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Cover Page Footnote

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Employee-Friendly Practices and Innovation

November 12, 2021

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Abstract: We examine the inter-relationships among employee-friendly policies (EFP), innovation through R&D investment, and firm value. We hypothesize that firms with higher levels of innovation and entrepreneurial spirit are more likely to utilize EFP. Furthermore, we speculate that the value-EFP association is more pronounced in firms with high R&D intensity. Consistent with these assertions, we find that EFP is significantly and positively related to R&D investment and the number of patents. EFP is also associated with increased firm value at high levels of R&D investment and high numbers of patents. Furthermore, we find that firms investing more in R&D are more likely to treat their workers favorably and that markets react positively when such firms are recognized for their favorable treatment of employees. Our analysis, based on a large sample of U.S.-based firms and two different measures of employee-friendly policies, supports the assertion that EFP based on sustainable innovation and entrepreneurial mindsets contributes to value creation.

Keywords; Employee-friendly practices; Human capital; R&D investment; Sustainable innovation; Entrepreneurial spirit; Value creation theory

JEL Codes: G30, G39, 032

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1. INTRODUCTION

While employee-friendly practices provide an obvious social benefit, the question of their relationship to corporate financial performance is still of significant interest to finance scholars. For example, were employee-friendly practices found to contribute to the creation of value, rather than simply to further social goals, that would provide an economic justification for firms' investment in the well-being of their employees (Bae, Kang, and Wang, 2011; Edmans, 2011; Kang and Kim, 2020). Although employees' human capital is central to firm financial success (Agle, Mitchell, and Sonnenfeld, 1999, Faleye and Trahan, 2011; Kovacs, Carnabuci, and Wezel (2021), the question of a direct relationship between employee-friendly practices and corporate financial performance remains a hotly debated issue (Kruger, 2015; Riley, Michael, and Mahony, 2017).

Human capital theory (Becker, 1964; Riley, Michael, and Mahony, 2017; Acabbi, 2020) posits that investments in employees will often generate positive economic value because they benefit the knowledge and skills of these employees, thereby improving employee productivity. Existing research supports the assertion that such investments lead to superior financial performance, especially when the human capital is firm-specific and accumulated human capital (Riley, Michael, and Mahony, 2017; Acabbi, 2020). Further, the resource-based approach suggests that firms are willing to make investments in firm-specific human capital. Because these intangible investments' tacit and multifaceted nature makes imitability difficult (Lippman and Rumelt, 1982), empirical research finds firm-specific human capital's importance (e.g., Hatch and Dyer, 2004). Human capital investments are often considered significant complements to knowledge gained through R&D, as employees may need to skillfully interact with advanced technology and operation for company success and for maintaining entrepreneurial spirit (Kor, 2006; Riley et al.,

2017; Acabbi, 2020).

Still relatively unexplored is the link between firm-specific human capital investment and employee-friendly practices, without which highly skilled but unhappy employees may be more likely to leave their jobs, preventing firms from realizing returns on their investment. Moreover, the argument linking employee-friendly policies to increased firm value and improved productivity may be spurious: it is possible that high-performing firms simply have sufficient slack resources to invest in employee-friendly policies, whereas firms with relatively weaker financial records lack such resources, so that the causal relationship actually stems from performance to employee-friendly policies. Alternatively, underperforming managers may treat workers better in an attempt to gain support and legitimacy (e.g., through labor union) to forestall problematic relationships (Pagano and Volpin, 2005; Cronqvist et al., 2009); in this case, poor performance might spur, rather than result from, the implementation of employee-friendly policies. More investigation into the directionality of this relationship is therefore merited.

This paper addresses these gaps by investigating the link between employee-friendly practices, entrepreneurial innovation spurred by research and development (R&D), and firm value. More specifically, we predict a positive relationship between firm-specific innovation through R&D investment and the likelihood of adopting employee-friendly practices, as well as a positive effect between this relationship and firm value creation. These questions generate insight into the process by which innovative firms might strategically initiate worker-friendly corporate atmospheres. Concomitantly, we expect firms that depend on human capital to spur innovation will generate more value from adopting employee-friendly practices than those less dependent on innovative and entrepreneurial spirit.

Incorporating R&D investment into the study of the links between employee-friendly policies and firm value also allows us to mitigate, at least partially, the causality problem. We draw on the innovation literature (e.g., Griliches, 1979, 1981; Hall, 1993, Eberhart, Maxwell, and Siddique, 2004) and the stakeholder theory-based value creation literature (e.g., Donaldson and Preston (1995) for a review of stakeholder theory) to identify employee-friendly policies as a critical element of firm value creation. If financial performance determined investment in employee-friendly policies, we would observe a positive correlation between them, independent of R&D intensity. Similarly, if employee-friendly policies precede improved firm performance, we would observe a stronger correlation between them among high R&D intensity firms than among low R&D intensity firms. Therefore, we posit that R&D investment is critical to explaining differences in the relationship between employee-friendly policies and firm value implementation.

Consistent with the value creation theory, we find that firms that invest more in R&D engage more in employee-friendly initiatives and activities than firms with lower R&D investments. Furthermore, we find that the relationship between employee-friendly practices and firm value is positive for high-R&D firms but not for low-R&D firms. These results indicate that R&D investment encourages firms to invest more in employee-friendly practices and provide evidence that the causation runs from employee treatment to firm performance. Our results remain consistent when we control for corporate governance. Based on *Fortune*'s "100 Best Companies to Work For" list as an alternative measure of employee friendliness, we find that firms with higher R&D expenditures are more likely to be included in the *Fortune* list, which leads investors to view innovation efforts more positively. In contrast to Chang and Jo's (2019) finding that product market competition incentivizes firms to treat their employees well, we argue that R&D

investment induces firms to invest in employee-friendly initiatives in the hopes of achieving competitive advantage through sustainable innovation and entrepreneurial mindset.

Our study contributes to the literature within several distinct domains. First, we find that R&D investment is an essential factor that motivates firms to improve employee-friendly practices. Employees are one of the most significant stakeholders of a company, and investments in programs that benefit employees are seen as value-adding activities. Our findings provide empirical evidence for the value creation theory and, to a certain extent, for the stakeholder theory of the firm. Second, with the help of R&D investment, this research sheds light on conflicting findings reported in the literature by mitigating the causality issue, at least partially, between labor policies and firm value. Third, it enhances our understanding of the importance of human capital in modern corporations.

The rest of the paper is organized as follows. The literature on employee-friendly practices and R&D investment is reviewed and our hypotheses are developed in Section 2. Data and research methodology are discussed in Section 3. Descriptive statistics and multivariate results are reported in Section 4. The conclusion is presented in Section 5.

2. THEORY AND HYPOTHESES

Many firms invest in programs that benefit employees beyond basic compensation and benefits packages. For example, employee-friendly initiatives may include profit-sharing plans, bereavement leave, help to offset the cost of elder care, and the provision of health insurance to cover unmarried domestic partners. Firms implement employee-friendly initiatives because they can improve employee productivity (e.g., Huselid, 1995) and enhance the quality of work-life in a

company's plants, work life innovations, and the use of cooperative labor-management teams (Katz et al., 1987; Michael, and Mahony, 2017).

