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Employee Satisfaction and Firm Performance

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Abstract

This paper studies operating and stock return performance of Japanese firms that ranked among the most employee friendly in the annual survey conducted by Nikkei, Inc. We ask if “Employee-Friendly Firms” are also shareholder-friendly. Firms that ranked among the highest in the survey tend to exhibit higher profitability ratios and stock returns than their peers, and the out-performance persists for a few years following the release of the survey ranking. We also find that a portfolio strategy investing in these Employee-Friendly Firms would have generated positive and significant benchmark-adjusted returns in our sample.

1. Introduction

There has been active discussion on the relationship between employee satisfaction and firm performance. Some effects may drive a positive relation while others may drive a negative one, but it is not necessarily clear which effects dominate. For a given level of cash flows a firm generates, shareholders and managers would receive less when they spend more cash resources on their employees, which suggests a negative relationship. On the one hand, we can assume that the utility of each employee increases with additional wages and decreases with additional labor. On the other hand, we can also assume that a firm's shareholder value increases with labor inputs (for given wages) and decreases with wages (for given labor inputs). Under these assumptions, a firm's shareholder value should be negatively associated with the utility of employees. Therefore, a firm manager may want to increase profitability by minimizing employee costs, particularly when a firm's business depends on an unskilled labor force. It is relatively easy to replace unskilled labor, and some may seek low labor costs in foreign markets. For firms whose business relies on unskilled labor, it would not make much economic sense to spend additional resources to improve the job satisfaction of their employees.

However, for firms whose value creating activities depend on the intellectual productivity of the workforce, it becomes economically important to ensure and improve the job satisfaction of their skilled and talented employees. We can find many telling examples in the information technology (IT) industry in the US. By ensuring a high level of job satisfaction among their highly skilled workforces, these IT firms have been able to generate enormous profits to be shared with shareholders, managers, employees, and local communities. When a firm can increase its productivity by hiring and motivating skilled and talented employees, it may also be able to boost productivity and hence share the increased economic profits with its various stakeholders.

In capitalist economies, firm managers serve in the interest of the shareholders. As such, the primary objective responsibility of managers is to maximize firm value. From a traditional view of finance, Jensen (2001) argues that social welfare will be ultimately maximized when individual firms pursue their own value maximizing activities. From the perspective of standard portfolio theory, imposing portfolio constraints, such as socially responsible investing (SRI) criteria (including fair employee treatment), should constrain a portfolio's ex ante performance. These traditional views suggest that firm managers should pursue shareholder value maximization, while shareholders should pursue optimal portfolio selection without being affected by SRI or other non-performance criteria.

In contrast, Donaldson and Preston (1995) put forth a stakeholder theory that casts doubt on shareholder-centered models of management. Kohn (1993) argues against employee

management systems that rely heavily on economic incentives. In Japan, a traditional moral code of business stresses the importance benefitting all three parties—customers, suppliers, and society/community (called *sanpou-yoshi*). The moral is that a firm can achieve long-term prosperity when it refrains from chasing short-term profits.

Peloza (2009) provides a survey of existing studies on the relationship between corporate social performance and financial performance. Here, corporate social performance refers to the degree to which management pays attention to the interests and concerns of non-shareholder stakeholders such as employees and local communities. Peloza finds that 59% of existing academic studies find the relationship to be positive, while 27% and 14% find the relationship to be neutral and negative, respectively. Meanwhile, Peloza adds that the positive relationship is generally weak and the direction of causality between corporate social performance and financial performance remains unclear. That is, it is not clear if superior corporate social performance drives strong financial performance, or if strong financial performance drives superior corporate social performance.

While many existing studies report an ambiguous relation, Edmans (2011) is a rare study that provides a clear directional relation. Using the list of the “100 Best Companies to Work For” (the “BC” list), provided by the Great Place to Work© Institute and published by *Fortune* magazine, Edmans (2011) shows that firms in the BC list earn significantly positive risk-adjusted stock returns. Edmans et al. (2017) extend the analysis to 14 countries for which BC lists are available, and find similar positive relationships in countries with flexible labor markets.

Why, then, would employee satisfaction improve a firm’s future value beyond the effects of firm growth and payouts to shareholders? One explanation would appeal to the recent shifts in the sources of firm value creation from tangible assets to intangible assets, as advocated by Lev and Radhakrishnan (2009). With structural changes in the economy, a firm’s competitive success depends increasingly on intangible assets that are not treated as assets in the current accounting system. These intangible assets include research and development projects, brand management strategies, product designs, and effective use of information technology. These intangible assets depend on the knowledge, skills, and creativity of employees. Thus, by spending resources to enhance employee motivation and productivity, firms are effectively making investments in intangible capital. Chan et al. (2001) suggest that the market tends to fail to efficiently incorporate the value of research and development expenses and other intangible investments that are expensed under the current accounting system. Firms with large intangible expenditures tend to be undervalued in stock markets and, consequently, may earn high future stock returns. Edmans (2011) argues that, as is the case with R&D expenditures,

employee-related costs are effectively investments in intangible capital¹.

