Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices*

Alex Edmans
Wharton School, University of Pennsylvania
aedmans@wharton.upenn.edu

July 31, 2009

Abstract

This paper analyzes the relationship between employee satisfaction and long-run stock returns. A portfolio of the "100 Best Companies to Work For in America" earned an annual four-factor alpha of 4% from 1984-2005. The portfolio also outperformed industry- and characteristics-matched benchmarks, and the results are robust to the removal of outliers and other methodological changes. Returns are even more significant in the 1998-2005 sub-period, even though the list was widely publicized by *Fortune* magazine. The Best Companies also exhibited significantly more positive earnings surprises and stronger earnings 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 excessive non-pecuniary compensation. 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.

KEYWORDS: Employee satisfaction, intangibles, market efficiency, short-termism, myopia, human capital, human resource management, socially responsible investing
JEL CLASSIFICATION: G14, J28, M14

*2433 Steinberg Hall-Dietrich Hall, 3620 Locust Walk, Philadelphia, PA 19104-6367. (215) 746 0498. I thank an anonymous referee, Franklin Allen, Jack Bao, John Core, Henrik Cronqvist, Ingolf Dittmann, Florian Ederer, Xavier Gabaix, Rients Galema, Simon Gervais, Itay Goldstein, David Hirshleifer, Tim Johnson, Mozaffar Khan, Lloyd Kurtz, Andrew Metrick, Milt Moskowitz, Stew Myers, Mahesh Pritamani, Rob Stambaugh, Luke Taylor, Jeff Wurgler, Yexiao Xu, and seminar participants at the 2009 Financial Intermediation Research Society, 2008 China International Conference in Finance, 2008 Oxford Finance Symposium, 2007 Conference in Financial Economics and Accounting at NYU, the 2007 Socially Responsible Investing annual conference, George Mason, MIT Sloan, National University of Singapore, Reading, Rockefeller, Rotterdam, UBS, Virginia Tech, Wharton, and York for valued input. Special thanks to Amy Lyman of the Great Place To Work Institute for answering numerous questions about the Fortune survey. James Park provided superb research assistance, and Patrick Sim and Daniel Kim assisted with data collection. I gratefully acknowledge support by the Goldman Sachs Research Fellowship from the Rodney White Center for Financial Research.

"[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

"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

This paper analyzes the relationship between employee satisfaction and long-run stock returns. An portfolio of the "100 Best Companies to Work For in America" earned a four-factor alpha of 0.34% per month from 1984-2005[1], or 4% per year. These figures exclude any event-study reaction to list inclusion and only capture long-run drift. Returns remain significant when calculated over industry- and characteristics-matched benchmarks, whether equal- or value-weighting, and when adjusting for outliers. The outperformance is even stronger from 1998, even though the list was published in *Fortune* magazine and thus highly visible to investors. The Best Companies exhibit significantly more positive earnings surprises and stock price reactions to earnings announcements: over the four announcement dates in each year, they earn over 1% more than firms of similar characteristics. 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 shareholder value. Traditional theories (e.g. Taylor (1911)) are based on the capital-intensive firm of the early 20th century, where mass production and cost efficiency were the primary goals. 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 are detrimental to shareholder value.[2] Principal-agent theory also supports this zero-sum view: the firm's objective function is maximized by holding the worker to her reservation wage.

By 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. As discussed in Section 1, 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 in-

[1]Throughout this paper, year t refers to the returns for the Best Companies list published in that year. Since the list is published part-way through each year, the return period ends the following year. For example, 1984-2005 returns are calculated from April 1984 through January 2006.

[2]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 et al. (2008) find that salaries are higher when managers are more entrenched, which supports the view that high worker pay is inefficient.

vestors, 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 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, 2001), Carlin and Gervais (2009), Berk, Stanton and Zechner (2009) and Lustig, Syverson and van Nieuwerburgh (2009).

I use long-run stock returns as my main dependent variable, as in Gompers, Ishii and Metrick (2003), Yermack (2006) and Liu and Yermack (2007). This is for three principal reasons. First, they suffer from fewer reverse causality issues than valuation ratios or accounting 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 incorporated in the current stock price, since they are tangible. Unlike profits or valuation ratios, stock returns should not be persistent, once momentum is controlled for. Second, they are more directly linked to shareholder value than profits, capturing all the channels through which satisfaction may benefit shareholders. Higher profits are unlikely to be the only benefit, in particular since intangible investment may take several years to feed through to earnings. Satisfaction may lead to many other tangible outcomes valued by the market, such as patents, new products or contracts, and positive equity analyst reports. Third, valuation ratios or event-study returns may substantially underestimate any relationship, given significant 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 et al. (2001)), patent citations (Deng, Lev and Narin (1999)) and software development costs (Aboody and Lev (1998)) all earn superior long-run returns.[3]

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 (see, e.g., Lev (2004).) Even if information is available on an output measure, the market may not incorporate it if it is not salient (for example, Deng et al.'s patent 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 Best Companies 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*,

[3]Even if satisfaction is fully valued, there may still be no relationship between valuation and satisfaction if firms choose satisfaction optimally given their circumstances (e.g. firms with unskilled labor invest little in employee welfare). Demsetz and Lehn (1985) made this point in relation to Q and managerial ownership.

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

My analysis is a joint test of both satisfaction benefiting firm value, and this effect not being immediately incorporated 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, and that other factors may also be important. For example, even if investors were aware of firms' levels of satisfaction, they may have been unaware of its benefits, since theory provides ambiguous predictions. Alternatively, investors use traditional valuation methodologies, devised for the 20th century firm and based on physical assets, which cannot incorporate intangibles easily even if they are known.

The speed of incorporation is of potential interest to investors, managers and policymakers. Since the market does not react fully to list publication, investors can earn trading profits even using public information on an output measure for large stocks, where transactions costs are low. Fama and French (2008) find that a number of anomalies are confined to small stocks. In myopia theories such as Stein (1988), managers underinvest in intangible assets because they are invisible to outsiders, consistent with the "lack of information" hypothesis. Under this view, myopia will be attenuated by providing information – for example, managers could hire firms to certify the value of their intangibles (similar to auditors or rating agencies) or policymakers could promote the dissemination of this information. However, my results suggest that lack of information is not the only cause of myopia. Thus, attenuating myopia will require not only dissemination of information, but a change in investor behavior – for example, investor education on the benefits of intangibles, or new valuation methodologies to incorporate intangibles. Combined with the paper's first implication (support of human relations theories), the results on non-incorporation imply a double-edged sword for managers' incentives to invest in satisfaction – it is positively correlated with shareholder returns, but only in the long-run.

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 typically strongest for small firms (e.g. Hong, Lim and Stein (2000)). Most firms in the Best Companies list are large and widely followed, yet underreaction still occurs.

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 a SRI screen used by a number of funds – see Table 10. 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

[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.

unconstrained optimization. Indeed, many existing studies find a negative or zero effect of SRI screens. Hamilton, Jo and Statman (1993), Kurtz and DiBartolomeo (1996), Guerard (1997), Bauer, Koedijk and Otten (2005), Schröder (2007), and Statman and Glushkov (2007) report that SRI portfolios have similar returns to their benchmarks. Hong and Kacperczyk (2009) document superior returns to "sin" stocks, such as tobacco and gambling, that would be screened out by most SRI strategies. Geczy, Stambaugh and Levin (2005) demonstrate significant losses by restricting oneself to SRI mutual funds. Brammer, Brooks and Pavelin (2006) find a negative effect of environmental and community screens, and Renneboog, Ter Horst and Zhang (2008) find the same result for social screens. While Moskowitz (1972), Luck and Pilotte (1993) and Derwall et al. (2005) find certain SRI screens that 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 an employee satisfaction screen as it appears to have the strongest theoretical motivation for a positive correlation with shareholder returns (see Section 1). Indeed, I find that an SRI screen can improve investment performance. If an investor is aware of every asset in the economy, an SRI screen can never improve returns, as non-SRI investors are free to choose the screened stocks anyway. However, if she can only learn about a subset of the available investment universe (e.g. as in the Merton (1987) model), 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 of the positive stock returns found in this paper. One is that high employee satisfaction causes higher firm value, as predicted by human capital theories, but the market fails to capitalize the value of satisfaction immediately. Instead, an intangible only affects the stock price when it subsequently manifests in tangible outcomes. I indeed find that the Best Companies have significantly more positive earnings surprises than other firms, particularly for earnings far into the future, and greater abnormal returns to earnings announcements.

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 Best Companies, and this demand caused their prices to rise. I find that SRI funds that use labor or employment screens are indeed overloaded on the Best Companies, and that they increased their weighting on these firms over the time period. However, 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 admits 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, and so profitable firms should not outperform in the future, reverse causality can occur in the presence of private information – employees with favorable informa-

tion may report higher satisfaction today, and the market is unaware that the list conveys such information. This explanation is unlikely given the 7-month time lag between responding to the Best Companies survey and the start of the return compounding window; moreover, 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 two other 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 1 discusses the theoretical motivation for hypothesizing a link between employee satisfaction and stock returns, as well as related studies. Section 2 discusses the data and methodology and Section 3 presents the results. Section 4 discusses the possible explanations for the findings and Section 5 concludes.

1 Theoretical Motivation: Why Might Employee Satisfaction Matter?

It may seem highly intuitive that firms should perform more strongly if their employees are happier, perhaps even removing the need to document 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 the CEP family benefit variable; Dhrymes (1998) find no relationship with the employee relations variable of KLD Research & Analytics. On the one hand, such research renders the relationship non-obvious, and thus interesting to study. On the other hand, it is also 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 results from an accidental pattern in the data rather than an underlying economic relationship.

A positive relationship between employee satisfaction and stock returns requires two channels: satisfaction is beneficial to firm value, and its benefits are not fully valued by the market. The second is motivated by the previously surveyed evidence on the non-incorporation of other intangibles. Here, I provide further discussion of the first channel. Human relations theories argue that satisfaction may benefit shareholders through two main 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 or mentoring subordinates. Output-based incentives may thus be ineffective or even destructive (Kohn (1993)).[5] 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 in their own utility functions, thus inducing effort even if not financially rewarded (McGregor (1960)).[6] A second channel is retention. In the traditional firm, retention was unimportant as employees performed unskilled tasks. By contrast, they are the key source of value creation in modern knowledge-based industries, such as pharmaceuticals or software. The resource-based view of the firm (e.g. Wernerfelt (1984)) argues that sustainable competitive advantage is attained through nurturing and retaining inimitable assets, such as human capital.

The above motivation and retention concerns only 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 an empirical 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' basic physical needs are met (which is increasingly true today), they are motivated by non-pecuniary factors such as recognition and self-esteem. Job satisfaction cannot be externally purchased with cash and can only be provided by the firm. Hence, satisfaction is an efficient *form* of compensation.

This paper is not the first to study the relationship between satisfaction and firm outcomes. However, it is distinct in jointly using the Best Companies list to measure satisfaction and long-run benchmark-adjusted returns to measure outcomes. Both choices are critical for all three implications of the paper. I start by motivating the use of the Best Companies list.

For the paper's 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 therefore easy to manipulate – a firm that cares little for employee welfare may hire a minority as a nonexecutive director to "check the box". Such measurement error may explain the insignificant previous findings. The Best Companies list is arguably the most thorough and respected measure available, receiving significant attention from shareholders, management,

[5] Ederer and Manso (2008) demonstrate experimentally that output-based incentives deter innovation.

[6] Mas (2007) finds that labor unrest in Caterpillar led to reduced product quality. Unlike quantities, quality is a non-contractible measure of effort that is difficult to control extrinsically.

employees, human resource departments, and the media. In addition to considering observable practices, this list involves an in-depth "grass-roots" analysis of satisfaction through extensively surveying the workers. (Section 2 provides further detail on list construction.) An additional advantage is that the Best Companies list is available for 22 years, whereas other measures exist for shorter periods and thus the results may lack power or be driven by outliers.

Second, the Best Companies 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 to be tested. For the paper's third goal, the list is publicly available and easily tradable by an SRI investor. In sum, the list appears to be unique in being both a thorough measure of employee satisfaction (allowing testing of human relations theories) and highly public (allowing testing of the market valuation of intangibles and returns available to investors).

