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# Does the stock market fully value intangibles? Employee satisfaction and equity prices ☆

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ABSTRACT

This paper analyzes the relationship between employee satisfaction and long-run stock returns. A value-weighted portfolio of the "100 Best Companies to Work For in America" earned an annual four-factor alpha of 3.5% from 1984 to 2009, and 2.1% above industry benchmarks. The results are robust to controls for firm characteristics, different weighting methodologies, and the removal of outliers. The Best Companies also exhibited significantly more positive earnings surprises and announcement returns. These findings have three main implications. First, consistent with human capital-centered theories of the firm, employee satisfaction is positively correlated with shareholder returns and need not represent managerial slack. Second, the stock market does not fully value intangibles, even when independently verified by a highly public survey on large firms. Third, certain socially responsible investing (SRI) screens may improve investment returns.



"[Costco's] management is focused on … employees to the detriment of shareholders. To me, why would I want to buy a stock like that?"—Equity analyst, quoted in BusinessWeek, 8/28/03

"I happen to believe that in order to reward the shareholder in the long term, you have to please your customers and workers."—Jim Sinegal, Costco's CEO, quoted in the Wall Street Journal, 3/26/04

## 1. Introduction

This paper analyzes the relationship between employee satisfaction and long-run stock returns. A value-weighted portfolio of the "100 Best Companies to Work For in America" (Levering, Moskowitz, and Katz, 1984; Levering and Moskowitz, 1993) earned a four-factor alpha of 0.29% per month from 1984 to 2009, or 3.5% per year. These figures exclude any event-study reaction to list inclusion and capture only long-run drift. When compared to industry-matched benchmarks, the alpha remains a statistically significant 2.1%.

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The results are also robust to controlling for firm characteristics, different weighting methodologies, and adjusting for outliers. The outperformance is at least as strong from 1998, even though the list was published in *Fortune* magazine and thus highly visible to investors. The Best Companies (BCs) exhibit significantly more positive earnings surprises and stock price reactions to earnings announcements: over the four announcement dates in each year, they earn 1.2–1.7% more than peer firms. These findings contribute to three strands of research: the increasing importance of human capital in the modern corporation; the equity market's failure to fully incorporate the value of intangible assets; and the effect of socially responsible investing (SRI) screens on investment performance.

Existing theories yield conflicting predictions as to whether employee satisfaction is beneficial for firm value. Traditional theories (e.g., Taylor, 1911) are based on the capital-intensive firm of the early 20th century, which focused on cost efficiency. Employees perform unskilled tasks and have no special status; just like other inputs such as raw materials, management's goal is to extract maximum output while minimizing their cost. Satisfaction arises if employees are overpaid or underworked, both of which reduce firm value.[1] Principal-agent theory also supports this zero-sum view: the firm's objective function is maximized by holding the worker to her reservation wage. In contrast, more recent theories argue that the role of employees has dramatically changed over the past century. The current environment emphasizes quality and innovation, for which human, rather than physical, capital is particularly important (Zingales, 2000). Human relations theories (e.g., Maslow, 1943; Hertzberg, 1959; McGregor, 1960) view employees as key organizational assets, rather than expendable commodities, who can create substantial value by inventing new products or building client relationships. These theories argue that satisfaction can improve retention and motivation, to the benefit of shareholders.

Which theory is borne out in reality is an important question for both managers and investors, and provides the first motivation for this paper. If the traditional view still holds today, managers should minimize expenditure on worker benefits, and investors should avoid firms that fail to do so. In contrast to this view, and the existing evidence reviewed in Section 2.1, I find a strong, robust, positive correlation between satisfaction and shareholder returns. This result provides empirical support for recent theories of the firm focused on employees as the key assets, e.g., Rajan and Zingales (1998), Carlin and Gervais (2009), and Berk, Stanton, and Zechner (2010).

I study long-run stock returns for three main reasons. First, they suffer fewer reverse causality issues than valuation ratios or profits. A positive correlation between valuation/profits and satisfaction could occur if performance causes satisfaction, but a well-performing firm should not exhibit superior future returns as profits should already be in the current stock price, since they are tangible.[2] Second, they are more directly linked to shareholder value than profits, capturing all the channels through which satisfaction may benefit shareholders and representing the returns they actually receive. In addition to profits, satisfaction may lead to many other tangible outcomes valued by the market, such as new products or contracts. Studying returns also allows for controls for risk.[3] Third, valuation ratios or event-study returns may substantially underestimate any relationship, given ample previous evidence that the market fails to fully incorporate intangibles. Firms with high R&D (Lev and Sougiannis, 1996; Chan, Lakonishok, and Sougiannis, 2001), advertising (Chan, Lakonishok, and Sougiannis, 2001), patent citations (Deng, Lev, and Narin, 1999), and software development costs (Aboody and Lev, 1998) all earn superior long-run returns. The market may be even more likely to undervalue employee satisfaction since theory has ambiguous predictions for whether it is desirable for firm value.

Indeed, investigating the market's incorporation of satisfaction is my second goal. I aim not only to extend earlier results to another category of intangibles, but also to shed light on the *causes* of the non-incorporation documented previously. The main explanation for prior results is that intangibles are not incorporated because the market lacks information on their value (the "lack-of-information" hypothesis). While R&D spending can be observed in an income statement, this is an input measure uninformative of its quality or success (Lev, 2004). Even if information is available on an output measure such as patent citations, the market may ignore it if it is not salient (Deng et al.'s citation measure had to be hand-constructed) or about small firms which are not widely followed (Hong, Lim, and Stein, 2000).

This paper evaluates the above hypothesis by using a quite different measure of intangibles to prior research, which addresses investors' lack of information. The BC list measures satisfaction (an output) rather than expenditure on employee-friendly programs (an input). It is also particularly visible: from 1998 it has been widely disseminated by *Fortune*, and it covers large companies (median market value of $5bn in 1998). Moreover, it is released on a specific event date which attracts widespread attention, because it discloses information on several companies simultaneously.[4]

[1] Indeed, agency problems may lead to managers tolerating insufficient effort and/or excessive pay, at shareholders' expense. The manager may derive private benefits from improving his colleagues' compensation, such as more pleasant working relationships (Jensen and Meckling, 1976). Alternatively, high wages may constitute a takeover defense (Pagano and Volpin, 2005). Cronqvist, Heyman, Nilsson, Svaleryd, and Vlachos (2008) find that salaries are higher when managers are more entrenched, which supports the view that high worker pay is inefficient.

[2] Faleye and Trahan (2006) find that the BCs exhibit superior contemporaneous accounting performance than peers over 1998–2004. Lau and May (1998) find a similar link using the 1993 list, but Fulmer, Gerhart, and Scott (2003) find no relationship. Filbeck and Preece (2003) show that firms in the 1998 list exhibited higher returns *prior* to list inclusion. Simon and DeVaro (2006) show that the BCs exhibit higher customer satisfaction. These results are consistent with reverse causality from performance to satisfaction, and do not have implications for the market's valuation of intangibles or the profitability of an SRI trading strategy.

[3] Goenner (2008) controls for the market beta but not other factors or characteristics.

[4] By contrast, R&D is one of many measures reported in a company's earnings announcement, and such announcements occur at different times for different firms. Gompers, Ishii, and Metrick (2003), Yermack (2006), and Liu and Yermack (2007) also document long-run abnormal returns. Their measures of corporate governance, corporate jets, and CEO mansions are also not released on a specific date and widely disseminated.

If lack of information is the primary reason for previous non-incorporation findings, there should be no excess returns to the BC list.

My analysis is a joint test of satisfaction both benefiting firm value and not being fully valued by the market. By delaying portfolio formation until the month after list publication, I give the market ample opportunity to react to its content. Yet, I still find significant outperformance. This result suggests that the non-incorporation of intangibles found by prior research does not stem purely from lack of information, but other factors. Even if investors were aware of firms' levels of satisfaction, they may have been unaware of its benefits, since theory provides ambiguous predictions. An alternative explanation is that investors use traditional valuation methodologies, devised for the 20th century firm and based on physical assets, which cannot incorporate intangibles easily. The results also support managerial myopia theories (e.g., Stein, 1988; Edmans, 2009), in which managers underinvest in intangible assets because they are invisible to outsiders and thus do not improve the stock price. Even if managers are able to provide information on the value of their intangibles (e.g., by hiring independent firms to audit their value), the market may not capitalize them.

In addition to the valuation of intangibles, the paper contributes to the broader literature on market underreaction since the *Fortune* study has a clearly defined release date, in contrast to previous intangible measures. Prior research finds that underreaction is strongest for small firms (e.g., Hong, Lim, and Stein, 2000); more generally, Fama and French (2008) find that most anomalies are confined to small stocks and thus hard to exploit given their high transactions costs. Here, underreaction occurs even though most firms in the BC list are large, and so the mispricing is exploitable.

The third implication relates to the profitability of SRI strategies, whereby investors only select companies that have a positive impact on stakeholders other than shareholders. Employee welfare is an SRI screen used by a number of funds. Traditional portfolio theory (e.g., Markowitz, 1959) suggests that any SRI screen reduces returns, since it restricts an investor's choice set; mathematically, a constrained optimization is never better than an unconstrained optimization. Indeed, many existing studies find a zero (Hamilton, Jo, and Statman, 1993; Kurtz and DiBartolomeo, 1996; Guerard, 1997; Bauer, Koedijk, and Otten, 2005; Schröder, 2007; Statman and Glushkov, 2008) or negative (Geczy, Stambaugh, and Levin, 2005; Brammer, Brooks, and Pavelin, 2006; Renneboog, Ter Horst, and Zhang, 2008; Hong and Kacperczyk, 2009) effect of SRI screens. While Moskowitz (1972), Luck and Pilotte (1993), and Derwall, Guenster, Bauer, and Koedijk (2005) find certain SRI screens improve returns, these results are based on short time periods.

The Markowitz (1959) argument suggests that any SRI screen worsens performance, and so it is sufficient to uncover one screen that improves performance to contradict it. I study a screen based on employee satisfaction as there is a strong theoretical motivation for why it may exhibit a positive correlation with stock returns (see Section 2). Indeed, I find an SRI screen that can improve returns. If an investor is aware of every asset in the economy, an SRI screen can never help, as non-SRI investors are free to choose the screened stocks anyway. However, if she can only learn about a subset of the available universe due to time constraints (as in Merton, 1987), the SRI screen – rather than excluding good investments – may focus the choice set on good investments. A firm's concern for other stakeholders, such as employees, may ultimately benefit shareholders (the first implication of the paper), yet not be priced by the market as "stakeholder capital" is intangible (the second implication).

There are several potential explanations for the positive returns found in this paper. One is mispricing: high satisfaction causes higher firm value, as predicted by human capital theories, but the market fails to capitalize it immediately. Indeed, both the magnitude and duration of the excess returns are similar to or lower than found by analyses of long-run returns to other intangibles, firm characteristics, or corporate events. Thus, the mispricing implied by this explanation is within the bounds of what prior literature has found to be feasible. Under a mispricing channel, *an intangible only affects the stock price when it subsequently manifests in tangible outcomes that are valued by the market*. I indeed find that the BCs have significantly more positive earnings surprises than peer firms and greater abnormal returns to earnings announcements. A mispricing story also implies that the BCs' outperformance might not be permanent, for two reasons. First, some firms are only on the list for a finite period: employee satisfaction may vary with changes in management or a firm's human resource policy (perhaps as a result of financial constraints). Thus, the level of intangibles and hence mispricing fall over time. Second, even for firms for which satisfaction is reasonably permanent, the market may learn about its true value over time as it releases positive tangible news. Consistent with both channels, I find the drift to list inclusion declines over time and becomes insignificant in the fifth year. In contrast, prior studies of mergers and acquisitions (M&A) (Agrawal, Jaffe, and Mandelker, 1992; Loughran and Vijh, 1997), value strategies (Lakonishok, Shleifer, and Vishny, 1994), and equity issuance (Spiess and Affleck-Graves, 1995; Loughran and Ritter, 1995) find no evidence of returns declining in the fifth year, and so the above explanation requires less mispricing than these earlier findings. Consistent with the second channel in particular, the returns sharply decline in the fifth year even for firms that remain on the list for all five years. Consistent with the first channel in particular, buying stocks dropped from the BC list or not updating the portfolio for future lists leads to lower returns than holding the most current list.