Now, the main empirical question of this paper is the following. In Japan, would a more employee-friendly work environment lead to the stronger operating performance of firms and a higher future market value for a firm's equity? To answer this question, we examine the relationship between a firm's employee friendliness and its market value. To quantify employee friendliness, we rely on the firm-level ranking of employee friendliness (or employee motivation) released by Nikkei, Inc. (hereafter 'Nikkei')². Starting in 2003, Nikkei has conducted an annual survey of Japanese employers based on questionnaires sent to firms (human resource managers) and Internet surveys of their employees. Nikkei scores each employer using the firm's responses to questionnaires weighted by employee views on the relative importance of each questionnaire item. The questionnaires typically consist of questions about the firm's human resource policies, paid vacations actually taken, mental health, etc. Employees tend to give relatively large weights to the ease of taking paid vacations and to actual working hours.

In contrast to Nikkei's ranking, the BC list used by Edmans (2011) and Edmans, et al. (2017) tends to use a ranking methodology that reflects employees' subjective views of their workplaces, in which employers solicit employees to participate in the surveys. The BC list is not primarily intended for the use of investors. The list tends to have industry concentrations. For example, the US BC list includes many IT and consulting firms. The BC list also includes many non-listed firms. The number of listed firms has been less than 50 since 2007, even in the US. Edmans, et al. (2017) report that an equally-weighted portfolio of firms in the Japanese BC list achieved significant risk-adjusted returns between 2007 and 2013. However, their result depends only on 10-15 listed firms, some of which are listed outside the 1st Section of the Tokyo Stock Exchange (TSE1). By contrast, Nikkei's ranking methodology does not directly reflect the subjective views of employees and hence provides an objective score of each firm. Many highly ranked firms are large listed firms in a wide variety of industries in Nikkei's ranking, which makes the ranking more useful for investors.

We compare the financial performance and stock return performance of the top 100 Employee-Friendly Firms listed by Nikkei with those of peer firms. We find that the top 100

¹ Edmans (2011) uses the Fama-French 4-factor model as the benchmark model in his US sample. We attempt to replicate his analysis with 3- or 5-factor benchmark models, where the significance of risk-adjusted returns tends to disappear. We thus proceed cautiously with our interpretation, as Edmans' result may not provide very strong evidence for the underpricing of intangibles.

² Saito and Ito (2017), about concurrently with the submission of this article, show that firms listed in Toyo Keizai's ranking earned significant risk-adjusted stock returns. Toyo Keizai releases its annual CSR (Corporate Social Responsibility) scores of Japanese firms in the *Weekly Toyo Keizai* magazine (a major business magazine in Japan), from which Saito and Ito focus on the firm-level scores of "Workforce and Human Resource Utilization." Despite the difference in data and methodology, our results and theirs are consistent with each other.

Employee-Friendly Firms tend to exhibit stronger financial performance and higher stock returns than their peers in the following years. When we regress portfolio returns of the top 100 Employee-Friendly Firms on Fama-French 5 factor returns, we find that the coefficients (factor loadings) on the value and profitability factors are positive and significant. After controlling for the five factors, the mean of factor risk-adjusted returns is statistically significant at around 2% per annum.

One of the possible channels of the predictive relation is the possible mispricing in stock markets. Employee-Friendly Firms tend to possess strong operating profitability (as we show later), but investors may underestimate the role of intangible capital associated with an employee-friendly work environment as providing such an environment is costly for firms. As Edmans (2011) suggests, the positive and significant risk-adjusted returns of Employee-Friendly Firms may indicate that their current stock prices do not fully reflect the intangible values associated with their employee friendliness. This undervaluation-based explanation is also consistent with a positive and significant portfolio exposure of these Employee-Friendly Firms to the value factor.

Another possible cause of the return predictability may be associated with Employee-Friendly Firms' idiosyncratic sources of risk which existing factor models do not account for. Firms that rely heavily on employee skills and creativity may strive to retain skilled and talented employees by spending resources to improve their job satisfaction. However, firm-specific intangible capital such as employee skills may lose significance and relevance of their value when rapid technological innovation affects a firm's business. Moreover, as Eisfeldt and Papanikolaou (2013) argue, a firm's key employees and shareholders often compete for the same cash resources generated by the firm. When skills and talents become more valuable, shareholders have to give up more to retain or hire skilled and talented employees. Then, a firm's equity value and its cost of capital should reflect such specific risk. We leave the examination of this effect for future research.

The rest of the paper is organized as follows. Section 2 describes the data and variables used in this study. Using the panel of Employee-Friendly Firms in Japan, Section 3 analyzes the firm characteristics and financial performance of Employee-Friendly Firms relative to their peers. Section 4 extends the panel data analysis to cumulative stock returns. Section 5 provides a portfolio performance analysis to examine if investors would have earned positive risk-adjusted returns by investing in a portfolio of Employee-Friendly Firms. Section 6 concludes.

2. Data

2.1 Employee-Friendly Firms

This study defines “Employee-Friendly Firms” as those that are ranked high in Nikkei’s annual rankings of “Employee-Friendly Firms” (and “Firms that Motivate Employees”). Nikkei has conducted surveys and released results annually since July 23, 2003 in the *Nikkei* newspaper and *Nikkei Sangyo Shimbun* (Nikkei Industrial Journal). The survey title changed from “Employee-Friendly Firms” to “Firms that Motivate Employees” in 2013, reflecting some changes in the survey’s emphasis. However, this change has had relatively little effect on the list of top-rated firms, and we do not distinguish between the two surveys. In this paper, we simply call the top-rated firms Employee-Friendly Firms. While Nikkei’s survey has evolved over time with both survey designs and questions being modified year by year, Nikkei has been consistent in sending both questionnaires to employers (human resource managers) and Internet survey questions to firm employees. Nikkei’s first survey manual clearly states that the survey focuses on the current and projected quality of the human resource management system and does not consider salary growth or a firm’s business growth.