Possible choices for the dependent variable include accounting profits, valuation ratios, event-study returns, long-run returns including the event-study window, or long-run returns excluding the event-study window. The final measure is appropriate for all three goals of the paper. The advantages for the first goal have already been explained in the introduction. For the second goal, a return variable is necessary to measure market underreaction; moreover, it must exclude the event-study period and focus only on long-run drift. For the third goal, stock returns rather than accounting profits are the payoffs actually received by an SRI investor, and allow for controls for sensitivity to risk factors. Excluding the event-study reaction measures the returns feasible for an investor who trades on the list once it is announced.

The different outcome variable distinguishes this study from other papers that use the Best Companies list. Faleye and Trahan (2006) study the list for the *Fortune* subperiod 1998-2004 only. They find that the Best Companies exhibit superior contemporaneous accounting performance than peers. 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 *Fortune* list exhibited higher returns *prior* to list inclusion. Simon and DeVaro (2006) show that the Best Companies exhibit higher customer satisfaction.[7] These results are consistent with reverse causality, and do not have implications for the market's valuation of intangibles or the profitability of an SRI trading strategy. Faleye and Trahan also find event-study returns of around 0.5%. These results are significantly lower than the long-run returns in this paper, consistent with the concern that event-study returns understate any relationship owing to market undervaluation of intangibles.

[7] Fulmer et al. (2003) find that stock returns over 1995-2000 to the Best Companies in the 1998 list did not significantly outperform matching firms. Goenner (2007) controls for the market beta but not other factors or characteristics.

2 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 by Levering, Moskowitz and Katz, and updated in February 1993 by Levering and Moskowitz. Since 1998, it has been featured in *Fortune* magazine each January. The list has been headed by Robert Levering and Milt Moskowitz throughout its 22-year existence. It is compiled from two principal sources. Two-thirds of the total score comes from employee responses to a 57-question survey created by the Great Place to Work® Institute in San Francisco.[8] This survey covers topics such as attitudes toward management, job satisfaction, fairness, and camaraderie. 250 employees across all levels 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).[9] Importantly, *Fortune* has no involvement in the company evaluation process, else it may have incentives to bias the list towards advertisers (Reuter and Zitzewitz (2006)).

Note that 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, if anything, 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 stock returns). If firms with low satisfaction choose not to apply because they expect to fail to make the list, this simply increases the accuracy of the list. 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. By 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 stock performance, this likely has little effect since list applications must be made by late May and the return window starts the following February 1 (8 months later). Jenter, Lewellen and Warner (2009) show that managers' private information is predominantly about stock returns over the next 100 days; they have little predictive ability for days 100-150. Moreover, if CEOs have long-lived private information and those who foresee negative stock returns are particularly likely to apply (as they believe list inclusion will bolster their stock price), this will bias

[8] 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.

[9] 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.

the results against me.

Since 1998, the Best Companies 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 1998-2005. The 1984 portfolio is formed on April 1, and the 1993 portfolio is formed on March 1.

Table 1 details the number of Best Companies in year t that had stock returns available on CRSP 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. Over 1984-2005, 224 separate public firms were included in a Best Companies list. The number of company-year observations is significantly greater (631), since many firms are on multiple lists. This repetition is intuitive as employee satisfaction is likely persistent. The number of firms is comparable to similar abnormal return studies, e.g. 237 in Yermack (2006) and 193 in Hong and Kacperczyk (2009).

On April 1, 1984, I form a portfolio containing the 74 publicly traded Best Companies 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 from March 1993 through January 1998. This process is repeated until January 2006 and I call this "Portfolio I".[10] If a Best Company is not traded in the first month after list publication but goes public before the next list, I add it to the portfolio from the first full month after it starts trading. 78 firms feature in Portfolio I from 1984-1993, since four firms in the initial list became public over that period. The results are unchanged when excluding firms that go public mid-way through the year (to ensure that IPO underpricing is not driving the results).[11]

Table 2 presents summary statistics on the original 74 Best Companies in March 1984, and the 69 Best Companies 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 \$25bn (\$5bn) in 1998. For comparison purposes, the 80th percentile breakpoint for the Fama-French portfolios was \$1bn in 1984 and \$4bn in 1998. The average market-book ratio is a high 2.3 in 1984 (4.9 in 1998) and the mean proportion of total assets accounted for by intangibles is only 0.9% (4.5%). 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 by the market.

[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 (2001) adjustment to delisting returns.

[11] I include Best Companies with only ADRs in the U.S., since an investor constrained to hold U.S. shares would have been able to invest in such firms. The results are unchanged when excluding firms with ADRs.

The most common industries in 1984 were consumer goods (7 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.

3 Analysis and Results

To ensure that any outperformance of the Best Companies does not result simply from their high exposure to risk factors, I run monthly regressions of portfolio returns on the four Carhart (1997) factors, as specified by equation (1) below:

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

where:

R_{it} is the return on Portfolio i in month t, in excess of a benchmark. Three different benchmarks are used, described below.

α is an intercept that captures the abnormal risk-adjusted return, and is the key variable of interest.

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 website.

The alpha in equation (1) reflects the excess return compared to passive investment in a portfolio of the factors. Standard errors are calculated using Newey-West (1987), which allows for ε_{it} to be heteroskedastic and serially correlated. The returns R_{it} are calculated over three different benchmarks. The first is the risk-free rate, taken from Ibbotson Associates. The second is an industry-matched portfolio using the 49-industry classification of Fama and French (1997). This is to ensure that outperformance is not simply because the Best Companies happen to be in industries that enjoyed strong returns. It also controls for any industry-specific risks not captured in the Carhart systematic risk factors. The third is the characteristics-adjusted benchmark used by Daniel et al. (1997) and Wermers (2004)[12], 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 simply because the Best Companies are exploiting the size, value and/or momentum anomalies. It is conservative, but not necessarily superfluous, to subtract the returns on the Daniel et al. (1997) benchmarks before running the four-factor regression, as characteristics can have explanatory power even when controlling for covariances (Daniel and Titman (1997)).

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

3.1 Core Results

My hypothesis is that Portfolio I generates significant alphas over its benchmarks and risk factors. This is a joint test of two sub-hypotheses: employee satisfaction is positively associated with shareholder value, and the market fails to fully incorporate this link.

Table 3 presents the core results of the paper, for the entire 1984-2005 period. Portfolio I indeed generates significant returns over all benchmarks and for both weighting schemes. For both equal- and value-weighted returns, the monthly alpha over the risk-free rate is 0.34% monthly or 4% annually. Unreported annual results show that the outperformance is consistent over time, with Portfolio I beating the market in 18 out of the 22 years from 1984-2005, including every year in 2000-2002 when the market declined sharply.

The magnitude of the alpha is consistent with previous studies that document abnormal returns. Most closely related are prior studies of excess returns to other intangible portfolios. Lev and Sougiannis (1996) find a 4.6% abnormal return based on R&D capital, and Chan et al. (2001) show that firms in the top quintile of R&D flows earn excess returns of 6.1%.[13] Moving to other potential sources of mispricing, Yermack (2006) documents a negative 3.8% alpha to firms where the CEO uses a corporate jet, and Hong and Kacperczyk (2009) find a 3.2% alpha to sin stocks. Gompers, Ishii and Metrick (2003) find 8.5% abnormal returns to a governance portfolio, and Liu and Yermack (2007) show 13.8% returns to a portfolio formed on CEO homes. These last two papers consider long-short portfolios and so their alphas should be halved for comparison with the present paper. Overall, the magnitude of the excess returns in this paper is consistent with existing research; moreover, as will be shown in Section 4, a meaningful proportion the abnormal returns can be explained by earnings surprises.

The outperformance in Table 3 may result from the market being unaware of the Best Companies list until 1998, since it was only published in book form. Even though the list was still publicly available and therefore potentially tradable by any investor, 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 1998-2005 subperiod when the list was featured in *Fortune* magazine and thus became highly salient. If the mispricing of intangibles, documented by prior research, stems from the absence of information (the lack-of-information hypothesis), then the alphas should be insignificant in this subperiod. I find the opposite: the returns to the portfolio are even higher, with an equal-weighted (value-weighted) Portfolio I earning a 0.64% (0.47%) monthly alpha. This 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 3.3 suggests that the higher returns may stem from the more frequent list updating in the *Fortune* subsample.

[13] The Lev and Sougiannis figure is the implied annual return corresponding to the coefficient on R&D/total assets in a multivariate regression including controls such as size and book-to-market. The Chan et al. figure is the excess return compared to a control portfolio of the same size and book-to-market.

3.2 Further Robustness Tests

The above subsection showed that the Best Companies' outperformance was not due to covariance with the Carhart (1997) factors, nor to selecting industries or characteristics associated with abnormal returns. 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 Best Companies over the time period, for $x = \{5, 10\}$. Table 5 show 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 only 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 than the three studied by Daniel et al. (1997). Specifically, I run a Fama-MacBeth (1973) estimation of equation (2) below:

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

where:

R_{it} is the return on stock i in month t, either unadjusted or in excess of the return on the industry-matched portfolio.

X_{it} is a dummy variable that equals 1 if firm i was included in the most recent Best Companies list.

Z_{it} is a vector of firm characteristics.

The Z_{it} controls are taken from Brennan, Chordia and Subrahmanyam (1998). These are as follow:

$SIZE$ is the natural logarithm of i's market capitalization at the end of month $t-2$.

BM is the natural logarithm 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 capitalization measured at calendar year-end. This variable is recalculated each July and held constant through the following June.

RET2-3 is the natural logarithm of the cumulative return over months $t-3$ through $t-2$.

RET4-6 is the natural logarithm of the cumulative return over months $t-6$ through $t-4$.

RET7-12 is the natural logarithm of the cumulative return over months $t-12$ through $t-7$.

$DVOL$ is the natural logarithm of the dollar volume of trading in security i in month $t-2$.

PRC is the natural logarithm of i's price at the end of month $t-2$.

The Appendix provides details on the calculation of variables that involve Compustat data. For both adjusted and industry-adjusted returns, list inclusion is associated with an additional return of over 40 basis points. This suggests that the Best Companies' outperformance does

not result from their correlation with the observable characteristics studied by Brennan et al. (1998).[14]

3.3 Alternative Portfolio Definitions

This subsection analyzes the returns to three alternative portfolios. This allows me to investigate whether updates of the Best Companies list provide value-relevant information to investors, or instead whether the results are principally driven by the original list.

Portfolio II is not reformed or reweighted each year: it simply calculates the returns to the original 74 Best Companies from April 1984 to January 2006. This portfolio represents the simplest trading strategy, as no rebalancing is required and no transactions costs incurred. For the *Fortune* subsample, this portfolio calculates the returns of the 69 Best Companies in the 1998 list from February 1998 to January 2006.

Portfolio III adds to the original portfolio any new companies which appear on subsequent lists, but does not drop any firm that is later removed. The motivation is that some companies may have dropped out of the Top 100, but still exhibit superior satisfaction than the average firm (e.g. now be in the Top 150) and so are useful additions to a portfolio.

Portfolio IV 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 IV. (For the *Fortune* subsample, it is created on February 1, 1999.) Like Portfolio I, Portfolios III and IV include firms that go public after list formation.

Portfolios II and III should outperform their benchmarks, since they contain firms with high satisfaction for at least part of the period. I can also form a tentative hypothesis on the relative performance of Portfolios I-III. Portfolio I should perform the most strongly, since it 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 224 firms across the full time period. It would also cast doubt on the list's accuracy, since the subsequent updates do not provide value-relevant information. While both Portfolios II and III fail to drop companies that have fallen out of the latest list, the difference is that Portfolio III contains newly-added firms. Therefore, it should outperform Portfolio II if recent lists provide useful information. The hypothesis for the relative performance of Portfolios I-III is tentative as it is difficult to

[14] When adding the Gompers, Ishii and Metrick (2003) index as an additional control, the coefficient on the Best Companies dummy is 0.22 (0.24 for industry-adjusted returns), which is significant at the 10% 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 1984-2005 period, there are 16,935 firm-month observations for Best Companies. 5,349 observations are lost by starting from 1990, and a further 3,035 observations are lost because several Best Companies are not in the governance index. The overall effect is to 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 (0.24 for industry-adjusted returns).

evaluate rigorously: since the three portfolios contain many common stocks, their returns will be very similar and likely statistically indistinguishable. However, we can still verify whether the differences are of the hypothesized sign.[15]

I also predict that Portfolio IV performs worse than Portfolios I-III, since the former contains companies outside the Top 100 for satisfaction. Whether it also underperforms its benchmarks depends on market 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 IV should earn negative returns.[16] However, if satisfaction is important but not incorporated by the market, such a prediction is not generated. In the extreme, if the Best Companies 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 150) and thus generate superior returns.