Nevertheless, the benefit of employee-friendly practices on corporate financial performance is a hotly debated topic between scholars in two theoretical camps: value creation theory and agency theory. Under the value creation theory, human capital is a critical organizational asset, and employees are one of the most important stakeholders to a firm's competitiveness and success (Pfeffer, 1994; Zingales, 2000).[1] We consider that higher R&D investment might motivate managers to promote innovation and firm productivity by enacting employee-friendly practices. Proponents of this theory believe that employee-friendly programs improve a firm's ability to recruit, retain, and motivate its employees (Edmans, 2011). These programs also attract socially responsible consumers and improve a firm's overall reputation. The value creation theory thus predicts that employee-friendly practices will positively affect expected future financial performance and increase shareholder wealth. In support of this theory, many studies have documented evidence of a relationship between employee-friendly company initiatives and favorable financial performance (e.g., Bae et al., 2011; Edmans, 2011; Ertugrul, 2013; Faleye and Trahan, 2011; Kang and Kim, 2020).

According to the value creation theory, human capital is a critical organizational asset, and employees are among the primary sources of ability to compete and succeed (Pfeffer, 1994; Wright & McMahan, 1992; Zingales, 2000). Higher R&D investment might motivate managers with an entrepreneurial mindset to enact employee-friendly policies to promote innovation and firm productivity. Such initiatives improve a firm's ability to recruit, motivate, and retain

[1] Pfeffer (1994) contends that creating a high-performance work force is crucial in competitive industries, because traditional sources of competitive advantage such as production technology, access to capital, and economies of scale have become increasingly available to all firms.

employees and enhance firm reputation. Consistent with the value creation theory, employee-friendly practices are associated with increased financial performance and shareholder wealth. Extant research supports the assertion that employee-friendly practices are associated with improved firm financial performance consistent with this account (e.g., Bae et al., 2011; Edmans, 2011; Ertugrul, 2013; Faleye & Trahan, 2011; Kang & Kim, 2020).

Friedman (1970), in contrast, argues that the primary corporate goal is to generate profits. Since employee-friendly initiatives shift value away from shareholders, they negatively impact long-term firm financial performance. The principal-agent theory (Jensen & Meckling, 1976) similarly asserts that managers may overinvest in employees to build their managerial reputations, a private benefit that shifts value away from shareholders. Cronqvist et al. (2009) likewise document that managers may overpay labor to gain private benefits including less adversarial wage negotiations and better social relationships with employees. Faleye et al.'s (2006) finding that labor-controlled firms produce lower labor productivity – and overall productivity – suggests that employee ownership does not necessarily align employee and shareholder interests. Furthermore, Atanassov and Kim (2009) find that firms, where management and workers are strongly aligned, are less likely to fire employees or managers, even when firm financial performance suffers. In sum, according to agency theory, employee-friendly initiatives are likely to compromise firm performance and shareholder wealth.

2.1 Employee-Friendly Practices and Firm Performance

A number of studies have examined the relationship between companies' employee-friendly initiatives and certain financial variables. Filbeck and Preece (2003) find that firms named to the Fortune list of "Best 100 Companies to Work For" have positive abnormal returns at the

announcement. Faleye and Trahan (2011) find that stock markets respond positively to announcements of labor-friendly policies and that labor-friendly firms have superior performance in long-run stock returns and operating results. Along the same lines, Edmans (2011) finds that employee satisfaction causes more robust corporate performance through improved recruitment, retention, and motivation. Further, Ertugrul (2013) examines whether employee-friendly practices of an acquiring firm affect acquisition performance and find a positive relationship between employee-friendly practices of the acquirer and long-term post-acquisition performance. Extending this research to firm risk tolerance, Bae, Kang, and Wang (2011) find that firms with a higher score on the Employee Treatment Index (i.e., firms that adopt more employee-friendly policies) maintain lower leverage.

The question that arises in light of these extensive findings is why managers fail to consider the positive impact that employee-friendly programs have on firm performance? In a study focused on the positive link between job satisfaction and firm value as determined by the stock market, Edmans (2011) found that although employee satisfaction is linked to improved corporate performance, the stock market does not immediately register the value of employee satisfaction. He points out that since managers are evaluated on short-term performance results, they do not invest in employee-friendly practices that enhance job satisfaction because such investments have no payoff in the short term.

In contrast, we can ask why, if employee-friendly practices are not generally motivated by firm performance, are any managers motivated to adopt them? What is missing from this calculation that previous studies have overlooked? As noted earlier, previous research has demonstrated that innovation and entrepreneurial incentives influence corporate decision-making

through R&D investment. Thus, we speculate that firms are motivated to implement employee welfare policies because such investments enhance firm innovative and entrepreneurial mindset.

2.2 Employee-Friendly Practices and R&D Investment

We believe that the real value of investment in employee-friendly practices is inexorably tied to the need for innovation based on R&D. High R&D intensity is often taken as an indication of the importance of knowledge and technology in a firm or industry (Helfat, 1994). R&D is also considered a form of investment in "technical" capital that results in knowledge enhancement, leading to product and process innovation. Firms can gain significant and enduring competitive advantage and other lasting benefits through R&D investment (Griliches, 1979; Gu, 2016; Liao and Lin, 2017). Gu (2016) has suggested that R&D-intensive firms tend to be riskier and earn higher expected returns than R&D-weak firms, particularly in competitive industries, though neglecting the relationship between R&D intensity and employee-friendly practices.

Recent studies have provided evidence that employee-friendly practices influence corporate innovation performance through patents. For example, Chen, Chen, Hsu, and Podolski (2016) show that firms with better employee treatment policies generate more and better patents by improving employee satisfaction and teamwork. Similarly, Chen, Leung, and Evans (2016) suggest that firms with employee-friendly workplaces achieve greater innovative success. Chang, Fu, Low, and Zhang (2015) further find that monetary incentives such as stock option plans for lower-level employees foster innovation.

Unlike the literature of employee treatment causing innovation and patents, our intuition focuses on the reverse-causal side of innovation causing employee-friendly practices. Specifically, R&D-intensive firms depend on highly skilled employees because of the technical expertise

required to acquire the firm-specific – potentially immense but quite uncertain – payoffs associated with R&D investment. Therefore, high R&D firms must invest in human capital to maintain and improve their innovative capacity and entrepreneurial spirit. Thus, we claim that they have strong incentives to treat employees well through practices like encouraging employee involvement in decision making, providing human capital development through training and development programs, and resolving various employee "controversy" concerns. Moreover, these types of human capital investments provide complements to knowledge gained through R&D, enabling employees at all levels to interact skillfully with advanced technology and conduct advanced operating procedures (Kor, 2006; Kor & Mahoney, 2005; Riley et al., 2017).