Let us briefly summarize Nikkei’s survey methodology in 2016. For more details, readers are referred to the *Nikkei* newspaper on the release date. In the survey, Nikkei first conducted surveys of employers and employees via questionnaires and Internet surveys respectively. Specifically, Nikkei sent questionnaires to all publicly-listed and major private companies with 1,000 employees or more on a consolidated basis (1,260 firms in total). The questionnaire contained 59 question items and Nikkei collected valid responses from 462 firms. A couple of question examples are: “Please fill in the annual total working hours and annual excess (non-statutory) working hours per each regular (permanent) employee,” “Please report the number of reported incidents of harassment in 2015”. Nikkei then asked some 12,231 employees to participate in the Internet-based survey, and received responses from 1,043 between July 20 and July 25. The employee survey asks each employee which of the 59 question items (in the employer questionnaire) are important to her/him. Nikkei used employee responses to determine the relative importance of each question in scoring each firm’s employee friendliness for ranking purposes.

The number of respondents varies over time (see Table 1). Our analysis focuses on the Top 100 firms in each period, with exception of the first year (2003) in which we focus on the Top 30 firms. We adopt this simple approach because the number of respondents and number of firms ranked by Nikkei have changed over time, and also because Nikkei’s method of scoring firms has also evolved over time. These Top 100 firms include private firms. When we focus on

publicly-traded firms, the number of Employee-Friendly Firms has been around 70-90 in our sample period (2013-16). Turnover of the Employee-Friendly Firms has been quite moderate. Table 1 shows that additions and deletions to/from the Top 100 list have been around 10-20 per year. Employee-Friendly Firms are generally concentrated among large firms as indicated by the median values of market capitalization. Employee-Friendly Firms also include a small number of small firms. Minori Solutions was the smallest company included in the list of Employee-Friendly Firms in 2015 and 2016. Four companies have been consistently listed in the Top 100 list in all 14 surveys: NEC, Panasonic, Ricoh, and Dai Nippon Printing. Employee-Friendly Firms include a few that have recorded large losses during the sample period. Thus, the list of Employee-Friendly Firms does not necessarily represent profitable firms.

Table 2 summarizes the distribution of Employee-Friendly Firms across industries over time. In 2016, for example, four belonged to the construction industry constituting 5.3% of the 76 Employee-Friendly Firms in that year. The last two columns of the table show the distribution of all public firms across industries in 2016, according to firm numbers and market capitalization. Compared with these, we can see that Employee-Friendly Firms tend to contain more firms in the electrical equipment, insurance, chemical, and food industries than the whole universe, and fewer firms in service, real estate, and retail industries. Many utility (electricity and gas) firms made the list of Employee-Friendly Firms in 2010 and before, but none of them have made the list since 2011. This shift may have something to do with the Great East Japan Earthquake in 2011. If so, this may suggest that firms cannot remain employee-friendly unless they maintain strength in business operations and financial health.

2.2 Financial and Market Data

We source financial and market data from NRI Data Services, supplemented by Nikkei Financials  for pension accounting data. Fama-French factor returns in Japan are from Ken French's data library site³. Our sample period runs from Nikkei's first survey (July 2003) through December 2016.

Let t be the end of the month in which Nikkei releases its annual list of most Employee-Friendly Firms. At each t , we obtain yearly income statement variables from the trailing 12 months. For example, when quarterly financial statements are available, we calculate yearly variables at t using the four most recent quarterly statements preceding t . We do not include reporting lags in this exercise. For balance sheet items, we use the most recent statement values at t . In order to calculate a profitability measure, we divide a yearly (trailing 12 months)

³ http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

income statement variable by a balance sheet variable at the beginning of the trailing 12-month period (i.e. with a yearly lag). At each t , we winsorize our financial variables at 1% and 99%.

3. Firm Characteristics and Financial Performance

This section analyzes a set of firm characteristics and financial performance of Employee-Friendly Firms in a panel (longitudinal) sample.

To conduct the analysis, we first define and construct the reference portfolio for each Employee-Friendly firm following Barber and Lyon's (1996) methodology. For each Employee-Friendly firm, the reference portfolio consists of the peer firms in the same industry with similar book equity values. Specifically, we take the following steps in constructing the reference portfolio. For each Employee-Friendly firm, we first select those in the same industry according to the TSE33 industry classification. Among them, we select those whose log book equity values are within $\pm 30\%$ of the log book value of the Employee-Friendly firm. The Employee-Friendly firm itself is not included in the reference portfolio. If the number of firms in the reference portfolio is less than five, we repeat the analysis by replacing the TSE33 industry classification with the TSE10 industry classification, and then look for firms in the same industry that have log book equity values within $\pm 100\%$ of the log book equity value of the Employee-Friendly firm. There are instances in which the number of reference firms is still lower than five. In that case, we remove the requirement that the reference firms should belong to the same industry. Repeating this process for all Employee-Friendly Firms, we are able to find at least five reference firms for each of the Employee-Friendly Firms in our sample⁴.