Table 7 illustrates the results. The returns to Portfolio I-III are positive over all time-periods, benchmarks and weighting methodologies, and statistically significant in most specifications. Portfolio I outperforms II and III in all specifications, and the statistical significance of the alphas in III is greater than in II in all specifications except for value-weighted returns in 1998-2005. These results suggest that the list updates contain useful information, potentially explaining why outperformance is particularly strong over 1998-2005. In the *Fortune* subperiod, the list was more updated every year, whereas for 1984-1997 it was updated only once in a fourteen year period. Indeed, the marginally insignificant 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 IV underperforms Portfolios I-III in all specifications except for the equal-weighted specification from 1984-2005. This strong performance disappears when value-weighting (or, in unreported results, winsorizing). However, Portfolio IV only underperforms its benchmarks in one specification (value-weighted from 1998-2005, and insignificant except for over 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 IV were initially added to the list.

4 Discussion

Section 3 has documented a significant correlation between employee satisfaction and future stock returns that is robust to controls for risk, industries, firm characteristics and outliers.

[15] Comparing the performance of 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.

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

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 shareholder value. Listed firms thus trade at an initial discount, and the higher returns are a correction of this undervaluation.

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.

Hypothesis A argues that satisfaction causes superior firm performance, through improving motivation and retention as posited by human relations theories. In turn, this manifests in tangible outcomes that affect the stock price, such as profits, new products, patents, and positive analyst reports. If this hypothesis accounts for a meaningful portion (although not necessarily all) of the overall correlation between satisfaction and stock returns, the results imply that employee-friendly programs can improve corporate performance.

To provide further evidence on this channel, I investigate whether the Best Companies exhibited superior future accounting performance. Note that short-run earnings are not the only channel through which employee satisfaction may improve shareholder value, and is likely not the most important one. LeRoy and Porter (1981) find that stock returns are predominantly driven by factors other than earnings. Therefore, profits will account for at 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 (2008) and study earnings surprises, i.e. the difference between announced earnings and analysts' expectations. Using similar methodology to these papers, I run the following regression:

$$Surprise_{it} = b_0 + b_1 X_{it} + b_2 Z_{it-j} + \varepsilon_{it} \tag{3}$$

Surprise is the 1- or 2-year earnings surprise, or the long-term growth surprise. The 1-year earnings surprise is the actual EPS for the fiscal year ending in year t minus the median I/B/E/S analyst forecast, deflated by the stock price at fiscal year-end. The I/B/E/S consensus forecast is taken 8 months prior to the end of the forecast period, i.e. 4 months after the previous fiscal year-end. Since the vast majority of annual reports are forecast are filed within 3 months of the fiscal year-end, this ensures that analysts know prior earnings when making their forecasts. The 2-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 (2008), I remove observations for which the forecast error is larger than 10% of the price. Since any effect of satisfaction may take several years to manifest in accounting earnings, I also calculate long-run growth surprises. This is the actual 5-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 Best Companies 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 1, 2 or 5 years prior to the forecast period end date, i.e. $j = 1$, 2 or 5. I estimate equation (3) using a pooled regression with year fixed effects.

The results are shown in Table 8. The 1- and 2-year earnings surprises are significantly greater for the Best Companies 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 Best Companies are typically very large firms, and earnings surprises are strongly positively correlated with size. This result suggests that 1- and 2-year earnings surprises may explain part of the outperformance of the Best Company portfolios compared to the market, but not the (lower) outperformance versus the characteristics benchmark. However, the results for 5-year earnings growth are robust to all controls – the Best Companies have significantly more positive growth surprises compared to peer firms. The stronger results for long-term growth are consistent with the view that satisfaction is a long-run investment that does not pay off immediately.[17]

Table 9 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-January 2006 from I/B/E/S and calculate 3-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. (Results are very similar for 5-day returns, and with different benchmarks.) Panel A presents the results of univariate comparisons and shows that firms in the most recent Best Companies list exhibit abnormal returns of 0.38%, significantly different from the 0.10% enjoyed by other firms. Panel B shows the results of a similar regression analysis to Table 9, using year fixed effects and controls. Regardless of the controls used, the Best Company dummy loads significantly. For example, the Best Companies exhibit a 0.31% higher announcement return than companies of similar size and book-to-market. With four quarterly announcements per year, earnings surprises account for over 1% of the outperformance of the Best Companies. This is a meaningful portion of the 3% excess returns enjoyed over characteristics benchmarks, documented in Table 3. Moreover, since the earnings announcement window is short, its calculation is 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.

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 it should incorporate all channels through which satisfaction can affect fundamental value, it may

[17]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 5 analyst forecasts to ensure that the I/B/E/S consensus is an accurate proxy for investor expectations. The results are very little affected by any of these changes – for example, the statistical significance of every coefficient remains the same.

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 Best Companies, which represent an increase in fundamental value. Moreover, Gilbert et al. (2008) 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. One existing piece of evidence against this explanation is the mild outperformance of the dropped companies in Portfolio IV. For a more systematic evaluation of this hypothesis, I study whether SRI funds indeed are overweight the Best Companies, and whether they increased this weighting over time. There is substantial heterogeneity across SRI funds and many funds 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[18], 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.[19] As expected, the classifications for labor relations and employment/equality are very highly correlated, with only one fund having a different designation between the two. I supplement this source with data from SocialFunds[20], which provides a similar table. 1 of its 10 screens is employment.[21] There is considerable overlap between the two data sources; where there is disagreement, I read the fund prospectus to see whether it mentions an employment screen. If it does not, I call the fund itself to verify whether it uses such a screen. For example, such calls uncovered that the Ariel Fund and Ariel Appreciation Fund do not use employment screens, contrary to the data from SocialFunds. I also called all major fund families (even where there was no disagreement between the data sources) to verify that the screening criteria have not changed over time,

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

[19] 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 "No Investment" option for the labor or employment screens.

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

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

and that the family did not previously have a fund that screened on employment that is now defunct and thus not in either of my data sources. I drop funds that invest exclusively overseas or in bonds, or are not in the CDA/Spectrum database, from where I obtain fund holdings. Table 10 contains the final list of "employment funds" which use either a Positive Investment or Restricted Investment screen on labor or employment.

I run the following regression:

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

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 Best Companies 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.[22] Also as in HK 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.[23]

Table 11 shows that employment funds overweight the Best Companies, as is intuitive. To investigate whether overweighting has increased over time, I add an additional regressor, Y_{it}, to equation (4), where $Y_{it} = (Year - 1984) \times X_{it}$; it is indeed significant. I next calibrate the extent to which this increase in demand can explain the superior return of the Best Companies. Employment funds owned \$5m of Best Company stock in 1984 and \$1,336m in 2005. The total value of the Best Companies was \$303,385m in 1984 and \$1,720,547m in 2005. Thus, the increase in employment funds' ownership of Best Company stock is driven in part by the increase in market value of the Best Companies rather than new purchases. However, to form an upper bound on the excess return that can be explained by increased demand, I will assume the entire \$1,331m increase stems from new purchases. The next step is to turn this into a percentage change in demand. Again, to form an upper bound, I take the 1984 value of Best Companies as the denominator, which translates into a 0.44% increase. The effect on stock prices is given by

$$\Delta P = 0.0044/\varepsilon,$$

where ε is the absolute price elasticity of demand. Estimates of ε range widely: Shleifer (1986)

[22] 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.

[23] 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 screen, but I also run the results focusing only on funds that positively screen.

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 0.44% abnormal return, or only 0.02% per year.[24] This is substantially smaller than the 4% annual alpha.[25]

Hypothesis C is that satisfaction has no effect on shareholder value, but the market believed that it has a negative effect (owing to traditional views that it represents wasteful expenditure, e.g. Taylor (1912)) and so reduced its initial valuation of the Best Companies. 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 documented by Faleye and Trahan (2006), which I also confirm in unreported results. An additional test is to examine whether the Best Companies 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 Best Companies are undervalued relative to their true fundamental value (comprised of tangible and intangible assets) since their intangible value is partially ignored by the market. However, it does not predict that the Best Companies should have lower observed valuation ratios than their 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 a 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 reacts negatively to its investment in intangibles. Firm 2 therefore trades at an initial M/B of 0.75 and thus a discount to firm 1; its subsequent abnormal returns result entirely from a correction of this discount.

I therefore run the following regression:

$$VAL_{it} = d_0 + d_1 X_{it} + d_2 Z_{it-1} + \varepsilon_{it} \tag{5}$$

[24] Inflows into Best Companies require outflows from other firms, and thus reduce the performance of benchmarks. Since the outflows will be spread over the thousands of stocks that are not Best Companies, the outflows from a particular stock will be negligible.

[25] 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 equation (4) using total institutional ownership as the dependent variable, since institutions in aggregate hold substantially more assets than employment funds. However, I find an insignificant coefficient on both X_{it} and Y_{it} (t-statistics below 0.5). 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.

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 $1998 - 2005$)). 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 aggregate value-to-EBITDA ratio (AV/EBITDA).[26] X_{it} is a dummy variable for whether the firm is in that month's Best Companies 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 dummy. I estimate equation (5) using Fama-MacBeth (1973), adjusting standard errors for potential autocorrelation.

The results are shown in Table 12. The Best Companies exhibit no significant differences in P/E to peer firms, and significantly *higher* M/B and AV/EBITDA ratios. These findings are inconsistent with Hypothesis C, that the superior returns stemmed from an initial discount to tangible value. Instead, they are consistent with Hypothesis A, that they were generated by intangibles that were not fully valued by the market. These results are also consistent with Gompers, Ishii and Metrick (2003) who document that firms with strong governance (another intangible) earned abnormal returns while trading at a valuation *premium* at the start of the return window. The higher M/B and AV/EBITDA ratios suggest that the market is at least partially valuing the intangibles. This result is consistent with a number of underreaction studies (see Barberis and Thaler (2003) for a survey), which finds 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. Here, the underreaction may be particularly interesting as it is on large firms, whereas prior studies suggest underreaction is concentrated in smaller stocks (e.g. Hong, Lim and Stein (2000).)

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 forwards. 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 (e.g. the next earnings announcement). Since they must return the questionnaires by June, 7 months before the start of the return compounding window the

[26] 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.

following February 1, this will not affect the results. It is also plausible that predict higher future returns will perceive the stock as undervalued today, potentially reducing satisfaction.[27]

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 (2006)) – i.e. the Best Companies dummy proxies for an omitted variable. While the analysis in Table 6 rules out correlation with an extensive list of observable determinants of returns, 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 150). Thus, such an approach would be biased towards finding no relationship (Zhou (2001)).[28]

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 even to widely disseminated news concerning large companies; and that an SRI investor could have earned excess returns by trading on the Best Companies list.

Another important caveat, shared by many other long-run event studies, is that the sample size is small. The Best Companies survey contains only 100 firms per year (of which approximately 2/3 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 IV 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 Best Companies.[29] In addition, while the paper documents

[27] 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.

[28] 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.

[29] 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

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 that 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 Best Companies 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 Best Company not considered by this analysis. In addition, even though the Best Companies survey is arguably the most accurate measure of employee satisfaction available, it remains noisy since satisfaction is inherently intangible and hard to measure. Any such measurement errors will bias the results towards zero.

5 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. This suggests that the non-incorporation of intangibles, documented by prior studies, is not simply due to the lack of salient information on them. It also provides empirical support for theoretical models of managerial myopia, which require the assumption that long-run investment is not incorporated into investors' assessments of firm value. 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, potentially through improved recruitment, retention and motivation. However, there are alternative interpretations of this association which the data cannot entirely rule out. The economic magnitudes documented by the paper suggest that future research that successfully identifies the underlying causes of superior performance

of outliers, and controlling simultaneously for systematic risk and firm characteristics.

may have important implications. If superior employee satisfaction caused even a portion of the 34 basis point monthly abnormal return, then employee-friendly programs can markedly improve shareholder value.

Table 1: Summary Statistics

The second column details the number of 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.

