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

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**Abstract**

This paper analyzes the relationship between employee satisfaction and long-run stock returns. A 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 publicly available and widely disseminated survey. Third, certain socially responsible investing ("SRI") screens may improve investment returns.

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*"[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 to 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 theory, and the existing evidence reviewed in Section 1, I find a strong, robust, positive correlation between satisfaction and shareholder returns.

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. In contrast to profits or valuation ratios, stock returns should not be persistent (controlling for momentum). Second, they are more directly linked to shareholder value than accounting profits, capturing all the potential channels through which satisfaction may benefit shareholders. While higher profits may be one benefit, it is unlikely to be the only (or even the most important) one, in particular since the results of intangible investment may not manifest in accounting variables for several years. (LeRoy and Porter (1981) find that earnings have very low explanatory power for stock returns.) Satisfaction may lead to many other visible outcomes that improve the stock price, 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 the market lacks information on the value of intangibles (the "lack-of-information" hypothesis). While the total level of R&D can be observed in an income statement, this is an input measure that provides no information about its quality or success (see, e.g., Lev (2004).)[4]

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), and is also particularly visible: from 1998 it has been widely disseminated by *Fortune*. Moreover, it is released on a specific event date which attracts widespread attention, because it discloses information on several companies simultaneously.[5] If lack of information is the

[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.

[4]Patent citations are an output measure but not immediately observable to investors. Although they can be constructed from public information, time constraints prevent investors from analyzing all potentially value-relevant information and so non-salient information may not be noticed (e.g. Hou and Moskowitz (2005)).

[5]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)

primary reason for previous underreaction findings, there should be no underreaction to the Best Companies list.

My analysis is a joint test of both satisfaction benefiting firm value, and this effect not being immediately understood 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 does not stem purely from lack of information, and that other forces may also be important. One potential additional factor is that, even though investors were aware of firms' levels of satisfaction, they were unaware of its benefits, since theory provides ambiguous predictions. A second is that investors use traditional valuation methodologies, initially devised for the 20th century firm and based on physical assets, which cannot incorporate intangibles easily.

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 publicly available information on an output measure. 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 if intangibles can be independently valued and widely publicized. However, my results suggest that lack of information is not the only cause of myopia – thus, from a policy perspective, attenuating myopia will require not only dissemination of information, but a change in investor behavior. 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 also contributes to the broader literature on market underreaction, since the *Fortune* study has a specific release date. Previous research finds that underreaction is typically strongest for small firms (e.g. Hong, Lim and Stein (2000)). Most of the publicly-traded companies in the Best Companies list are large firms (median market value of $5bn in 1998) that are widely followed, yet underreaction still occurs.

The third implication relates to the profitability of SRI strategies, whereby investors only select companies that they define as socially responsible. Traditional portfolio theory (e.g. Markowitz (1959)) suggests that SRI reduces returns, since it restricts an investor's choice set. Indeed, many existing studies find a negative or zero effect of SRI screens. Moskowitz (1972), Luck and Pilotte (1993) and Derwall et al. (2005) find that SRI screens sometimes improve returns, although based on smaller samples. Hamilton, Jo and Statman (1993), Kurtz and DiBartolomeo (1996), Guerard (1997), Bauer, Koedijk and Otten (2005), Schröder (2007), Statman and Glushkov (2007), and Goukasian and Whitney (2008) report that SRI portfolios have similar returns to their benchmarks. Hong and Kacperczyk (2008) 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) show that investors can experience significant losses by restricting themselves to SRI mutual funds. Brammer, Brooks and Pavelin (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.

find a negative effect of environmental and community screens, and Renneboog, Ter Horst and Zhang (2008) find the same result for social screens.

This paper suggests that SRI screens may improve investment performance – at least when the screen focuses on employee welfare. Rather than excluding good investments, SRI screens may focus the choice set on good investments. A firm's concern for other stakeholders, such as employees, may be ultimately beneficial to 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 satisfaction causes higher firm value, but the market is unaware of this relationship. Even though satisfaction is intangible, it subsequently manifests in tangible benefits that are valued by the market. I indeed find that the Best Companies have significantly more positive earnings surprises than other firms, particularly for earnings far into the future. In addition, the abnormal returns to earnings announcements are significantly greater for listed firms. Non-accounting channels may also be important such as patents, new products or analyst reports. If this explanation accounts for a significant portion (although not necessarily all) of the positive correlation, it supports the human capital theories that argue employee-friendly programs can boost shareholder value.