For each Employee-Friendly firm, we evaluate its financial performance relative to the median value of the reference firms. We define 'reference date' as the date at the end of the month preceding the release of Nikkei's ranking. Table 3 reports the sample average of each relative performance measure. We also test if each average is reliably different from zero. Because Employee-Friendly Firms tend to remain employee friendly for many years and because financial performance measures of a firm tend to persist over time, our inference relies on clustered standard errors that are robust to within-firm correlations⁵. We report our results for two separate samples. The first sample covers all Employee-Friendly Firms. The second focuses on the firms that are new additions to the list of Employee-Friendly Firms in each year.

As we can see in Table 3, at the reference dates preceding the release of the ranking, we do not

⁴ In the first step, 527 firms are matched with their reference portfolios. Then, 151, 339, and 51 additional firms are matched with reference portfolios in each of the following steps. The average numbers of constituents of the reference portfolios at these steps are 9.2, 6.3, 6.7, and 70.2, respectively.

⁵ See Cameron et al. (2011).

find discernible differences in Tobin q ratios between the Employee-Friendly Firms and their peers (reference firms).

However, Employee-Friendly Firms tend to have significantly higher gross profitability ratios than their peers. Moreover, new additions to Employee-Friendly Firms tend to exhibit higher operating profitability and ROE than their peers. These firms have higher profitability measures from both the perspective of broad stakeholders (gross profitability, operating profitability) and also that of equity holders (ROE).

The high relative R&D expenses of Employee-Friendly Firms is consistent with the findings of US evidence by Faleye and Trahan (2010) and Japanese evidence by Kawamura and Nagata (2016). Employee-Friendly Firms also tend to invest more in fixed capital than their peers. Business operations of these firms may be strong enough to generate resources to spend on their employees as well as on R&D and fixed capital investments.

Bae et al. (2001) report that Employee-Friendly Firms in the US tend to have low financial leverage. In interpreting the result, they suggest that stakeholders generally prefer not to enter business relations with highly-leveraged firms. In contrast, Employee-Friendly Firms in Japan tend to carry large debt. Publicly-traded Japanese firms generally have low bankruptcy risk. In addition, Employee-Friendly Firms may be able to obtain bank loans more easily than their peers.

Goto and Yanase (2016) show that high pension funding ratios convey favorable management information about firms' business prospects. Firm managers do not necessarily have strong incentives to make large cash contributions to their pension plans because large pension contributions tend to constrain their ability to make large business investments and/or payouts to shareholders. Furthermore, in market downturns, large pension deficits and required pension contributions can severely constrain business operations. Consequently, firms with well-funded pension plans tend to have confidence in their business prospects and to pay attention to employee income security after retirement. We indeed find that Employee-Friendly Firms tend to maintain higher pension funding ratios than their peers.

As is the finding of Kawamura and Nagata (2016) for firms with high CSR (corporate social responsibility) ratings, we find that Employee-Friendly Firms tend to have higher foreign (non-Japanese institutions) equity ownership than their peers. Japanese firms are known to have lower MSCI Social Scores and MSCI Governance Scores than many American or European firms in general⁶. Although MSCI scores are available for only a subset of our sample firms, we examine these scores of the Employee-Friendly Firms in that subset. Our results indicate that

⁶ See MSCI's report titled "Measuring the Sustainability of Abenomics" (September 2016).

Employee-Friendly Firms tend to have significantly higher MSCI Social Scores and MSCI Governance Scores than their peers. With the capability and intention of monitoring management, foreign investors often have a significant voice in a firm's governance, which may be contributing to improve the ESG scores of these firms. While our analysis focuses on publicly-traded firms, the most Employee-Friendly Firms in Nikkei's ranking include many subsidiaries of foreign (non-Japanese) firms like IBM Japan, Ltd.

Table 4 then shows the relative profitability measures for a few years before and after the reference dates. On average, Employee-Friendly Firms have higher profitability ratios than their peers for a few years before and after the release dates. Those firms that are newly added to the Nikkei's list have significantly higher operating profitability and ROEs than their peers. Apparently, firms with strong profitability and favorable business prospects tend to provide employee-friendly human resource management practices/systems, and this affects Nikkei's survey results. Relative operating profitability and relative ROE tend to decline right before the release dates. There may be reversal effects in these relative profitability measures, as both relative operating profitability and relative ROE tend to increase for five years following the release of Nikkei's survey results.

These results suggest that Employee-Friendly Firms tend to exhibit superior financial performance. However, the direction of the causation is unclear. It is possible that firms with strong business prospects promote an employee-friendly work environment. It is also possible that employee friendliness helps improve labor productivity and hence profitability. It is quite likely that both effects exist and interact with each other.

In the following section, we examine if the stock market incorporates the positive relation between employee friendliness and firm profitability.

4. Stock Market Performance

To see how the stock market incorporates information on employee friendliness, we consider return performance of portfolios formed on stocks of Employee-Friendly Firms. In this analysis, we consider two sets of benchmark portfolios: the first set is cross sorted by size (market capitalization) and value (book-to-market ratios), the second set comprises industry portfolios.