An alternative causal interpretation is that superior returns are caused not by employee satisfaction, but list inclusion per se—it encourages SRI funds to buy the BCs, and this demand caused their prices to rise. I find that SRI funds that use labor or employment screens increased their weighting on the BCs over time, but this effect can explain at most 0.02% of the annual outperformance. Moreover, as with other long-run event studies (e.g., Gompers, Ishii, and Metrick, 2003; Yermack, 2006; Liu and Yermack, 2007), we do not have a natural experiment with random assignment of the variable of interest to firms, and so the data admit non-causal explanations. First, the use of long-run stock

returns only reduces, rather than eliminates, reverse causality concerns. While publicly observed profits should already be in the current stock price, reverse causality can occur in the presence of private information; employees with favorable information report higher satisfaction today, and the market is unaware that the list conveys such information. This explanation is unlikely given the seven-month time lag between responding to the BC survey and the start of the return compounding window; in addition, existing studies suggest that workers have no superior information on their firm's future returns (e.g., Benartzi, 2001; Bergman and Jenter, 2007). Second, satisfaction may proxy for other variables that are positively linked to stock returns and also misvalued by the market. While I control for an extensive set of observable characteristics and covariances, by their very nature unobservables (such as good management) cannot be directly controlled for. If either reverse causality or omitted variables account for the bulk of the results, improving employee welfare may not cause increases in shareholder value. However, the second and third conclusions of the paper still remain: the existence of a profitable SRI trading strategy on large firms, and the market's failure to incorporate the contents of a highly visible measure of intangibles—regardless of whether the list captures satisfaction, management, or employee confidence.

This paper is organized as follows. Section 2 discusses the theoretical motivation for hypothesizing a link between employee satisfaction and stock returns. Section 3 discusses the data and methodology and Section 4 presents the results. Section 5 discusses the possible explanations for the findings and Section 6 concludes.

## 2. Theoretical motivation: Why might employee satisfaction lead to excess returns?

For employee satisfaction to lead to superior returns, this requires that employee satisfaction is both beneficial for firm value and not immediately capitalized by the market. Sections 2.1 and 2.2 provide the motivation for each hypothesis.

### 2.1. Employee satisfaction and firm value

It may seem intuitive that employee satisfaction should improve firm performance, perhaps even removing the need to demonstrate such a relationship empirically. However, the traditional theories reviewed in the introduction suggest the opposite relationship, and existing evidence finds little support for the human relations view. Abowd (1989) shows that announcements of pay increases reduce market valuations dollar-for-dollar; Diltz (1995) finds stock returns are uncorrelated with the Council of Economic Priorities (CEP) minority management and women in management variables, and negatively correlated with family benefits; Dhrymes (1998) finds no relationship with KLD's employee relations variable; and Gorton and Schmid (2004) show that greater employee involvement reduces profitability and valuation. On the one hand, such research renders the relationship non-obvious, and thus interesting to study. On the other hand, it is necessary to have a convincing a priori hypothesis for why a positive link might exist in spite of the above research, to mitigate "data-mining" concerns and the risk that any correlation is spurious rather than reflecting a true economic relationship.

Human relations theories argue that satisfaction may benefit shareholders through two mechanisms. The first is motivation. In traditional manufacturing firms, motivation was simple because workers' output could be easily measured, allowing the use of monetary "piece rates" (Taylor, 1911). In the modern firm, workers' tasks are increasingly difficult to quantify, such as building client relationships. Output-based incentives may thus be ineffective or even destructive (Kohn, 1993). The reduced effectiveness of extrinsic motivators increases the role for intrinsic motivators such as satisfaction. This role is microfounded in both economics and sociology. The efficiency wage theory of Akerlof and Yellen (1986) argues that "excess" satisfaction can increase effort, because the worker wishes to avoid being fired from a satisfying job (Shapiro and Stiglitz, 1984) or views it as a "gift" from the firm and responds with a "gift" of increased effort (Akerlof, 1982). Sociological theories argue that satisfied employees identify with the firm and internalize its objectives, thus inducing effort (McGregor, 1960). A second channel is retention. In the traditional firm, retention was unimportant as employees performed unskilled tasks. In contrast, they are the key source of value creation in modern knowledge-based industries, such as pharmaceuticals or software. Relatedly, high satisfaction can be a valuable recruitment tool.[5] A quite separate benefit to those predicted by human relations theories is that customers may be more willing to patronize firms which treat their workers fairly—for example, Whole Foods actively advertises its list inclusion to customers.

### 2.2. Underpricing of employee satisfaction

In an efficient market, a tangible variable that is unambiguously beneficial to firm value will be rapidly capitalized and not lead to excess returns. However, a broad strand of existing research demonstrates underpricing of a number of firm characteristics. Starting with studies of intangibles in particular, Lev and Sougiannis (1996) find a 4.6% abnormal return based on R&D capital, and Chan, Lakonishok, and Sougiannis (2001) show that firms in the top quintile of R&D flows earn excess returns of 6.1%. Advertising (Chan, Lakonishok, and Sougiannis, 2001), patent citations (Deng, Lev, and Narin, 1999), and software developments (Aboody and Lev, 1998) are also associated with excess returns. Moving to other variables,

[5] These theories imply a high *level* of compensation, but do not suggest that the *form* of compensation should be in satisfaction compared to cash. Indeed, in the early 20th century, cash was viewed as the most effective motivator: given harsh economic conditions, workers were mainly concerned with physical needs such as food and shelter, which could be addressed with money. Such a view would motivate a study of wages rather than satisfaction. Again, human relations theories stress that the world is different nowadays. Maslow (1943) and Hertzberg (1959) argue that money is only an effective motivator up to a point: once workers' physical needs are met, they are motivated by non-pecuniary factors such as job satisfaction, which cannot be externally purchased with cash and can only be provided by the firm. Hence, satisfaction is an efficient *form* of compensation.

Gompers, Ishii, and Metrick (2003) find 8.5% abnormal returns to a governance portfolio, Yermack (2006) documents a negative 3.8% alpha to firms in which the CEO uses a corporate jet, Liu and Yermack (2007) show 13.8% returns to a portfolio formed on CEO homes, and Hong and Kacperczyk (2009) find a 3.2% alpha to sin stocks.

This paper is also related to studies of long-run drift, since the BC list has a clearly defined release date. Numerous studies find large and persistent drift after a variety of corporate events. For M&A, Agrawal, Jaffe, and Mandelker (1992) find that acquirers suffer −10% abnormal returns over the next five years; Loughran and Vijh (1997) show that cash tender offers (stock mergers) outperform their benchmarks by 62% (−25%) over a five-year period. Both find that abnormal returns are still strong in the fifth year. For initial public offerings (IPOs), Ritter (1991) finds underperformance of 29.1% over three years and that the underperformance is still strong in year three; Loughran (1993) documents −45% returns over five years which only die out in year six. For seasoned equity offerings (SEOs), Spiess and Affleck-Graves (1995) show underperformance of 31–39% over five years; Loughran and Ritter (1995) consider IPOs and SEOs together and find −30% returns over five years. Neither find that returns abate even in year five. Michaely, Thaler, and Womack (1995) discover returns to dividend initiations (omissions) of 25% (−15%) over three years and only evidence of the omission drift declining in the third year. Lakonsihok and Vermaelen (1990) find 17% abnormal returns to repurchase tender offers over two years with no evidence of the returns dying out; Ikenberry, Lakonishok, and Vermaelen (1995) find 12% returns to open-market repurchases (45% for value stocks) over four years, with returns only abating in the final year. Moving away from event studies but to other analyses of long-run returns, Lakonishok, Shleifer, and Vishny (1994) find that a value-growth portfolio earns 10% per year and that the returns are stronger in the fifth year than all other years.

In addition to providing evidence for both mispricing and long-horizon drift, existing research also provides guidelines on the magnitude and duration of excess returns that are plausible. Most closely related are the other intangibles studies which suggest abnormal returns of up to 4–6% per year are possible. Some of the other studies find even greater annual excess returns.[6] Moving to the duration of the drift, the studies of M&A, IPOs, and SEOs find no evidence of abnormal returns abating even in the fifth year. Moreover, the bounds of plausibility for the magnitude and longevity of underpricing of employee satisfaction may be even greater, for two reasons. First, satisfaction is an intangible, while many of the other studies investigate tangible characteristics and events which are easier to incorporate into traditional valuation methodologies. Second, theory offers reasonably clear predictions for the direction of the effect of many previously studied events on firm value. For example, signaling and free cash flow theories predict that dividend initiations and repurchases should increase firm value, and equity issuance and dividend omissions should reduce it; despite these clear predictions, there is still significant drift. As previously discussed, traditional theories and existing evidence suggest that employee satisfaction is negatively correlated with firm value. Thus, even if the changing nature of the firm suggests the relationship may now be positive, the persistence of the traditional view may mean the market does not capitalize it.

The majority of the above studies find long-horizon drift, but do not identify the mechanism. However, some papers provide evidence that one channel through which firm characteristics generate superior returns is that they lead to future tangible outcomes that are valued by the market. La Porta, Lakonishok, Shleifer, and Vishny (1997) find that value stocks exhibit superior earnings surprises to glamour stocks, and Giroud and Mueller (2011) find the same for well-governed firms in non-competitive industries compared to their worse-governed peers. Masulis, Wang, and Xie (2007) find that better-governed firms experience superior returns to M&A announcements.

## 3. Data and summary statistics

My main data source is the list of the "100 Best Companies to Work for in America." This list was first published in a book in March 1984 (Levering, Moskowitz, and Katz, 1984) and updated in February 1993 (Levering and Moskowitz, 1993). Since 1998, it has been featured in *Fortune* magazine each January. The list has been headed by Robert Levering and Milt Moskowitz throughout its 26-year existence. It is compiled from two principal sources. Two-thirds of the score comes from employee responses to a 57-question survey created by the Great Place to Work® Institute in San Francisco.[7] This survey covers topics such as attitudes toward management, job satisfaction, fairness, and camaraderie. Across all levels of employees, 250 are randomly selected in each firm, fill in the surveys anonymously, and return their responses directly to the Institute. The response rate is around 60%. The remaining one-third of the score comes from the Institute's evaluation of factors such as a company's demographic makeup, pay and benefits programs, and culture. The companies are scored in four areas: credibility (communication to employees), respect (opportunities and benefits), fairness (compensation, diversity), and pride/camaraderie (teamwork, philanthropy, celebrations).[8] Importantly, *Fortune* has no involvement in the company evaluation process, else it may have incentives

[6] The alphas of Lakonishok, Shleifer, and Vishny (1994), Gompers, Ishii, and Metrick (2003), and Liu and Yermack (2007) should be halved for comparison with the present setting as they study long-short portfolios.

[7] While the Institute was not founded until 1990, Levering and Moskowitz used the same criteria for the 1984 list, although they surveyed employees directly rather than through a questionnaire.

[8] After evaluations are completed, if significant negative news comes to light that may significantly damage employees' faith in management, the Institute may exclude that company from the list. Only news that damages employee trust is relevant-a decline in profits is not an example of such news, unless it has been caused by (say) unethical behavior. Ever since list commencement, fewer than five firms have been excluded for this reason.

to bias the list towards advertisers (Reuter and Zitzewitz, 2006).[9]

Firms apply to be considered for the list; the application deadline is the previous May and the questionnaires must be returned by June. Such selection issues either have no effect or likely bias the results downwards. For it to affect the results, the selection decision must be correlated with either the independent variable (level of satisfaction) or outcome variable (future returns). If firms with low satisfaction choose not to apply because they expect not to make the list, this simply increases its accuracy. If a firm with high satisfaction chooses not to apply because it believes this quality is already publicly known and thus does not need independent verification, this reduces the satisfaction level of the firms in the list and attenuates the results. Turning to the outcome variable, this represents another motivation for studying stock returns rather than profits. Profits are persistent, and so may be correlated with both the decision to apply and future profits. In contrast, there should be no correlation between stock returns at the time of application and during the return window (controlling for momentum). Even if management has temporary private information on future returns, this likely has little effect since list applications must be made by late May and the return window starts the following February 1 (eight months later). Jenter, Lewellen, and Warner (2011) show that managers' private information is confined to the next 100 days; managers have little predictive ability for returns over days 100–150. Moreover, if managers have long-lived private information and those who foresee negative returns are particularly likely to apply (as they believe list inclusion will bolster their stock price), this will bias the results downwards.