Investment in employee-friendly practices, therefore, is increasingly pivotal in a firm with high R&D intensity. Effective human capital investments, which enhance employees' knowledge and skills, increase the likelihood of choosing higher-margin R&D projects from a portfolio, raising the possibility of creating sustainable competitive advantage (Hatch and Dyer, 2004; Kor, 2006; Kor & Mahoney, 2005; Riley et al., 2017). This *sustainable innovation hypothesis* thus predicts that firms with higher R&D intensity invest more in employee-friendly practices. In contrast, firms that invest heavily in R&D are high-growth firms with relatively low free cash flows and internal reserves. Jensen's (1986) free cash flow theory argues that these firms have fewer resources to invest in employee benefits wastefully. So, firms with higher R&D intensity are less likely to invest in employee-friendly practices. Based on the above arguments, we suggest the following:

> ***H1****: Firms with higher levels of R&D investment are more likely to utilize employee-friendly policies.*

2.3 Employee-Friendly Practices, R&D Investments, and Firm Value

R&D-driven innovation benefits firms by generating barriers to entry that allow them to achieve economies of scale or product differentiation (Porter, 1979), thus generating sustainable competitive advantage. Following the seminal work by Griliches (1981), several papers have examined firms' productivity from R&D investments to demonstrate the positive relationship between R&D investments and firm value (e.g., Cockburn and Griliches, 1988; Jaffe, 1986). Recent studies have similarly attempted to link employee-friendly practices to long-term competitive advantage and firm value as well (e.g., Edmans, 2011; Ertugrul, 2013; Edmans, Li, and Zhang, 2017). However, observers note that the advantages of employee-friendly programs are often ignored (e.g., Pfeffer and Veiga, 1999). This is at least in part because financial markets fail to register their value, as employee-friendly practices are intangible and cannot be physically observed or easily measured, and their benefits take as long as four to five years to become apparent (Edmans, 2011).

Nevertheless, Kruger (2015) finds that markets react negatively to negative news related to employee-friendly practices, suggesting that markets recognize the value of treating employees well. To the extent that R&D investment determines the degree of employee-friendly practices, it is likely that the two together should also impact firm value. The value creation theory points to the importance of human capital as an organizational asset. According to the sustainable innovation hypothesis, R&D investment incentivizes firms to invest in more employee-friendly practices. Together, firms may be able to generate value through sustainable innovation and subsequent increases in competitiveness.

If high R&D firms keep poor employee-friendly practices, they become less innovative and consequently are valued less. However, poor employee-friendly practices are less damaging for low R&D firms, in terms of firm value. This is because, in those organizations, value creation

through human capital is not as critical as in high R&D firms. In contrast, agency theory predicts that an over-investment in employee-friendly practices might be a waste and detrimental to shareholder value in those firms (Friedman, 1970; Jensen and Meckling, 1976; Pagano & Volpin, 2005; Cronqvist et al., 2009; Masulis and Reza, 2015). Thus, we postulate:

> ***H2****: The positive firm value-employee-friendly policies association is more pronounced in firms with high R&D intensity than firms with low R&D intensity.*

3. DATA, MEASUREMENT, AND RESEARCH METHODOLOGY

3.1 Data and Measurement of Employee-Friendly Practices

We used the MSCI Kinder, Lydenberg, and Domini (KLD) Stats database from 1991 to 2013 to build our sample. After eliminating observations with incomplete data in Compustat and the Center for Research in Security Prices (CRSP), we eliminated all firms in highly regulated industries like utilities and finance, giving us a final sample of 3,590 firms and 22,005 firm-year. The KLD database has been used to measure employee-friendly policies in several ways (e.g., Bae et al., 2011; Faleye & Trahan, 2011; Landier et al., 2009; Verwijmeren & Derwall, 2010); we follow Verwijmeren and Derwall's (2010) protocol.

KLD gives each company a rating on each of seven strengths and five concerns in its employee relations ratings. Specifically, the strength ratings are based on: the quality of a company's union relations, cash profit sharing, employee involvement in decision making or stock ownership, human capital development by training and development programs, retirement benefits, a healthy and safe workplace, and "other" strengths. The concerns ratings are based on: having notably poor union relations, willful violations of employee health and safety standards, significant reductions in the company's workforce in recent years, having an inadequate retirement benefits program, and other employee "controversy" concerns, which generally consist of human

rights violations pertaining to employees. The KLD ratings consist of a 0/1 value assigned to each strength and each concern factor. An employee friendliness index (EFI) is constructed by summing these ratings, with negative weight for weakness categories. A higher EFI indicates better employee-friendly practices.

Consistent with earlier studies (Verwijmeren & Derwall, 2010; Kang & Kim, 2020), we leave out workforce reductions from our analysis because they are negatively correlated to other categories of employee concerns. Our results remain similar if we include the workforce reductions category.

3.2 Research Methodology

We use ordinary least squares (OLS) regression models with pooled observations across both firms and time to test our hypotheses. In particular, we regress *EFI* on *R&D*, measured by R&D expenditure normalized by total assets to examine H1 of the relationship between employee-friendly policies and R&D intensity. We estimate the following equation to test our predictions:

$$EFI_{it} = \beta_0 + \beta_1 R\&D_{it} + \gamma X_{it} + \lambda_t + \varepsilon_{it}, \quad (1)$$

where $R\&D_{it}$ is R&D intensity, measured by R&D expenditure normalized by total assets. X_{it} is a vector of time-variant firm-specific control variables known to be important in the literature. λ_t is year dummy and ε_{it} is the error term. Following Landier et al. (2009) and Faleye and Trahan (2011), our control variables include financial leverage, capital expenditure, sales growth, profitability (return on assets [ROA]), stock return volatility, firm age, and firm size. *Leverage* is long-term debt divided by total assets. *ROA* is defined as earnings before interest, taxes, depreciation, and amortization (EBITDA) divided by total assets. *Capital expenditure* is normalized by total assets. *Sales growth* is computed as a geometric mean of change in sales over

year t-3 to t. *Return volatility* is the standard deviation of daily stock return during the year. *Firm age* is the number of years listed in CRSP. We also control product market competition following Gu (2016) and Chang and Jo (2019), measured by the Herfindahl-Herschman index (HHI).[2] All financial variables are measured at fiscal year-end. A summary of variable definitions is provided in the Appendix. The prediction of $\beta_1 > 0$, which is consistent with the sustainable innovation theory, captures the idea that firms treat their employees better to maintain competitive advantage in high R&D firms. If β_1 is negative, the result supports the free cash flow theory prediction that managers are forced to commit fewer resources to employee-friendly programs when faced with higher R&D investment.

To test the effects of employee-friendly practices and R&D investment on firm value (Tobin's q), we estimate the following equation:

$$Tobin's\ q_{it} = \beta_0 + \beta_1\ EFI_{it} + \beta_2\ D(High\ R\&D)_{it} + \beta_3\ EFI_{it} * D(High\ R\&D) + \gamma\ X_{it} + \lambda_t + \varepsilon_{it}\ , \quad (2)$$

where *D(High R&D)* is a dummy variable indicating R&D higher than the sample median. X_{it} is a vector of time-variant firm-specific control variables, including financial leverage, capital expenditure, sales growth, ROA, product market competition, return volatility, firm age, and firm size. λ_t is year dummy and ε_{it} is the error term. *Tobin's q* is measured by the market value of equity plus book value of debt, divided by the book value of total assets, obtained from *Compustat*. The prediction of $\beta_3 > 0$ is consistent with the value creation theory, which implies that firms investing more in R&D become more innovative and create additional value through more investments in employee-friendly practices, resulting in higher firm value. Conversely, the prediction of $\beta_3 < 0$ is consistent with the agency theory, which implies that engaging more in employee-friendly policies leads to a lower firm value, when R&D investment is high.

[2] HHI is computed as the sum of squared market shares, using firms' sales from Compustat within the two-digit SIC code. Note that the higher the HHI index, the higher the concentration (i.e., the lower the competition).