For the former (size and value matched benchmark portfolios), we sort the sample of all Japanese stocks into five groups by size every month. In the meantime, we also sort the sample into five value groups every month. We conduct the two sorts independently. We then construct 25 (5 x 5) portfolios by interacting the two sorts. In each sort, we use only the 1st Section of the Tokyo Stock Exchange (TSE1) to determine quintile breakpoints. We then apply these

breakpoints for the entire sample including stocks that are listed outside TSE1. Given the 25 benchmark portfolios, we match each Employee-Friendly firm with one of the benchmark portfolios according to the firm's size and value at the reference date. We rebalance the 25 benchmark portfolios annually at the end of June and record their market cap-weighted returns every month.

For the latter (industry matched benchmark portfolios), we consider market cap-weighted portfolios of the TSE33 industries. We then match each Employee-Friendly firm with its corresponding industry portfolio annually at the reference dates.

We calculate each Employee-Friendly firm's cumulative stock returns and corresponding two benchmark portfolio returns starting from the reference date. We then take differences between cumulative stock returns of each Employee-Friendly firm and those of the two corresponding benchmark portfolio returns. We call these differences 'benchmark-adjusted excess stock returns of each Employee-Friendly firm'.

Table 5 summarizes benchmark-adjusted cumulative returns over months (Panel A) and over years (Panel B). For example, six-month benchmark-adjusted excess returns are six-month cumulative stock returns less six-month cumulative benchmark portfolio returns. We then evaluate the pooled average of these benchmark adjusted excess returns in the panel of all Employee-Friendly Firms over the sample period. A positive average of benchmark-adjusted excess returns implies that Employee-Friendly Firms tend to earn higher returns than their peers in the stock market. Given that cumulative portfolio returns tend to overlap, we test the significance of average benchmark-adjusted excess returns using clustered standard errors that are robust to within-firm correlations.

Our results indicate that Employee-Friendly Firms tend to earn positive benchmark-adjusted excess returns, though averaged benchmark-adjusted excess returns tend to be somewhat lower when we use the industry benchmarks rather than the size \times value benchmark portfolios. Employee-Friendly Firms tend to earn higher benchmark-adjusted excess returns in horizons of about two years or longer than in shorter horizons. These effects are particularly pronounced among the newly included Employee-Friendly Firms. They are clearly different from the well-known return predicting effects such as value and momentum effects. The superior long-run return performance also indicates that the announcement effect of Nikkei's ranking does not necessarily drive the evidence. As Table 4 indicates, on average, newly included Employee-Friendly Firms tend to have high operating profitability one year prior to the release of Nikkei's ranking, but which after release then tends to slow down for a few years. It appears that firms with recent high profit growth tend to make the top Employee-Friendly Firms list. It might be the case that their benchmark-adjusted returns tend to be rather modest initially

reflecting the weakened profitability of these firms, but they reflect the strength of these firms (e.g. due to intangibles) subsequently in the long run.

5. A Portfolio Analysis

In this section, we consider the return performance of a portfolio of Employee-Friendly Firms.

Our portfolio holds stocks of firms that have been included in the Top 100 list at least once in the three most recent Nikkei rankings. We consider both a market cap-weighted portfolio and an equally-weighted portfolio. The former (market cap-weighted portfolio return) provides a suitable return measure when we invest a large amount in stocks of Employee-Friendly Firms. The latter (the equally-weighted portfolio returns) provides a useful measure of the average stock return performance of Employee-Friendly Firms irrespective of their size. We rebalance the portfolios once a year at the end of the month Nikkei releases the ranking. The portfolios are not rebalanced every month. The average number of stocks in the portfolio since January 2005 (skipping the first two years) has been 119. Average annual turnover rates are 9.5% for the market cap-weighted portfolio and 16.0% for the equally-weighted portfolio.

Figure 1 plots cumulative returns of the market cap-weighted and equally-weighted portfolios of the stocks of Employee-Friendly Firms, in excess of the market's cumulative returns. The graph also plots cumulative returns of the Fama-French Japanese SMB (Small-Minus-Big) factor. As we can see, the equally-weighted portfolio of Employee-Friendly Firms has generated superior return performance quite consistently over time.

We then regress the time series of excess returns of each of the two employee-friendly portfolios on Fama-French 3, 4, and 5 factors. Table 6 summarizes the results. The equally-weighted portfolio of employee-friendly stocks has generated positive alphas (intercepts) against all benchmark factor models. These alphas are reliably different from zero at the 1% critical level. The equally-weighted portfolio has a somewhat positive coefficient on the SMB factor, as we would generally expect for an equally-weighted portfolio. However, the coefficient is rather moderate, meaning that the SMB factor does not necessarily explain the superior return performance of the portfolio. In the meantime, the market cap-weighted portfolio of employee-friendly stocks generates positive alphas (intercepts) once we include the SMB factor as one of the benchmark factors. These alphas are reliably different from zero at the 5% critical level. The portfolios have weak but negative exposures to the momentum (WML) factor in the 4-factor model, consistent with what Edmans (2011) reports. Both market cap-weighted and equally-weighted portfolios of Employee-Friendly Firms have positive and significant exposures to the value (HML) and profitability (RMW) factors in the 5-factor model.

These exposures suggest that Employee-Friendly Firms tend to have high operating profit and large intangible assets. However, the stock market does not appear to fully incorporate the implications of these values, resulting in positive and significant alphas.