Since 1998, the BC list has been published in the first issue of *Fortune* magazine each year. The publication date is typically in mid-January, and the issue reaches the newsstands one week before the publication date. If the stock market fully incorporates any effect of satisfaction into stock prices, the list contents should be impounded by at least the start of February. Therefore, February 1 is the date for portfolio formation from 1998 to 2009. The 1984 portfolio is formed on April 1, and the 1993 portfolio is formed on March 1.

Table 1 details the number of BCs in year $t$ that had stock returns available on the Center for Research in Security Prices (CRSP) tapes in at least one month before the next portfolio formation date. The table also gives the number of firms added to and dropped from the list. As is intuitive, employee satisfaction is a reasonably persistent characteristic. However, as with other intangibles (e.g., management quality, customer satisfaction, or product reputation), it is not permanent—approximately one-third of traded firms drop off the list each year, perhaps as a result of changes in management or the firm's human resource policy (e.g., if it suffers financial constraints). Over 1984–2009, 244 separate public firms were included in a list, corresponding to 1,616 firm-year observations (810 excluding years when the list was not updated). The number of firms compares favorably to similar abnormal return studies, e.g., 104 in Yermack (2006) and 193 in Hong and Kacperczyk (2009).

**Table 1**
Summary statistics.

The second column details the number of the 100 Best Companies to Work For in America (Best Companies) that had returns available on CRSP for at least one month between publication of the list of that year, and the subsequent list. The third column gives the number of new public companies added to the Best Companies list of that year. The fourth column contains the number of companies on the previous Best Companies list which no longer feature in the current list or are no longer public. The sample period is 1984–2009.

| Year of list | Best Companies | Added | Dropped |
|---|---|---|---|
| 1984 | 78 | | |
| 1993 | 69 | 30 | 39 |
| 1998 | 70 | 34 | 33 |
| 1999 | 68 | 26 | 28 |
| 2000 | 60 | 20 | 28 |
| 2001 | 55 | 15 | 20 |
| 2002 | 55 | 13 | 13 |
| 2003 | 61 | 14 | 8 |
| 2004 | 57 | 11 | 15 |
| 2005 | 58 | 11 | 10 |
| 2006 | 50 | 8 | 16 |
| 2007 | 47 | 10 | 13 |
| 2008 | 42 | 11 | 16 |
| 2009 | 39 | 7 | 10 |

On April 1, 1984, I form a portfolio containing the 74 publicly traded BCs in that year, and measure the returns to this portfolio from April 1984 to February 1993. I construct both equal- and value-weighted portfolios as Fama and French (2008) find that a number of anomalies are not robust to the weighting methodology. The portfolio is reformed on March 1, 1993 to contain the 65 firms included in the new list, and returns are calculated through January 1998. This process is repeated until December 2009 and I call this "Portfolio I."[10] If a BC is initially private but goes public before the next list, I add it to the portfolio from the first full month after it starts trading. Portfolio I features 78 firms from 1984 to 1993, since four firms in the initial list became public over that period.[11]

[9] Statman, Fisher, and Anginer (2008) investigate the returns to another *Fortune* list, "America's Most Admired Companies," focusing on the "long-term investment value" component of this list. This list is not a measure of employee satisfaction, but investors' views of the firms and so their interpretation is that it measures irrational exuberance. Indeed, they find negative long-horizon returns to firms in this list.

[10] If a firm de-lists and the delisting payment date is prior to the end of the month, delisting returns are used where the monthly return is missing. If the delisting payment date is after the end of the month and both monthly and delisting returns are available, the two are aggregated to calculate the return of the month. At the start of the next month, the proceeds are reinvested in all of the other stocks in the portfolio, based on their relative weights in the portfolio at that point in time. Results are unchanged if I instead reinvest any takeover proceeds in the new parent, under the rationale that at least part of the merged entity exhibits superior employee satisfaction, or use the Shumway (1997) adjustment to delisting returns.

[11] The results are unchanged when excluding firms that go public midway through the year (to ensure that IPO underpricing is not driving the results). In addition, I include Best Companies with only American Depository Receipts (ADRs) in the U.S., since an investor constrained to

**Table 2**
Summary characteristics.

Summary characteristics for the 74 companies in the 1984 "100 Best Companies to Work For in America" (Levering, Moskowitz, and Katz, 1984) list that were public on April 1, 1984, and the 69 companies in the 1998 list published in *Fortune* that were public on February 1, 1998. The first two items are taken from CRSP at the end of March 1984 (January 1998, respectively.) The last three items are based on CRSP and Compustat data for 1997 (1983), missing for companies that were not traded in 1997 (1983), and excluded for companies for which only the ADRs are traded.

| | # obs | Mean | Median | Std. dev. | Min | Max |
|---|---|---|---|---|---|---|
| *1984 List* | | | | | | |
| Market Cap ($ bn) | 74 | 3.99 | 1.25 | 9.48 | 0 | 69.47 |
| Price ($) | 74 | 37.43 | 33.88 | 19.64 | 5.91 | 113.75 |
| Dividend yield (%) | 69 | 2.45 | 2.23 | 2.03 | 0 | 9.06 |
| Market/book | 69 | 2.41 | 1.95 | 1.82 | 0.68 | 10.80 |
| Intangibles as a % of total assets (%) | 69 | 0.91 | 0 | 2.15 | 0 | 10.35 |
| *1998 List* | | | | | | |
| Market Cap ($ bn) | 69 | 21.33 | 5.24 | 39.52 | 0.03 | 204.59 |
| Price ($) | 69 | 51.35 | 44.22 | 25.47 | 5.38 | 127.56 |
| Dividend yield (%) | 63 | 1.60 | 1.03 | 4.31 | 0 | 34.26 |
| Market/book | 63 | 5.20 | 4.13 | 4.22 | −5.34 | 20.91 |
| Intangibles as a % of total assets (%) | 63 | 5.23 | 0.08 | 7.75 | 0 | 29.97 |

Table 2 presents summary statistics on the original 74 BCs in March 1984, and the 69 BCs in the first *Fortune* list in January 1998. Most notably, the firms are large, with a mean (median) market value of $4bn ($1bn) in 1984 and $21bn ($5bn) in 1998. As a comparison, the 80th percentile breakpoint for the Fama-French size portfolios was $1bn in 1984 and $4bn in 1998. The average market-book ratio is a high 2.4 in 1984 (5.2 in 1998) and the mean ratio of intangibles to total assets is only 0.9% (5.2%). Together, these results suggest that these companies have little human capital on the balance sheet, possibly because accounting standards hinder capitalization, increasing the likelihood that it is not fully valued. The most common industries in 1984 were consumer goods (seven companies), hardware (7), measuring and control equipment (5), retail (5), and financial services (5). In 1998 they were consumer goods (7), financial services (6), software (5), pharmaceuticals (5), hardware (4), and electronic equipment (4). Human capital is plausibly an important input in nearly all of these industries, with the link perhaps less obvious for consumer goods.

Other measures of employee satisfaction and intangibles have been studied in the literature, but the use of the Best Companies list is superior for all three goals of the paper. For the first goal, studying the effect of satisfaction on firm value is challenging because it is very difficult to measure. The previously used measures of CEP and KLD are less informative as they are only based on observable practices, such as minority representation. They are easier to manipulate—a firm that cares little for employee welfare may hire a minority director to "check the box." Such measurement error may explain the insignificant previous findings. The BC list is arguably the most thorough measure available, receiving significant attention from shareholders, management, employees, and the media. As outlined above, in addition to considering observable practices, it involves an in-depth "grass-roots" analysis through extensively surveying the workers. It is also available for 26 years, whereas other measures exist for shorter periods and thus the results may lack power or be driven by outliers. (Naturally, studying other intangibles such as R&D would not assess human capital theories.) Second, the BC list is useful for studying the market's incorporation of intangibles since it is highly public and attracts substantial attention given its perceived accuracy. It is therefore more salient than not only other satisfaction measures but also other intangibles studied by prior literature, and allows testing of the "lack-of-information" hypothesis. The list also has a clearly defined release date, allowing underreaction and drift to be tested. For the paper's third goal, the list is publicly available and easily tradable by an SRI investor. Studying other intangibles would have no implications for SRI, since intangibles such as R&D and advertising are not SRI screens. In sum, the list appears unique in being both a thorough measure of employee satisfaction (allowing testing of human relations theories and SRI) and highly public (allowing testing of the market valuation of intangibles and returns available to investors).

## 4. Analysis and results

To ensure that any outperformance of the BCs does not result from risk, I control for the four Carhart (1997) factors using

$$R_t = \alpha + \beta_{MKT} MKT_t + \beta_{HML} HML_t + \beta_{SMB} SMB_t + \beta_{MOM} MOM_t + \varepsilon_{it}, \quad (1)$$

where $R_{it}$ is the return on Portfolio I in month $t$ in excess of a benchmark, described below. $\alpha$ is an intercept that captures the abnormal risk-adjusted return. $MKT_t$, $HML_t$, $SMB_t$, and $MOM_t$ are the returns on the market, value, size, and momentum factors, taken from Ken French's Web site.

Standard errors are calculated using Newey and West (1987), which allows for $\varepsilon_{it}$ to be heteroskedastic and serially correlated. The returns $R_{it}$ are calculated over three different benchmarks. The first is the risk-free rate from Ibbotson Associates. The second is an industry-matched portfolio using the 49-industry classification of

(*footnote continued*)
hold U.S. shares would have been able to invest in such firms. The results are unchanged when excluding firms with ADRs.

Fama and French (1997). This is to ensure that outperformance is not simply because the BCs are in industries that happened to enjoy strong returns.[12] It also controls for any industry-specific risks not captured in the Carhart (1997) systematic risk factors. The third is the characteristics-adjusted benchmark used by Daniel, Grinblatt, Titman, and Wermers (1997) and Wermers (2004),[13] which matches each stock to a portfolio of stocks with similar size, book-market ratio, and momentum. This is to ensure that the outperformance is not because the BCs are exploiting the size, value, and/or momentum anomalies. It is conservative, but not necessarily superfluous, to subtract the returns on the Daniel, Grinblatt, Titman, and Wermers (1997) benchmarks before running the four-factor regression, as characteristics can have explanatory power even when controlling for covariances (Daniel and Titman, 1997).

### 4.1. Core results

Table 3 presents the core results of the paper, for the entire 1984–2009 period. As hypothesized, Portfolio I generates significant returns over all benchmarks and for both weighting schemes. For value-weighted returns, the alpha is 0.29% monthly (3.5% annually) above the risk-free rate, and 0.17% monthly (2.1% annually) controlling for industries. The returns are slightly higher when equal-weighting, 0.31% and 0.20% per month, respectively. The magnitude of the alpha and thus mispricing is within the bounds of plausibility implied by previous studies that demonstrate abnormal returns, in particular those studying other intangible portfolios, as summarized in Section 2.2. Moreover, as will be shown in Section 5, a meaningful proportion of the abnormal returns can be explained by earnings surprises.

The outperformance in Table 3 may result from the market being unaware of the BC list until 1998, since it was only published in book form. Even though the list was still publicly available and therefore tradable, it was substantially less salient. Therefore, while the full-sample results are consistent with two of the paper's three main implications (the positive association between satisfaction and stock returns, and the profitability of an SRI strategy), they do not imply that the market ignores highly visible measures of intangibles.