To provide additional evidence on the value creation theory, we perform an event study using the list of Fortune's "100 Best Companies to Work For." We examine the market reaction to the inclusion in the Fortune list to test whether investors value employee-friendly policies positively, especially for R&D intensive firms. This event study also provides a test of the causal relationship between employee relations and firm value. First, abnormal stock returns at the inclusion announcement are estimated using the market model method described in Brown and Warner (1985). Finding a positive mean abnormal return would be supportive of the view that employee-friendly practices increase shareholder value. Then we estimate the following cross-sectional regression:

$$AR_{it} = \beta_0 + \beta_1 R\&D_{it} + \gamma X_{it} + \varepsilon_{it}\,, \qquad (3)$$

where AR_{it} is abnormal return. X_{it} is a vector of control variables. The prediction of $\beta_1 > 0$ is consistent with the premise that higher R&D intensity creates more value in employee-friendly firms.

4. RESULTS

4.1 Descriptive Statistics and Bivariate Correlation

In Table 1, we present the summary statistics for our sample of 22,005 firm-year observations. We first report the main variables, employee friendliness index (*EFI*) and R&D intensity (*R&D*), and then show control variables obtained from Compustat and CRSP. EFI has a mean of -0.030 and a median of 0.000. Verwijmeren and Derwall (2010) report similar mean and median of -0.197 and 0.000, respectively, for their KLD sample from 2001 to 2005. The average of R&D is 4.4% of total assets with a median of 0.5%. The mean values of leverage and ROA are 0.190 and 0.118, respectively. Sample firms also display an average Tobin's q of 2.146. Capital

expenditure averages 5.7% of total assets. Sales growth rate has large outliers and is thus winsorized at the 1st and 99th percentiles. Mean sales growth is 12.1% over the prior three years. Mean return volatility is 0.029 and sample firm age is, on average, 22.21 years. Finally, mean firm size is $7,348 million in terms of total assets (adjusted to 2013 constant dollars). Note that the number of observations is reduced to 21,333 for Tobin's q because of missing values in Compustat. The above sample characteristics are comparable to those documented in previous studies, such as Verwijmeren and Derwall (2010) and Bae et al. (2011).

[Table 1 about here]

Table 2 presents the Spearman correlation matrix for our variables. Consistent with our prediction of a positive association between employee-friendly practices and degree of R&D intensity, EFI is positively related to R&D, suggesting that the higher the R&D investment level, the higher the level of employee-friendly practices. The correlation coefficient of 0.054 is significant at the 1% level. Next, as expected, Tobin's q is positively related to both EFI and R&D, suggesting firm value is higher with better employee-friendly practices and higher R&D intensity. The correlation coefficients are 0.083 and 0.295 (both significant at the 1% level), respectively.

[Table 2 about here]

Table 3 reports our findings on EFI by R&D investment. The sample is partitioned by R&D. The high R&D subsample contains firms with R&D greater than the median, and the low R&D subsample contains firms with R&D less than and equal to the median. The evidence indicates that employees are treated better in high R&D firms. The mean estimates of EFI are higher for the high R&D group (0.096) than for the low R&D counterpart (-0.155), and the mean difference test is highly significant (*t*-value = 19.81). This result is robust to possible deviations

from nonnormality; the nonparametric Wilcoxon test is also highly significant (*p*-value = 0.000). The univariate results again support our hypothesis that employee-friendly practices are positively correlated with R&D investment. The evidence is consistent with the sustainable innovation hypothesis, H1.

[Table 3 about here]

4.2 Regression Results of Employee-Friendly Practices

We employ OLS regressions with year dummies to account for time-independent effects for each variable that might be correlated with the regressors.[3] The *p*-values of coefficients are computed based on heteroskedasticity-consistent standard errors clustered at the firm level. Table 4 presents results from the baseline regression of the level of employee-friendly practices on the level of R&D investment with control variables. In model (1), we find that the impact of R&D on EFI is positive and significant with a *p*-value of 0.000, supporting H1.

In model (2), we include control variables. The results are similar to those in model (1). Our point estimate of R&D is positive and significant, suggesting that the level of employee-friendly practices increases as firms become more R&D intensive.[4] This evidence confirms our univariate results reported in Table 3 that the mean EFI is higher for high R&D firms than low R&D firms.

In model (3), we additionally control for capital expenditure and sales growth, and obtain results similar to those in model (2). The results on the control variables are mostly consistent with the findings in earlier studies. The leverage coefficient is negative and significant at the 1% level,

[3] We control only the year fixed effects, as industry control would be perfectly correlated with the HHI.

[4] Our results remain intact when we measure lagged R&D investment in the regressions.

suggesting that firms with a high debt ratio tend to shun employee-friendly policies. Our finding is consistent with Verwijmeren and Derwll (2010) and Bae et al. (2011), which report a negative relationship between employee-friendly practices and financial leverage. We also find that companies in more competitive industries are more likely to implement employee-friendly practices, supporting Chang and Jo (2019), which stems from the need for a competitive edge. Because human capital is vital in these firms for a competitive advantage, they are likely to invest more in employee-friendly policies. In addition, firms that are more profitable and larger tend to treat their employees better. Overall, our evidence supports the sustainable innovation hypothesis, H1.

[Table 4 about here]

4.3 Regression Results of Firm Value

Table 5 examines the effects of employee-friendly practices and R&D investment on firm value, measured by Tobin's q. We again employ pooled regressions with year dummies. In model (1), we first test the influence of employee friendliness on firm value with control variables. We find a positive and significant association between EFI and Tobin's q (p-value = 0.000), suggesting that firm value is positively related to employee-friendly practices. The results are consistent with Edmans (2011) and Faleye and Trahan (2011).

Next, we add R&D investment in model (2). We use the dummy variable *D(High R&D),* indicating R&D greater than the sample median, and find that R&D investment is positively and significantly correlated with Tobin's q (p-value = 0.000). The finding suggests that R&D investment enhances firm value (see, e.g., Eberhart et al. 2004: Gu 2016). Furthermore, the coefficient on EFI remains positive and significant.

In model (3), we add the interaction variable *EFI * D(High R&D)* to test the joint effect of employee treatment and R&D intensity on firm value. We find that the coefficient on the interaction variable is positive and significant at the 1% level, indicating that Tobin's q increases with the level of employee-friendly practices when R&D intensity is high. The coefficient on *D(High R&D)* remains positive and significant, but the coefficient on *EFI* is no longer significant. The results suggest that the positive association between EFI and Tobin's q in models (1) and (2) is primarily driven by firms with high R&D investments. Tobin's q is not associated with EFI for firms with low R&D investment. Firm value thus increases with the level of employee-friendly practices mainly from high R&D intensity firms, supporting the value creation hypothesis, H2.

Furthermore, we find no significant relationship between employee-friendly practices and firm value among low R&D firms, providing evidence against reverse causality. If the direction of causation went from firm performance to employee-friendly practices, a positive correlation between them should have been found regardless of R&D investment. The results for the control variables are similar to those in previous studies and show that Tobin's q is higher when firms grow faster, but lower when firms have higher leverage and are more matured and larger.

[Table 5 about here]

Padgett and Galan (2010) find that R&D intensity is positively associated with corporate social responsibility (CSR), where employee relations are one of its components. Therefore, it is plausible that EFI proxies for CSR in our firm value regressions, so we control for CSR in model (4) to discern the EFI effect. The variable '*CSR less EFI'* is constructed by adding strength and concern factors (negative weight for concerns) for each KLD category other than employee relations and then summing the scores across different categories.[5] Even after controlling for other

[5] Other KLD categories include community, corporate governance, diversity, environment, human rights, and product.