6. Conclusion

To our knowledge, this is the first comprehensive study of the implications of ‘employee friendliness’ as ranked by Nikkei. By focusing on the long-run dynamics of financial and stock return performance of Employee-Friendly Firms, we find that these firms tend to exhibit superior performance. The superior performance of Employee-Friendly Firms extends and persists for a few years following the release of Nikkei’s rankings. An attribution analysis with the Fama-French 5-factor model suggests that the portfolios of Employee-Friendly Firms exhibit positive exposures to the value and profitability factors. After controlling for the effects attributed to these factors, the employee-friendly portfolios earn positive and significant risk-adjusted returns (alphas). The results are more pronounced for the equally-weighted portfolio than for the market cap-weighted portfolio, suggesting that the superior stock returns of Employee-Friendly Firms are more evident when we attenuate the effects of very large firms.

Does our evidence suggest that we can reasonably anticipate superior return performance when we invest in stocks of Employee-Friendly Firms (of firms with high employee satisfaction)? This question remains still difficult to answer and merits further investigation. In particular, we need to have a better understanding of the exact channel through which employee friendliness (or employee satisfaction) results in superior stock returns in the future. We should also be cautious in interpreting our empirical results for a few reasons. First, the length of our available sample, 14 years, is relatively short. Second, employee friendliness appears to be a persistent firm characteristic, as Employee-Friendly Firms are more likely to remain employee friendly. As such, there are relatively small variations in the constituents of the Top 100 most Employee-Friendly Firms. Third, while the average risk-adjusted return of Employee-Friendly Firms is statistically significant, its economic magnitude is rather moderate at around 2% per year. Finally, it takes relatively long time horizons for Employee-Friendly Firms to realize superior stock returns, when compared to other return predicting firm characteristics. These are some of the issues that investors should consider when they seek investments in some of these Employee-Friendly Firms.

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Table 1: Nikkei's Survey and Employee-Friendly Firms

Release dates	Nikkei's survey		Employee-Friendly Firms (Top 100)				
	# of respondents	# ranked	# effective	# of additions	# of deletions	Market cap (JPY bil)	
						Median	Minimum
2003/7/23	161	30	29	0	0	647.0	17.6
2004/6/22	183	100	94	70	5	647.6	26.3
2005/9/5	249	100	85	17	26	779.6	33.0
2006/8/1	252	252	82	17	20	969.0	47.7
2007/8/27	399	200	82	20	20	1,306.6	46.7
2008/9/1	442	200	83	22	21	998.8	33.7
2009/9/7	436	200	82	17	18	691.5	27.9
2010/9/21	478	200	77	17	22	724.4	23.9
2011/9/26	465	200	74	15	18	693.3	9.6
2012/10/1	480	200	72	12	14	650.7	21.3
2013/11/5	436	200	82	24	14	930.6	32.0
2014/10/6	439	200	79	13	16	1,131.1	25.0
2015/10/5	454	200	75	15	19	1,273.0	8.1
2016/10/3	462	200	76	15	14	1,223.0	8.1

Table 2: Sector Weights

(%)	Employee-Friendly Firms								TSE1 universe as of 2016	
	2003	2004	2006	2008	2010	2012	2014	2016	# of firms	Mkt cap
Fishery, agriculture & forestry	0	0	0	0	0	0	0	0	0.3	0.1
Mining	0	0	0	0	0	0	0	0	0.2	0.3
Construction	0	2.1	1.2	4.8	5.2	4.2	5.1	5.3	4.9	2.9
Foods	10.3	6.4	3.7	1.2	3.9	2.8	6.3	6.6	3.6	4.9
Textiles and apparels	3.4	5.3	4.9	2.4	2.6	2.8	2.5	2.6	1.5	0.7
Pulp and paper	0	0	0	0	0	0	0	0	0.7	0.3
Chemicals	10.3	9.6	8.5	12.0	10.4	16.7	12.7	9.2	5.9	6.2
Pharmaceutical	3.4	5.3	3.7	1.2	2.6	2.8	3.8	0	1.8	5.4
Oil and coal products	0	0	2.4	2.4	1.3	0	0	0	0.4	0.5
Rubber products	0	0	0	0	1.3	1.4	1.3	1.3	0.5	0.9
Glass and ceramics products	3.4	3.2	2.4	2.4	1.3	0	1.3	1.3	1.6	0.8
Iron and steel	0	1.1	0	0	0	0	1.3	0	1.3	1.1
Nonferrous metals	0	2.1	1.2	1.2	1.3	1.4	0	0	1.0	0.7
Metal products	0	0	0	0	0	0	1.3	0	2.5	0.7
Machinery	3.4	8.5	2.4	7.2	6.5	6.9	6.3	6.6	6.4	4.7
Electric appliances	27.6	19.1	23.2	19.3	20.8	25.0	19.0	18.4	7.2	11.1
Transportation equipment	6.9	5.3	3.7	7.2	5.2	2.8	3.8	1.3	2.7	9.7
Precision instruments	3.4	2.1	2.4	0	1.3	1.4	1.3	0	1.4	1.5
Other products	6.9	4.3	4.9	2.4	3.9	4.2	3.8	3.9	3.0	2.0
Electric power and gas	3.4	5.3	6.1	6.0	5.2	0	0	0	0.6	1.6
Land transportation	0	1.1	0	0	0	0	0	0	1.8	3.8
Marine transportation	0	1.1	1.2	1.2	0	0	0	0	0.4	0.2
Air transportation	3.4	1.1	1.2	1.2	0	1.4	1.3	2.6	0.1	0.4
Warehousing and harbor transportation	0	0	0	0	0	0	0	0	1.0	0.2
Information & communication	0	0	3.7	3.6	3.9	4.2	6.3	7.9	10.9	10.5
Wholesale trade	6.9	4.3	4.9	4.8	7.8	8.3	7.6	9.2	9.3	4.3
Retail trade	0	4.3	2.4	1.2	2.6	1.4	2.5	5.3	9.6	6.3
Banks	0	0	2.4	6.0	2.6	1.4	1.3	5.3	2.5	6.6
Securities and commodities futures	0	1.1	3.7	2.4	2.6	2.8	2.5	1.3	1.2	0.9
Insurance	6.9	3.2	3.7	6.0	3.9	5.6	5.1	6.6	0.4	2.0
Other financing business	0	3.2	3.7	1.2	1.3	1.4	1.3	1.3	0.9	1.4
Real estate	0	0	0	0	0	0	0	1.3	3.3	2.4
Services	0	1.1	2.4	2.4	2.6	1.4	2.5	2.6	11.0	4.9