Table 4 therefore repeats the analysis for the 1998–2009 subperiod when the list was featured in *Fortune* magazine and thus highly salient. If the mispricing of intangibles, shown by prior research, stems from lack of information, then the alphas should be insignificant in this subperiod. In contrast, I find that the returns are marginally higher, with a value-weighted monthly alpha of 0.32% over the risk-free rate and 0.19% controlling for industries (0.44% and 0.31% equal-weighted). This

**Table 3**
Risk-adjusted returns.

Monthly regressions of returns to a portfolio of the "100 Best Companies to Work For in America" on the four Carhart (1997) factors, *MKT*, *HML*, *SMB*, and *MOM*. The dependent variable is the portfolio return less either the risk-free rate, the industry-matched portfolio return, or the characteristics-matched portfolio return. Panel A contains equal-weighted returns and Panel B contains value-weighted returns. The alpha is the excess risk-adjusted return. *t*-Statistics are in parentheses. The sample period is April 1984–December 2009.

| | Excess returns over | | |
|---|---|---|---|
| | Risk-free | Industry | Characteristics |
| *Panel A: Equal-weighted* | | | |
| $\alpha$ | 0.31 | 0.20 | 0.24 |
| | (3.34)*** | (2.76)*** | (2.94)*** |
| $\beta_{MKT}$ | 1.08 | 0.06 | 0.09 |
| | (41.01)*** | (3.55)*** | (3.69)*** |
| $\beta_{HML}$ | 0.03 | 0.09 | 0.01 |
| | (0.70) | (3.22)*** | (0.45) |
| $\beta_{SMB}$ | 0.17 | 0.15 | 0.05 |
| | (3.66)*** | (5.70)*** | (1.39) |
| $\beta_{MOM}$ | −0.15 | −0.07 | −0.09 |
| | (−6.36)*** | (−3.39)*** | (−4.80)*** |
| *Panel B: Value-weighted* | | | |
| $\alpha$ | 0.29 | 0.17 | 0.15 |
| | (2.59)*** | (2.28)** | (2.15)** |
| $\beta_{MKT}$ | 1.00 | −0.04 | 0.01 |
| | (35.68)*** | (−0.18) | (0.59) |
| $\beta_{HML}$ | −0.37 | −0.03 | −0.11 |
| | (−7.64)*** | (−0.76) | (−3.32)*** |
| $\beta_{SMB}$ | −0.17 | −0.21 | −0.03 |
| | (−3.64)*** | (−6.63)*** | (−0.88) |
| $\beta_{MOM}$ | −0.06 | −0.02 | −0.04 |
| | (−1.78)* | (−0.81) | (−2.11)** |
| # obs | 309 | 309 | 309 |

*: Significant at the 10% level; **: Significant at the 5% level; ***: Significant at the 1% level.

**Table 4**
Risk-adjusted returns from 1998.

Monthly regressions of returns to a portfolio of the "100 Best Companies to Work For in America" on the four Carhart (1997) factors, *MKT*, *HML*, *SMB*, and *MOM*. The dependent variable is the portfolio return less either the risk-free rate, the industry-matched portfolio return, or the characteristics-matched portfolio return. Panel A contains equal-weighted returns and Panel B contains value-weighted returns. The alpha is the excess risk-adjusted return. *t*-Statistics are in parentheses. The sample period is February 1998–December 2009.

| | Excess returns over | | |
|---|---|---|---|
| | Risk-free | Industry | Characteristics |
| *Panel A: Equal-weighted* | | | |
| $\alpha$ | 0.44 | 0.31 | 0.43 |
| | (2.89)*** | (2.62)*** | (3.46)*** |
| *Panel B: Value-weighted* | | | |
| $\alpha$ | 0.32 | 0.19 | 0.16 |
| | (1.65) | (1.50) | (1.35) |
| # obs | 143 | 143 | 143 |

***: Significant at the 1% level.

[12] Note that asset pricing theory does not predict that expected returns should be different across industries. I control for industries to be conservative, since it may be that realized returns happened to be higher in certain industries, e.g., due to a technological shock or change in regulation. I do not take a stance on whether differential returns across industries stem from risk or mispricing, but control for industries to ensure that it is not they (rather than satisfaction) that are driving my results.

[13] The benchmarks are available via http://www.smith.umd.edu/faculty/rwermers/ftpsite/Dgtw/coverpage.htm.

**Table 5**
Risk-adjusted returns of winsorized portfolios.

Monthly regressions of returns to a portfolio of the "100 Best Companies to Work For in America" on the four Carhart (1997) factors, *MKT*, *HML*, *SMB*, and *MOM*. The returns of the Best Companies are winsorized at the $x$% and $(100-x)$% levels across the sample period. The dependent variable is the winsorized portfolio return less either the risk-free rate, the industry-matched portfolio return, or the characteristics-matched portfolio return. Panel A contains equal-weighted returns and Panel B contains value-weighted returns. The alpha is the excess risk-adjusted return. *t*-Statistics are in parentheses. The sample period is April 1984–December 2009 for the left-hand column, and February 1998–December 2009 for the right-hand column.

| | $x=5$ | | | $x=10$ | | |
|---|---|---|---|---|---|---|
| | Risk-free | Industry | Characteristics | Risk-free | Industry | Characteristics |
| *Panel A: Equal-weighted* | | | | | | |
| $\alpha$ | 0.35 | 0.23 | 0.28 | 0.40 | 0.29 | 0.33 |
| | (3.49)*** | (2.80)*** | (3.10)*** | (4.18)*** | (3.36)*** | (3.76)*** |
| *Panel B: Value-weighted* | | | | | | |
| $\alpha$ | 0.35 | 0.23 | 0.20 | 0.40 | 0.28 | 0.25 |
| | (3.33)*** | (3.16)*** | (2.66)*** | (3.93)*** | (3.61)*** | (3.15)*** |
| # obs | 309 | 309 | 309 | 309 | 309 | 309 |

***: Significant at the 1% level.

result suggests that factors other than the lack of information are behind the misvaluation of intangibles, such as the difficulty in incorporating intangibles into traditional valuation models. Section 4.4 suggests that the marginally higher returns may stem from the more frequent list updating in the *Fortune* subsample.

### 4.2. Further robustness tests

The above subsection showed that the BCs' outperformance was not due to covariance with the Carhart (1997) factors, nor to their industry affiliation or characteristics. This subsection conducts further robustness tests. To test whether the results are driven by outliers, I winsorize the $x$% highest and $x$% lowest returns exhibited by the BCs over the time period, for $x=\{5,10\}$. Table 5 shows that the alphas for the winsorized portfolios are in fact slightly higher than in Table 3. The results in the other tables are also robust to winsorization.

An additional concern is that the explanatory power of list inclusion stems from its correlation with firm characteristics other than the size, book-to-market, or momentum variables already studied in Tables 3 and 4. Calculating the returns on a benchmark portfolio with similar characteristics is only feasible when the number of characteristics is small, else it is difficult to form a benchmark. I therefore use a regression approach to control for a wider range of characteristics. Specifically, I run a Fama-MacBeth (1973) estimation of

$$R_{it} = a_0 + a_1 X_{it} + a_2 Z_{it} + \varepsilon_{it}, \quad (2)$$

where $R_{it}$ is the return on stock $i$ in month $t$, either unadjusted or industry-adjusted. $X_{it}$ is a dummy variable that equals one if firm $i$ was included in the most recent BC list. $Z_{it}$ is a vector of firm characteristics. The $Z_{it}$ controls are taken from Brennan, Chordia, and Subrahmanyam (1998). These are as follows; the Appendix details the calculation of variables that involve Compustat data: *SIZE* is the log of $i$'s market capitalization at the end of month $t-2$. *BM* is the log of $i$'s book-to-market ratio. This variable is recalculated each July and held constant through the following June. *YLD* is the ratio of dividends in the previous fiscal year to market value at calendar year-end. This variable is recalculated each July and held constant through the following June. *RET*2–3 is the log of the cumulative return over months $t-3$ through $t-2$. *RET*4–6 and *RET*7–12 are defined analogously. *DVOL* is the log of the dollar volume of trading in security $i$ in month $t-2$. *PRC* is the log of $i$'s price at the end of month $t-2$.

Table 6 presents the results. For both adjusted and industry-adjusted returns, list inclusion is associated with an additional return of 27–39 basis points. This suggests that the BCs' outperformance does not result from their correlation with the observable characteristics studied by Brennan, Chordia, and Subrahmanyam (1998).[14]

### 4.3. Earnings announcements

This paper's hypothesis is that employee satisfaction is beneficial to firm value, but not immediately capitalized by the market because it is intangible. Instead, it only affects the stock price when it subsequently manifests in tangible outcomes, thus generating superior long-run returns. To provide direct evidence on this channel, I investigate whether the BCs exhibited superior future accounting performance. Note that earnings are not the only channel through which employee satisfaction may improve shareholder value: LeRoy and Porter (1981) find that stock returns are predominantly driven by factors other than earnings. Therefore, profits will account for at

[14] When adding the Gompers, Ishii, and Metrick (GIM) (2003) index as an additional control, the coefficient on the Best Companies dummy is 0.21 (0.23 for industry-adjusted returns and significant at the 5% level). The slight decline in the coefficient does not arise because the Best Companies exhibit superior governance. The Best Companies dummy has only a 0.01 correlation with the index. Instead, it stems entirely from a loss in observations. The governance index is only available from September 1990 onwards, and only for around 70% of the Best Companies within this time period. Over the 1984–2009 period, there are 18,991 firm-month observations for Best Companies. By starting from 1990, 5,349 observations are lost, and a further 5,091 observations are lost because several Best Companies are not in the governance index. The overall effect is to more than halve the number of firm-month observations to 8,551. Running the regression in Table 6 without the GIM index, but restricting it to firms with non-missing GIM, leads to a coefficient of 0.20 (0.23 for industry-adjusted returns).

**Table 6**
Characteristics regressions.

Monthly regressions of individual stock returns on a dummy variable for whether the firm was in the most recent list of the "100 Best Companies to Work For in America" (*BC*) and the characteristics used in Brennan, Chordia, and Subrahmanyam (1998). *SIZE* is the log of the firm's market capitalization (in billions) in month $t-2$. *BM* is the log of the firm's book-to-market ratio as of the calendar year-end before the most recent June. *YIELD* is the firm's dividend yield as of the calendar year-end before the most recent June. *RET*2–3, *RET*4–6 and *RET*7–12 are the logs of the compounded returns in, respectively, month $t-3$ to month $t-2$, month $t-6$ to month $t-4$, and month $t-12$ to month $t-7$. *DVOL* is the dollar trading volume (in millions) in month $t-2$. *PRC* is the price at the end of month $t-2$. *t*-Statistics are in parentheses. The sample period is April 1984–December 2009 for the left-hand column, and February 1998–December 2009 for the right-hand column.

| | 1984–2009 | | 1998–2009 | |
|---|---|---|---|---|
| | Raw | Industry-adjusted | Raw | Industry-adjusted |
| *BC* | 0.39 | 0.34 | 0.34 | 0.27 |
| | (3.68)*** | (3.58)*** | (1.87)* | (1.72)* |
| *SIZE* | 0.14 | 0.15 | 0.04 | 0.05 |
| | (1.86)* | (2.43)** | (0.34) | (0.43) |
| *BM* | 0.21 | 0.22 | 0.09 | 0.10 |
| | (4.41)*** | (5.79)*** | (1.12) | (1.61) |
| *YIELD* | −0.03 | −0.03 | 0.00 | −0.00 |
| | (−2.45)** | (−3.24)*** | (0.20) | (−0.28) |
| *RET*2–3 | 0.77 | 0.39 | 1.04 | 0.53 |
| | (2.64)*** | (1.40) | (1.92)* | (1.04) |
| *RET*4–6 | 0.73 | 0.49 | 0.88 | 0.45 |
| | (2.90)*** | (2.07)** | (1.89)* | (1.03) |
| *RET*7–12 | 0.89 | 0.67 | 0.58 | 0.31 |
| | (5.19)*** | (4.13)*** | (1.93)* | (1.08) |
| *DVOL* | −0.10 | −0.11 | −0.02 | −0.05 |
| | (−1.51) | (−1.90)* | (−0.17) | (−0.51) |
| *PRC* | −0.29 | −0.23 | −0.40 | −0.25 |
| | (−2.66)*** | (−2.20)** | (−2.16)** | (−1.35) |
| Constant | 2.04 | 1.27 | 1.59 | 1.39 |
| | (6.08)*** | (3.01)*** | (2.84)*** | (1.95)* |
| # obs | 1,691,492 | 1,673,440 | 819,956 | 813,707 |
| Number of groups | 309 | 309 | 143 | 143 |

