strong-culture funds maybe inflexible. As Sorensen (2002) observes, in periods of crisis (such as the period surrounding the Fall of 2008) when volatility is substantial and flexibility to change critical, firms with strong corporate cultures may be less able to carry out the radical changes needed to adapt high volatility.

In conclusion, Morningstar states that the stewardship ratings or corporate culture ratings should not be used to predict future

<sup>12</sup> In the 2005 and 2007 samples each component of the Morningstar stewardship rating was given a rating of excellent, good, average, poor or very poor which we coded 5 to 1 respectively. In the 2009 sample Morningstar used four specific ratings (A, B, C, and D) which we coded 4 to 1 respectively.

<sup>13</sup> For survivorship bias method 1, in which we use the returns of a matching fund, we follow the same procedure described in Appendix A except that instead of matching on corporate culture we match using the other sub-rating component in question. For example, for regulatory issues, the returns of a missing fund are based on a matching surviving fund which has a regulatory issues rating, Morningstar category, and expense and turnover ratios similar to the missing fund. For survivorship bias method 2, the missing fund returns are the equally weighted returns of all the surviving funds with same rating as the missing fund. For example for regulatory issues, we use the equally weighted returns of all surviving funds with the same regulatory issue rating as that of the missing fund.

performance.<sup>14</sup> Indeed, the company makes the same argument about the Morningstar star rating. Our results largely confirm this as we find that corporate culture and the other components of the stewardship rating are not consistently significant factors in predicting future fund performance. While investors may be more confident that funds with good corporate cultures will not fall victim to scandal as easily as other funds, the notion that these funds will perform significantly better does not hold up in the data.

#### Appendix A. Algorithm for finding matching funds used in survivorship bias method 1

Survivorship bias method 1 uses the following algorithm to identify the closest surviving fund.

1. To choose the matching fund, we identify domestic equity funds that survive during the entire sample period.
2. Of the funds that remain following step 1:
  - a. We identify all funds that share the same corporate culture rating and Morningstar Category.
  - b. If no fund satisfies a, we identify all funds that share the same corporate culture rating.
  - c. If no fund satisfies either a or b, we identify all funds that share the same Morningstar Category.
  - d. If no fund satisfies either a, b, or c, we identify all funds.
3. Of the funds that remain following step 2:
  - a. Select the fund with the closest expense ratio to the fund that eventually disappears. Then,
  - b. If only one fund remains, go to the final step.
  - c. If more than one fund remains, go to the next step.
4. Of the funds that remain following step 3:
  - a. Select the fund with the closest turnover ratio to the fund that eventually disappears. Then,
  - b. If only one fund remains, go to the final step.
  - c. If more than one fund remains, go to the next step.
5. Of the funds that remain following step 4 we randomly choose one fund and go to the final step.
6. Final step: Extract the returns of the identified fund.

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<sup>14</sup> David J. Drucker, "Fiduciary Funds", *Research Magazine*, October 31, 2007. Specifically, Laura Lutton, a Morningstar analyst states that "while the ratings are not intended to serve as buy/sell signals, when combined with other Morningstar analyst commentary, they can help determine the difference between a great investment and one to avoid".