However, 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 alternative 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 inside information may report higher satisfaction today, and the market may be unaware that the list conveys such information. While existing studies on employee trading behavior suggest that workers have no superior information on their firm's future stock returns (e.g. Benartzi (2001), Bergman and Jenter (2007)), this only constitutes an indirect defense. 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, 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 will not necessarily cause a firm's stock returns to improve. However, the two other conclusions of the paper still remain – the existence of a profitable SRI trading strategy, 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, and Diltz (1995) and Dhrymes (1998) find no link between stock returns and the employee relations variables of the Council on Economic Priorities ("CEP") and KLD Research & Analytics, respectively. 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, thus 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)). The reduced effectiveness of extrinsic motivators increases the role for intrinsic motivators such as satisfaction. This role is microfounded in both neoclassical economics and sociology.[6] 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 rewarding job (Shapiro and Stiglitz (1984)) or views pleasant working conditions a "gift" from the firm, and responds with a "gift" of increased effort (Akerlof (1982)).[7] 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)).[8] 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

[6] It is also supported by experimental evidence. Falk and Kosfeld (2006) show a positive relation between trust and productivity. Ederer and Manso (2008) demonstrate that output-based incentives deter innovation.

[7] See Bénabou and Tirole (2003) and Carlin and Gervais (2009) for additional economic models of intrinsic motivation and work ethic.

[8] 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.

attained through nurturing and retaining inimitable assets, such as human capital.[9]

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 a study of wages rather than satisfaction. Again, human relations theories stress that the world is different nowadays. Maslow (1943) and Hertzberg (1959) argue that money is only an effective motivator up to a point: once workers' 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 by no means the first to study the relationship between satisfaction and firm outcomes. However, it is distinct in both measuring satisfaction using the Best Companies list and using long-run benchmark-adjusted returns as the dependent variable. 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 noisy 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, 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 particularly visible. It releases information about 100 companies on a single day, and attracts substantial attention given its perceived accuracy. It is therefore more salient than not only other measures of satisfaction 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 and event-study window, 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 (thus allowing testing of the human relations theories) and highly public (enabling testing of the market valuation of intangibles and returns available to investors).

[9]Similarly, in recent employee-centric theories of the firm such as Rajan and Zingales (1998) and Lustig, Syverson and van Nieuwerburgh (2007), the firm must ensure that key workers do not leave.

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; in addition, they 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. A contemporaneous working paper by Faleye and Trahan (2006) uses the list for 1998-2004 when published by *Fortune*. 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.[10] Simon and DeVaro (2006) study customer satisfaction and Fulmer, Gerhart and Scott (2003) examine employee welfare. Such results may be 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.

# 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.[11] This survey covers topics such as attitudes toward management, job satisfaction, fairness in the workplace, 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

[10] Filbeck and Preece (2003) examine the relationship between inclusion in the 1998 *Fortune* list and stock returns from 1987-1999. Interpretations may therefore be affected by reverse causality: employee satisfaction may be caused by strong past stock returns. They also find that Best Companies do not outperform size- and industry-matched benchmarks. Fuller et al. (2003) find that 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. Anginer, Fisher and Statman (2007) investigate the returns to another *Fortune* list, "America's Most Admired Companies." This list is not a measure of employee satisfaction or any other fundamental, but investors' views of the firms and thus more likely to capture irrational exuberance. Indeed, they find negative long-horizon returns to firms in this list.

[11] 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.

comes from the Institute's evaluation of factors such as a company's demographic makeup, pay and benefits programs, and the firm's response to a series of open-ended questions about its 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).[12] 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. 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 advantage of studying stock returns (rather than accounting profits) as expected future returns are zero, and thus uncorrelated with the decision to apply, in the absence of private information. If CEOs do have 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 lower the returns to the companies in the list.[13]

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 contents of the list 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 listed 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 is repetition is to be expected as employee satisfaction is likely persistent.