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

Table 2: Summary Characteristics

Summary characteristics for the 74 companies in the 1984 "100 Best Companies to Work For in America" 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 ($)	74	37.43	33.88	19.64	5.91	113.75
Dividend yield (%)	70	2.41	2.20	2.04	0	10.11
Market/book	70	2.43	1.96	1.82	0.68	10.80
Intangibles as a % of total assets (%)	70	0.89	0	2.14	0	10.35
1998 list						
Market Cap ($ bn)	69	21.33	5.24	39.52	0.03	204.59
Price ($)	69	51.35	44.22	25.48	5.38	127.56
Dividend yield (%)	64	1.59	1.22	4.28	0	34.26
Market/book	64	5.14	4.08	4.21	-5.34	20.91
Intangibles as a % of total assets (%)	64	5.36	0.01	7.76	0	29.97

Table 3: Risk-Adjusted Returns

Monthly regressions of portfolio returns 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-January 2006.

	Excess returns over		
	Risk-free	Industry	Characteristics
Panel A (equal-weighted)			
α	0.34	0.22	0.25
	(3.49***)	(2.97***)	(2.97***)
β_{MKT}	1.11	0.07	0.12
	(38.08***)	(3.41***)	(4.74***)
β_{HML}	0.03	0.04	0.02
	(0.64)	(1.23)	(0.61)
β_{SMB}	0.15	0.14	0.03
	(3.08***)	(4.45***)	(0.80)
β_{MOM}	-0.13	-0.04	-0.08
	(4.76***)	(2.20**)	(3.97***)
Panel B (value-weighted)			
α	0.34	0.20	0.19
	(3.03***)	(2.70***)	(2.63***)
β_{MKT}	0.95	-0.03	-0.01
	(30.29***)	(1.30)	(0.27)
β_{HML}	-0.46	-0.09	-0.15
	(8.13***)	(2.39**)	(3.77***)
β_{SMB}	-0.24	-0.25	-0.04
	(4.77***)	(7.23***)	(1.27)
β_{MOM}	-0.04	-0.00	-0.02
	(0.95)	(0.06)	(1.03)
# obs	262	262	262

*: 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 portfolio returns 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-January 2006.

	Excess returns over		
	Risk-free	Industry	Characteristics
Panel A (equal-weighted)			
α	0.64	0.46	0.57
	(3.70***)	(3.28***)	(4.08***)
Panel B (value-weighted)			
α	0.47	0.30	0.32
	(2.06**)	(2.05**)	(2.11**)
# obs	96	96	96

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

Table 5: Risk-Adjusted Returns of Winsorized Portfolios

Monthly regressions of portfolio returns 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-January 2006 for the left-hand column, and February 1998-January 2006 for the right-hand column.

	$x = 10\%$			$x = 5\%$		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Panel A (equal-weighted)						
α	0.19	0.07	0.13	0.51	0.33	0.48
	(1.88*)	(1.01)	(1.52)	(2.93***)	(2.43**)	(3.44***)
Panel B (value-weighted)						
α	0.30	0.14	0.14	0.47	0.30	0.33
	(3.49***)	(2.02**)	(2.02**)	(2.25**)	(2.23**)	(2.36**)
# obs	262	262	262	96	96	96

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

Table 6: Characteristics Regressions

Monthly regressions of individual stock returns on a dummy variable for whether the firm was in the most recent Best Companies list (*BC*) and the characteristics used in Brennan, Chordia and Subrahmanyam (1998). *SIZE* is the natural logarithm of the firm's market capitalization (in billions) in month $t-2$. *BM* is the natural logarithm 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. *RET2-3*, *RET4-6* and *RET7-12* are the natural logarithms 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-January 2006 for the left-hand column, and February 1998-January 2006 for the right-hand column.

	1984-2005		1998-2005	
	Raw	Industry-Adjusted	Raw	Industry-Adjusted
BC	0.46	0.44	0.55	0.52
	(4.05***)	(4.28***)	(2.38**)	(2.60***)
SIZE	0.14	0.13	-0.02	-0.05
	(1.57)	(1.89*)	(0.11)	(0.32)
BM	0.25	0.24	0.12	0.10
	(4.57***)	(5.64***)	(1.05)	(1.21)
YIELD	-0.05	-0.04	-0.03	-0.02
	(4.21***)	(4.39***)	(2.26**)	(2.31**)
RET2-3	0.80	4.61	1.19	6.02
	(2.61**)	(0.12)	(1.76*)	(0.19)
RET4-6	0.91	3.71	1.51	4.63
	(3.61***)	(0.77)	(2.78***)	(0.26)
RET7-12	1.03	2.53	0.92	3.07
	(5.98***)	(0.22)	(2.62**)	(0.23)
DVOL	1.26	1.06	1.65	1.40
	(1.44)	(1.53)	(0.04)	(0.10)
PRC	-0.33	-0.31	-0.58	-0.47
	(2.72***)	(2.65***)	(2.31**)	(1.92*)
Constant	2.58	1.47	2.76	1.96
	(7.16***)	(3.25***)	(3.89***)	(2.19**)
# obs				

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

Table 7: Alternative Portfolio Definitions

Monthly regressions of the returns of Portfolios II, III and IV 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-January 2006 for the left-hand column, and February 1998-January 2006 for the right-hand column.

	1984-2005: excess returns over			1998-2005: excess returns over		
	Risk-free	Industry	Characteristics	Risk-free	Industry	Characteristics
Panel A (equal-weighted)						
α, II	0.18	0.13	0.11	0.60	0.44	0.56
	(1.61)	(1.33)	(1.08)	(3.25***)	(3.56***)	(3.85***)
α, III	0.29	0.20	0.21	0.61	0.46	0.55
	(3.24***)	(3.02***)	(2.58***)	(3.72***)	(3.80***)	(4.11***)
α, IV	0.36	0.26	0.29	0.50	0.38	0.43
	(2.64***)	(1.96*)	(2.34**)	(1.68*)	(1.55)	(1.94*)
Panel B (value-weighted)						
α, II	0.22	0.17	0.15	0.46	0.24	0.31
	(2.28**)	(2.09**)	(2.11**)	(1.96*)	(1.62)	(1.82*)
α, III	0.23	0.13	0.12	0.32	0.13	0.21
	(2.84***)	(2.25**)	(2.43**)	(1.65)	(1.11)	(1.75*)
α, IV	0.18	0.09	0.05	-0.33	-0.39	-0.22
	(1.54)	(0.79)	(0.60)	(1.12)	(1.87*)	(1.18)
# obs	96	96	96	224	224	224

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

Table 8: Earnings Surprises

Regressions of earnings surprises 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. 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 5-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-January 2006.

Panel A (1-year earnings)	(1)	(2)	(3)
BC	3.92	3.87	-0.12
	(5.74***)	(5.66***)	(0.18)
BM		-0.17	0.58
		(1.63)	(5.58***)
SIZE			1.69
			(28.60***)
# obs	70,266	65,530	65,530
Panel B (2-year earnings)			
BC	3.95	4.48	0.64
	(4.80***)	(5.43***)	(0.76)
BM		1.34	2.12
		(9.55***)	(14.70***)
SIZE			1.84
			(22.06***)
# obs	47,182	44,672	44,672
Panel C (long-term growth)			
BC	2.26	3.32	1.28
	(4.11***)	(6.05***)	(2.28**)
BM		2.76	3.25
		(25.72***)	(29.32***)
SIZE			1.01
			(16.41***)
# obs	33,330	31,690	31,690

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

Table 9: Earnings Announcement Returns

(-1,+1) abnormal returns to quarterly earnings announcements. Abnormal returns are calculated above a market model where 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 Best Companies list 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-January 2006.

Panel A (univariate comparisons)		
	Best Company	Other firms
CAR	0.38	0.10
# obs	4,730	250,345
t-stat (difference from 0)	(4.33***)	(5.95***)
t-stat (difference in means)	(2.23**)	

Panel B (regressions)	(1)	(2)	(3)
BC	0.30	0.39	0.31
	(2.40**)	(3.15***)	(2.45**)
BM		0.24	0.26
		(12.32***)	(12.72***)
SIZE			0.03
			(3.14***)
# obs	255,075	228,527	228,527

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

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 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 is in the most recent Best Companies list (*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 indices (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 1984-2005. 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. *[Standard errors to be replaced with t-stats]*

	(1)	(2)	(3)	(4)
	All Funds	Positive Funds	All Funds	Positive Funds
BC	0.000317***	0.000314***	-6.44e-05	-5.16e-05
	(8.17e-05)	(8.10e-05)	(0.000133)	(0.000133)
YEARBC			3.63e-05***	3.48e-05***
			(1.02e-05)	(1.01e-05)
SIZE	5.37e-05***	5.16e-05***	5.37e-05***	5.16e-05***
	(6.79e-06)	(6.75e-06)	(6.81e-06)	(6.77e-06)
MB	-3.09e-05***	-3.10e-05***	-3.15e-05***	-3.16e-05***
	(1.10e-05)	(1.11e-05)	(1.10e-05)	(1.11e-05)
PRINV	1.24e-05***	1.17e-05***	1.22e-05***	1.14e-05***
	(1.65e-06)	(1.63e-06)	(1.64e-06)	(1.63e-06)
STD	-3.08e-06	-3.16e-06	-3.01e-06	-3.09e-06
	(2.43e-06)	(2.40e-06)	(2.41e-06)	(2.37e-06)
MORET	-2.37e-06***	-2.32e-06***	-2.32e-06***	-2.27e-06***
	(6.43e-07)	(6.45e-07)	(6.41e-07)	(6.43e-07)
NASDAQ	3.55e-05	3.63e-05	3.48e-05	3.56e-05
	(2.77e-05)	(2.76e-05)	(2.75e-05)	(2.75e-05)
SP500				
Constant	-0.000255***	-0.000246***	-0.000254***	-0.000246***
	(4.23e-05)	(4.21e-05)	(4.24e-05)	(4.22e-05)
# obs	136,201	136,201	136,201	136,201
R^2	0.011	0.011	0.011	0.011

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

Table 12: Valuation Regressions

Regressions of a stock's valuation on a dummy variable for whether the firm is in the current Best Companies list (*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 1998-2005. 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	0.369***	0.0669	0.129**
	(0.0518)	(0.0475)	(0.0498)
ROE	0.0127	-0.0416*	-0.00452
	(0.00801)	(0.0193)	(0.00335)
RDSALES	0.00232***	2.156***	0.622
	(0.000721)	(0.390)	(0.453)
RDMISS	-0.0692***	0.00974	-0.0316
	(0.0196)	(0.0175)	(0.0249)
SP500	0.567***	0.326***	0.163***
	(0.107)	(0.0792)	(0.0507)
FROE	0.00860**	-0.00486	-0.00118
	(0.00373)	(0.0120)	(0.00198)
F2ROE	0.00313	0.00689	-0.00117
	(0.00185)	(0.00781)	(0.00234)
F3ROE	0.00371***	0.00967**	-3.22e-05
	(0.00114)	(0.00415)	(0.00185)
Constant	0.831**	2.793***	1.665***
	(0.368)	(0.215)	(0.141)
# obs	41,167	30,177	34,042
R^2	0.115	0.066	0.000
Number of groups	10	10	10

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

Appendix: 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) + FASB106 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 totalassets (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 (item 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 (item 237) / average book equity.

References

[1] Aboody, David and Baruch Lev (1998): "The Value Relevance of Intangibles: The Case of Software Capitalization." *Journal of Accounting Research* 36, 161-191

[2] Abowd, John (1989): "The Effect of Wage Bargains on the Stock Market Value of the Firm". *American Economic Review* 79, 774-800

[3] Akerlof, George and Janet Yellen (1986): "Efficiency Wage Models of the Labor Market." Cambridge University Press, Cambridge UK

[4] Akerlof, George (1982): "Labor Contracts as Partial Gift Exchange." *Quarterly Journal of Economics* 97, 543-69

[5] Barberis, Nicholas and Richard Thaler (2003): "A Survey of Behavioral Finance." Chapter 18, Handbook of Economics of Finance (Elsevier, North-Holland).