*: Significant at the 10% level; **: Significant at the 5% level; ***: Significant at the 1% level.

most a portion of the abnormal returns. Since profits are persistent and thus affect stock returns only to the extent they are unexpected, I follow Core, Guay, and Rusticus (2006) and Giroud and Mueller (2011) and study earnings surprises. Using similar methodology to these papers, I run the following regression:

$$Surprise_{it} = b_0 + b_1 X_{it} + b_2 Z_{it-j} + \varepsilon_{it}. \quad (3)$$

*Surprise* is the one- or two-year earnings surprise, or the long-term growth surprise. The one-year earnings surprise is the actual earnings per share (EPS) for the fiscal year ending in year $t$ minus the median Institutional Brokers' Estimate System (I/B/E/S) analyst forecast, deflated by the stock price at fiscal year-end. The I/B/E/S consensus forecast is taken eight months prior to the end of the forecast period, i.e., four months after the previous fiscal year-end. Since the vast majority of annual reports are filed within three months of the fiscal year-end, this ensures that analysts know prior earnings when making their forecasts. The two-year earnings surprise is calculated similarly, with the consensus forecast taken 20 months prior to year-end. As in Easterwood and Nutt (1999), Lim (2001), Teoh and Wong (2002), and Giroud and Mueller (2011), I remove observations for which the forecast error is larger than 10% of the price. The long-run growth surprise is the actual five-year EPS growth from I/B/E/S minus the consensus long-run growth forecast 56 months prior. Since this measure is already a percentage, I do not deflate it. $X_{it}$ is a dummy variable for whether the firm was in the most recent BC list. $Z_{it-j}$ is a vector of control variables, the log book-to-market ratio, and the log market capitalization at year-end. These are calculated either one, two, or five years prior to the forecast period end date, i.e., $j=1$, 2, or 5. I estimate Eq. (3) using a pooled regression with year fixed effects.

The results are shown in Table 7. The one- and two-year earnings surprises are significantly greater for the BCs than all other firms at the 1% level. These results are robust to controls for the book-to-market ratio but not when size is also added as a control. This is because, contrary to most underreaction studies, the BCs are typically large firms, and earnings surprises are strongly positively correlated with size. Thus, one- and two-year earnings surprises may explain part of the outperformance of the BCs compared to the market, but not the (lower) outperformance versus the characteristics benchmark. However, the results for five-year earnings growth are robust to all controls. The stronger results for long-term growth are consistent with the view that satisfaction is a long-run investment.[15]

Table 8 examines the stock price consequences of such earnings surprises by calculating the abnormal returns to earnings announcements. I take all earnings announcement dates from April 1984 to December 2009 from I/B/E/S and calculate three-day $(-1,+1)$ returns in excess of a market model. The market model is estimated using up to 255 trading days, ending 46 days before the event date.[16] Panel A presents the results of univariate comparisons and shows that firms in the most recent BC list exhibit abnormal returns of 0.36%, significantly different from the 0.08% enjoyed by other firms. Panel B shows the results of a similar regression analysis to Table 6, using year fixed effects and controls. Regardless of the controls used, the BC dummy loads significantly. For example, the BCs exhibit a 0.36% higher announcement return than companies of similar size and book-to-market. With four quarterly announcements per year, earnings surprises account for over 1.4% of the BCs' outperformance. This is a meaningful portion of the 2.9% equal-weighted alpha over characteristics benchmarks, shown in Table 3.[17] I use the standard short event-study window so that the calculation of abnormal returns is

[15] For robustness, I also calculate the earnings surprise scaling by assets per share rather than the stock price; use the mean rather than median forecast as consensus; and drop observations for which there are fewer than five analyst forecasts to ensure that the I/B/E/S consensus is an accurate proxy for investor expectations. The results are barely affected by any of these changes.

[16] Results are very similar for five-day returns, and with different benchmarks.

[17] I compare the return explained by earnings surprises to an equal-weighted alpha, because a regression equally weights all observations. The value-weighted alpha over characteristics benchmarks is 1.8%, so earnings surprises account for an even greater proportion of it.

**Table 7**
Earnings surprises.

Regressions of earnings surprises on a dummy variable for whether the firm was in the most recent list of the "100 Best Companies to Work For in America" (*BC*) and controls (*BM*, log book-to-market and *SIZE*, log market equity) calculated at the previous year-end. The 1- (2-) year earnings surprise is the actual EPS minus the I/B/E/S median analyst forecast 8 (20) months prior to the end of the forecast period, scaled by the stock price. The long-term growth surprise is the actual five-year annualized EPS growth rate minus the I/B/E/S median analyst long-term growth forecast from 56 months earlier. The Best Company dummy and control variables are taken from the same month as the I/B/E/S median forecast. Panel A (B) contains the results for 1- (2-) year earnings surprises; Panel C contains the results for long-term growth surprises. All coefficients are multiplied by 1,000. All regressions include year fixed effects and a constant, not reported for brevity. *t*-Statistics are in parentheses. The sample period is April 1984–December 2009.

| | (1) | (2) | (3) |
|---|---|---|---|
| *Panel A: 1-Year earnings* | | | |
| *BC* | 3.63 | 3.17 | −1.14 |
| | (5.26)*** | (4.60)*** | (−1.63) |
| *BM* | | −1.21 | −0.41 |
| | | (−12.26)*** | (−4.01)*** |
| *SIZE* | | | 1.80 |
| | | | (31.26)*** |
| # obs | 75,813 | 72,164 | 72,164 |
| *Panel B: 2-Year earnings* | | | |
| *BC* | 3.89 | 4.02 | −0.10 |
| | (4.69)*** | (4.84)*** | (−0.12) |
| *BM* | | 0.41 | 1.23 |
| | | (3.00)*** | (8.80)*** |
| *SIZE* | | | 1.93 |
| | | | (23.82)*** |
| # obs | 51,076 | 49,156 | 49,156 |
| *Panel C: Long-term growth* | | | |
| *BC* | 2.27 | 3.55 | 1.46 |
| | (4.08)*** | (6.37)*** | (2.57)*** |
| *BM* | | 2.82 | 3.34 |
| | | (26.72)*** | (30.52)*** |
| *SIZE* | | | 1.02 |
| | | | (16.89)*** |
| # obs | 34,710 | 33,510 | 33,510 |

***: Significant at the 1% level.

**Table 8**
Earnings announcement returns.

(−1,+1) abnormal returns to quarterly earnings announcements. Abnormal returns are calculated above a market model in which the coefficients are estimated over a 255-day period ending 46 days before the earnings announcement. Panel A compares the average announcement returns to firms included in the most recent list of the "100 Best Companies to Work For in America" with the returns to all other firms. Panel B regresses announcement returns on a dummy variable for whether the firm was in the most recent Best Companies list (*BC*) and controls (*BM*, log book-to-market and *SIZE*, log market equity) calculated at the previous year-end. These regressions include year fixed effects and a constant, not reported for brevity. *t*-Statistics are in parentheses. The sample period is April 1984–December 2009.

*Panel A: Univariate comparisons*

| | Best Company | Other firms |
|---|---|---|
| CAR | 0.36 | 0.08 |
| # obs | 5,241 | 311,328 |
| *t*-Stat (difference from 0) | (40.57)*** | (5.01)*** |
| *t*-Stat (difference in means) | (2.20)** | |

| *Panel B: Regressions* | (1) | (2) | (3) |
|---|---|---|---|
| *BC* | 0.29 | 0.43 | 0.36 |
| | (2.36)** | (3.49)*** | (2.83)*** |
| *BM* | | 0.31 | 0.33 |
| | | (17.17)*** | (17.37)*** |
| *SIZE* | | | 0.03 |
| | | | (3.12)*** |
| # obs | 316,569 | 296,826 | 296,826 |

**: Significant at the 5% level; ***: Significant at the 1% level.

relatively insensitive to the benchmark asset pricing model used. Therefore, studying earnings announcements also addresses the concern that the abnormal returns stem from a yet-to-be-discovered risk factor missing from the Carhart (1997) model. Moreover, given post-earnings announcement drift (e.g., Bernard and Thomas, 1989), earnings surprises may account for an even greater proportion of the total excess returns. These results are also consistent with La Porta, Lakonishok, Shleifer, and Vishny (1997), who find that positive earnings surprises account for a meaningful proportion of the outperformance of value over glamour portfolios.

### 4.4. Longevity of outperformance

I now study the longevity of the excess returns. If they result from mispricing of employee satisfaction rather than risk, then one might expect the drift associated with list inclusion to decline over time, for two reasons. First, satisfaction is not a permanent characteristic—as shown in Table 1, one-third of firms drop off the list each year. If a firm's satisfaction declines over time, it no longer enjoys top-100 motivation, recruitment, and retention and so should generate smaller outperformance. Put differently, the value of the intangible asset ignored by the market is lower, so there is less mispricing. Second, even for firms that remain on the list for several years, the mispricing may be corrected over time as the market slowly learns about their value, for example, through their releases of tangible news such as earnings. However, as shown by the prior research summarized in Section 2.2, this correction can take over five years.

The prior literature on long-run drift calculates longevity of outperformance in two main ways. The first is the cumulative abnormal return (CAR). It starts by calculating a stock's benchmark-adjusted return in month *t* after the "event." The CAR up to month *t* is obtained by an arithmetic sum of the abnormal returns from month 1 to month *t*, and the portfolio return is an equally weighted average of the returns on each stock affected by the event. The second is buy-and-hold returns (BHAR). This involves calculating a stock's benchmark-unadjusted return from month *s* to month *t* by geometrically compounding its monthly returns. The benchmark returns over that period are calculated separately, and then subtracted from the return on each stock. The months *s* and *t* are typically chosen to coincide with years (e.g., 1–12, 13–24) which effectively assumes rebalancing to equal-weight at the start of each year. This is to ensure that returns are not driven by the extreme performance of a few stocks in the portfolio. Conrad and Kaul (1993) argue that the BHAR method is more accurate for statistical reasons.

The results of these two methods are presented in Panels A and B of Table 9. Panel A shows that the CARs continue to grow through month 54, but are virtually zero between months 54 and 60. The BHAR results in Panel B are consistent: the returns drop from 2% to 3% in year 4 to close to zero in year 5 and become insignificant in all specifications. Both panels suggest that, as found by prior literature, it takes several years before the abnormal returns start to decline. However, in contrast to Agrawal, Jaffe, and Mandelker (1992), Lakonishok, Shleifer, and Vishny (1994), Spiess and Affleck-Graves (1995), Loughran and Ritter (1995), and Loughran and Vijh (1997), I find that the drift dies out in the fifth year.

The results in both panels are consistent with both hypotheses mentioned at the start of the subsection. The reduction in drift over time could occur either because some firms have dropped off the list, or because the market has now learned of their valuable intangibles. I start by investigating the second hypothesis—that even in firms for which satisfaction is reasonably permanent, the abnormal returns die down because the market learns about their intangibles over time. I conduct a similar BHAR analysis to Panel B, but focusing on firms which remain on the list for at least the next five years—i.e., throughout the period over which drift is calculated. Specifically, it contains firms on the 1998 list which are also on the 1999, 2000, 2001, and 2002 lists, and so on for the 1999–2005 lists. It also contains firms in the 1984 (1993) list which are on the 1993 (1998) list. Panel C illustrates the results; consistent with Panel B, it finds that the returns drop markedly in the fifth year and actually become slightly negative. (Since the restriction to firms on the list for the next five years significantly reduces the sample size, the results in Panel C are winsorized at the 5th and 95th percentiles to remove the effect of outliers; however, without winsorization the returns also fall sharply and become insignificant in year five.) These results are consistent with a mispricing story.