※ We report the fraction of each industry sector in 2003 (the first year) and every other year starting from 2003.

Table 3: Financial Attributes of Employee-Friendly Firms Relative to Those of Peers

	Employee-Friendly Firms		New additions	
	# of Obs	Mean diff	# of Obs	Mean diff
Tobin's q	1,068	0.020 (0.5)	270	0.027 (0.8)
Gross profitability	991	4.88% *** (3.8)	255	3.89% *** (3.2)
Operating profitability	1,067	0.18% (0.6)	270	0.43% (1.4)
ROE	1,068	0.44% (0.9)	270	1.33% * (1.9)
R&D expenses / total assets	861	0.63% *** (4.2)	221	0.48% *** (3.4)
Capital expenditures / total assets	1,060	0.41% *** (3.9)	267	0.33% *** (2.9)
Financial leverage	1,068	0.156 *** (3.9)	270	0.182 *** (4.8)
Pension funding ratio	917	4.38% *** (2.7)	233	1.93% (0.9)
Foreign investor ownership	1,065	1.98% ** (2.3)	268	1.89% * (1.8)
MSCI Social Score	665	0.350 *** (3.0)	117	0.316 ** (2.1)
MSCI Governance Score	665	0.161 * (1.9)	117	0.084 (0.6)

※ Tobin's q is the ratio of market cap to total assets. 'Gross profitability' is the ratio of revenues minus cost of goods sold to total assets. 'Operating profitability' is the ratio of operating income to total assets. 'Financial leverage' is the ratio of total assets to common equity. 'Pension funding ratio' is the ratio of pension assets to pension liabilities, which means a company with a higher ratio has a more robust pension plan.

※ "Obs" is observations. 'Mean diff' is the average difference over the whole sample between an Employee-Friendly firm's value and its reference portfolio's value at the end of the month in which Nikkei releases its annual rankings. Cluster-Robust t statistics (by firms) are shown below in parentheses. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 4: Relative Financial Performance

	Employee-Friendly Firms			New additions		
	Gross profitability	Operating profitability	ROE	Gross profitability	Operating profitability	ROE
3 year ago	4.60% *** (3.5)	0.18% (0.5)	0.17% (0.3)	2.89% ** (2.5)	-0.17% (-0.5)	-0.18% (-0.2)
2 year ago	4.87% *** (3.8)	0.29% (0.9)	0.82% (1.4)	3.56% *** (3.2)	0.29% (1.0)	0.91% (1.0)
1 year ago	5.06% *** (3.9)	0.31% (1.0)	0.89% (1.6)	4.10% *** (3.4)	0.66% ** (2.1)	2.58% ** (2.6)
Release month	4.88% *** (3.8)	0.18% (0.6)	0.44% (0.9)	3.89% *** (3.2)	0.43% (1.4)	1.33% * (1.9)
1 year later	4.80% *** (3.8)	0.16% (0.6)	0.59% (1.2)	3.67% *** (3.3)	0.51% (1.6)	1.45% ** (2.2)
2 year later	4.68% *** (3.6)	0.10% (0.4)	0.25% (0.4)	4.25% *** (3.7)	0.56% * (1.8)	1.32% ** (2.0)
3 year later	4.49% *** (3.4)	0.13% (0.5)	0.27% (0.5)	4.02% *** (3.3)	0.62% * (1.9)	1.86% ** (2.6)
4 year later	4.47% *** (3.4)	0.14% (0.5)	0.16% (0.3)	3.25% *** (2.7)	0.26% (0.7)	-0.08% (-0.1)
5 year later	4.65% *** (3.5)	0.21% (0.8)	0.67% (0.9)	4.32% *** (3.7)	0.55% (1.6)	1.44% * (1.7)
6 year later	4.40% *** (3.3)	0.10% (0.4)	0.27% (0.4)	3.53% *** (3.1)	0.05% (0.2)	0.91% (1.0)
7 year later	4.22% *** (3.2)	0.10% (0.4)	0.43% (0.6)	3.57% *** (3.1)	0.04% (0.1)	1.21% (1.1)

※ “Release Month” refers to end of the month in which Nikkei releases its annual ranking. Also see notes to Table 3.