CSR components, our results are almost identical to those reported in model (3). In particular, the interaction variable *EFI*D(High R&D)* is positive and significant. At the same time, *EFI* remains insignificant, suggesting that employee-friendly policies are associated with a higher value in high R&D intensive firms, reinforcing our value creation hypothesis, H2. We also note that *CSR less EFI* is positively related to the firm value, consistent with the findings of earlier studies (Ferrell, Liang, and Renneboog, 2016; Flammer, 2015; Jiao, 2010).

4.4 Robustness Check: Controlling for Corporate Governance

Prior studies document that R&D investment and corporate governance are interrelated. For example, O'Connor and Rafferty (2012) find that firms with stronger governance invest more in R&D, while Jo and Harjoto (2012) find that corporate governance influences CSR activity, including employee-friendly practices. In addition, Almeida, Hsu, Li, and Tseng (2021) suggest that, without appropriate corporate governance, a cash windfall may lead managers to engage in riskier innovation strategies, which can destroy value. We, therefore, control for governance mechanisms in both employee-friendly practices and firm value regressions.

We gathered data on board characteristics and governance quality - independent board, board size, G-index, and E-index – from RiskMetrics for each sample firm. Independent board is a dummy variable indicating that the proportion of independent outsider to total board members is greater than 50%. Board size represents a count of board members. The G-index is the governance quality index from Gompers et al. (2003), constructed by adding one index point for each of the 24 anti-governance provisions listed in Gompers et al. (2003). The E-index is the entrenchment index from Bebchuk et al. (2009), an index of the six anti-takeover provisions listed in Bebchuk et al. (2009). Higher index values imply weaker governance. Note that the RiskMetrics "Directors" file

that contains director information only goes back to 1996, whereas the "Legacy" file that contains G-index and E-index information goes back to 1990 but stops in 2006. Accordingly, our sample size is reduced to 11,148 firm-year observations to include board characteristics and further reduced to 7,013 to include governance index variables.

Table 6 presents results from OLS regressions of the level of EFI on the level of R&D investment with internal governance variables including independent board, board size, G-index, and E-index. In model (1), we add the dummy variable *D(Independent board)* and *Board size* with the same control variables used in Table 4. Similar to the results reported in Table 4, we find that the impact of R&D on EFI is positive and significant at the 1% level. In addition, we find that the coefficient on *D(Independent board)* is positive and significant at the 5% level, but the coefficient on *Board size* is insignificant. Interestingly, our finding of a positive effect of independent board on employee-friendly practices contrasts with Landier et al.'s (2009) finding that firms with stronger governance via the presence of a large outside blockhloder invest less in employee-friendly practices.

In model (2), we add G-index to model (1). Although the coefficients on *R&D* and *D(Independent board)* remain positive and significant, the coefficient on *G-index* is insignificant. These results do not change when we replace *G-index* with *E-index* in model (3). The results on the other control variables are largely unaffected with the addition of the governance variables. Again, although our study supports the view that R&D investment influences a firm's investments in its employees, our study also provides limited support for the view that the amount a firm invests in employee-friendly initiatives, at least partially, depends on the resources it has, as evidenced by the positive coefficients on both profitability and firm size measures.

[Table 6 about here]

Next, we examine the joint effect of R&D investment and employee-friendly practices on firm value, while controlling for governance mechanisms that include independent board, board size, G-index and E-index. In model (1) of Table 7, we add *D(Independent board)* and *Board size* and other controls. Similar to the results reported in Table 5, we find an insignificant coefficient on *EFI*, a positive and significant coefficient on *R&D*, and a positive and significant coefficient on the interaction variable *EFI *D(High R&D)*. The results again suggest that firm value is positively associated with the level of employee-friendly practices only in high R&D intensity firms. In addition, we find that the coefficient on *Board size* is negative and significant at the 10% level, but the coefficient on *D(Independent board)* is insignificant.

These baseline results remain essentially unchanged in model (2) when we add G-index, which shows a negative and significant coefficient (*p*-value = 0.005). This negative correlation between Tobin's q and G-index suggests that firm value decreases with poor governance quality, consistent with Gompers et al. (2003) and Masulis et al. (2007). Note that the coefficient on *Board size* is no longer significant. In model (3) we replace G-index with E-index, but the results are almost identical as in model (2). The coefficient of *E-index* is again negative and significant at the 1% level, confirming the findings in Bebchuk et al. (2009).

[Table 7 about here]

Even after controlling *CSR less EFI* variable, our results reported in model (4) are almost identical to those reported in model (3). In particular, the interaction variable *EFI*D(High R&D)* is still positive and significant, further supporting the value creation hypothesis, H2.

4.5 Additional Analysis: List of Fortune's "100 Best Companies to Work For"

We conduct additional robustness tests using the list of Fortune's "100 Best Companies to Work For" as an alternative measure of employee friendliness index. The sample consists of 556 firm-year observations from 1998, the first year of publication, through 2013 after eliminating private firms, financials, and utilities. The sample is further combined with the KLD Stats database, excluding the Fortune firms, resulting in 18,310 firm-year observations. Table 8 presents logit regression results explaining a firm's inclusion on the Fortune list. The dependent variable equals one if a firm is included in the list and zero otherwise. In model (1), *R&D* is positive and significant at the 1% level, suggesting firms with higher R&D investment are more likely to treat their workers better and make the Fortune list. This positive association continues to hold even after controlling for other variables in model (2). The results for the control variables are similar to the findings in Table 4, except capital expenditure and firm age are now positive and negative, respectively, and significant at the 1% level. Overall, the evidence on the Fortune list reinforces our earlier findings that use EFI.

[Table 8 about here]

Event Study: Similar to Chang and Jo (2019), as a robustness check, we conduct an event study and examine the market's reaction to a firm's inclusion on the list of Fortune's "100 Best Companies to Work For." We selected only the first year a firm appears in the Fortune list for our sample, resulting in 167 observations. This event study also provides a test of reverse causality between employee-friendly practices and firm value, and presents additional evidence for our earlier findings from the regression analysis. To the extent that a firm's first-time inclusion is largely unanticipated, the analysis of announcement returns at inclusion can explain the causation that runs from employee-friendly policies to firm performance. We use the standard market model method described in Brown and Warner (1985) for the event study. The announcement date (day

0) follows the newswire date that usually precedes the *Wall Street Journal* publication date.[6] Market model parameters are estimated from day -210 to day -11. Two-day abnormal returns are measured based on the (-1, 0) window. We use the CRSP equally weighted return index as the market return.

We find that the mean announcement abnormal return is 0.73% and significant at the 5% level (t-value = 2.19), indicating that investors favorably perceive good employee-friendly policies. The result is similar to the findings reported in previous research (see, e.g., Faleye & Trahan, 2011). Next, we present cross-sectional regressions explaining abnormal announcement returns in Table 9. In model (1), the coefficient of *R&D* is positive and significant at the 5% level, suggesting that the market reaction is more positive when firms with higher R&D investment are selected for the Fortune list. This relationship continues to hold in models (2) and (3), with the addition of firm size and other control variables. Overall, the event-study results confirm our earlier findings that good employee-friendly practices lead to an increase in firm value (not the other way around), especially when R&D investment is high.

[Table 9 about here]

4.6 Robustness Check: Controlling for Patents

Recent studies show that employee-friendly policies are positively correlated with patents generated (Chang et al., 2015; C. Chen et al., 2016; J. Chen, et al., 2016). Kovacs, Carnabuci, and Wezel (2021) show that patents that receive more citations tend to have greater economic value and influence future technological developments. Moreover, they further show that the number of citations a patent receives depends not only on its inherent technological value, but also on

[6] A Factiva search is conducted to identify the announcement date.

seemingly neutral classification decisions affecting the likelihood that potential future users will notice it.