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, both equal- and value-weighted, from April 1984 to February 1993. 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.

[12] 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.

[13] Similarly, even though the Best Companies survey is arguably the most accurate and widely respected 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.

This process is repeated until January 2006 and I call this "Portfolio I".[14] 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 therefore feature in Portfolio I from 1984-1993, since four firms in the initial list became public over that period. 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, or firms that go public mid-way through the year (to ensure that IPO underpricing is not driving the results).

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. 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.

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 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.

$\alpha$ 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. Note that, while I control for all of the standard risk factors used in the

[14] If a firm de-lists, its delisting return is used in its final 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.

literature, I cannot rule out the argument that any non-zero alpha results from a missing, yet-to-be-discovered risk factor. Standard errors are calculated using Newey-West (1987), which allows for $\varepsilon_{it}$ to be heteroskedastic and serially correlated.

The returns $R_{it}$ are calculated over three different benchmarks. The first is the risk-free rate, 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 operated in industries that enjoyed strong returns. It also controls for any industry-specific risks not captured in the systematic risk factors of the Carhart (1997) model. The third is the characteristics-adjusted benchmark used by Daniel et al. (1997) and Wermers (2004)[15], 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)).

## 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 corporate performance, 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 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 publicly available and therefore potentially tradable by any investor, time constraints prevent investors from analyzing all potentially value-relevant information. Thus, non-salient information may not be noticed by market participants (e.g. Hou and Moskowitz (2005)). 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 need 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 even more visible than the intangibles studied by earlier studies. If the mispricing of intangibles, documented by prior research, stems predominantly from 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,

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

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.

## 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 top 10% and bottom 10% of returns by portfolio and by month.[16] Table 5 illustrates the four-factor alphas for the winsorized portfolios, for both 1984-2005 and the *Fortune* subperiod. The alphas remain significant in the vast majority of specifications; in some specifications the statistical significance increases as winsorization reduces standard errors. 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:

$$R_{it} = a_t + b_t X_{it} + c_t Z_{it} + \varepsilon_{it} \tag{2}$$

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 firm characteristics included in $Z_{it}$ are taken from Brennan, Chordia and Subrahmanyam (1998). These are as follows:

$SIZE$ 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.[17] This variable is recalculated each

[16] For example, the returns of the top decile of firms in Portfolio I in June 2000 are replaced by the 90th percentile return among all firms in Portfolio I in June 2000, and similarly for the bottom decile.

[17] To calculate book equity, I start with stockholders' equity (Compustat item 216) if it is not missing. If it is missing, I use total common equity (item 60) plus preferred stock par value (item 130) if both of these are present. Otherwise, I use total assets (item 6) minus total liabilities (item 181), if both are present. To obtain book equity, I subtract from shareholders' equity the preferred stock value, using redemption value (item 56), liquidating value (item 10), or carrying value (item 130), in that order, as available. Finally, if not missing, I

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 results are presented in Table 6. For both the unadjusted and industry-adjusted specifications, list inclusion is associated with an abnormal return of over 40 basis points for the full sample, and an even higher return in the *Fortune* subperiod. This suggests that the Best Companies' outperformance does not result from their correlation with the observable characteristics studied by Brennan et al. (1998).[18]

## 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 lists.

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 exhibited superior satisfaction than the average firm (e.g. now be in the Top 150).

Conversely, 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

add in balance sheet deferred taxes (item 35) and subtract the FASB106 adjustment (item 330).

[18] The results stay significant when adding the Gompers, Ishii and Metrick (2003) index as a control. The index has very low correlation with the Best Companies dummy; the average value of the index is 9.2 for the Best Companies and 9.4 for all other companies (compard to a standard deviation of 2.7). Since the index is only available from 1990, Table 5 presents the results without the index.

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. 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 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.[19]

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 at all times capitalizes the value of satisfaction, the removal of a company from the list signals that this variable has declined from previous market expectations. Therefore, if satisfaction is positively correlated with performance, Portfolio IV should earn negative returns.