Table 5: Relative Cumulative Stock Return Performance**Panel A: Monthly**

	Employee-Friendly Firms		New additions	
	Size×B/M	Industry	Size×B/M	Industry
1 month later	0.19% (1.0)	0.40% ** (2.3)	-0.04% (-0.1)	-0.05% (-0.1)
2 month later	0.42% (1.5)	0.47% ** (2.0)	0.06% (0.1)	0.01% (0.0)
3 month later	0.67% * (1.9)	0.74% ** (2.5)	-0.07% (-0.1)	0.13% (0.2)
6 month later	0.38% (0.7)	0.38% (0.9)	-0.20% (-0.2)	0.00% (0.0)
9 month later	1.60% *** (2.7)	0.97% ** (2.0)	0.97% (0.9)	0.55% (0.6)

Panel B: Yearly

	Employee-Friendly Firms		New additions	
	Size×B/M	Industry	Size×B/M	Industry
1 year later	1.33% * (1.9)	0.56% (0.9)	2.06% * (1.7)	1.02% (0.9)
2 year later	4.46% *** (3.0)	2.21% * (1.7)	9.16% *** (3.5)	5.82% *** (2.7)
3 year later	5.67% ** (2.5)	3.28% * (1.8)	13.33% *** (3.4)	9.27% *** (2.8)
4 year later	6.96% ** (2.2)	3.68% (1.4)	13.70% *** (2.8)	9.43% ** (2.3)
5 year later	6.82% * (1.8)	2.59% (0.8)	13.10% *** (3.0)	8.09% ** (2.2)
6 year later	6.28% (1.5)	2.33% (0.6)	11.35% ** (2.6)	3.65% (1.0)
7 year later	6.51% (1.4)	3.88% (0.9)	17.51% *** (3.3)	9.71% ** (2.1)

※ This table reports cumulative benchmark-adjusted excess returns from the end of the reference month. Cumulative returns are holding period returns and are not annualized. The reference month is the month in which Nikkei releases its rankings. “B/M” is book-to-market ratio. Also see notes to Table 3.

Figure 1: Cumulative Excess Return over the Market Index

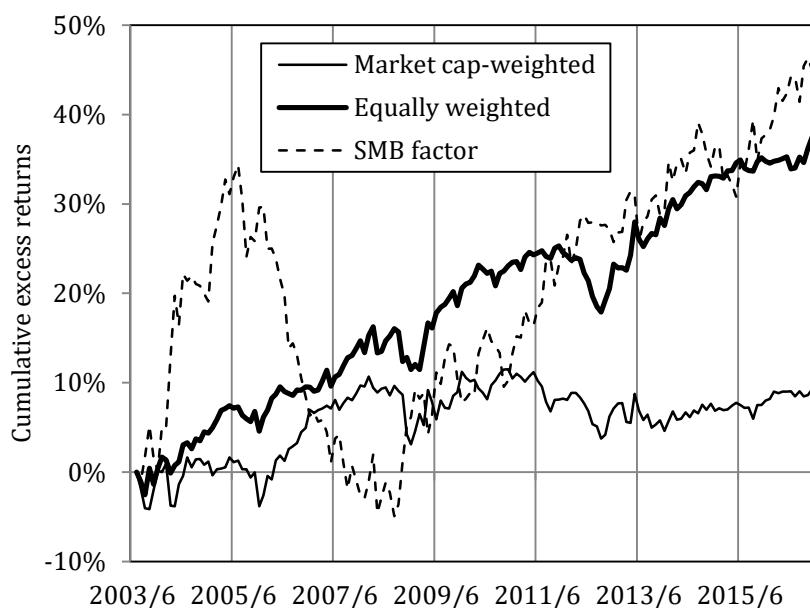


Table 6: Performance Attribution

	Market cap-weighted		Equally weighted	
	coef.	t-stat	coef.	t-stat
α (% pa)	0.81	(1.0)	2.63 ***	(3.3)
Mkt	0.99	(48.1)	1.03	(49.4)
α (% pa)	1.79 **	(2.1)	2.22 ***	(2.8)
Mkt	0.97	(65.7)	1.04	(53.5)
SMB	-0.23 ***	(-5.9)	0.05	(1.6)
HML	-0.01	(-0.3)	0.07 *	(1.8)
α (% pa)	1.80 **	(2.2)	2.22 ***	(2.9)
Mkt	0.97	(67.3)	1.03	(58.9)
SMB	-0.20 ***	(-5.1)	0.07 **	(2.4)
HML	-0.02	(-0.4)	0.07	(1.5)
WML	-0.06 *	(-1.9)	-0.05	(-1.5)
α (% pa)	1.73 **	(2.0)	2.16 ***	(2.6)
Mkt	0.96	(53.4)	1.03	(60.5)
SMB	-0.23 ***	(-6.5)	0.05	(1.6)
HML	0.11 **	(2.5)	0.11 ***	(2.6)
RMW	0.27 ***	(4.6)	0.16 ***	(3.1)
CMA	-0.05	(-0.8)	0.00	(-0.1)

※ Newey-West adjusted t-stats are shown in parentheses. “SMB” stands for small (market capitalization) minus big, “HML” for high (B/M) minus low, “WML” for winner minus loser, “RMW” for robust (profitability) minus weak, and “CMA” for conservative (investment) minus aggressive. Also see notes to Table 3.