Since the patent output is known to be higher in more R&D intensive firms (Scherer, 1965; Griliches, 1990; C. Chen et al., 2016; J. Chen, et al., 2016), our R&D variable may be merely a proxy for the patent count in our regressions. To examine this issue, we include a firm's number of patents granted as a control variable. The patent data is collected from the NBER Patent Citation database constructed by Kogan, Papanikolaou, Seru, & Stoffman (2017).[7] Accordingly, since the patent database spans 1926 to 2010, our sample size is reduced to 19,963 firm-year observations. The results are reported in Table 10. *Patents* are the total number of patents filed (and eventually granted) in a given year.[8] We use the logarithm of 1 plus *Patents* in our regressions. Panel (a) contains the results explaining EFI. In model (1), we find that the coefficient on *R&D* is positive and significant after controlling for the patent count, confirming our results in Table 4. The patent variable *Log(1+Patents)* is also positive and significant, indicating a positive association between employee treatment and patents, similarly documented in C. Chen et al. (2016) and J. Chen et al. (2016). In model (2), we include other control variables used in Table 4, but the results are almost identical.

[Table 10 about here]

Panel (b) of Table 10 presents the regression results explaining the effect of R&D expenditures on firm value (Tobin's q). In each of the four models, we add *Log(1+Patents)* in addition to the control variables used in Table 5. Our findings remain intact after controlling for the patent count. Notably, the interaction variable *EFI*D(High R&D)* is positive and significant,

[7] The data is obtained from Noah Stoffman's website: https://iu.app.box.com/patents.
[8] Following other studies, we use patent filing year instead of patent grant year, because the filing year is more accurate timing of innovation performance (Griliches et al., 1986; C. Chen et al., 2016).

while *EFI* is insignificant in models (3) and (4). The results imply that employee-friendly policies are positively associated with firm value only in high R&D firms, further supporting the value creation hypothesis, H2. *Log(1+Patents)* is positive and significant in all models, suggesting that patents also increase firm value.

5. CONCLUSION

Based on an extensive sample of U.S. data on firms' employee-friendly practices and R&D investment, this paper finds that firms with high R&D intensity engage in employee-friendly initiatives more than those with low R&D intensity. The evidence implies that R&D investment encourages firms to treat their employees well, as a high-performing workforce will enhance corporate innovation (our sustainable innovation hypothesis). We also find that employee friendliness is positively correlated with firm value, but more for firms with high R&D investment (our value creation hypothesis).

The latter finding, along with our evidence of a positive correlation between the level of R&D expenditures and stock price reactions to inclusion on the list of Fortune's "100 Best Companies to Work For", supports a causal argument that runs from employee-friendly policies to firm performance. Our findings remain robust under different methodologies, including controlling for corporate governance and an alternative measure of employee-friendly practices. We believe that our results support the R&D investment-employee-friendly practices and the R&D investment-firm value nexus. Given that R&D investment is an essential determinant of employee-friendly practices, this finding provides valuable guidance for managers seeking to create value for their company.

Our study makes several distinct contributions. Most importantly, our study sheds light on a puzzling but common observation in the employee relations literature: why is it that in spite of the large number of academic studies that have linked employee-friendly practices to favorable firm outcomes, a large number of firms have failed to adopt such practices even as others have? While Edmans (2011) presents a persuasive explanation of why the management of many companies do not invest in employee-friendly practices, his explanation does not explain why some companies do invest in their employees. Our study suggests that at least part of the motive underlying the adoption of such programs is a motive that has rarely been examined in the previous literature: managers are influenced by sustainable innovation and entrepreneurial mindset considerations in their dealings with employees.

Our study also implies that R&D investment is a significant motivator of CSR initiatives, at least as such initiatives affect the CSR category of employee relations. Therefore, our findings suggest that investments in employee-friendly policies, at least those that affect this key stakeholder group, are influenced by innovation and entrepreneurial spirit considerations. Finally, our study contributes to the innovation literature by identifying R&D investment as an essential motivator of sustainable employee-friendly policies and the stakeholder theory-based value creation literature by suggesting that employee-friendly policies benefit R&D-intensive firms.

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Appendix. Variable definitions and data source

Variable	Definition	Data Source
Dependent Variables		
EFI	Employee friendliness index constructed by summing six strengths and four weaknesses of employee relations categories, where each category is assigned a 0/1 rating and EFI is the sum of these ratings, with negative weight for weakness categories	KLD Stats database
Fortune's 100 Best Companies to Work For		Fortune
Tobin's q	Market value of equity plus book value of debt, divided by book value of total assets	Compustat: (Item6 – Item60 + Item199* Item25)/Item6
Independent Variables		
R&D	Research and development expenditures divided by total assets	Compustat: Item46/Item6
D(High R&D)	Dummy variable indicating that R&D is greater than sample median	Compustat
EFI * D(High R&D)	Interaction variable of EFI times by D(High R&D)	Compustat
Control Variables		
CSR less EFI	Adding strengths and concern factors (negative weight for concerns) for each KLD category other than employee relations and then summing the scores across different CSR categories	KLD Stats database
Leverage	Long-term debt divided by total assets	Compustat: Item9/Item6
ROA	Return on assets defined as earnings before interest, taxes, depreciation, and amortization (EBITDA) divided by total assets	Compustat: Iem13/Item6
D(Low q)	Dummy variable indicating Tobin's q less than the sample median	Compustat
HHI	Product market competition: Herfindahl-Hirschman index (HHI) computed using firms' sales within the two-digit SIC.	Compustat
Capital expenditure	Capital expenditures divided by total assets	Compustat: Item128/Item6
Sales growth	Geometric mean of sales growth over year t-3 to t	Compustat: $(Item12_t/Item12_{t-3})^{1/3} - 1$
Return volatility	Standard deviation of daily stock return during the year	Center for Research in Stock Prices (CRSP)
Firm age	Number of years listed in CRSP,	CRSP
Total assets	Book value of total assets in millions of 2012 dollar	Compustat: Item6
D(Independent board)	Dummy variable indicating that the proportion of outside to total board members is greater than 50%	RiskMetrics
Board size	Number of board members	RiskMetrics
G-index	GIM: Governance index from Gompers et al. (2003)	RiskMetrics
E-index	BCF: Entrenchment index from Bebchuk et al. (2009)	RiskMetrics

Table 1. Summary statistics

	Mean	Std dev	Q1	Median	Q3
EFI	-0.030	0.950	-1.000	0.000	0.000
R&D	0.044	0.112	0.000	0.005	0.052
Leverage	0.190	0.205	0.011	0.155	0.287
ROA	0.118	0.182	0.082	0.132	0.187
Tobin's q[a]	2.146	1.598	1.263	1.667	2.431
HHI	0.069	0.076	0.003	0.042	0.074
Capital expenditure	0.057	0.061	0.020	0.039	0.072
Sales growth (winsorized)	0.121	0.220	0.015	0.086	0.184
Return volatility	0.029	0.015	0.019	0.026	0.035
Firm age	22.21	19.68	8.00	16.00	32.00
Total assets (in millions of 2013 $)	7,348	29,373	476	1,434	4,816

The sample consists of 22,005 firm-year observations from the KLD Stats database, spanning 1991 to 2013. Variables are defined in the Appendix. *Sales growth* is winsorized at the 1st and 99th percentiles. All financial variables are measured at fiscal year-end. [a]The number of observations is 21,333 for *Tobin's q* because of missing values in Compustat.

