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THE EFFECTS ON SHAREHOLDER WEALTH FOR COMPANIES THAT
INVEST IN THEIR EMPLOYEES

by

ALISON M. THRELFALL

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Finance
in the College of Business Administration
and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

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Thesis Chair: James H. Gilkeson, Ph.D., CFA

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ABSTRACT

Companies have been known to reduce their costs by reducing their spending on employee benefits, but in the last decade there has been an increasing interest on how these decisions affect not just employee productivity and turnover, but also overall shareholder wealth and company profitability. This thesis seeks to answer whether companies that have a greater focus on their employee welfare and satisfaction are more financially stable and profitable than their competitors.

The research and analysis consists of 40 companies, 20 highly rated by their employees paired with 20 of the worst companies according to employee opinion and benefits. Each pair must consist of comparable companies based on their industry and size. All companies are also part of Fortune 1000 and must be publicly traded. After conducting multiple tests on the data collected for each company and industry, the results support the hypothesis of a positive correlation between employee spending and shareholder wealth.

DEDICATION

For my family:
you've taught me it's not
what I have in life but
who I have in life
that truly counts.

ACKNOWLEDGEMENTS

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DO COMPANIES THAT INVEST IN THEIR EMPLOYEES CREATE SHAREHOLDER WEALTH?

INTRODUCTION

The subject of this Honors in the Major research project is the importance of changing the mindset of today's corporations to view investing in their employees as the best way to maximize shareholder wealth. This research is of timely relevance: many companies and their employees worldwide have recently experienced a great hardship, especially during the recent recession of 2008. Many businesses reacted by cutting back wages, laying off workers, and minimizing the benefit packages offered to their employees. According to multiple sources such as Harvard Business Review and Forbes (Zeynep, Parrish and Quast), this has been the most common course of action taken by businesses since the Industrial Age: focusing on cost-cutting to obtain short term profitability. In the long term, these companies may start to experience higher employee turnover, employees who are no longer engaged or committed to their work, decreases in company performance, customer dissatisfaction, lower profitability and reduced competitiveness. Changing the thinking of the corporate world is of major importance, not just for its future profitable performance and long term viability, but also to positively impact society as a whole. The question this research project is addressing is: are companies that have a greater focus on their employee welfare and satisfaction more financially stable and profitable than their competitors?

The conventional wisdom in many companies is that they have no choice but to offer low-paying jobs with minimal or no benefit packages. This is especially prevalent in those

companies whose business models entail competing on price. The mainstream assumption is that if companies invest more in employees, customers will have to pay more and profits will erode. According to Zeynep Ton's article, "Labor is often a retailer's largest controllable expense and can account for more than 10% of revenues—a considerable level in an industry with low profit margins. In addition, many retailers see labor as a cost driver rather than a sales driver and could therefore focus on minimizing such costs. Accordingly, they often evaluate store managers on whether they meet monthly (or weekly) targets for payroll as a percentage of sales" (Ton). It can be easy to conclude that some of these employee-friendly retailers, such as the Container Store are able to offer great jobs only because their consumers are willing to pay higher prices for their goods. However, many successful retail chains, like Costco Wholesale Clubs, heavily invest in their store employees and yet they have some of the lowest prices in their industry, along with solid financial performance, and even better customer service than most of their competitors.

As stated by Christopher Matthews, "corporate profits have gone steadily up and consumers have been offered an increasingly wide selection of affordable products, but wages for the majority of employees have stagnated" (Matthews). This trend can be the cause of familiar reasons such as the availability worldwide of cheap labor, from India and China for example, that has been a result of globalization. Many of the competitively, well payed manufacturing jobs have been outsourced overseas, leaving countries like the United States mainly only with low-skill service jobs with low wages, like sales associates for the nation's retailers. This new era led by the globalization of ruthless worldwide competition has led companies to cut expenses anywhere they can, even if this results in keeping wages and employee benefits in these types of jobs relatively low. By underinvesting in their employees,

one could argue that retailers actually make most of their operations more inefficient and therefore leading to a decrease in their profitability.

When companies train and pay their employees well, they are much less likely to leave. Companies have always considered investing in human resources a good strategy, but it is now more important than ever for brick and mortar retailers due to the great rise in the use of e-commerce in the industry, which has brought great emphasis for these retailers to be more efficient and justify their physical existence to their customers. When sales drop, many of the labor budgets take a hit at many retailers since they are set as a percentage of sales. With low labor budgets, store managers are unable to increase their staff levels, even though they know this action would make the business more profitable. And with retail managers hesitant on investing in employee training and benefits that would help increase retention levels and boost store sale, this vicious cycle continues. It comes without surprise that employee morale takes a toll as a consequence of unpredictable schedules, short shifts, and dead-end jobs. “When morale is low, absenteeism, tardiness, and turnover rise, increasing the variability of the labor supply, which, of course, makes matching labor with customer traffic more difficult” (Ton). The effects of both the retailing’s vicious and virtuous cycles can also be observed in Figure 1 below.