[6] Bauer, Rob, Kees Koedijk and Roger Otten (2005): "International Evidence on Ethical Mutual Fund Performance and Investment Style." *Journal of Banking and Finance* 29, 1751-1767

[7] Benartzi, Shlomo (2001): "Excessive Extrapolation and the Allocation of 401(k) Accounts to Company Stock." *Journal of Finance* 56, 1747-1764

[8] Bergman, Nittai and Dirk Jenter (2007): "Employee Sentiment and Stock Option Compensation." *Journal of Financial Economics* 84, 667-712

[9] Berk, Jonathan, Richard Stanton and Josef Zechner (2009): "Human Capital, Bankruptcy, and Capital Structure." *Journal of Finance*, forthcoming

[10] Bloom, Nick, Tobias Kretschmer and John Van Reenen (2006): "Work-Life Balance, Management Practices and Productivity." Working Paper, Stanford University

[11] Brammer, Stephen, Chris Brooks and Stephen Pavelin (2006): "Corporate Social Performance and Stock Returns: UK Evidence From Disaggregate Measures." *Financial Management* 35, 97-116

[12] Brennan, Michael, Tarun Chordia and Avanidhar Subrahmanyam (1998): "Alternative Factor Specifications, Security Characteristics, and the Cross-Section of Expected Stock Returns." *Journal of Financial Economics* 49, 345-373

[13] Carhart, Mark (1997): "On Persistence in Mutual Fund Performance." *Journal of Finance* 52, 57-82

[14] Carlin, Bruce and Simon Gervais (2009): "Work Ethic, Employment Contracts, and Firm Value." *Journal of Finance* 64, 785-821

[15] Chan, Louis, Josef Lakonishok and Theodore Sougiannis (2001): "The Stock Market Valuation of Research and Development Expenditures." *Journal of Finance* 56, 2431-2456

[16] Core, John, Wayne Guay and Tjomme Rusticus (2006): "Does Weak Governance Cause Weak Stock Returns? An Examination of Firm Operating Performance and Investors' Expectations." *Journal of Finance* 61, 655-687

[17] Cronqvist, Henrik, Fredrik Heyman, Mattias Nilsson, Helena Svaleryd and Jonas Vlachos (2008): "Do Entrenched Managers Pay Their Workers More?" *Journal of Finance* 64, 309-339

[18] Daniel, Kent, Mark Grinblatt, Sheridan Titman and Russ Wermers (1997): "Measuring Mutual Fund Performance with Characteristic-Based Benchmarks." *Journal of Finance* 52, 1035-1058

[19] Daniel, Kent and Sheridan Titman (1997): "Evidence on the Characteristics of Cross-Sectional Variation in Common Stock Returns." *Journal of Finance* 52, 1-33

[20] Demsetz, Harold and Kenneth Lehn (1985): "The Structure of Corporate Ownership: Causes and Consequences." *Journal of Political Economy* 93, 1155-1177

[21] Deng, Zhen, Baruch Lev and Francis Narin (1999): "Science and Technology as Predictors of Stock Performance." *Financial Analysts Journal* 55, 20-32

[22] Derwall, Jeroen, Nadja Guenster, Rob Bauer and Kees Koedijk (2005): "The Eco-Efficiency Premium Puzzle." *Financial Analysts Journal* 61, 51-63

[23] Dhrymes, Phoebus J. (1998): "Socially Responsible Investing: Is It Profitable?" in *The Investment Research Guide to Socially Responsible Investing*, The Colloquium on Socially Responsible Investing

[24] Diltz, J. David (1995): "Does Social Screening Affect Portfolio Performance?" *Journal of Investing* Spring, 64-69

[25] Easterwood, John and Stacey Nutt (1999): "Inefficiency in Analysts' Earnings Forecasts: Systematic Misreaction or Systematic Optimism?" *Journal of Finance* 54, 1777-1797.

[26] Ederer, Florian and Gustavo Manso (2008): "Is Pay-for-Performance Detrimental to Innovation?" Working Paper, Massachusetts Institute of Technology

[27] Faleye, Olubunmi and Emery Trahan (2006): "Is What's Best For Employees Best For Shareholders?" Working Paper, Northeastern University

[28] Fama, Eugene and Kenneth French (1997): "Industry Costs of Equity." *Journal of Financial Economics* 43, 153-193

[29] Fama, Eugene and Kenneth French (2008): "Dissecting Anomalies." *Journal of Finance* 63, 1653-1678

[30] Fama, Eugene and James MacBeth (1973): "Risk, Return, and Equilibrium: Empirical Tests." *Journal of Political Economy* 81, 607-636

[31] Filbeck, Greg and Dianna Preece (2003): "*Fortune*'s Best 100 Companies to Work For in America: Do They Work For Shareholders?" *Journal of Business, Finance and Accounting* 30, 771–797.

[32] Fulmer, Ingrid Smithey, Barry Gerhart and Kimberly Scott (2003): "Are the 100 Best Better? An Empirical Investigation of the Relationship Between Being a "Great Place to Work" and Firm Performance." *Personnel Psychology* 56, 965-993

[33] Geczy, Christopher, Robert Stambaugh and David Levin (2005): "Investing in Socially Responsible Mutual Funds." Working Paper, University of Pennsylvania

[34] Gilbert, Thomas, Lars Lochstoer, Shimon Kogan and Ataman Ozyildirim (2008): "Investor Inattention and the Market Impact of Summary Statistics." Working Paper, University of Washington

[35] Giroud, Xavier and Holger Mueller (2008): "Corporate Governance, Product Market Competition, and Equity Prices." Working Paper, New York University

[36] Goenner, Cullen (2007): "Investing in Fortune's 100 Best Companies to Work for in America." *Journal of Economics*, forthcoming

[37] Gompers, Paul, Joy Ishii and Andrew Metrick (2003): "Corporate Governance and Equity Prices." *Quarterly Journal of Economics* 118, 107-155

[38] Gompers, Paul and Andrew Metrick (2001): "Institutional Investors and Equity Prices." *Quarterly Journal of Economics* 116, 229-259

[39] Guerard, John (1997): "Is There a Cost to Being Socially Responsible in Investing?" *Journal of Investing* 6, 11-18

[40] Hamilton, Sally, Hoje Jo and Meir Statman (1993). "Doing Well While Doing Good: The Investment Performance of Socially Responsible Mutual Funds." *Financial Analysts Journal* November/December: 62-66.

[41] Hertzberg, Frederick (1959): "The Motivation to Work." John Wiley & Sons, New York

[42] Hong, Harrison, Terence Lim and Jeremy Stein (2000): "Bad News Travels Slowly: Size, Analyst Coverage, and the Profitablity of Momentum Strategies". *Journal of Finance* 55, 265-295

[43] Hong, Harrison and Marcin Kacperczyk (2009): "The Price of Sin: The Effect of Social Norms on Markets." *Journal of Financial Economics* 93, 15-36

[44] Huberman, Gur and Tomer Regev (2001): "Contagious Speculation and a Cure for Cancer: A Nonevent that Made Stock Prices Soar." *Journal of Finance* 56, 387-396

[45] Jensen, Michael and William Meckling (1976): "Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure." *Journal of Financial Economics* 3, 305-360

[46] Jenter, Dirk, Katharina Lewellen and Jerold Warner (2009): "Security Issue Timing: What Do Managers Know, and When Do They Know It?" Working Paper, Stanford University

[47] Kohn, Alfie (1993): "Why Incentive Plans Cannot Work." *Harvard Business Review*, September-October 1993

[48] Kurtz, Lloyd and Dan DiBartolomeo (1996): "Socially Screened Portfolios: An Attribution Analysis of Relative Performance." *Journal of Investing* 5, 35-41

[49] Lau, R.S.M. and Bruce May (1998): "A Win-Win Paradigm for Quality of Work Life and Business Performance." *Human Resource Development Quarterly* 9, 211-226

[50] LeRoy, Stephen and Richard Porter (1981): "The Present-Value Relation: Tests Based on Implied Variance Bounds." *Econometrica* 49, 555-574

[51] Lev, Baruch (2004): "Sharpening the Intangibles Edge." *Harvard Business Review*, June, 109-116

[52] Lev, Baruch and Theodore Sougiannis (1996): "The Capitalization, Amortization, and Value-Relevance of R&D." *Journal of Accounting and Economics* 21, 107-138

[53] Levering, Robert and Milton Moskowitz (1993): "The 100 Best Companies to Work For in America." Plume, New York NY

[54] Levering, Robert, Milton Moskowitz and Michael Katz (1984): "The 100 Best Companies to Work For in America." Addison-Wesley, Reading MA

[55] Lim, Terence (2001): "Rationality and Analysts' Forecast Bias." *Journal of Finance* 56, 369-385.

[56] Liu, Crocker and David Yermack (2007): "Where are the Shareholders' Mansions? CEOs' Home Purchases, Stock Sales, and Subsequent Company Performance." Working Paper, Arizona State University

[57] Luck, Christopher and Nancy Pilotte (1993): "Domini Social Index Performance." *Journal of Investing* 2, 60-62

[58] Lustig, Hanno, Chad Syverson and Stijn van Nieuwerburgh (2009): "Technological Change and the Growing Inequality in Managerial Compensation." Working Paper, University of California, Los Angeles

[59] Markowitz, Harry (1959): "Portfolio Selection: Efficient Diversification of Investments." Wiley, New York

[60] Mas, Alexandre (2007): "Labor Unrest and the Quality of Production: Evidence from the Construction Equipment Resale Market." *Review of Economic Studies*, forthcoming

[61] Maslow, Abraham (1943): "A Theory of Human Motivation." *Psychological Review* 50, 370-396

[62] Merton, Robert (1987): "A Simple Model of Capital Market Equilibrium With Incomplete Information." *Journal of Finance* 42, 483-510.

[63] McGregor, Douglas (1960): "The Human Side of Enterprise." McGraw-Hill, New York

[64] Moskowitz, Milt (1972): "Choosing Socially Responsible Stocks." *Business and Society* 1, 71-75

[65] Newey, Whitney and Kenneth West (1987): "A Simple Positive-Definite Heteroskedasticity and Autocorrelation Consistent Covariance Matrix." *Econometrica* 55, 703–708

[66] Pagano, Marco and Paolo Volpin (2005): "Managers, Workers, and Corporate Control." *Journal of Finance* 60, 843-870

[67] Rajan, Raghuram and Luigi Zingales (1998): "Power in a Theory of the Firm." *Quarterly Journal of Economics* 113, 387-432

[68] Rajan, Raghuram and Luigi Zingales (2001): "The Firm as a Dedicated Hierarchy: A Theory of the Origins and Growth of Firms." *Quarterly Journal of Economics* 116, 805-851

[69] Renneboog, Luc, Jenke Ter Horst and Chendi Zhang (2008): "The Price of Ethics and Stakeholder Governance: The Performance of Socially Responsible Mutual Funds." *Journal of Corporate Finance* 14, 302-322

[70] Reuter, Jonathan and Eric Zitzewitz (2006): "Do Ads Influence Editors? Advertising and Bias in the Financial Media." *Quarterly Journal of Economics* 121, 197-227

[71] Schröder, Michael (2007): "Is There a Difference? The Performance Characteristics of SRI Equity Indices." *Journal of Business Finance and Accounting* 34, 331-348

[72] Shapiro, Carl and Joseph Stiglitz (1984): "Equilibrium Unemployment as a Worker Discipline Device." *American Economic Review* 74, 433-444

[73] Shleifer, Andrei (1986): "Do Demand Curves for Stocks Slope Down?" *Journal of Finance* 41, 579-590

[74] Shumway, Tyler (1996): "The Delisting Bias in CRSP Data." *Journal of Finance* 52, 327-340

[75] Simon, Daniel and Jed DeVaro (2006): "Do the Best Companies to Work for Provide Better Customer Satisfaction?" *Managerial and Decision Economics* 27, 667-683

[76] Statman, Meir and Denys Glushkov (2007): "The Wages of Social Responsibility." Working Paper, Santa Clara University

[77] Stein, Jeremy (1988): "Takeover Threats and Managerial Myopia." *Journal of Political Economy* 46, 61-80

[78] Taylor, Frederick (1911): "The Principles of Scientific Management." Harper Brothers, New York

[79] Teoh, Siew Hong, and T. J. Wong (2002): "Why New Issues and High-Accrual Firms Underperform: The Role of Analysts' Credulity." *Review of Financial Studies* 15, 869-900.

[80] Wermers, Russ (2004): "Is Money Really 'Smart'? New Evidence on the Relation Between Mutual Fund Flows, Manager Behavior, and Performance Persistence." Working Paper, University of Maryland

[81] Wernerfelt, Birger (1984): "The Resource-Based View of the Firm." *Strategic Management Journal* 5, 171-180.

[82] Wurgler, Jeffrey and Ekaterina Zhuravskaya (2002): "Does Arbitrage Flatten Demand Curves for Stocks?" *Journal of Business* 75, 583-608.