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 abnormal 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 and that the earlier results are attributable to the 224 firms included in the Best Companies list across the entire time period, rather than only the 74 firms that featured in the first list. These results offer a potential explanation for 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

[19] Similarly, 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.

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. There are a number of potential explanations for this association:

Hypothesis A: Employee satisfaction causes superior future stock returns.

Hypothesis B: Employee satisfaction is irrelevant for shareholder value, and the higher returns stemmed from irrational market reactions or demand from SRI funds.

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

Hypothesis D: 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 improved accounting performance, 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.

As stated in the introduction, stock returns have several advantages as a dependent variable: they capture all of the potential channels through which satisfaction can affect shareholder value, allow for risk controls, and attenuate concerns of reverse causality. However, the stock price has some limitations. While it should incorporate all mechanisms that affect fundamental value, it may also be influenced by factors unrelated to fundamental value, such as irrational speculation. 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 believed that a relationship exists and reacted irrationally when the list was first featured in *Fortune*, or the list created publicity for the featured companies. Gilbert et al. (2008) find that the market reacts to a meaningless macroeconomic variable that investors erroneously pay attention to, and Huberman and Regev (2001) document a firm-level case of reaction to non-information. However, both papers find the irrational reactions are concentrated immediately after the announcement of irrelevant news. This is another advantage of excluding the event-study window from the return calculation.

A similar explanation is that *Fortune* inclusion led to buying by SRI funds merely because it allows the stocks to pass SRI screens. Such purchases may take time to be executed and need

not occur within the month of list announcement. However, these trades are likely to occur within one year. In unreported results I find that Portfolio II slightly *underperforms* in 1998 and outperforms in every year from 1999-2005, suggesting the results are not driven by inflows from SRI funds or the publicity resulting from list inclusion. (The same time-series result is true for Portfolios I and III.) Similarly, starting Portfolio II in 1999 (or 1985) also leads to economically and statistically significant returns.[20] In addition, the mild outperformance of the dropped companies in Portfolio IV suggests that the abnormal returns of Portfolios I-III do not stem purely from a publicity effect.

In addition to contradicting arguments that the abnormal returns resulted purely from irrationality, I can investigate whether they stemmed partly from fundamentals. I therefore investigate the accounting performance of the Best Companies. 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. Moreover, particularly in the modern firm, the main immediate benefit of superior satisfaction may be in difficult-to-measure outputs such as product quality or the strength of client relationships, which only manifest in accounting performance in the long-term. The strength or weakness of an accounting channel does not preclude a link through other mechanisms, but I study accounting performance as it is the most measurable.

Since superior profits 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:

$$Surprise_{it} = a_t + b_t X_{it} + c_t Z_{it} + \varepsilon_{it} \tag{3}$$

*Surprise* is the 1- or 2-year earnings surprise, or the long-term growth surprise. The 1-year earnings surprise is the actual EPS announcement 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. 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. All right-hand side variables are calculated as of the same date as the I/B/E/S consensus forecast. $X_{it}$ is a dummy variable for whether the firm was in the

[20] An alternative hypothesis is that the market erroneously reacts negatively to list inclusion under the belief that employee satisfaction is wasteful expenditure, and the long-run outperformance is correction of this temporary underpricing. This hypothesis is contradicted by the slightly positive event-study returns documented by Faleye and Trahan (2006), which I also confirm in unreported results.

most recent Best Companies list. $Z_{it}$ is a vector of control variables, the log book-to-market ratio and the log market capitalization.

The results are shown in Table 8. The 1- and 2-year earnings surprises are significantly positively 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. 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.

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 event-study 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.

Since the setting is not a natural experiment with random assignment of employee satisfaction to firms, we cannot make strong claims about causality from satisfaction to shareholder returns. Hypothesis C 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 impounded in the current stock price, and so profitable firms should not outperform going forwards. However, if employees have private information about their firm's future stock returns, those with positive information may report higher satisfaction today.[21] (This direction is not unambiguous,

[21] Note that the Best Companies survey does not simply ask employees the general question of rating their

since employees that predict higher future returns will perceive the stock as undervalued today, potentially reducing satisfaction). This hypothesis cannot be ruled out directly since it will be valid regardless of the measure of employee satisfaction used – *any* thorough measure of satisfaction (rather than just an observation of policies or outcomes) must come from workers. However, it can be evaluated indirectly by using prior research on employee trading behavior. 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. Both of these studies are inconsistent with the notion that employees have superior information about future stock returns.