Figure 1



The impact experienced by employers with wellness programs in the workplace is a “3-to-1 return on their investment, including a reduction in health care costs, reduced absenteeism, an increased intention to stay with the employer longer and increased level of commitment from employees” (Wellness Summary).

Research also shows that “higher spending on employee training and efforts to create strong corporate learning cultures can reduce turnover, increase employee engagement, and improve productivity and customer satisfaction” (Munro). Workers do recognize and acknowledge the investment, and repay their employers with superior productivity and loyalty, ultimately making customers happy.

Companies classified as great places to work benefit from increased revenues and decreased expense or even greater productivity per employee, along with a great increase in overall employee morale and retention. With the increase in healthcare costs along with the

increasing rate of obesity, heart disease and diabetes, which without a doubt has also been influences with the increasing sedentary working conditions that many workers experience daily for 8 or more hours, “an investment in employee wellness should not be thought of as a nice-to-have, but an investment that enables significant savings and contributes to creating a great workplace culture” (Caccamese).

When you have happy, satisfied employees, retaining them creates value that will find its way into traditionally calculated ROI. As an example, “the average voluntary turnover rate among top rated employers is less than 5% compared to the national average of 21.1%” (Parrish). One may think at first that investing in employee training when the current economy is challenging would be counter-intuitive since it would require a significant capital investment up front and thus resulting in increased costs for the firm. But when companies fail to invest in the development of their employees, its comparable to a manufacturer failing to upgrade their equipment but at the same time still expecting an increase in productivity. According to Diana O’Brien, from Deloitte Consulting, “the top five reasons to invest in learning and development are:

1. To increase performance and productivity: Better-skilled professionals deliver more and better work.
2. To attract and retain talent: Development is a gift, and our professionals recognize and appreciate that. Knowledge workers – particularly younger workers, who can be the hardest group to retain – greatly value this kind of support.
3. To strengthen culture and foster diversity of thought

4. To nurture innovative ideas: All companies can benefit from consistently investing in learning initiatives that foster creativity and intellectual growth and drive employees to stay ahead of their competitors.
5. To better serve customers: Regardless of your job – whether it’s serving coffee, manufacturing automobile parts, or consulting on IT infrastructure – learning will always help you become better at what you do, and therefore better able to address your customers’ needs.”

(Quast)

When the economy is down, investing in learning programs, mentoring and other new opportunities for employees shows them the company’s commitment to their overall success. In return, workers commit themselves to the success of the organization as a whole. All too often, the budgets for training are the first to be cut in organizations and are the last budgets to be reinstated (Abudi).

In recent years, with a greater focus on how companies can make themselves more competitive, there has been a lack of attention paid to the financial benefits of investing in employees. With all the different types of resources that are readily available to companies, human capital has tremendous potential to improve the ability for any organization to compete in today’s market conditions. With relatively comparable factors such as material costs and labor expenses between different business entities, human capital offers a greater ability for organizations to differentiate themselves from their competition. Tragically, many people view this investment only through the lens of monetary expenditures. “Managers who devote their

time to motivating employees fulfill a critical role in the investment process. History has shown that employees who are properly motivated enjoy a greater level of overall satisfaction with their position within any organization” (McGunagle). Many independent organizations, such as Glassdoor, conduct surveys with employees of public companies in order to rank and provide lists of the highest rated companies. It is no coincidence that one of the most important factors for employees on such surveys is the benefits offered to them by their employers. This satisfaction is expected to result in improved productivity and performance in all areas of employment, leading to increased profitability and greater grounds for competition. “One thing is for certain, and that is that the increasingly high level of competition in the global marketplace is causing more and more companies to take a second look at their personnel resources” (McGunagle). As more businesses commit their time and money to further investing in their human capital, this positive development will be the key to the future success of the firm.

LITERATURE REVIEW

In his book, *Finance and the Good Society*, the well-known professor of finance and winner of a Nobel prize in Economics, Robert J. Shiller, has put in perspective the change that has occurred in recent years and the importance of the role of finance and how it affects society as a whole. Finance is usually understood as the science and practice of enlarging portfolios, managing the risks and tax liabilities, ensuring the rich grow richer which seems to be working against an egalitarian society. He points out that finance is a powerful tool because it has the ability to amass capital, pool information, and coordinate and incentivize people. Shiller goes on to explain that people cannot go back to a simpler, older, kind of civilization, and that we can only move forward. “To be successful, we have to come to a better understanding of these discontents as well as what kinds of innovations, financial or otherwise, we should focus on developing” (Shiller 129).

BUSINESS MORALS

Anna Bernasek, in her 2010 book *The Economies of Integrity*, concluded that business morals are the key to a beneficial and dynamic economy. She refers to the “constant temptation to cut corners to save money or exploit the trust of others.” Bernasek proposes that businesspeople with moral standards resist that temptation: “Integrity works to create wealth by making the economy more efficient.”