I now turn to the first channel, that returns die down over time because satisfaction is not a permanent characteristic. I do so by studying the returns to two additional portfolios, which contain firms that were on previous BC lists but not the latest one. Portfolio II is not reformed or reweighted each year: it simply calculates the returns to the original 74 BCs from April 1984 to December 2009, some of which drop off subsequent lists. For the *Fortune* subsample, this portfolio calculates the returns of the 69 BCs in the 1998 list from February 1998 to December 2009. (I conduct this particular analysis separately for the *Fortune* subsample to allow comparison with Table 4 as well as Table 3.) Portfolio III includes only companies dropped from the list. Specifically, it is created on March 1, 1993 and includes any companies that were in the 1984 list but not in the 1993 list. On February 1, 1998, any companies that were in the 1993 list but not in the 1998 list are added, and so on. If a firm is later added back to the list, it is removed from Portfolio III. (For the *Fortune* subsample, it is created on February 1, 1999.) Like Portfolio I, Portfolio III includes firms that go public after list formation.

Portfolio II should outperform its benchmark, since it contains firms with high satisfaction for at least part of the period. It should also underperform Portfolio I, since the latter represents the most up-to-date list. On the other hand, if Portfolio II performs similarly to Portfolio I, this would imply that the previous results were driven by a single portfolio: the 1984 (or 1998) list, and thus only around 70 firms, rather than the 244 firms across the full time period. It would also suggest that the non-permanence of employee satisfaction is not a reason for the reduction in drift over time. The hypothesis for the relative performance of Portfolios I–II is tentative as it is difficult to evaluate rigorously: since the portfolios contain many common stocks, their returns will be similar and likely statistically indistinguishable. However, we can still verify whether the differences are of the hypothesized sign.[18]

I also predict that Portfolio III performs worse than Portfolios I–II, since the former contains companies outside the Top 100 for satisfaction. Whether it also underperforms its benchmarks depends on the market's incorporation of intangibles. If the market fully capitalizes satisfaction, the removal of a company from the list signals that this variable has declined from previous expectations. Therefore, if satisfaction is positively correlated with performance, Portfolio III should earn negative returns.[19] However, if satisfaction is important but not incorporated by the market, such a prediction is not generated. In the extreme, if the BC list is completely ignored, satisfaction only feeds through to returns when its benefits manifest in future tangible outcomes. Hence, the abnormal return of firm $i$ depends on its level of employee welfare compared to the average firm, rather than compared to the market's previous assessment of firm $i$'s level of welfare. If firm $i$ is outside the Top 100, it may still exhibit above-average satisfaction (e.g., be in the Top 200) and thus generate superior returns.

Panel D of Table 9 illustrates the results. The returns to Portfolio II are positive over all time-periods, benchmarks, and weighting methodologies, and often significant, but it underperforms Portfolio I in all 12 specifications. These results suggest that employee satisfaction is not a permanent characteristic and list updates contain useful information, potentially explaining why outperformance is particularly strong over 1998–2009. In the *Fortune* subperiod, the list was updated every year, whereas for 1984–1997, it was updated only once in a 14-year period. Indeed, the weaker results for the 1984 Portfolio II arise because it contained firms such as Polaroid, Delta Airlines, Dana, and Armstrong that featured only in the 1984 list and suffered very weak performance from 1993 onwards. Also as predicted, Portfolio III underperforms Portfolio I in all 12 specifications, and Portfolio II in all specifications except for the equal-weighted specification from 1984 to 2009. This strong performance disappears when value-weighting (or, in unreported results, winsorizing). However, Portfolio III only underperforms its benchmarks for

[18] Comparing newly added versus newly dropped companies leads to economically significant differences, but not statistical significance since there are too few added and dropped stocks to draw inferences.

[19] This prediction assumes that capitalization takes at least a few weeks. If it occurs before the start of the return compounding window, Portfolio III should earn zero abnormal returns (as should all portfolios).

**Table 9**
Longevity analysis.

Panel A calculates cumulative abnormal returns (CAR) to portfolios of the "100 Best Companies to Work For in America" in calendar time. The abnormal return of stock in event month $t$ is calculated by subtracting its benchmark return $t$ months after list inclusion. The CAR through month $t$ is an arithmetic sum of the abnormal returns from months 1 through $t$. Panel B calculates the buy-and-hold returns (BHAR). It first geometrically compounds the unadjusted returns of a Best Company from month 1–12, 13–24, etc. and then subtracts the geometrically compounded benchmark return over the same period. Panel C calculates the BHAR to companies that remain on the list for the following five years, winsorizing at the 5th and 95th percentiles. Panel D contains monthly regressions of the returns of Portfolios II and III on the four Carhart (1997) factors, *MKT*, *HML*, *SMB*, and *MOM*. Portfolio II is the original 1984 (1998) Best Companies list and is not updated with subsequent lists. Portfolio III contains only companies dropped from a prior list. The alpha is the excess risk-adjusted return. $t$-Statistics are in parentheses. The sample period is April 1984–December 2009 for Panels A–C and given in the headings for Panel D.

| *Panel A: CARs* | CAR over | | |
|---|---|---|---|
| Month | Market | Industry | Characteristics |
| 6 | 2.11 | 2.21 | 1.56 |
| 12 | 5.57 | 4.72 | 4.76 |
| 18 | 7.26 | 6.65 | 5.80 |
| 24 | 10.36 | 8.66 | 8.82 |
| 30 | 11.50 | 10.36 | 9.32 |
| 36 | 15.73 | 12.88 | 12.54 |
| 42 | 18.63 | 15.92 | 14.09 |
| 48 | 21.03 | 17.33 | 16.03 |
| 54 | 24.10 | 20.57 | 18.68 |
| 60 | 24.21 | 20.68 | 18.66 |

| *Panel B: BHARs* | BHAR over | | |
|---|---|---|---|
| Months | Market | Industry | Characteristics |
| 1–12 | 5.07 | 4.53 | 4.84 |
| | (2.11)** | (1.94)* | (1.90)* |
| 13–24 | 2.66 | 2.24 | 2.66 |
| | (1.88)* | (1.73)* | (1.91)* |
| 25–36 | 3.32 | 2.63 | 1.87 |
| | (2.41)** | (2.05)* | (1.36) |
| 37–48 | 3.35 | 2.90 | 1.94 |
| | (2.44)** | (2.25)** | (1.61) |
| 49–60 | 0.33 | 0.81 | 0.27 |
| | (0.24) | (0.62) | (0.21) |

| *Panel C: BHARs of firms on list for 5 years* | BHAR over | | |
|---|---|---|---|
| Months | Market | Industry | Characteristics |
| 1–12 | 9.47 | 6.97 | 6.81 |
| | (5.28)*** | (4.34)*** | (3.63)*** |
| 13–24 | 6.63 | 4.30 | 5.41 |
| | (3.81)*** | (2.82)*** | (3.18)*** |
| 25–36 | 3.10 | 2.13 | 2.45 |
| | (1.90)* | (1.49) | (1.50) |
| 37–48 | 2.95 | 2.28 | 2.38 |
| | (1.95)* | (1.62) | (1.68)* |
| 49–60 | −0.36 | −0.07 | −0.82 |
| | (−0.23) | (−0.04) | (−0.56) |

| *Panel D: Alphas* | 1984–2009: excess returns over | | | 1998–2009: excess returns over | | |
|---|---|---|---|---|---|---|
| | Risk-free | Industry | Characteristics | Risk-free | Industry | Characteristics |
| *Equal-weighted* | | | | | | |
| α, II | 0.23 | 0.12 | 0.13 | 0.44 | 0.28 | 0.34 |
| | (2.15)** | (1.44) | (1.41) | (2.97)*** | (2.55)** | (2.50)** |
| α, III | 0.30 | 0.20 | 0.21 | 0.34 | 0.26 | 0.27 |
| | (2.68)*** | (2.16)** | (2.36)** | (1.75)* | (1.82)* | (1.96)* |
| *Value-weighted* | | | | | | |
| α, II | 0.23 | 0.16 | 0.15 | 0.24 | 0.08 | 0.11 |
| | (2.31)** | (1.85)* | (2.36)** | (1.17) | (0.62) | (0.87) |
| α, III | 0.16 | 0.04 | 0.04 | −0.21 | −0.29 | −0.19 |
| | (1.44) | (0.34) | (0.63) | (−1.08) | (−2.13)** | (−1.44) |
| # obs | 309 for II, 202 for III | | | 143 for II, 131 for III | | |

*: Significant at the 10% level; **: Significant at the 5% level; ***: Significant at the 1% level.

the *Fortune* subsample when value-weighting (and only significantly compared to the industry benchmark), and outperforms significantly in some specifications. This result further suggests that the market did not fully react when the companies in Portfolio III were initially added to the list.

Overall, the results in all four panels of Table 9 suggest that the abnormal returns of BCs abate over time, both because employee satisfaction is not a permanent characteristic, and the market slowly learns about this intangible. The duration of outperformance, of approximately four years, is slightly lower than some prior studies and thus implies a lower level of mispricing.

## 5. Discussion

Section 4 has shown a significant correlation between employee satisfaction and future stock returns that is robust to controls for risk, industries, firm characteristics, and outliers. There are a number of potential explanations for this association:

Hypothesis A: Employee satisfaction causes superior future stock returns, and this link was not fully valued by the market.

Hypothesis B: Employee satisfaction is irrelevant for shareholder value, but list inclusion causes higher returns via irrational market reactions or demand from SRI funds.

Hypothesis C: Employee satisfaction is irrelevant for shareholder value, but list inclusion causes higher returns because the market erroneously believes it is detrimental to value. Listed firms thus trade at an initial discount, and the higher returns are a correction of this.

Hypothesis D: Expectations of superior future stock returns cause high satisfaction today.

Hypothesis E: There is no causal relationship in either direction between satisfaction and stock returns, but a third variable causes both.

The results of Tables 7 and 8 provide support for Hypothesis A: that employee satisfaction is not directly capitalized, but only affects the stock price when it subsequently manifests in tangible outcomes that are valued by the market. The evidence of Table 9, that the abnormal returns eventually die out with a longevity similar to other mispricing studies, is also consistent with this hypothesis. This section evaluates the alternative explanations.

As stated in the Introduction, stock returns have several advantages as a dependent variable: they are critical for the paper's three goals. However, they also have some limitations. While they should incorporate all channels through which satisfaction can affect fundamental value, they may also be influenced by factors unrelated to fundamental value, such as irrational speculation. Thus, even if there is causality, it could be list inclusion per se rather than satisfaction that is causing superior returns. Hypothesis B is that the superior returns did not stem from a true increase in firm value. For example, satisfaction may be irrelevant for shareholder value, but the market erroneously believes that a relationship exists and reacts irrationally positively to list inclusion. This hypothesis is contradicted by the superior earnings surprises of the BCs, which represent an increase in fundamental value. Moreover, Gilbert, Lochstoer, Kogan, and Ozyildirim (2010) and Huberman and Regev (2001) show that irrational reactions to non-information are concentrated immediately after the announcement of irrelevant news. Here, the event-study window is excluded from the return calculation.

A similar explanation is that list inclusion led to buying by SRI funds because it allows the stocks to pass SRI screens; if demand curves are downward-sloping, this raises prices. Such purchases may take time to be executed and need not occur within the month of list announcement. In addition to the earnings announcement results, an additional piece of evidence against this explanation is the mild outperformance of the dropped companies in Portfolio III. For a more systematic evaluation of this hypothesis, I study whether SRI funds indeed are overweighting the BCs, and whether they increased this weighting over time. There is substantial heterogeneity across SRI funds and many screen on factors orthogonal to employee satisfaction, such as animal testing and environmental protection. I therefore must be careful to select funds that use employment screens in particular. My main data source is the Social Investment Forum,[20] which contains details of each SRI fund and 11 different screening criteria, two of which are labor relations and employment/equality. For each fund and criterion, there are three categories. Positive Investment denotes that the fund is more likely to invest in a firm that surpasses an upper bar for the criterion, Restricted Investment denotes that the fund will seek to avoid firms that fall below a lower bar, and No Screen denotes that the fund does not use that criterion.[21] The classifications for labor relations and employment/equality are highly correlated, with only one fund having a different designation between the two. I supplement this source with data from SocialFunds,[22] which provides a similar table. One of its ten screens is employment.[23] There is considerable overlap between the two data sources; when there is disagreement, I read the fund prospectus to see whether it mentions an employment screen. If it does not, I call the fund to verify whether it uses such a screen. For example, such calls uncovered that the Ariel Fund does not use employment screens, contrary to the data from SocialFunds. I also called all major fund families (even when there was no disagreement between the data sources) to verify that the screening criteria have not changed over time, and that the family did not previously have a fund that screened on employment that is now defunct and thus not in either data source. I drop funds that invest exclusively overseas or in bonds, or are not in the CDA/Spectrum database, from which I obtain fund holdings.