Hypothesis D 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 8 ruled out correlation with 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)).[22]

If the results were entirely driven by a combination of Hypotheses C and D, 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 only contains 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. While the mild outperformance of Portfolio IV in most specifications suggests that the results extend to moderate satisfaction

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, diversity) which aim to specifically target satisfaction rather than optimism.

[22] 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.

levels, this interpretation requires the assumption that firms that drop outside the Top 100 remain above-average. In addition, while the paper documents 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.

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, the effects of satisfaction (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. Finally, since employee satisfaction is particularly difficult to measure accurately, 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 survey. This suggests that the market may have even greater difficulty in valuing other forms of intangible investment, and provides empirical support for theoretical models of managerial myopia. In addition, the results imply that an SRI screen based on employee welfare may improve investment performance.

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 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 | 14 | 14 |
| 2003 | 61 | 14 | 8 |
| 2004 | 57 | 11 | 15 |
| 2005 | 58 | 11 | 10 |

**Table 2: Summary Characteristics**

This table illustrates 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 1996 (1982), missing for companies that were not traded in 1996 (1982), 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 ($) | 74 | 37.43 | 33.88 | 19.64 | 5.91 | 113.75 |
| Dividend yield (%) | 70 | 2.74 | 2.35 | 2.29 | 0 | 10.11 |
| Market/book | 70 | 2.33 | 1.91 | 1.85 | 0.01 | 9.78 |
| Intangibles as a % of total assets (%) | 70 | 0.92 | 0 | 2.13 | 0 | 8.38 |
| **1998 list** | | | | | | |
| Market Cap ($ bn) | 69 | 21.51 | 5.03 | 39.78 | 0.03 | 204.59 |
| Price ($) | 69 | 50.99 | 43.39 | 25.48 | 5.38 | 127.56 |
| Dividend yield (%) | 62 | 1.19 | 1.10 | 1.19 | 0 | 5.97 |
| Market/book | 61 | 4.86 | 3.92 | 4.86 | -3.14 | 29.10 |
| Intangibles as a % of total assets (%) | 62 | 5.01 | 0.01 | 7.50 | 0 | 28.88 |

**Table 3: Risk-Adjusted Returns**

This table documents the results of monthly regressions of portfolio returns on the four Carhart (1997) factors, $MKT$, $HML$, $SMB$, and $MOM$. The regression is specified in equation (1). 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)** | | | |
| $\alpha$ | 0.34 | 0.22 | 0.25 |
| | (3.49***) | (2.97***) | (2.97***) |
| $\beta_{MKT}$ | 1.11 | 0.07 | 0.12 |
| | (38.08***) | (3.41***) | (4.74***) |
| $\beta_{HML}$ | 0.03 | 0.04 | 0.02 |
| | (0.64) | (1.23) | (0.61) |
| $\beta_{SMB}$ | 0.15 | 0.14 | 0.03 |
| | (3.08***) | (4.45***) | (0.80) |
| $\beta_{MOM}$ | -0.13 | -0.04 | -0.08 |
| | (4.76***) | (2.20**) | (3.97***) |
| **Panel B (value-weighted)** | | | |
| $\alpha$ | 0.34 | 0.20 | 0.19 |
| | (3.03***) | (2.70***) | (2.63***) |
| $\beta_{MKT}$ | 0.95 | -0.03 | -0.01 |
| | (30.29***) | (1.30) | (0.27) |
| $\beta_{HML}$ | -0.46 | -0.09 | -0.15 |
| | (8.13***) | (2.39**) | (3.77***) |
| $\beta_{SMB}$ | -0.24 | -0.25 | -0.04 |
| | (4.77***) | (7.23***) | (1.27) |
| $\beta_{MOM}$ | -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**