William O. Douglas, the second head of the SEC and later a U.S. Supreme Court justice, wrote in 1940: “In big business, management tends to become impersonal. The huge aggregations of capital of big business mean that the number of public security holders is large.

These investors are largely scattered. Management acquires a sort of feudal tenure as a result of the utter dependence of the public security holders on them... There can be no question that the laxity in business morals has a direct relationship to the size of business. Empires so vast as to defy the intimate understanding of any one man tend to become playthings for manipulation.”

Two University of Chicago economists, Raghuram Rajan and Luigi Zingales, in their 2003 book *Saving Capitalism from the Capitalists* recognized the need for appropriate regulation in many places and also believe that society can exert oversight over regulators to help prevent their capture by private interests. Their position is that it isn't that society needs “more” or “less” regulation, but that regulation must not be commandeered by selfish special interests, and that it needs to be done right.

Shiller affirms that the key to achieving our goals and reinforcing human values is to continue to maintain and improve upon a democratic financial system that considers the whole range and diversity of human motives and drives. “We need a system that allows people to make complex and incentivizing deals to further their goals, and one that allows an outlet for our aggressions and lust for power. It must be a system that redirects the inevitable human conflicts into a manageable arena, an arena that is both peaceful and constructive” (Shiller 239).

CEO INCENTIVIZATION

In “Does the Stock Market Fully Value Intangibles?”, Professor of Finance at Wharton, Alex Edmans, writes on the relationship between Employee Satisfaction and Equity Prices. “What's needed is not just for the manager to know employee satisfaction matters, but also to have the incentive to act on this” (Edmans). Managers who are being compensated on short-term

stock price changes, will not change their current arrangements about investing in employee satisfaction or other valuable intangibles. Edmans suggests that a way to fix this problem is to change the way managers are compensated, for example by adding a limitation that these stock or options cannot be sold for a specified number of years.

The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 proposes that CEO incentivization by stock options provides an advantage over rewarding the CEO with yearly bonuses for achieving high profits. When CEOs received profits-based bonuses, this might be encouraging them to exploit the company for short-term success but neglecting the longer-term problems that may arise from these actions, which leaves an unfavorable situation for future successors (Dodd-Frank Act, 21). With stock-price-related incentives, CEOs are further encouraged to drive the company in the right directions and towards more opportunities that add long-term value. The Squam Lake Group, a non-affiliated, non-partisan group of academics who offer guidance on the reform of financial regulation, has gone further and recommends that bonuses be deferred during a period of time, in a way that would deprive the CEO of compensation if there was ever a bailout or failure of the company. This has yet to pass congressional approval to become an enforceable law, but there has been recent support on such regulations.

In "Incentivizing CEOs to Build Customer- and Employee-Firm Relations for Higher Customer Satisfaction and Firm Value," Xueming Luo, Jan Wieseke, and Christian Homburg explained that firms that are currently performing poorly are tempted to adopt a short-term orientation in order to attempt to conserve the company. Pursuing this strategy may result in

laying off employees, which ultimately negatively affects employee relationships with the firm and inferior customer satisfaction, and changing CEO compensation towards a short-term outlook because it is more motivating than a longer-term compensation when the company is in danger of going out of business. These changes to the proportion of long-term equity-based compensation for CEOs did result in a positive and significant impact on a change in strategies to build stronger customer relations. “Actions to build both customer and employee relations have a positive impact on changes in customer satisfaction” (Luo).

As can be concluded from Davis, Appel and Cohn’s “Free Lunches and ROI: A Modern Fable”, the return on investment (ROI) measure may not be the best way to measure and incentivize management performance bonuses, as if not observed carefully, some investment trading between managers can create increasing ROIs in their field even if the reality of the situation is simply stagnated growth for the company as a whole. Careful observation of such factors at play is necessary if ROI is being used to evaluate the company’s performance.

EMPLOYEE SATISFACTION AND CORPORATE VALUE

In the research done by Wharton University on “How Investing in Intangibles – Like Employee Satisfaction – Translates into Financial Returns”, companies categorized as good places to work did earn returns that were more than double those pertaining to the overall marketplace. The companies on Fortune magazine’s annual list of the “100 Best Companies to Work for in America” between the years of 1998 and 2005, showed an average on their returns of 14% per year, as opposed to the 6% a year for the overall market. It is then safe to conclude that pleasant working conditions do help influence employees to identify with the company,

resulting in employees expending more effort and efficiency than the minimum required of them by the employment contract. Moreover, it can be a powerful strategy to implement in order to increase the retention of key employees. Unfortunately, the market fails to incorporate intangibles, such as employee satisfaction levels and good management, even when this information is made available to the public and investors could have benefitted from significant risk-adjusted returns by trading on this Fortune's list.