Table 2. Correlation matrix

	1	2	3	4	5	6	7	8	9	10	11
1. *EFI*	1.000										
2. *R&D*	0.054***	1.000									
3. *Leverage*	-0.053***	-0.087***	1.000								
4. *ROA*	0.054***	-0.672***	-0.047***	1.000							
5. *Tobin's q*	0.083***	0.295***	-0.249***	0.007	1.000						
6. *HHI*	-0.070***	-0.155***	0.032***	0.092***	-0.051***	1.000					
7. *Capital expenditure*	0.021***	-0.122***	0.089***	0.133***	0.005	0.029***	1.000				
8. *Sales growth*	0.011	0.049***	-0.031***	-0.055***	0.211***	-0.050***	0.135***	1.000			
9. *Return volatility*	-0.041***	0.234***	0.006	-0.306***	0.093***	-0.054***	-0.063***	0.066***	1.000		
10. *Firm age*	0.074***	-0.134***	0.026***	0.131***	-0.118***	0.024***	-0.024***	-0.203***	-0.317***	1.000	
11. *Total assets*	0.085***	-0.051***	0.038***	0.031***	-0.048***	0.011	-0.004	-0.033***	-0.130***	0.274***	1.000

The sample consists of 22,005 firm-year observations from the KLD Stats database, spanning 1991 to 2013. Variables are defined in the Appendix. *** and ** indicate statistical significance at the 1% and 5% levels, respectively.

Table 3. Employee friendliness index (EFI) by R&D investment

	R&D > median	R&D ≤ median	Difference (p-value)	t-statistic (p-value)	z-statistic
Mean EFI	0.096	-0.155	0.251	19.81 (<0.000)	19.17 (<0.000)

The sample consists of 22,005 firm-year observations from the KLD Stats database, spanning 1991 to 2013. Higher EFI indicates better employee-friendly practices. R&D expenditures are normalized by total assets. Mean difference is tested using the *t*-test and nonparametric Wilcoxon *z*-test.

Table 4. Ordinary least squares (OLS) regression results explaining employee friendliness index (EFI)

Variables	Model (1)	Model (2)	Model (3)
Intercept	0.106***	-0.411***	-0.425***
	(0.000)	(0.000)	(0.000)
R&D	0.590***	1.318***	1.333***
	(0.000)	(0.000)	(0.000)
Leverage		-0.271***	-0.278***
		(0.000)	(0.000)
ROA		0.611***	0.610***
		(0.000)	(0.000)
HHI		-0.870***	-0.877***
		(0.000)	(0.000)
Capital expenditure			0.243
			(0.169)
Sales growth			0.035
			(0.339)
Return volatility		0.814	0.846
		(0.330)	(0.315)
Log(*Firm age*)		0.010	0.010
		(0.454)	(0.474)
Log(*Total assets*)		0.058***	0.058***
		(0.000)	(0.000)
Year fixed effects	Yes	Yes	Yes
Adjusted R^2	0.121	0.145	0.145
Number of observations	22,005	22,005	22,005

The sample consists of 22,005 firm-year observations from the KLD Stats database, spanning 1991 to 2013. Variables are defined in the Appendix. The *p*-values based on heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5. Ordinary least squares (OLS) regression results explaining firm value (Tobin's q)

Variables	Model (1)	Model (2)	Model (3)	Model (4)
Intercept	3.414***	3.126***	3.155***	3.104***
	(0.000)	(0.000)	(0.000)	(0.000)
EFI	0.111***	0.087***	0.040	0.025
	(0.000)	(0.000)	(0.133)	(0.272)
D(High R&D)		0.458***	0.461***	0.460***
		(0.000)	(0.000)	(0.000)
*EFI * D(High R&D)*			0.094***	0.079**
			(0.005)	(0.017)
CSR less EFI				0.040***
				(0.000)
Leverage	-1.867***	-1.645***	-1.636***	-1.614***
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	0.232	0.395	0.388	0.376
	(0.554)	(0.330)	(0.338)	(0.353)
HHI	-0.319	0.420	0.403	0.420
	(0.400)	(0.250)	(0.274)	(0.256)
Capital expenditure	0.029	0.854***	0.862***	0.905***
	(0.928)	(0.001)	(0.007)	(0.005)
Sales growth	1.279***	1.205***	1.210***	1.211***
	(0.000)	(0.000)	(0.000)	(0.000)
Return volatility	3.428*	1.998	1.909	2.197
	(0.061)	(0.271)	(0.292)	(0.224)
Log(*Firm age*)	-0.074***	-0.097***	-0.098***	-0.097***
	(0.001)	(0.001)	(0.000)	(0.001)
Log(*Total assets*)	-0.143***	-0.148***	-0.151***	-0.148***
	(0.000)	(0.000)	(0.000)	(0.000)
Year fixed effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.157	0.174	0.174	0.177
Number of observations	21,333	21,333	21,333	21,333

The sample consists of 21,333 firm-year observations from the KLD Stats database, spanning 1991 to 2013. Variables are defined in the Appendix. *CSR less EFI* is corporate social responsibility (CSR) index excluding *EFI*. The *p*-values based on heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6. Ordinary least squares (OLS) regression results explaining the employee friendliness index (EFI)—Controlling for corporate governance

Variables	Model (1)	Model (2)	Model (3)
Intercept	-0.478**	-0.506**	-0.584***
	(0.012)	(0.021)	(0.006)
R&D	3.847***	3.411***	3.418***
	(0.000)	(0.000)	(0.000)
D(Independent board)	0.102**	0.123***	0.116***
	(0.012)	(0.005)	(0.008)
Board size	-0.960	-0.577	-0.746
	(0.334)	(0.604)	(0.513)
G-index		-0.012	
		(0.209)	
E-index			-0.008
			(0.729)
Leverage	-0.390***	-0.447***	-0.463***
	(0.001)	(0.000)	(0.000)
ROA	0.756***	0.817***	0.819***
	(0.000)	(0.001)	(0.001)
HHI	-0.759***	-0.770**	-0.769**
	(0.006)	(0.014)	(0.013)
Capital expenditure	0.113	0.460	0.482
	(0.740)	(0.297)	(0.263)
Sales growth	-0.037	0.024	0.030
	(0.650)	(0.815)	(0.767)
Return volatility	1.818	3.305	3.601*
	(0.258)	(0.127)	(0.097)
Log(*Firm age*)	-0.001	0.017	0.010
	(0.955)	(0.598)	(0.755)
Log(*Total assets*)	0.068***	0.054***	0.067***
	(0.002)	(0.004)	(0.003)
Year fixed effects	Yes	Yes	Yes
Adjusted R^2	0.141	0.129	0.128
Number of observations	11,148	7,013	7,013

The sample consists of 11,148 firm-year observations from the KLD Stats database merged with RiskMetrics, spanning 1996 to 2013. Note that the "Directors" file that contains director information only goes back to 1996 and the "Legacy" file that contains G-index and E-index information goes back to 1990 but stops in 2006. Accordingly, the sample size is reduced to 11,148 firm-year observations to include board characteristics and further reduced to 7,013 to include governance index variables. Variables are defined in the Appendix. The *p*-values based on heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7. Ordinary least squares (OLS) regression results explaining firm value (Tobin's q)—Controlling for corporate governance