[83] Yermack, David (2006): "Flights of Fancy: Corporate Jets, CEO Perquisites, and Inferior Shareholder Returns." *Journal of Financial Economics* 80, 211-242

[84] Zhou, Xianming (2001): "Understanding the Determinants of Managerial Ownership and the Link between Ownership and Performance: Comment." *Journal of Financial Economics* 62, 559-571

[85] Zingales, Luigi (2000): "In Search of New Foundations." *Journal of Finance* 55, 1623-1653

Response to Referee's Comments

JFE 2008842: "Does the Stock Market Fully Value Intangibles? Employee Satisfaction and Equity Prices

Summary

I am very grateful for the Referee's detailed and insightful comments on this paper, and in particular for giving me the opportunity to revise the paper to incorporate his/her input. This document describes the principal changes made to the paper, which are summarized below:

- I compare the size of the alpha to a number of prior studies documenting abnormal returns to trading strategies, including those examining other forms of intangibles. I show that the magnitude of the alpha is similar to these previous papers, and therefore plausible rather than puzzling.

- I hand-gather data on SRI mutual funds that specifically employ labor or employment screens. Consistent with the Referee's prediction, I find that these funds are overloaded on the Best Companies and increase their holdings over the time period. I calibrate the effect of such purchases on prices and find that they can only explain a very small portion of the abnormal returns.

- I demonstrate that the Best Companies are not undervalued with respect to tangible valuation metrics. This result is consistent with the interpretation that their excess returns stem from valuable intangible assets that the market did not fully incorporate. However, it is inconsistent with the interpretation that intangibles are irrelevant for shareholder value but the market erroneously perceived a negative relationship and so valued them at a discount, and this initial discount was the source of future abnormal returns.

- I show that, consistent with the Referee's prediction, the results of this paper are similar to other intangibles studies, both qualitatively and quantitatively. I explain more clearly that the main goal of the paper is to test human capital theories, which requires a measure of employee satisfaction ("ES") in particular rather than intangibles in general. I clarify that a second goal is to test the "lack-of-information" hypothesis, that previous findings of excess returns to intangibles stem from the market lacking information on them, which requires a particularly salient measure of intangibles and one on large firms. I show that the sample size is comparable to other recent studies of abnormal returns.

- I find that list inclusion has very little correlation with corporate governance, and so the results are unlikely to be driven by the finding of Gompers, Ishii and Metrick ("GIM", 2003).

- I discuss the fact that firms volunteer to be considered for inclusion in the Best Companies list, and explain that selection biases are unlikely to affect my results given the use of stock returns as the dependent variable, and the 8-month lag between application to the list and the start of the return compounding window.

In addition to summarizing the above changes to the paper, this document also contains additional analyses I have undertaken to address the Referee's concerns which I did not include in the present draft of the paper due to space constraints. (Naturally, I would be more than happy to promote them to the paper if the Referee recommends.) For example, I show that a 4% annual alpha translates into a discount of 10%, rather than 35-40%. In addition, the inability of SRI mutual funds' increased holdings to explain a significant part of the abnormal returns arises because there are very few such funds and so their price impact is low. I therefore also study the holdings of institutions in aggregate, since the total capital held by institutions is substantially larger than that held by SRI funds who screen on labor or employment. I find that institutions in aggregate are not overloaded on the Best Companies and have not increased their weighting over time.

The Appendix of this document contains some of these additional analyses, as well as tables that are omitted from the paper but indicated as available to the reader upon request.

Referee's Comments

1. *"My first concern is that the alpha is very large, maybe too large. A 4% alpha implies that the firms on the Fortune list trade at a discount of 35-40% relative to other stocks."*

   I will start by addressing the second sentence: that 4% alpha implies that the Best Companies trade at a discount of $35-40\%$. I am guessing that the Referee obtained this discount through estimating a Gordon growth model (similar to the translation between a discount and an alpha in Section 4.5 of Hong and Kacperczyk ("HK", 2009)), but please accept my apologies if this guess is incorrect. Under the Gordon growth model, if $\frac{D}{r-g}$ is the value of a firm not on the list, and $\frac{D}{r-g+4\%}$ is the value of a firm on the list, then the Best Companies are undervalued by $100\% - \frac{r-g}{r-g+4\%}$. With $r = 9\%$ and $g = 3\%$, this gives a discount of 40%, which corresponds to his/her number.

   However, the above calculation assumes that firms remain on the list in perpetuity. This assumption is appropriate for HK where "sin" stocks are permanently sin stocks. Importantly, unlike "sin" status, ES is not a permanent variable. Approximately 1/3 of traded firms in one list drop off the next list, as can be seen in Table 1 of the manuscript. Calculating the ratio of the firms that drop off each list and taking an average across years yields a figure of 34%.[30] Out of the 70 firms in the 1998 list that were publicly traded during that year, only 15 were still on the list by 2005. Similarly, taking the firms on the

[30] Even when excluding the 1984 and 1993 lists and focusing on the *Fortune* subsample, this figure is 29%.

1998 list and identifying the final year that they were on the list gives a median (mean) tenure of 2 (3.2) years.[31] Firms should only earn excess returns in the years in which ES is high.

Recalculating the Gordon growth model numbers assuming that a Best Company is on the list for 3 years gives a valuation of:

$$\begin{aligned} & \sum_{t=1}^{3} \frac{D\left(1+g\right)^{t-1}}{\left(1+r+4\%\right)^{t}} + \frac{D\left(1+g\right)^{3}}{\left(r-g\right)} \frac{1}{\left(1+r+4\%\right)^{3}} \\ = \quad & \frac{D}{\left(r-g+4\%\right)} - \frac{D\left(1+g\right)^{3}}{\left(r-g+4\%\right)} \frac{1}{\left(1+r+4\%\right)^{3}} + \frac{D\left(1+g\right)^{3}}{\left(r-g\right)} \frac{1}{\left(1+r+4\%\right)^{3}}. \end{aligned}$$

This translates into a 10% discount.[32] Even assuming a tenure of 5 years leads to only a 15% discount.[33] Moreover, the 4% annual alpha corresponds to the 0.34% monthly alpha over the risk-free rate in Table 3. When calculated over industry (characteristics) benchmarks, the annual alpha is 2.7% (3.0%). A 3% annual alpha corresponds to a 7% (11%) discount assuming a tenure of 3 (5) years. All of these discounts are significantly smaller than the 35-40% referred to in the report, and therefore much more plausible.

I now turn to the first sentence, that the alpha is "very large, maybe too large." In addition to the limited tenure of Best Companies on the list, the annual alpha of 4% (even if it were permanent) is fully consistent with other similar studies, and thus plausible rather than puzzling. The following table lists the alphas found in related research:

Paper	Explanatory variable	Annualized alpha
Lakonishok, Shleifer and Vishny (1994)	Value	10-11%
Lev and Sougiannis (1996)	R&D capital	4.6%
Chan, Lakonishok and Sougiannis (2001)	R&D flows	6.1%
Diether, Malloy and Scherbina (2002)	Forecast dispersion	7.7% (62bp/month)
Gompers, Ishii and Metrick (2003)	Corporate governance	8.5%
Yermack (2006)	Corporate jets	3.8%
Liu and Yermack (2007)	CEO home purchases	13.8% (1.08%/month)
Hong and Kacperczyk (2009)	Sin stocks	3.2% (26bp/month)

Where possible, all alphas are with respect to the four-factor model, for comparability

[31] On the one hand, this tenure measure is downward biased since the maximum tenure is 7 years (since my data stops in 2005). On the other hand, it is upward biased as it calculates tenure using the final year that each firm appears on the list, and therefore does not take into account the fact that firms may temporarily drop off the list and then reappear on the list later.

[32] Hong and Kacperczyk (2008) use $r = 12\%$ and $g = 4\%$ for their calculations, which gives a discount of 33% assuming that firms are on the list in perpetuity. I use $r = 9\%$ and $g = 3\%$ because this yields a discount within the Referee's range of $35 - 40\%$. Under $r = 12\%$ and $g = 4\%$, the discount assuming a 3-year tenure is even lower at 9%.

[33] An average tenure of 5 years would arise if the 15 firms that were on the 1998 list and remained on the list by 2005 continued to stay on the list for over 8 more years (on average). Therefore, it is a conservative upper bound.

with the present paper. Lakonishok et al. (1994) and Lev and Sougiannis (1996) were written before the four-factor model. The alpha for the former is the size-adjusted excess return; for the latter, it is the implied annual return corresponding to the coefficient on R&D/total assets in a multivariate regression including controls such as size and book-to-market. The alpha in Chan et al. (2001) is the excess return compared to a control portfolio of the same size and book-to-market.

It might be argued that the alphas in GIM, Lakonishok et al. (1994), Liu and Yermack (2007) and Diether, Malloy and Scherbina (2002) should be halved for comparison with the present paper, since they represent strategies to long-short portfolios, whereas this paper considers a long-only portfolio. Even under halving, the alpha in the present paper is similar to those documented in previous papers and so not abnormally large. In particular, Chan et al. (2001) and Lev and Sougiannis (1996) study another category of intangibles (R&D) and find slightly higher excess returns; therefore, it appears quite plausible that an intangible such as ES can correspond to a 4% annual alpha.[34]

Moreover, in many of the above papers, the *source* of the excess returns is undocumented. For example, Core, Guay and Rusticus (2006) find that the high governance firms studied by GIM do not exhibit more positive earnings surprises than control firms. By contrast, I find that the Best Companies exhibit significantly more positive earnings surprises. From Panel B in Table 9, the four earnings announcements in a year explain $4 \times 0.3 = 1.2\%$ of the abnormal return. Hence, there is a less of a "mystery" component to the annual alpha than in many previous studies.

In sum, the alpha documented in this paper is of similar magnitude to other studies and can be partially explained by earnings surprises. Moreover, the limited tenure of Best Companies on the list means that the alpha translates into a significantly lower value discount than the more permanent variables analyzed by other papers. Following the Referee's comments, I have summarized the findings of related papers in Section 3.1 of the new draft of the paper. Since the 4% alpha is consistent with other papers, the current draft does not include the calculation of the value discount implied by a 4% alpha to conserve on space, but I would be more than happy to include it if the Referee recommends.

A number of the Referee's other comments appear to be motivated by the view that the alpha and implied discount were very large, and were very useful suggestions on I might be able to "explain away" such a large alpha, e.g. by studying discounts to peer firms and whether SRI mutual funds overloaded on the Best Companies. Since the alpha is comparable to many other studies and implies a significantly smaller discount, this partially addresses these other comments as there is a far smaller discount to be "explained

[34]Note that the above table only contains returns to buy-and-hold (or sell-and-hold) strategies which are similar to those in the present paper. Alphas are typically even higher for strategies that involve frequent more rebalancing, e.g. a 1.376% four-factor monthly alpha in Cohen and Frazzini (2008).

away"; consequently, one might not expect to find significant results in these additional analyses. For example, the Referee writes that it "might make more sense" if I can show that the excess returns can be "explained away" due to SRI funds overloading on these Best Companies, but since the alpha is comparable to other studies, it is plausible even if there are no significant demand effects here. Since a number of prior papers have found similar or greater alphas in the absence of demand effects, I might not expect significant effects here. Nevertheless, I have taken all of the suggestions seriously, undertaken the recommended analyses and detail the results later in this document.

2. *"The paper should try to see if in fact these companies trade at such discounts relative to otherwise similar companies? My sense is that this is tough since a 35-40% [discount] is quite big. ... The auxiliary evidence on earnings surprises helps to some degree but doesn't address the magnitude question."*

   As stated above, the 4% alpha (3% over industry or characteristics benchmarks) only implies a discount of about 10%, which is significantly smaller than 35-40%. Therefore, the 4% alpha need not imply that the Best Companies must have been trading at a large discount initially. In addition, I agree with the Referee that the earnings surprise results may not be sufficient to explain a 35-40% discount; however, they do explain a reasonable proportion of a 10% discount. For example, considering the 3% alpha over characteristics benchmarks and subtracting the 1.2% abnormal return from earnings announcements implies only a 4% (7%) discount assuming a tenure of 3 (5) years.[35]

   If the abnormal returns indeed stem from intangibles which are not incorporated by the market, the firm will be undervalued with respect to its true fundamental value, which incorporates both its tangible and intangible assets. As the Referee notes, "price ratios like cash-flow to price or market-to-book aren't good" because they measure the valuation of tangible assets only. The use of these ratios is entirely appropriate in HK (2009): their hypothesis is that sin stocks are undervalued due to certain institutions shunning them, and so abnormal returns must result from the stocks being initially undervalued based on tangible valuation ratios, as HK indeed find. However, if abnormal returns are generated from an intangible, such as employee satisfaction, corporate governance (GIM (2003)) or CEO agency problems (Yermack (2006), Liu and Yermack (2007)), they need not imply an initial discount based on tangible valuation ratios. Excess returns stem from an intangible not captured by these valuation ratios, rather than an initial discount being subsequently corrected. Indeed, GIM find that well-governed firms trade at a significant *premium* to peers, even at the start of the return compounding period.[36] *[Question: Do I need to*

[35] For consistency, I assume that a 3-year tenure means that the abnormal announcement returns, in addition to the alphas, are only received for 3 years.