As concluded by Alex Edmans in his research, "Traditional management theory treats workers like any other input — get as much out of them as possible and pay them as little as you can get away with." Even though some managers believe that satisfied employees enhance long-term corporate performance, they may not act on these beliefs since investing in human capital reduces company earnings in the short-term. "This is a large concern people have had for a couple of decades now — that the American corporate system is short-term or myopic" (Edmans).

Shahid and Azhar wrote in "Gaining Employee Commitment: Linking to Organizational Effectiveness," that those employees who enjoy their jobs tend to stay longer with their employers and overall work harder than those employees who do not. Job satisfaction and work-life satisfaction are very important, especially when it comes to employee commitment to the company. "Inadequate monetary reward system is seen as a major disappointment of employees' commitment and this can bring about increase in absenteeism, lateness, low performance, feeling of grievances, and employees turnover" (Shahid).

As cited by Accord Management Systems, disengaged employees are more likely to have a higher cost for their organization. According to the report, “employees who are disengaged:

- Miss an average of 3.5 more days per year.
- Are less productive.
- Cost the US economy \$292 to \$355 billion per year.”

(Accord Management Systems)

EMPLOYEE BENEFITS AND COMPENSATION

Baughman, DiNardi, and Holtz-Eakin reveal in "Productivity and Wage Effects of "Family-Friendly" Fringe Benefits," that as women’s participation rate in the labor force has increased dramatically in recent years, along with the number of dual-earner households in the Western hemisphere, many employers are starting to provide more employee benefits that support a better balance between work and family life, such as flexible schedules, at-work daycare facilities or daycare subsidies, as well as parental leave. A significant decrease in employee turnover has also be linked to firms that provide flexible sick leave and child care referral services.

Siegwarth Meyer, Mukerjee, and Sestero analyze in "Work-Family Benefits: Which Ones Maximize Profits?" the positive work-family benefits on company profits through the effect of gaining a positive labor market reputation. The implication being that just the presence of benefit programs, rather than the actual use, attracts the best employees and decrease employee stress levels in the workplace resulting in an increase in productivity. “In general, work-family programs have a positive effect on profit rates” (Siegwarth Meyer). These results support the

efficiency compensation theory, which states that firms that provide compensation packages that are above the market norm are able to reduce their worker turnover, absenteeism and tardiness, resulting in increased productivity, which leads to an increase in the overall profitability of the company.

William Dennis writes in "Wages, Health Insurance and Pension Plans: The Relationship between Employee Compensation and Small Business Owner Income," that larger firms on average provide greater compensation than do smaller ones. Larger businesses have the ability to provide higher wages and a superior likelihood for health insurance coverage, as well as a greater opportunity for more frequent pension plan participation. Overall, employees in better paying industries also receive more benefits.

The Employee Benefit Research Institute, a nonpartisan, nonprofit organization that provides unbiased information on employee benefit plans, reports that: "Ninety-four (94) percent of firms employing 1,000 people or more offered an employee health insurance plan (77 percent of employees participating) compared to 33 percent among firms with 10 or fewer (26 percent of employees participating). Twenty (20) percent of businesses with under 25 employees sponsor pension plans (15 percent of employees participating) compared to 85 percent of firms employing 100 or more (66 percent of employees participating)."

In "LOW-COST BENEFITS, Big-Time Payoffs," Mark Opperman illustrates that, when business finances are not as readily available and the firm is experiencing a slight decline in profitability, it's tempting to solve the problem at hand by cutting back on employee benefits. But these benefit cuts leads to unhappy employees, which results in higher turnover rates. Staff

that is unmotivated and underpaid simply will not be as productive as those who feel valued and taken care of by their company. If a company cuts benefits, it risks cutting benefits in the long-run.

J.D. Phillips details in “The price tag on turnover”, that the average cost of employee turnover for a firm is approximately 1.5 times the annual salary of the worker that is being replaced. This number includes both direct recruiting costs involved with filling the position and the loss in productivity in the workplace resulting from the employees that are preparing to depart and leave positions vacant in the company until a replacement is found. An example of a company taking action to foster and instill a sense of loyalty in their employees is Costco; CEO Jim Sinegal has been criticized by multiple Wall Street analysts throughout the years for being ‘too generous’ to Costco’s customers and employees and for leaving shareholder interests as their lowest priority. Yet, just as its stated on the company’s code of ethics on their website, after they accomplish taking care of their employees and members, following the law and respecting their suppliers, Costco will achieve the ultimate goal of rewarding their shareholders. Costco claims their success of differentiating themselves from the rest of the industry by paying some of the highest wages and offering great benefits and generous health plans to their employees has resulted not only in a very low turnover but also in strikingly low occurrence of thefts from their employees, some still experienced at large by their competitors. Following their personal code of ethics company-wide has led to great competitive advantage and annual sales of over \$40 billion, which in the end benefits all stakeholders in Costco.