This table documents the results of monthly regressions of portfolio returns on the four Carhart (1997) factors, $MKT$, $HML$, $SMB$, and $MOM$. The regression is specified in equation (1). 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)** | | | |
| $\alpha$ | 0.64 | 0.46 | 0.57 |
| | (3.70***) | (3.28***) | (4.08***) |
| **Panel B (value-weighted)** | | | |
| $\alpha$ | 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**

This table documents the results of monthly regressions of portfolio returns on the four Carhart (1997) factors, $MKT$, $HML$, $SMB$, and $MOM$. The regression is specified in equation (1). For each portfolio and for each month, the returns of the constituent stocks are winsorized at the 10% and 90% levels. 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.

| | 1984-2005: excess returns over | | | 1998-2005: excess returns over | | |
|---|---|---|---|---|---|---|
| | Risk-free | Industry | Characteristics | Risk-free | Industry | Characteristics |
| **Panel A (equal-weighted)** | | | | | | |
| $\alpha$ | 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)** | | | | | | |
| $\alpha$ | 0.30 | 0.14 | 0.14 | 0.47 | 0.30 | 0.33 |
| | (3.49***) | (2.02**) | (2.02**) | (2.25**) | (2.23**) | (2.36**) |

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

**Table 6: Characteristics Regressions**

This table documents the results of monthly regressions of individual stock returns on a dummy variable for whether the firm was in the most recent Best Companies list 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 February 1998-January 2006.

| | 1984-2005 | | 1998-2005 | |
|---|---|---|---|---|
| | Raw | Industry-Adjusted | Raw | Industry-Adjusted |
| Best Company | 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**) |

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

**Table 7: Alternative Portfolio Definitions**

This table documents the results of monthly regressions of the returns of Portfolios II, III and IV on the four Carhart (1997) factors, $MKT$, $HML$, $SMB$, and $MOM$. The regression is specified in equation (1). 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)** | | | | | | |
| $\alpha$, 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***) |
| $\alpha$, 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***) |
| $\alpha$, 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)** | | | | | | |
| $\alpha$, 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*) |
| $\alpha$, 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*) |
| $\alpha$, 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) |

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

**Table 8: Earnings Surprises**

This table reports the results of regressions of earnings surprises on a Best Company dummy variable and controls (log book-to-market and log market equity.) 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. at the same time as the I/B/E/S median forecast. Panel A (B) contains the results for 1- (2-) year earnings surprises; the coefficients are multiplied by 1,000 for clarity. Panel C contains the results for long-term growth surprises. 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)** | | | |
|---|---|---|---|
| Best Company (x 1000) | 3.92 | 3.87 | -0.12 |
| | (5.74***) | (5.66***) | (0.18) |
| Log (book-to-market) | | -0.17 | 0.58 |
| | | (1.63) | (5.58***) |
| Log (market equity) | | | 1.69 |
| | | | (28.60***) |
| # obs | 70,266 | 65,530 | 65,530 |
| **Panel B (2-year earnings)** | | | |
| Best Company | 3.95 | 4.48 | 0.64 |
| | (4.80***) | (5.43***) | (0.76) |
| Log (book-to-market) | | 1.34 | 2.12 |
| | | (9.55***) | (14.70***) |
| Log (market equity) | | | 1.84 |
| | | | (22.06***) |
| # obs | 47,182 | 44,672 | 44,672 |
| **Panel C (long-term growth)** | | | |
| Best Company | 2.26 | 3.32 | 1.28 |
| | (4.11***) | (6.05***) | (2.28**) |
| Log (book-to-market) | | 2.76 | 3.25 |
| | | (25.72***) | (29.32***) |
| Log (market equity) | | | 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**

This table reports the (-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 Best Company dummy variable and controls (log book-to-market and log market equity.) 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)** | | | |
|---|---|---|---|
| Best Company | 0.30 | 0.39 | 0.31 |
| | (2.40**) | (3.15***) | (2.45**) |
| Log (book-to-market) | | 0.24 | 0.26 |
| | | (12.32***) | (12.72***) |
| Log (market equity) | | | 0.03 |
| | | | (3.14***) |
| # obs | 255,075 | 228,527 | 228,527 |

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