[36] The Referee suggests using "some model of the the value of intangibles." Unfortunately, I have been unable to find any such models in the literature – intangibles such as employee satisfaction, management quality, brand name etc. are inherently difficult to measure. The only valuation model not based on price-to-fundamental ratios that appears to be widely used is the residual income model of Ohlson (*Contemporary Accounting Research*,

even include this footnote? Given the implied discount is far lower, perhaps I don't need to even show a discount in the first place.]

Even though abnormal returns from an intangible do not have to stem from a discount to tangible valuation ratios, they still might do. It is plausible that employee satisfaction has no effect on shareholder value, but the market thinks that it has a *negative* effect, given traditional management philosophies (Taylor (1911)) and existing evidence (Abowd (1989)). In this case, the Best Companies *will* trade at a discount to tangible value, and the abnormal returns merely stem from the correction of the discount. The following numerical example illustrates. 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. The core hypothesis is that firm 2's intangibles are valuable (so that its true value is \$3bn) but the market only partially incorporates this, so it trades at \$2.4bn initially. Thus, firm 1 (2) exhibits a 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 and subsequently manifest in tangible outcomes (e.g. earnings surprises) that are valued by the market. Under this alternative hypothesis, firm 2's intangibles are worthless and so its true value is also \$2bn, but the market values it at \$1.5bn because it reacts negatively to its investment in intangibles. (The HK analog is that firm 2 is valued at \$1.5bn because certain investors shun it). Firm 2 therefore trades at an initial M/B of 0.75 and thus a discount to firm 1; the abnormal returns stem entirely from a correction of this initial discount.

Therefore, I have used the Referee's suggestion constructively to pinpoint the source of the abnormal returns: whether employee satisfaction merely causes the Best Companies to trade at an initial discount to tangible value (which is then corrected), or has a direct effect on shareholder value. Indeed, I have expanded the Discussion in Section 4 to add a fifth interpretation of the results, that abnormal returns stem from a correction of a discount to tangible value. This is the new Hypothesis C (the old Hypotheses C and D are renamed D and E respectively). The previous draft only considered this explanation in Footnote 17 and only addressed it by reporting positive event-study reactions to list inclusion. The analysis suggested by the Referee allows me to undertake a far more thorough evaluation of this hypothesis.

The results can be seen in Table 12 and are discussed in Section 4. I follow the methodology of HK: I use the log M/B, P/E and AV/EBITDA as valuation ratios, and all of the HK controls. Using the P/E ratio, the Best Companies exhibit no differential valuations to peer firms, and using the M/B and AV/EBITDA ratios they in fact exhibit a significantly *higher* valuation. These results are inconsistent with the interpretation that the abnormal returns merely stemmed from a correction of initial undervaluation based

1995). However, this method uses analyst earnings forecasts, which I show to be inaccurate for the Best Companies since they exhibit systematically more positive earnings surprises.

on tangible valuation ratios, and instead point to employee satisfaction actively adding value over and above what is captures in tangible valuation measures. I am very grateful to the Referee for this suggestion which has helped me address a potential competing explanation for my results.

Moreover, that the Best Companies' valuations are higher than peer firms suggests the market might at least be partially valuing intangibles, albeit not fully. The results are thus entirely consistent with existing evidence on market underreaction (see Barberis and Thaler (2003) for a survey). Consistent across a large range of corporate events (e.g. earnings announcements, dividend changes, equity issues, repurchases, stock splits), the market values the event in the correct direction, but significantly underestimates the magnitudes. Indeed, finding higher valuations of the Best Companies appears more plausible than finding lower valuations – it suggests that the market is getting the valuation at least partially correct (albeit understating the magnitudes) rather than the direction wrong. Indeed, in the above numerical example, firm 2 trades at a premium.

3. *"What about a high intangible portfolio? Employee satisfaction is only a small part of intangibles ... one should find similar patterns as the Fortune list. This would also help as the sample of such firms is much bigger. The Fortune sample is pretty small in comparison"*

   I fully agree that there are several additional types of intangibles than employee satisfaction. Indeed, these have been explored by prior research which does "find similar patterns as the *Fortune* list", as the referee predicts. As detailed on p3 of the paper, firms with high R&D (Lev and Sougiannis (1996), Chan, Lakonishok and Sougiannis (2001)), advertising (Chan et al. (2001)), patent citations (Deng, Lev and Narin (1999)) and software development costs (Aboody and Lev (1998)) all earn superior long-run returns. In addition to the consistent directions, the magnitudes are similar to this paper. Chan et al. find the top quintile of firms by R&D/market equity earn a 6.12%/year excess return, and Lev and Sougiannis find a 4.57%/year annual return to R&D capital/total assets. (Deng et al. and Aboody and Lev do not report numbers interpretable as annual excess returns). Section 3.1 of the new draft highlights this consistency. I am grateful to the Referee for suggesting this useful comparison.

   It is indeed true that the Best Companies list has disadvantages owing to its small sample size. However, these should be balanced against two important advantages which are essential for the goals of the paper. First, the paper's main objective is to evaluate the relationship between ES in particular (rather than intangibles in general) and shareholder returns, and thus it requires a measure of ES in particular rather than other intangibles. This relationship is important because human capital is increasingly central to the modern firm, and so it is critical to understand how to manage it to maximize shareholder value. The traditional view is that managers maximize shareholders' objective function by en-

suring that workers' participation constraint binds with equality, i.e. by minimizing ES. This view continues to pervade many modern firms, and has been supported by existing evidence (e.g. Abowd (1989)). On the other hand, the human capital theories of Maslow (1943), Hertzberg (1959) and McGregor (1960) argue that ES can benefit shareholders. Despite their intuitive logic, there is very little evidence supporting these theories, and hence the paper's primary goal is to test them, thus also providing support for recent theories of the firm centered on employees as the key assets (e.g. Rajan and Zingales (1998, 2001), Carlin and Gervais (2009), Berk, Stanton and Zechner (2009) and Lustig, Syverson and van Nieuwerburgh (2009).) The Best Companies list is arguably the most accurate measure of ES available (see p[7] of the paper) and uniquely placed to study these theories. Examining other intangibles such as R&D and advertising would not test human capital theories. Indeed, I find a significant, robust and positive relationship which has potentially important implications for both managers and shareholders. It may change the way that managers think about managing their employees – not as simply a cost to be minimized who should be held to their reservation utility, but a positive source of value creation. Turning to shareholders, the traditional view is that any firm that spends excessively on other stakeholders is destroying value and should be avoided. Indeed, existing research suggests SRI is costly for financial returns.[37] By contrast, the present paper is one of the very few studies that shows that certain SRI screens boost investment returns, a result which has the potential to change the mindset of investors. Other measures of intangibles have no implications for SRI, since R&D and advertising are not SRI screens.

Second, even insofar as investigating intangibles in general (rather than ES in particular), the Best Companies list has attractions, which represent its second main advantage. The above studies of intangibles have used less visible and non-salient measures of intangibles (e.g. Deng et al.'s patent citation measure had to be constructed by hand.) Previous studies thus suggested that the primary cause of excess returns was the non-salience of intangible measures (the "lack-of-information" hypothesis referred to on p[3]). By contrast, the Best Companies list is particularly salient and widely publicized, and on large firms that are widely covered. It is thus uniquely placed to test the "lack-of-information" hypothesis. If the absence of salient information was the main reason for prior findings of excess returns to intangible portfolios, I should find no excess returns to the Best Companies list. By documenting excess returns even to this list, I extend prior research on intangibles and contradict the "lack-of-information" hypothesis by showing that non-salience is not the sole cause of non-incorporation. Even widely disseminated measures of intangibles on large firms are not fully valued by the market. This result has potentially important policy implications: see p[4] of the paper. Other intangibles measures would not be able to test this hypothesis.

[37] See, for example, Hong and Kacperczyk (2008), Geczy, Stambaugh and Levin (2005), Brooks and Pavelin (2006) and Renneboog, Ter Horst and Zhang (2008).

A further advantage is that, since the Best Companies list has a clearly defined release date (unlike other intangible measures), the paper contributes to the underreaction literature. Prior papers found that underreaction is concentrated on small firms (e.g. Hong, Lim and Stein (2000)). This paper documents underreaction to large firms – the Best Companies have a mean (median) market value of $4bn ($1bn) in 1984 and $25bn ($5bn) in 1998. For comparison purposes, the 80th percentile breakpoint for the Fama-French portfolios was $1bn in 1984 and $4bn in 1998. Similarly, Fama and French (2008) show that certain excess return results are driven by small firms, and the results are not robust to the weighting methodology. Therefore, the trading strategy is difficult to exploit, given the transactions costs of trading small firms. The Best Companies list is focused on large firms, and the results are robust to equal- and value-weighting. This point and the size comparisons were not made in the previous draft and I have corrected this omission.

In sum, while I fully agree the Best Companies list is small compared to other measures of intangibles (and this drawback is acknowledged on p[18]), it has the four essential advantages of being a measure of ES in particular, being a screen that certain SRI investors use, having a clearly defined release date, and being highly salient and on large firms. The relevant comparison is not the Best Companies list to other intangible measures (which may indeed be broader) but to other measures of ES in particular, and other highly salient measures of intangibles. Showing abnormal returns to another broad measure of intangibles would not extend prior literature, since existing research already documents such results. This paper aims to extend prior literature by focusing on ES in particular (and thus testing human capital theories and the profitability of SRI) and an especially salient measure of intangibles that focuses on large firms (and thus testing the "lack-of-information" hypothesis). Other measures of intangibles would not be tests of ES or the profitability of SRI, nor would they be able to show that the market does not react to even highly visible measures of intangibles. The new draft explains the advantages of the Best Companies list and the unsuitability of other intangibles measures more clearly on pages [7-8].

There are two main disadvantages of a small sample. The first is that it may contain only small firms that are relatively unimportant for the economy, and the results may not extend to large firms which journal readers care more about. In a similar vein, documenting excess returns to a small sample of small stocks is of limited interest since they are difficult to trade without bearing significant transactions costs. My sample is focused on large firms. The second is that a small sample is that it increases the risk that results are anomalous and driven by a few outliers. I have therefore conducted a battery of robustness checks to address this issue: the results are robust to equal- and value-weighting, to winsorization of outliers, and to controls for industry performance, firm characteristics and risk. These robustness tests are not always straightforward to pass: as alluded to above, Fama and French (2008) find that the asset growth and profitability anomalies do

not hold under value-weighting. Table III of Vassalou and Xing (JF 2004) shows that abnormal returns to firms with high default risk are insignificant under value-weighting, and so the authors only report equally-weighted returns for the rest of the paper. More broadly, many papers documenting excess returns report only equally-weighted or value-weighted returns, not both. Similarly, a number of abnormal returns studies control for the Carhart (1997) risk factors; this paper simultaneously controls for risk factors and firm characteristics (equation (1)) because characteristics may have explanatory power, even when controlling for covariances (Daniel and Titman (1997)). Pinegar (AER 2002) finds that the clock-change anomaly of Kamstra, Kramer and Levy (AER 2000), based on a small sample, is not robust to controlling for outliers. Moreover, the number of firms in the study does not compare unfavorably to other long-run event studies. I have 224 separate firms (631 firm-year observations), compared to 237 in Yermack (JFE 2006) and 193 in Hong and Kacperczyk (JFE 2009). The new draft makes this comparison in Section 2.

4. *"Are firms on the Fortune list good corporate governance firms?"*

   I thank the Referee for this suggestion. This is a potentially useful control to add, since it is indeed plausible that high ES firms may be "do-gooder" firms that also exhibit high governance. Unfortunately, there are two main issues with including the index – it is only available from September 1990 onwards, and only for around 70% of the Best Companies within this time period. Over the 1984-2005 period, there are 16,935 firm-month observations for Best Companies. 5,349 observations are lost by starting from 1990, and a further 3,035 observations are lost because several Best Companies are not in the governance index. The overall effect is to halve the number of firm-month observations to 8,551.