Sands and Harper, in "Family-Friendly Benefits and Organizational Performance," conclude that employee engagement does lead to higher financial performance, customer satisfaction as well as employee retention. Engaging employees in the workplace lead to a decrease in the functional costs of the organization because employees show more commitment and achievement than those non-engaged employees do. By conserving the assets in the workforce, companies are able to retain employees and their intellectual capital, which further secures progression within the business and the company's ability to meet their key business objectives. Products of a healthy workplace with employees who are engaged in both their work and the company include higher work significance, organizational advocacy and an organizational climate. Striving to maintain high levels of employee engagement subsidizes the short-term survival of the firm during economic volatility, but it also is a crucial factor when market conditions are favorable in the long-term, for business attainment and better positioning. Companies with the "right" amount of engagement in the workplace, enjoy a source of competitive advantage within their talent supply as well as business results that are hard for other companies to imitate.

METHODOLOGY

The methodology being used for this research to compare the 40 companies selected is based on previous research done by D. T. Livingston and James B. Henry which compared a sample of 51 companies that offered employee stock ownership plans and 51 companies that did not. This consists of analyzing past historical data on each company selected. Previous research has indicated systematic discrepancies in financial ratios based on industry and firm size, therefore a matched-pair analysis is used to control for these biases. The financial ratios are then calculated for each ESOP-firm and then compared to their non-ESOP match. A t-test will also be used along with each ratio for each pair to determine statistical differences.

Edward Altman, in “Financial Ratios, Discriminant Analysis and the Prediction of Corporate Bankruptcy,” stated: “Ratio analysis in a univariate framework is susceptible to faulty interpretation and is potentially confusing.” In order to attempt to eliminate such problems, this research will also use multiple discriminant analysis (MDA) to analyze similar data. This has been done by multiple scholars such as Edmister, Pinches and Mingo, Stevens and many others in their research. Livingston and Henry also used this method as an additional test to “determine whether the financial ratios for ESOP firms and non-ESOP firms are sufficiently different to allow statistical identification by group” (Livingston and Henry).

The combination of ratios that will be used in this research paper consist of profitability, leverage, liquidity and variability ratios in order to compare each matched pair along with using their t-test results, and then multivariate analysis (concerning the linear and the quadratic rules) will be used in order to make generalized conclusions on the results. The following tables have

been taken from the research done by Livingston and Henry, only data pertaining only to ESOP-specific analysis has been eliminated as it proves irrelevant for this research paper.

Table 1: Profitability Ratios

EBIT/total assets	EBIT/A
Pre-tax income/total assets	PTI/A
Net income/total assets	NI/A
EBIT/total equity	EBIT/E
Pre-tax income/total equity	PTI/E
Net income/total equity	NI/E
EBIT/net sales	EBIT/S
Pre-tax income/net sales	PTI/S
Net income/net sales	NI/S

Table 2: Leverage Ratios

Long-term debt/total assets	LTD/A
Total liabilities/total assets	TD/A

Table 3: Liquidity Ratios

Net working capital/total assets	NWC/A
Net working capital/net sales	NWC/S
Current assets/current liabilities	CR

In order to compare the paired companies to their respective industry, this thesis will be using the following ratios in Table 4. The company is then compared to its respective industry

averages based on the S&P 500 category in which it falls. These measures are used by multiple information systems, such as Bloomberg, in their financial analysis of each company to their industry. The following table was extracted directly from the ratios provided by Bloomberg's benchmark analysis of public companies.

Table 4: Industry Ratios/Benchmark Analysis

Return on common equity	ROE
Return on capital	ROC
Operating margin	OM
Price/earnings per share	P/EPS
Price/book value	P/BV
Net debt/EBITDA	ND/EBITDA

DATA COLLECTION

For the data collection for this research, a short list was obtained with a sample of 20 of the Top Rated / Best Companies to work for (also referred to as “green”) and 20 of the Lowest Rated / Worst Companies to work for (also referred to as “red”), based on independent ratings reports.

The criteria used for each of the selected companies are as follows:

- Must be a publicly traded corporation
- Must be on the US Fortune 1000 company list (in at least one of the following years: 2013, 2014, 2015)
- Based on Employee Opinion Rating Reports and surveys from Glassdoor, Workplace Dynamics, Fortune, Payscale, and 24/7 Wall St. These must be independent studies - not paid for by the companies.
- Two representatives in each industry selected: one top rated and one lowest rated company.

The process taken to select the 20 pairs of companies is as follows: first a list of the best and one for the worst companies that are also in the U.S. Fortune 1000 company list is created with each company’s respective industry; then all the companies within the same industry are grouped together; once these groups are formed, companies are then paired (one best and one worst) within each industry group while taking compatible company asset size into consideration, which is in part controlled by being all publicly traded companies within the U.S. Fortune 1000 list. The 20 pairs are then randomly selected from all the listed pairs formed, while also trying to keep a good balance and variety of different industries to avoid possible industry bias.