[20] http://www.socialinvest.org/resources/mfpc/screening.cfm.

[21] The other screens are alcohol, tobacco, gambling, defense/weapons, animal testing, products/services, environment, human rights, and community investment. For the first four screens, there is a fourth option of "No Investment," which is stronger than Restricted Investment and denotes that the fund will not invest in any company that produces these products. There is no such option for the labor or employment screens.

[22] http://www.socialfunds.com/funds/chart.cgi?sfChartId=Social+Issues.

[23] The other screens are shareholder advocacy, community investment, environment, human rights, employment, product safety, weapons, animal rights, nuclear power, and alcohol/tobacco/gambling.

**Table 10**
List of employment funds.

SRI funds that invest in domestic equity and use labor or employment screens. The main data sources are the Social Investment Forum and SocialFunds. Any conflicts were resolved by reading the fund prospectus or calling the fund. (P) denotes that the fund employs a Positive Investment screen on labor or employment, and (R) denotes a Restricted Investment screen.

| | |
|---|---|
| AHA Socially Responsible Equity (P) | LKCM Acquinas Small Cap (R) |
| Appleseed (P) | LKCM Acquinas Value (R) |
| Calvert Aggressive Allocation (P) | MMA Praxis Core Stock (P) |
| Calvert Capital Accumulation (P) | MMA Praxis Growth Index (P) |
| Calvert Conservative Allocation (P) | MMA Praxis Intermediate Income (P) |
| Calvert Global Alternative Energy (P) | MMA Praxis International (P) |
| Calvert International Opportunities (P) | MMA Praxis Small Cap (P) |
| Calvert Large Cap Growth (P) | MMA Praxis Value Index (P) |
| Calvert Mid Cap Value (P) | Neuberger Berman Socially Responsible (P) |
| Calvert Moderate Allocation (P) | New Alternatives (P) |
| Calvert New Vision Small Cap (P) | Parnassus (P) |
| Calvert Small Cap Value (P) | Parnassus Mid-Cap (P) |
| Calvert Social Index (P) | Parnassus Small-Cap (P) |
| Calvert Social Investment Balanced (P) | Parnassus Workplace (P) |
| Calvert Social Investment Enhanced Equity (P) | Pax World Balanced (P) |
| Calvert Social Investment Equity (P) | Pax World Growth (P) |
| Calvert World Values International (P) | Pax World High Yield (P) |
| Domini Social Equity (P) | Pax World Value (P) |
| Dreyfus Premier Third Century (R) | Pax World Women's Equity (R) |
| Epiphany Faith and Family Values 100 (P) | Sentinel Sustainable Core Opportunities (P) |
| Flex-Funds Total Return Utilities (R) | Sentinel Sustainable Emerging Companies (P) |
| Green Century Equity (P) | TIAA CREF Inst Social Choice Equity (P) |
| Integrity Growth and Income (R) | Vanguard FTSE Social Index Fund (R) |
| Legg Mason Partners Social Awareness (P) | Walden Social Balanced (P) |
| LKCM Acquinas Growth (R) | Walden Social Equity (P) |

Table 10 contains the final list of "employment funds" which use either a Positive or Restricted Investment screen on labor or employment.[24]

I run the following regression:

$$EO_{it} = c_0 + c_1 X_{it} + c_2 Z_{it} + \varepsilon_{it}. \quad (4)$$

$EO_{it}$ is the percentage ownership of stock $i$ across all employment funds in Table 10 at the end of December of year $t$. $X_{it}$ is a dummy variable for whether the firm was in the most recent BC list, and $Z_{it}$ is a vector of control variables. Following Hong and Kacperczyk (2009), I use the following controls: log size, log M/B, the inverse stock price, S&P 500 dummy, and Nasdaq dummy (all measured at the end of year $t$), as well as the standard deviation of daily returns and average monthly return (measured in year $t$). I also use industry dummy variables.[25] Also as in Hong and Kacperczyk (2009), I run a panel regression with year fixed effects and cluster standard errors at the industry level, since a fund's investment in a particular stock may increase (reduce) its probability of owning an industry peer for specialization (diversification) reasons. The results are very similar using Fama-MacBeth (1973) and are available upon request.

Table 11 shows that employment funds indeed overweight the BCs. To investigate whether overweighting has increased over time, I add an additional regressor, $Y_{it}$, to Eq. (4), where $Y_{it}=(Year-1984)\times X_{it}$; it is significant. I next calibrate the extent to which this increase in demand can explain the superior returns. Employment funds owned \$5m of BC stock in 1984 and \$1,653m in 2007. (To form an upper bound on the excess return that can be explained by increased demand, I take the 2007 figures as they are the highest.) The total value of the BCs was \$303,169m in 1984 and \$1,703,218m in 2007. Thus, the increase in employment funds' ownership of BC stock is driven in part by the increase in market value of the BCs rather than new purchases. Again to form an upper bound, I assume that the entire \$1,648m increase stems from new purchases. The next step is to turn this into a percentage change in demand. To maximize the percentage change, I take the 1984 value of BCs as the denominator, which translates into a 0.54% increase. The effect on stock prices is given by

$$\Delta P = 0.0054/\varepsilon, \quad (5)$$

where $\varepsilon$ is the absolute price elasticity of demand. Estimates of $\varepsilon$ range widely: Shleifer (1986) and Gompers and Metrick (2001) suggest a unit elasticity,Wurgler and Zhuravskaya (2002) estimate $\varepsilon=8$, and Scholes (1972) calibrates $\varepsilon=3{,}000$. Using $\varepsilon=1$, again to create an upper bound, yields a 0.54% abnormal return, or only 0.02% per year.[26]

[24] List inclusion can affect the holdings of funds with both Positive and Restricted screens, since it may directly cause a positively screening fund to buy the stock, and remove limitations previously preventing a restrictively screening fund from buying the stock. Therefore, the main specification includes employment funds that impose both types of screens, but I also run the results focusing only on funds that positively screen.

[25] HK do not use industry dummy variables because their definition of sin stocks is at the industry level; they instead use the industry beta. Industry dummies are feasible in the present setting, and control for broader differences across industries than their betas.

[26] Inflows into Best Companies require outflows from other firms, and thus reduce the performance of benchmarks. Since the outflows will

**Table 11**
Holdings by employment funds.

Regressions of a stock's aggregate ownership by employment funds at year-end on a dummy variable for whether the firm was in the most recent list of the "100 Best Companies to Work For in America" (*BC*) and various control variables. *SIZE* is log market equity, *MB* is the log market-to-book ratio, *PRINV* is the inverse of the stock price, *NASDAQ* and *SP500* are dummy variables for inclusion in the Nasdaq and S&P 500 indexes (all measured at year-end), *STD* is the standard deviation of daily stock returns, and *MORET* is the average monthly return (all measured over the year). In specifications (3) and (4), I include *YEARBC*, defined as $(Year-1984)\times BC$. The coefficients are estimated using a panel regression with industry and year dummies. Robust standard errors are clustered at the industry level. *t*-Statistics are in parentheses. The sample period is 1984–2009. Columns 1 and 3 consider funds that use positive or restrictive employment screens. Columns 2 and 4 only consider funds that employ positive employment screens alone. All coefficients are multiplied by 1,000.

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | All funds | Positive funds | All funds | Positive funds |
| *BC* | 0.330 | 0.328 | −0.101 | −0.083 |
| | (3.27)*** | (3.28)*** | (−0.62) | (−0.52) |
| *YEARBC* | | | 0.039 | 0.038 |
| | | | (3.49)*** | (3.35)*** |
| *SIZE* | 0.054 | 0.052 | 0.053 | 0.051 |
| | (8.01)*** | (7.75)*** | (7.98)*** | (7.72)*** |
| *MB* | −0.029 | −0.030 | −0.030 | −0.030 |
| | (−2.84)*** | (−2.84)*** | (−2.89)*** | (−2.89)*** |
| *PRINV* | 0.013 | 0.012 | 0.012 | 0.012 |
| | (6.58)*** | (6.29)*** | (6.44)*** | (6.15)*** |
| *STD* | −0.004 | −0.004 | −0.004 | −0.004 |
| | (−1.81)* | (−1.88)* | (−1.82)* | (−1.89)* |
| *MORET* | −0.002 | −0.002 | −0.002 | −0.002 |
| | (−2.96)*** | (−2.92)*** | (−2.90)*** | (−2.85)*** |
| *NASDAQ* | 0.029 | 0.030 | 0.029 | 0.029 |
| | (1.32) | (1.36) | (1.31) | (1.34) |
| *SP500* | 0.001 | −0.005 | 0.005 | −0.001 |
| | (0.03) | (−0.17) | (0.17) | (−0.03) |
| Constant | −0.282 | −0.273 | −0.284 | −0.275 |
| | (−5.91)*** | (−5.76)*** | (−5.97)*** | (−5.81)*** |
| # obs | 143,487 | 143,487 | 143,487 | 143,487 |

*: Significant at the 10% level; ***: Significant at the 1% level.

This is substantially smaller than the 3.5% annual alpha, and so in-sample purchases cannot explain the excess returns.[27]

Hypothesis C is that satisfaction has no effect on shareholder value, but the market believes that it has a negative effect [owing to traditional views that it represents wasteful expenditure, e.g., Taylor (1911)] and so reduced its initial valuation of the BCs. Under this hypothesis, the subsequent superior returns are merely correction of temporary undervaluation rather than any direct benefit of satisfaction. This interpretation echoes Hong and Kacperczyk (2009), who find that "sin" stocks' abnormal returns stemmed from their initial undervaluation. Again, it is list inclusion rather than satisfaction that is causing the superior returns.

This hypothesis is contradicted by the slightly positive event-study returns to list inclusion shown by Faleye and Trahan (2006), which I also confirm in unreported results. An additional test is to examine whether the BCs traded at a value discount to their peers at the start of the return compounding period. Hypotheses A and C have different predictions as to whether an initial discount should exist. Hypothesis A posits that the BCs are undervalued relative to their true fundamental value (comprised of tangible and intangible assets) since their intangible value is partially ignored. However, it does not predict that the BCs should have lower observed valuation ratios than peers, because the denominator of traditional valuation ratios (e.g., market-to-book) does not consider intangibles. For example, assume that firm 1 has $2bn of tangible assets and thus a true value of $2bn; firm 2 has $2bn of tangible assets and has spent $1bn on intangibles. Under Hypothesis A, firm 2's intangibles are valuable and so its true value is $3bn, but it trades at $2.4bn as the market only partially incorporates intangibles. Thus, firm 1 (2) exhibits an M/B ratio of 1 (1.2) and so firm 2's subsequent abnormal returns arise not because it trades at an initial discount, but because it has valuable intangibles which were not fully priced initially. Under Hypothesis C, firm 2's intangibles are worthless and so its true value is also $2bn, but the market values it at $1.5bn because it infers that wasteful expenditure on intangibles implies more general agency problems. Firm 2 therefore trades at an initial M/B of 0.75 and thus at a discount to firm 1; its subsequent abnormal returns result entirely from a correction of this discount.

I therefore run the following regression:

$$VAL_{it} = d_0 + d_1 X_{it} + d_2 Z_{it-1} + \varepsilon_{it}, \tag{6}$$

at the beginning of each return compounding window. $VAL_{it}$ is the valuation of stock $i$ at the start of the return compounding period in year $t$ (i.e., end of March for $t=1984$, February for $t=1993$, January for 1998–2009). Similar to Hong and Kacperczyk (2009), I use three valuation ratios: the log market-to-book ratio (M/B), the log price-to-earnings ratio (P/E), and the log of the ratio of aggregate value to earnings before interest, tax, depreciation, and amortization (AV/EBITDA).[28] I drop observations for which the denominator is negative. $X_{it}$ is a dummy variable for whether the firm is in that month's BC list, and $Z_{it-1}$ is a vector of control variables measured as of December of the previous year. Following Hong and Kacperczyk, I use the firm's return on equity (ROE) as well as the next three year's ROEs, R&D as a fraction of sales, a dummy variable if R&D is missing, and an S&P 500

(*footnote continued*)
be spread over the thousands of stocks that are not Best Companies, the outflows from a particular stock will be negligible.