Variables	Model (1)	Model (2)	Model (3)	Model (4)
Intercept	0.809***	0.424*	0.336	0.381
	(0.000)	(0.090)	(0.180)	(0.127)
EFI	0.001	-0.020	-0.014	-0.024
	(0.950)	(0.506)	(0.647)	(0.423)
D(High R&D)	0.419***	0.449***	0.444***	0.442***
	(0.000)	(0.000)	(0.000)	(0.000)
*EFI * D(High R&D)*	0.099***	0.118**	0.110**	0.105**
	(0.005)	(0.023)	(0.034)	(0.043)
D(Independent board)	-0.044	0.003	-0.002	-0.001
	(0.473)	(0.967)	(0.977)	(0.993)
Board size	-1.991*	-1.814	-1.896	-2.129
	(0.068)	(0.183)	(0.151)	(0.119)
G-index		-0.031***		-0.031***
		(0.005)		(0.005)
E-index			-0.069***	
			(0.004)	
CSR less EFI				0.030***
				(0.008)
Leverage	-1.609***	-1.813***	-1.831***	-1.794***
	(0.000)	(0.000)	(0.000)	(0.000)
ROA	7.178***	8.755***	8.719***	8.705***
	(0.000)	(0.000)	(0.000)	(0.000)
HHI	-0.213	-0.493	-0.529	-0.461
	(0.473)	(0.262)	(0.227)	(0.288)
Capital expenditure	-1.837***	-2.570***	-2.454***	-2.549***
	(0.000)	(0.000)	(0.000)	(0.000)
Sales growth	1.144***	1.266***	1.265***	1.301***
	(0.000)	(0.000)	(0.000)	(0.000)
Return volatility	16.021***	20.364***	20.583***	20.468***
	(0.000)	(0.000)	(0.000)	(0.000)
Log(*Firm age*)	-0.094***	-0.086**	-0.107***	-0.081**
	(0.000)	(0.016)	(0.002)	(0.024)
Log(*Total assets*)	0.045**	0.085***	0.083***	0.091***
	(0.036)	(0.002)	(0.003)	(0.001)
Year fixed effects	Yes	Yes	Yes	Yes
Adjusted R^2	0.372	0.393	0.393	0.395
Number of observations	10,990	6,913	6,913	6,913

The sample consists of 10,990 firm-year observations from the KLD Stats database merged with RiskMetrics, spanning 1996 to 2013. Note that the "Directors" file that contains director information only goes back to 1996 and the "Legacy" file that contains G-index and E-index information goes back 1990 but stops in 2006. Accordingly, the sample size is reduced to 10,990 firm-year observations to include board characteristics and further reduced to 6,913 to include governance index variables. Variables are defined in the Appendix. *CSR less EFI* is corporate social responsibility (CSR) index excluding *EFI*. The *p*-values based on heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8. Logit regression results explaining inclusion in the list of Fortune's 100 best companies to work for

Variables	Model (1)	Model (2)
Intercept	-8.107***	-8.581***
	(0.000)	(0.000)
R&D	2.930***	6.455***
	(0.007)	(0.000)
Leverage		-3.479***
		(0.000)
ROA		5.165***
		(0.000)
HHI		-1.002*
		(0.069)
Capital expenditure		2.237***
		(0.005)
Sales growth		-0.043
		(0.892)
Return volatility		-4.734
		(0.584)
Log(*Firm age*)		-0.319***
		(0.000)
Log(*Total assets*)	0.560***	0.685***
	(0.000)	(0.000)
Year fixed effects	Yes	Yes
Pseudo R^2	0.101	0.185
Number of observations	18,310	18,310

The dependent variable equals one if a firm is included in the list of Fortune's 100 Best Companies to Work For, and zero otherwise. The sample consists of 556 firm-year observations from 1998 through 2013, excluding private firms, financials, and utilities. The sample is further combined with the KLD Stats database, excluding the Fortune firms, resulting in 18,310 firm-year observations. Variables are defined in the Appendix. The *p*-values based on heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. * and *** indicate statistical significance at the 10% and 1% levels, respectively.

Table 9. Ordinary least squares (OLS) regression results explaining abnormal stock returns (−1, 0) around announcements of Fortune's 100 Best Companies to Work For

Variables	Model (1)	Model (2)	Model (3)
Intercept	0.001	0.014	0.003
	(0.931)	(0.457)	(0.915)
R&D	0.142**	0.140**	0.153**
	(0.029)	(0.035)	(0.032)
Leverage			-0.004
			(0.789)
ROA			-0.019
			(0.531)
HHI			-0.072
			(0.127)
Capital expenditure			0.056
			(0.423)
Sales growth			0.012
			(0.366)
Return volatility			0.462
			(0.223)
Log*(Firm age)*			0.002
			(0.527)
Log(*Total assets*)		-0.002	-0.002
		(0.426)	(0.406)
Adjusted R^2	0.039	0.038	0.085
Number of observations	167	167	152

The announcement date (day 0) is the day following the newswire date of announcing the firm's inclusion in the list of Fortune's 100 Best Companies to Work For. The announcement-period returns are measured from day -1 through day 0. The sample period is from 1998 through 2013. Only the first appearance on the list is included in the sample, resulting in 167 observations. Variables are defined in the Appendix. The *p*-values based on heteroskedasticity-consistent standard errors are reported in parentheses. ** indicates statistical significance at the 5% level.

Table 10. Robustness check: Controlling for patents

Panel (a): Ordinary least squares (OLS) regression of employee-friendly policy index (EFI) on R&D investment

Variables	Model (1)	Model (2)
Intercept	-0.032	-0.098
	(0.352)	(0.427)
R&D	0.414***	0.945***
	(0.000)	(0.000)
Log(1+Patents)	0.082***	0.071***
	(0.000)	(0.000)
Other control variables in Table 4	No	Yes
Year FE	Yes	Yes
Adjusted R^2	0.101	0.113
N	19,963	19,963

Panel (b): Ordinary least squares (OLS) regression of firm value (Tobin's q) on employee-friendly policy index (EFI) and R&D investment

Variables	Model (1)	Model (2)	Model (3)	Model (4)
Intercept	3.421***	3.076***	3.101***	3.036***
	(0.000)	(0.000)	(0.000)	(0.000)
EFI	0.086***	0.075***	0.027	0.019
	(0.000)	(0.000)	(0.260)	(0.414)
D(High R&D)		0.349***	0.360***	0.355***
		(0.000)	(0.000)	(0.000)
*EFI * D(High R&D)*			0.098**	0.085**
			(0.023)	(0.049)
CSR less EFI				0.036***
				(0.000)
Log(1+Patents)	0.148***	0.086***	0.083***	0.083***
	(0.000)	(0.000)	(0.000)	(0.000)
Other control variables in Table 5	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R^2	0.178	0.184	0.185	0.187
N	19,353	19,353	19,353	19,353

In Panel (a), the sample consists of 19,963 firm-year observations from the KLD Stats database, spanning 1991 to 2010. The sample is reduced to 19,353 firm-year observations in Panel (b). Variables are defined in Appendix. *Patents* are the number of patents. *CSR less EFI* is corporate social responsibility (CSR) index excluding *EFI*. The *p*-values based on heteroskedasticity-consistent standard errors clustered at the firm level are reported in parentheses. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.