Once the 40 companies have been paired within their industry, data is mostly gathered using Bloomberg, to calculate ratios and run the following tests:

1. Regression analysis
2. Benchmark analysis
3. Wilcoxon Signed Rank Test
4. T-Test for two-sample assuming equal variances

Based on the ratio data collected, each pair of companies is compared and also compared with their specific industry averages. The criteria for the comparison will include: profitability measures such as return on equity, return on investment, and return on assets; total return on stock performance during 1- and 5-year periods; stock price performance over the past 5 years; and revenue growth. Other ratios for size, growth, assets in place and the Tobin's Q ratio will also be included in the analysis. Benchmark analysis will take ratios from each company as well as each pair's respective comparable industry ratios and a comparison will be made; the main ratio being used due to availability of information is P/BV. The Wilcoxon signed rank test is a non-parametric statistical hypothesis test used to compare between two related samples to deduce if their population mean ranks are significantly different; also called a paired difference test or median test. It assumes that each pair was chosen independently and at random, and that the data being paired comes from the same population at large; it's used when the population can't be assumed to be normally distributed. A p-value less than or equal to 0.025 and 0.005 shows that the results are significantly different from zero. The two-sample t-test assuming equal variance is the traditional two-sample t-test in use today. It assumes that the distributions of the two

populations are normal and that the variances of the two distributions are the same. In this thesis we are using this t-test to find out if the comparison of each paired measure selected is significantly ($t\text{-stat} \geq 1.96$) different from the hypothesized mean difference of 0. The regression analysis employed will show the adjusted r-squared (indicates how well the data selected fits the statistical model), the number of observations, and the coefficient value, standard error, t-stat and p-value for each of the respective categories of data selected. All the regressions assume a 95% confidence level.

The selected sample companies are shown in the table below.

Table 5: Selected Top Rated and Lowest Rated Companies to Work For, By Industry

INDUSTRY	BEST (GREEN)	WORST (RED)
Services – Specialty Retail, Other	Container Store (TCS)	Hhgregg (HHG)
Financial Services	Capital One (COF)	Bank of New York Mellon (BK)
Services, Department Stores	Nordstrom (JWN)	Dillard’s (DDS)
Services – Discount, Variety Stores	Costco (COST)	Dollar General (DG)
Services – CATV Systems	Discovery Communications (DISCA)	Dish Network (DISH)
Technology – Diversified Computer Systems	Apple (AAPL)	Hewlett-Packard (HPQ)
Services, Department Stores	Macy’s (M)	Sears Holdings (SHLD)
Technology – Information Technology Services	Rackspace Hosting (RAX)	NCR (NCR)

Services – Electronics Stores	Best Buy (BBY)	RadioShack (RSHCQ)
Services, Department and Grocery Stores	Target (TGT)	Wal-Mart Stores (WMT)
Services – Business Services	Microsoft (MSFT)	Fiserv (FISV)
Technology, Information Technology Services	Factset Research Systems (FDS)	Accenture (ACN)
Technology, Communication Equipment	Qualcomm (QCOM)	Cisco Systems Inc. (CSCO)
Financial, Credit Services	Credit Acceptance (CACC)	American Express (AXP)
Financial Services, Investment	Goldman Sachs Group (GS)	Bank of America (BAC)
Services – Grocery, Variety Stores	Whole Foods Market (WFM)	Family Dollar (FDO)
Automobile Services	Carmax (KMX)	Hertz (HTZ)
Telecommunication Services	Verizon (VZ)	Frontier Communications Inc. (FTR)
Services, Restaurants	Cheesecake Factory (CAKE)	Cracker Barrel Old Country Store Inc. (CBRL)
Specialty Eateries	Starbucks Corporation (SBUX)	McDonald's (MCD)

RESULTS

Examining the profitability ratio data from Table 6, in 17 of 20 cases, ROA was higher for ‘green’ companies than their ‘red’ comparison company. However, the t-test was insignificant so the null hypothesis that the ROA are equal cannot be rejected. On the other hand, the difference was significant ($p\text{-value} < 0.025$) using the Wilcoxon signed rank test, as can be observed on Tables 13 and 14. The EBIT/E ratios overall, except for eight pairs of companies (four of which were only minor differences of less than 0.05), consists of ‘green’ companies with higher ratios than their ‘red’ counterparties yet this measure doesn’t test significant for the t-test analysis or the Wilcoxon signed rank test. PTI/E ratios only showed six instances where the ‘red’ companies had higher ratios, three of which had a difference of less than 0.055, yet this measure’s t-test doesn’t test significant, but did show significance at a $p < 0.025$ under the Wilcoxon analysis. For NI/E, the ratios between the paired companies only have six pairs of exceptions, two of which are under 0.03, besides which all ‘green’ companies had higher ratios. Yet this was another profitability measure that didn’t test as significant on the t-test or the Wilcoxon analyses. These discrepancies could be due to the sample size. All other profitability measures did prove to be significant under both tests.