[27] The main reason why increased ownership by employment funds is unable to explain a significant portion of the Best Companies' outperformance is there are very few such funds, and so they have little price impact. I therefore rerun Eq. (4) using total institutional ownership as the dependent variable, since institutions in aggregate hold substantially more assets than employment funds. However, I find institutions are underweighted on the Best Companies. These results remain similar when studying only ownership by banks, insurance companies, and other institutions, who are more likely to be constrained by social norms (Hong and Kacperczyk, 2009). The results are available upon request.

[28] Hong and Kacperczyk (2009) use the price-to-EBITDA ratio. Since the EBITDA represents profits to both debtholders and equityholders, I use the aggregate value of both debt and equity in the numerator. AV/EBITDA is unaffected by changes in capital structure.

**Table 12**
Valuation regressions.

Regressions of a stock's valuation on a dummy variable for whether the firm is in the current list of the "100 Best Companies to Work For in America" (*BC*) and various control variables. The three valuation measures are *MB*, the log market-to-book ratio, *PE*, the log price-to-earnings ratio, and *AVEBITDA*, the log ratio of aggregate value to EBITDA, and measured at the end of each month in which a Best Companies list was published, i.e., March 1984, February 1993, and January 1998–2007. I drop observations for which the denominator of the valuation ratio is negative. The control variables are all measured at December of the previous year: *ROE* is the return on equity, *FROE*, *F2ROE*, and *F3ROE* are the returns on equity for the next three years, *RDSALES* is the ratio of R&D to sales, *RDMISS* is a dummy variable for whether R&D is missing, and *SP500* is a dummy variable for inclusion in the S&P 500 index. The coefficients are estimated using Fama-MacBeth (1973). *t*-Statistics are in parentheses.

| | (1) | (2) | (3) |
|---|---|---|---|
| | *MB* | *PE* | *AVEBITDA* |
| *BC* | 0.384 | 0.092 | 0.145 |
| | (9.24)*** | (2.14)* | (3.57)*** |
| *ROE* | 0.006 | −0.297 | −0.063 |
| | (0.49) | (−1.17) | (−1.07) |
| *RDSALES* | 0.030 | 2.086 | 0.803 |
| | (1.09) | (4.73)*** | (1.81)* |
| *RDMISS* | −0.100 | −0.017 | −0.055 |
| | (−4.46)*** | (−0.89) | (−2.06)* |
| *SP500* | 0.583 | 0.330 | 0.168 |
| | (6.62)*** | (4.65)*** | (3.64)*** |
| *FROE* | 0.038 | 0.038 | 0.006 |
| | (1.25) | (0.88) | (0.79) |
| *F2ROE* | 0.008 | 0.070 | 0.016 |
| | (1.68) | (1.04) | (0.93) |
| *F3ROE* | 0.003 | 0.008 | 0.000 |
| | (2.48)** | (2.23)** | (0.22) |
| Constant | −0.083 | 2.105 | 2.013 |
| | (−0.33) | (11.06)*** | (10.74)*** |
| # obs | 47,097 | 35,258 | 39,381 |
| Number of groups | 12 | 12 | 12 |

∗: Significant at the 10% level; **: Significant at the 5% level; ***: Significant at the 1% level.

dummy. I estimate Eq. (6) using Fama-MacBeth (1973), adjusting standard errors for potential autocorrelation.

The results are shown in Table 12. The BCs exhibit *higher* valuation ratios based on all three measures. These findings are inconsistent with Hypothesis C but consistent with Hypothesis A, as well as Gompers, Ishii, and Metrick (2003) who show that firms with strong governance earned abnormal returns while trading at a valuation *premium* at the start of the return window. The higher ratios suggest that the market is at least partially valuing the intangibles. This result is also consistent with the drift studies summarized in Section 2.2, which find that the market generally values corporate events in the correct direction, but significantly underestimates the magnitudes. Indeed, in the above numerical example, firm 2 trades at an initial premium.

Since the setting is not a natural experiment with random assignment of employee satisfaction to firms, non-causal explanations also exist. Hypothesis D is that superior performance leads to satisfaction. The use of stock returns as a dependent variable addresses concerns of reverse causation in the absence of private information—past, current, and expected future profitability should all be incorporated in the current stock price, and so profitable firms should not outperform going forward. However, if employees have superior information about their firm's future stock returns, those with positive information may report higher satisfaction today. This explanation is unlikely for a number of reasons. Existing empirical studies suggest that employees do not have private information: Benartzi (2001) shows that employees make incorrect decisions when allocating their 401(k) accounts to company stock, and Bergman and Jenter (2007) find that firms are able to lower total compensation by granting their workers overvalued options in lieu of salary. Even if employees do have superior information, it is likely to be about near-term returns, given that managers are unable to forecast returns past 100 days (Jenter, Lewellen, and Warner, 2011). Since they must return the questionnaires by the end of June, seven months before the start of the return compounding window the following February 1, this will not affect the results. It is also plausible that employees who predict higher future returns will perceive the stock as undervalued today, potentially reducing satisfaction.[29]

Hypothesis E is that the link between satisfaction and returns arises because a third unobservable variable causes both, such as good management (Bloom, Kretschmer, and Van Reenen, 2009; Bloom et al., 2011)—i.e., the BC dummy proxies for an omitted variable. While I rule out correlation with industries, factor loadings, and an extensive list of observable characteristics, by their very nature, unobservables cannot be used as regressors. The standard solution is to introduce firm fixed effects to absorb the unobservables and identify purely on within-firm changes in the variable in question. This approach cannot be used here because fixed effects require the unobservables to be constant over time, but a change in satisfaction could be caused by changes in management practices. In addition, there is limited within-firm variation in list inclusion: many firms remain in the list for several years, and a firm removed from the list may still exhibit significantly above-average satisfaction (e.g., be in the Top 200). Thus, such an approach would be biased towards finding no relationship (Zhou, 2001).[30]

If the results were entirely driven by a combination of Hypotheses D and E, then satisfaction has no causal effect on returns and the introduction of employee-friendly programs would have no impact. However, other conclusions from this paper would be unaffected. It still remains that the market does not incorporate intangibles (be they satisfaction, good management, or workers' private information) even when made public; that investors underreact to even widely disseminated news concerning large companies; and that an SRI investor could have earned excess returns by trading on the BC list.

[29] Furthermore, the Best Companies survey does not simply ask employees the general question of rating their satisfaction, which could indeed lead to optimistic employees reporting high satisfaction. Instead, the survey covers very specific questions, such as communication to employees, corporate philanthropy, and diversity, which aim to specifically target satisfaction rather than optimism.

[30] An alternative approach would be to use random variation in some firm-specific characteristic that was causal for employee satisfaction but has no direct effect on stock returns. Unfortunately, I have been unable to identify such an appropriate instrument. For example, "natural experiments" such as exploiting labor law regulatory change are not firm-specific.

Another caveat shared by many other long-run event studies is that the sample size is small. The BC survey contains only 100 firms per year (of which typically 50–70 are publicly traded). Since these firms are all in the right tail of satisfaction, this small sample may not reflect the relationship between shareholder returns and the whole range of levels of satisfaction. It may be that a positive link only exists at very high levels, and there is no difference between moderate and very low satisfaction. The mild outperformance of Portfolio III in most specifications suggests that the results extend to moderate satisfaction levels, under the assumption that firms that drop outside the Top 100 remain above-average, but this is yet to be shown directly. A standard concern with a small sample is that it may be predominantly composed of small firms that are relatively unimportant for the overall economy, and any excess returns are hard to exploit given transactions costs. This concern does not apply here, given the size of the BCs.[31] In addition, while the paper shows superior returns to an SRI screen based on employee relations, its results may not extend to other SRI screens (e.g., environmental policy). My findings provide an a priori motivation for extending the investigation to other screens: if other forms of "stakeholder capital" also benefit shareholders (e.g., low pollution means that a firm is well-placed to comply with increasing environmental regulations) and are also undervalued by the market, certain other screens may also improve returns. However, this has yet to be shown directly. Note that traditional portfolio theory predicts that *any* screen reduces investment returns by restricting the investor's choice set, so finding even one screen that improves returns is sufficient to challenge this classical view.

Finally, other factors may lead to the results being understated. Under Hypothesis A, the portfolio returns only capture the benefits of satisfaction that have manifested in tangible outcomes within the time period studied. However, certain benefits (such as developing a new patent) may not become visible for several years, and thus not be captured by the results, particularly for the later lists. Some firms may choose not to be considered for the BC list, perhaps because their reputations for employee welfare are already strong and they do not need independent certification. Thus, there may be many companies with high satisfaction and stronger returns than the mean BC, that are not considered by this analysis.

## 6. Conclusion

This paper finds that firms with high levels of employee satisfaction generate superior long-horizon returns, even when controlling for industries, factor risk, or a broad set of observable characteristics. These findings imply that the market fails to incorporate intangible assets fully into stock valuations—even if the existence of such assets is verified by a widely respected and highly publicized survey on large companies. Instead, an intangible only affects the stock price when it subsequently manifests in tangibles that are valued by the market, such as earnings announcements. This suggests that the non-incorporation of intangibles, shown by prior studies, is not simply due to the lack of salient information on them. It also provides empirical support for managerial myopia theories, which require the assumption that long-run investment is not valued by investors. Even if managers are able to credibly communicate the value of their intangible investment, it may still not affect outsiders' valuations, and so they may be reluctant to invest in the first place. A separate implication is that an SRI screen based on employee welfare may improve investment performance, in contrast to existing views that any SRI screen necessarily reduces investor returns.

The results are consistent with human relations theories which argue that employee satisfaction causes stronger corporate performance through improved recruitment, retention, and motivation, and existing studies of underpricing of intangibles and long-run drift to corporate events. However, the study's implications for the future stock performance of firms with superior employee satisfaction is unclear. The main hypothesis for the excess returns found in this paper is that the market believed in the negative or zero relationship predicted by traditional frameworks and shown by existing evidence, and was caught unawares by the changing nature of the firm, which means that employee satisfaction is now beneficial. If the market has now learned of the positive correlation between list inclusion and future returns, one should expect the returns to go down over time. However, if the market does not update (e.g., because intangibles are inherently difficult to incorporate into stock prices) and arbitrage remains limited, the superior returns may persist going forward.

## Appendix A. Calculation of variables

This table details the calculation of various variables used in the analysis. The numbers in parentheses refer to Compustat line items.

| Item | Calculation |
|---|---|
| *BM* | Book equity/market equity. Book equity = shareholders' equity—preferred stock + balance sheet deferred taxes (35) + FASB 106 adjustment (330). Shareholders' equity = stockholders' equity (216) if not missing, else total common equity (60) plus preferred stock par value (130) if both are present, else total assets (6) minus total liabilities (181), if both are present. Preferred stock = redemption value (56), liquidating value (10), or carrying value (130), in that order, as available. |
| *PE* | Price/Earnings. Earnings = income before extraordinary items for common shareholders (237) + deferred taxes (50) + investment tax credit (50). |
| *AVEBITDA* | Aggregate value/EBITDA. Aggregate value = market equity + market value plus net debt. Net debt = long-term debt (9) + debt in current liabilities (34)—cash and short-term investments (1). EBITDA = operating income before depreciation (13). |
| *ROE* | Income before extraordinary items for common shareholders (237)/average book equity. |

[31] In addition to issues on the generalizability of the results to the rest of the distribution, another issue with a small sample is that it increases the risk that results are anomalous and driven by a few observations. This is addressed by a battery of tests showing that the results are robust to weighting methodologies, winsorization of outliers, and controlling simultaneously for systematic risk and firm characteristics.

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