   Adding the GIM index to the regression in Table 5, the coefficient on the Best Companies dummy is 0.22 (0.24 for industry-adjusted returns), which is significant at the 10% level. Note that the fall in the Best Companies dummy is entirely due to the loss of half the observations. Running the regression in Table 5 without the GIM index, but restricting it to firms with non-missing GIM, leads to a coefficient of 0.20 (0.24 for industry-adjusted returns). The Best Companies dummy has only a 0.01 correlation with the index: the average value of the index is 9.2 for the Best Companies and 9.4 for all other companies (compared to a standard deviation of 2.7). I have discussed this result in Section 3.2. In addition, the positive earnings surprises to Best Companies are not shared by high-governance firms (Core, Guay and Rusticus (2006)).

5. *"It would be interesting if the authors got data on SRI mutual funds to see if they are overloaded on this. It would even be better if the authors found that the SRI funds got into this more and more over the sample. This would help with explain[ing] that it might not simply be underreaction but rather an in-sample purchase of these stocks driving the*

returns."

I am very grateful for this suggestion. The previous draft acknowledged this potential explanation but only addressed it indirectly on p15-16, using the earnings surprise results, the mild outperformance of the dropped companies in Portfolio IV, and the fact that the Best Companies slightly underperformed in the year after the study was first published in *Fortune* (when purchases by SRI funds were most likely). The Referee's suggestion has allowed me to address this important explanation much more directly.

The results of the analysis are in Section 4 and I summarize them here. It is important to note that there is substantial heterogeneity across SRI funds and many funds screen on criteria such as animal testing and environmental protection which are orthogonal to employee satisfaction. The first step therefore was to identify funds that are likely to screen on employee satisfaction in particular. My main data source was the Social Investment Forum, which lists each SRI fund and details which of 11 different screening criteria they use, two of which are labor relations and employment/equality. (As is expected, these two criteria are very highly correlated, with only one fund having a different designation between the two.) I supplement this source with data from SocialFunds, which provides a similar table; 1 of its 10 screens is employment. There is considerable overlap between the two data sources, but combining the two yields a more comprehensive list than would be obtained by considering one source in isolation. Where there were disagreements between the sources, I read the fund prospectus to see whether it mentions an employment screen. If it does not, I call the fund itself to verify whether it uses such a screen. For example, such calls uncovered that the Ariel Fund and Ariel Appreciation Fund do not use employment screens, contrary to the data in SocialFunds. I also call all major fund families (even where 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 of my data sources. I drop three funds because they invest exclusively overseas, and an additional three funds because they invest exclusively in bonds. The final list of funds is in Table 10; I call these "employment funds."

I regress ownership by these employment funds on a Best Company dummy and a list of controls taken from HK. For brevity, in the paper I only include HK's specification of a pooled regression with industry fixed effects and say that the Fama-MacBeth results are available to the reader upon request; I include the Fama-MacBeth results in the Appendix of this document. Consistent with both of the Referee's predictions, employment funds are indeed overloaded on the Best Companies, and the extent of this overloading has increased over time.

The final step is to calibrate the extent to which these additional purchases can explain the abnormal returns. Employment funds owned \$5m of Best Company stock in 1984 and \$1,336m in 2005. The total value of the Best Companies was \$303,385m in 1984 and

$1,720,547m in 2005. To give this hypothesis the greatest possible chance of explaining the results, at every step of the calibration I choose inputs to give the highest possible price impact. Some of the $1,331m increase in employment funds' holdings of Best Company stock likely resulted from the general rise in market values of these firms over time, but I assume that it stemmed entirely from new purchases. Using the 1984 value of the Best Companies, this translates into a 0.44% increase. The price impact of this additional demand depends on the elasticity. Estimates of these vary significantly and Scholes (1972) calibrates an elasticity of $3,000$, which corresponds to nearly-flat demand curves and negligible price impact. Again to form an upper bound, I use the lowest elasticity I could find in the literature, which is the unit elasticity of Gompers and Metrick (2001). (I thank the Referee for alerting me to this paper). Even under this elasticity, the increase in demand corresponds to a 0.44% abnormal return, or only 0.02% per year. This is substantially smaller than the 4% annual alpha.

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 reran the results using total institutional ownership as the dependent variable, since institutions in aggregate hold substantially more assets than employment funds. However, I find that institutions are not overloaded on the Best Companies (in some specifications, they are significantly underloaded), and that their weight did not increase over time. This result is the same regardless of whether I study ownership by all institutions, or ownership by banks, insurance companies and other institutions only (which are more likely to be subject to social norms – see HK). For brevity, I do not include the results in the paper but have put them in the Appendix to this document; naturally I would be happy to promote them to the paper if the Referee recommends this.

6. *"One might also want to worry a bit about selection bias on who even gets or responds to a questionnaire from Fortune. Is it employee satisfaction or some investor relations selection bias? Again, a more systematic and larger sample would deal with some of these selection biases and to better nail down a causal story."*

   The Referee is indeed correct that firms have to apply to be on the Best Companies list. This issue and its potential effects are discussed on p[9] on the paper. For selection to affect the results, it must be correlated with either the dependent or independent variable. It is correlated with the independent variable if satisfaction affects firms' decisions to apply for this list. If anything, this issue appears to work against me. If firms with high satisfaction choose not to apply for the list (perhaps because they do not think they need independent verification of their level of ES), this reduces the average ES of firms on the list and attenuates my results. If firms with low satisfaction choose not to apply, this increases the accuracy of the list.

Selection is correlated with the dependent variable if firm performance affects firms' decisions to apply for this list: it may be the more profitable firms that choose to apply. This concern explains my choice of dependent variable. Accounting profits are persistent, and so may be correlated with both the decision to apply and future profits. I therefore use stock returns as the dependent variable, since 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 stock performance, this likely has little effect since list applications must be made by May and the return window starts the following February 1 (8 months later). Jenter, Lewellen and Warner (2009) show that managers' private information is predominantly about stock returns over the next 100 days; they have little predictive ability for days 100-150. The new draft highlights this time lag, which was absent from the initial submission.

The earnings surprise analysis provides more direct evidence of a causal channel. This test is often difficult to pass; for example, Core et al. (2006) show that the GIM high governance firms do not exhibit superior earnings announcements. Even despite these significant results, the manuscript is up-front about the fact that it is impossible to definitely prove causality, since we do not have a natural experiment with random assignment of ES to firms (see, e.g., p5). This issue is shared with most other long-run event studies (e.g. GIM, Yermack (2006), Liu and Yermack (2007)). The conclusions and implications of the paper are thus stated with a similarly cautious tone to that adopted in GIM. Despite ruling out alternative explanations via a battery of tests (e.g. controls for risk, industries, characteristics, outliers and weighting methodologies, testing earnings surprises, studying in-sample purchases and discounts at the start of the compounding window), long-run event studies in general (and more broadly, most empirical studies) are unable to achieve completely conclusive proof since there is rarely random assignment of the variable of interest to firms. Even so, the positive correlation between ES and shareholder returns should move the reader's prior that ES is necessarily detrimental to shareholder value, as suggested by existing empirical studies (e.g. Abowd (1989)) and theoretical models that the principal's objective is maximized by forcing the employee's participation constraint to bind. Moreover, the paper highlights that the second and third results of the paper are unchanged even without causation – it remains the case that an SRI investor could have made significant risk-adjusted returns by trading on the list (contradicting earlier findings that SRI necessarily reduces returns), and that the market fails to fully incorporate a highly salient measure of intangibles (regardless of whether they are ES or another intangible such as good management) for large firms.

A Appendix

Table A1: Holdings by Employment Funds, Fama-MacBeth

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 Best Companies list (*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 indices (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). The coefficients are estimated using Fama-MacBeth (1973). t-statistics are in parentheses. The sample period is 1984-2005. Column (1) considers funds that use positive or restrictive employment screens. Column (2) only considers funds that employ positive employment screens alone. *[Standard errors to be replaced with t-stats]*

	(1)	(2)
	All Funds	Positive Funds
BC	0.000335***	0.000332***
	(6.42e-05)	(6.42e-05)
SIZE	4.94e-05***	4.79e-05***
	(7.00e-06)	(6.70e-06)
MB	-3.22e-05***	-3.23e-05***
	(1.02e-05)	(1.02e-05)
PRINV	2.57e-06	1.92e-06
	(3.42e-06)	(3.37e-06)
STD	-1.96e-06	-1.99e-06
	(1.61e-06)	(1.62e-06)
MORET	-1.66e-06*	-1.64e-06
	(9.41e-07)	(9.62e-07)
NASDAQ	2.25e-05**	2.32e-05**
	(1.06e-05)	(1.06e-05)
SP500	1.38e-05	7.20e-06
	(1.84e-05)	(1.82e-05)
Constant	-0.000251***	-0.000245***
	(5.25e-05)	(5.05e-05)
# obs	136,201	136,201
R^2	0.009	0.009
Number of groups	23	23

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

Table A2: Institutional Ownership, Fama-MacBeth

Regressions of a stock's institutional ownership on a dummy variable for whether the firm was in the most recent Best Companies list (*BC*) and various control variables, all measured at year-end. Two measures of institutional ownership are used: *IOALL* is total instutitional ownership and *IOBANK* is ownership by banks, insurance companies and other institutions. *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 indices (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). The coefficients are estimated using Fama-MacBeth (1973). t-statistics are in parentheses. The sample period is 1984-2005. *[Standard errors to be replaced with t-stats]*

	(1)	(2)
	IOALL	*IOBANK*
BC	-0.0456***	-0.0211*
	(0.0111)	(0.0109)
SIZE	0.0831***	0.0506***
	(0.00516)	(0.00652)
MB	-0.0462***	-0.0280***
	(0.00503)	(0.00449)
PRINV	-0.0132	-0.0125*
	(0.00776)	(0.00684)
STD	-0.00730***	-0.00393***
	(0.00110)	(0.00117)
MORET	-0.000221	-0.000716
	(0.000569)	(0.000455)
NASDAQ	-0.00356	-0.00197
	(0.00283)	(0.00217)
SP500	-0.0245	0.00895
	(0.0145)	(0.0155)
Constant	-1.210***	-0.749***
	(0.0799)	(0.0939)
# obs	136,201	136,201
R^2	0.478	0.344
Number of groups	23	23

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

Table A3: Institutional Ownership, Pooled Regression

Regressions of a stock's institutional ownership on a dummy variable for whether the firm was in the most recent Best Companies list (*BC*) and various control variables, all measured at year-end. Two measures of institutional ownership are used: *IOALL* is total instutitional ownership and *IOBANK* is ownership by banks, insurance companies and other institutions. *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 indices (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)-(4) I include *YEARBC, defined as* $(Year - 1984) \times BC$. The coefficients are estimated using a panel regression with industry and year dummies. Standard errors are clustered at the industry level. t-statistics are in parentheses. The sample period is 1984-2005. *[Standard errors to be replaced with t-stats]*

	(1)	(2)	(3)	(4)
	IOALL	*IOBANK*	*IOALL*	*IOBANK*
BC	-0.0456**	-0.0238**	-0.0238	-0.0521***
	(0.0189)	(0.0118)	(0.0250)	(0.0172)
YEARBC			-0.00207	0.00268
			(0.00233)	(0.00181)
SIZE	0.0864***	0.0548***	0.0864***	0.0548***
	(0.00333)	(0.00247)	(0.00333)	(0.00247)
MB	-0.0481***	-0.0294***	-0.0481***	-0.0295***
	(0.00311)	(0.00269)	(0.00312)	(0.00270)
PRINV	0.0103***	0.00879***	0.0103***	0.00876***
	(0.00108)	(0.000646)	(0.00109)	(0.000649)
STD	-0.00911***	-0.00301**	-0.00911***	-0.00300**
	(0.00156)	(0.00138)	(0.00156)	(0.00138)
MORET	0.000234	-0.000539***	0.000230	-0.000535***
	(0.000210)	(0.000174)	(0.000210)	(0.000175)
NASDAQ	0.00158	0.00580	0.00161	0.00575
	(0.00879)	(0.00559)	(0.00883)	(0.00558)
SP500	-0.0319***	0.00259	-0.0321***	0.00274
	(0.00994)	(0.00632)	(0.00997)	(0.00629)
Constant	-1.259***	-0.803***	-1.259***	-0.803***
	(0.0647)	(0.0474)	(0.0647)	(0.0473)
# obs	136,201	136,201	136,201	136,201
R^2	0.539	0.581	0.539	0.581

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