Table 7 provides results for the three liquidity ratios used in the analysis. The six financial companies have been omitted due to the different nature of their business. NWC/A did have ten company pairs of companies in which ‘red’ was higher than ‘green’, but of these 5 had differences of less than 0.06. This measure didn’t test significant under either the t-test or the Wilcoxon analyses. For the NWC/S ratio there were nine exceptions were the ‘green’ companies

had a lower ratio, but of which five were small differences of under 0.06. This ratio also didn't test significant on either test employed in the analysis. The current ratio is overall higher for 'green' companies than 'red' ones, except for eight instances (one of which was a minor difference of less than 0.07), yet the results of this measure also didn't test as significant on the t-test analysis or the Wilcoxon signed rank test. This all could be due to the omission of the three pairs of financial companies, which created an even smaller sample size to work on.

The difference in leverage ratios listed on Table 8 was insignificant on both the t-tests and the Wilcoxon analysis. LTD/A and TD/A are expected to be lower for 'green' companies as they should be able to cover their debt better than 'red' companies with their total assets; makes them more stable companies overall, but unless there is more information as to why the company has the debt and what its being used for one could also argue that the more stable and profitable companies have the ability and capacity to have more debt without the need to increase their total assets. For purposes of this thesis, although imperfect, it's assumed that the leverage ratios should be lower for 'green' companies overall. For LTD/A there are eight instance when this is not the case, out of which four had a difference of less than 0.1 and a fifth pair had a mere difference of 0.00488. TD/A only had six instances where the 'red' companies had lower ratios, but three had a difference of less than 0.07 and a fourth pair had only a difference of 0.026892. Another measure listed on the table is the growth ratio R&D/S; all financial companies were omitted from being listed since the nature of their business doesn't consist of any, if at all, research and development costs. This ratio wasn't tested due to the results mainly consisting of most companies, except for eight, not investing any significant amount that would be reported on their financial statements. This could be due to the nature of their business or the economic

conditions for the industries during the period being analyzed. To better analyze this ratio, more information would be needed and possibly reviewing the ratio over a longer time period, or simply eliminating it or replacing it for a more applicable growth ratio.

Tobin's Q ratio, which could also have been categorized as a type of profitability ratio, is shown on Table 9. This measure consists of the sum of the market capitalization plus total debt and preferred stock dividend divided by total assets. The measure for the previous year did test significant for both the t-test and the Wilcoxon analysis with a $p < 0.005$, but the current year did not test significant for the t-test but did test significant under the Wilcoxon analysis with a $p < 0.005$. Further observation shows that five pairs of companies had 'red' companies with a higher ratio, out of which two had a difference of less than 0.15. This could possibly be the cause of a small sample size. The ratio for size is also listed as the natural logarithm of total assets; this is simple a control measure for which no real comparison is to be done other than making sure the companies being compared are not much different in size. Further testing does show that there is no significant difference on neither the t-test or the Wilcoxon signed rank test, which further supports the actual pairing between the companies in the sample being used for this research. The last measure listed on this table is the assets in place, which is represented by Inventory plus Gross Property, Plant and Equipment divided by total Assets; this measure was also used as a control measure of sorts, with financial companies being omitted due to the nature of their assets and composition. Further testing showed that the ratio was not significantly different under the t-test but did show as significant under the Wilcoxon analysis at a $p < 0.025$.

On Table 10 are the revenue growth measures. Both the one-year and five-year ratios for this measure test significant on the t-test for two-sample assuming equal variances and the Wilcoxon signed rank test with a p-value of less than 0.005, meaning that the differences shown between the ratios of the paired companies was unlikely to occur purely by chance.

Table 11 shows the stock performance measure based on the total return on investment over a one-year and a five-year period, adjusted for any stock splits and/or stock dividends during the period analyzed. These stock performance return on investment measures were not considered to be significant on either the t-test or the Wilcoxon sign test. Without further data collection and analysis in this area, it could assume that the stock prices of the companies already show all the information available to the market, including employee benefits.

The benchmark ratios shown on Table 12 compare the company pairs along with their industry averages. Only P/BV was tested on the t-test and the Wilcoxon analysis since it was the only measure for which all information was available for all companies. This measure didn't test significant under the t-test or the Wilcoxon analysis (its p-value was equal to 0.025), yet there are only five instances when the 'red' companies have higher ratios, four of which had a difference of less than 1. Again, these results could be due to the size of the sample tested. The differences can be observed between the rest of the ratios on the table for which all information is available and determine how they compare. Return on equity is overall significantly higher for 'green' than 'red'; there are only five instances where this is not the case, one of which only has a difference of 0.11. ROC is higher for all 'green' companies except for one instance where there is a difference between the paired companies of 0.61. The operating margin measure all showed

overall that 'green' companies had higher values than 'red', but there were three instances when this wasn't the case; one of which was only a 0.44 difference between them. For P/EPS, its expected to see higher ratios for 'green' companies since people should be willing to pay more for the stock for each dollar in earnings the company generates for those companies who are more responsible for their employees' satisfaction in the job and all the benefits to the rest of the stakeholders that seem to be a result of this. There are only eight instances where this is not the case, three of which are only a difference of less than or equal to 2.20. For the last measure of the table, ND/EBITDA, it's expected to find 'green' companies having a lower ratio as this would indicate that they have a better coverage of their debt with operating income. It can be observed that there are only five instances where this is not the case, three of which consist of a difference of less than 1. Due to the limited information on some of the companies and the sample size, it can only be deduced that the information that is available does support the grounds for this thesis, but in order to get concrete tests and analysis the sample size must be larger.

The median tests (or the Wilcoxon sign tests) all support the t-tests at the 95% significance level, with t-tests using an implied alpha of 0.05 and the median tests using a significance level of 0.005.

All four regression analyses displayed on Tables 15 through 18 show that after controlling for factors such as: growth, profitability, leverage, risk, size, assets in place, whether the company is good to employees or not, and lagged performance; the differences that exist between the companies are not driven by whether they are classified as 'green or red'. This could be due to having a relatively small sample, especially since all six financial companies were also

not considered for the regressions due to the different nature of their business and financial statement reporting.

CONCLUSION

The hypothesis this research project is testing whether companies with a greater focus on their employee welfare and satisfaction are more financially stable and profitable than their competitors, resulting in greater shareholder wealth. The summary of the results from all the data collected and test results can be observed in Appendix D. The results from this investigation show mixed support for the hypothesis. However, the results point to a statistically significant correlation between better employee benefits and satisfaction resulting in superior shareholder wealth compared to those competitors that don't prioritize their employees' welfare.

Even though the evidence presented in this thesis supports the relationship between high performing companies and their focus on employee well-being, it is not possible, with the tests and data collected, to prove any type of causation between employee satisfaction and benefits and shareholder wealth and company profitability. The potential number of factors, both internal and external to the companies, make it impossible to reach this type of determination. However, the statistical correlation between the two aspects tends to infer a symbiotic relationship, where employees that are well treated and compensated are more productive, producing greater results and a competitive edge for the company, which in turn is able to generate higher profits for its shareholders and continue to invest in their employees.

Recommendations for further studies and analysis pursuing this hypothesis or similar areas of investigation would include primarily expanding the sample size to a greater number of pairs of companies to be tested. Additionally, it would be desirable to explore using additional types of median tests for the analysis. Due to the reporting differences and constraints inherent to

their business, it would be advisable to exclude companies within the financial sectors, or otherwise test them separately from the rest of industries.

APPENDIX A: RATIOS

Table 6: Profitability Ratios

Companies	EBIT/A	PTI/A	NI/A (ROA) Previous Year	NI/A (ROA) Current Year	EBIT/E	PTI/E	NI/E	EBIT/S	PTI/S	NI/S
TCS	0.060509	0.038474	0.010631	0.029208	0.235415	0.149686	0.113635	0.060076	0.038198	0.028999
HHG	-0.18187	-0.18651	0.00035	-0.24277	-0.41374	-0.4243	-0.55228	-0.0467	-0.04789	-0.06234
COF	0.021687	0.021687	0.013515	0.014619	0.15156	0.15156	0.102163	0.294706	0.294706	0.198654
BK	0.009379	0.009379	0.005737	0.006757	0.09229	0.09229	0.066491	0.227058	0.227058	0.163587
JWN	0.148493	0.133004	0.088099	0.080813	0.585398	0.524336	0.318584	0.097956	0.087739	0.05331
DDS	0.139177	0.1244	0.079924	0.080735	0.285219	0.254936	0.165452	0.084375	0.075416	0.048945
COST	0.101727	0.101	0.071017	0.065017	0.273728	0.271773	0.174948	0.028587	0.028382	0.018271
DG	0.16016	0.152172	0.096549	0.096448	0.318405	0.302524	0.191743	0.093555	0.088889	0.056339
DISCA	0.132998	0.112735	0.077036	0.0735	0.327559	0.277654	0.181024	0.32897	0.278851	0.181804
DISH	0.08593	0.056789	0.042797	0.044494	1.196112	0.790485	0.619341	0.124592	0.08234	0.064513
AAPL	0.239281	0.243748	0.193372	0.180066	0.446652	0.454989	0.336118	0.287223	0.292585	0.216144
HPQ	0.068795	0.062782	0.047686	0.047998	0.262308	0.239381	0.183013	0.064466	0.058831	0.044978
M	0.129945	0.110918	0.069724	0.07082	0.481638	0.411112	0.262492	0.099626	0.085038	0.054296
SHLD	-0.09584	-0.10709	-0.0726	-0.1069	-2.43619	-2.72213	-2.71729	-0.04834	-0.05401	-0.05391
RAX	0.104958	0.102439	0.062236	0.070956	0.153606	0.149919	0.103844	0.091135	0.088948	0.061611
NCR	0.042238	0.016392	0.061201	0.022854	0.191069	0.074154	0.103383	0.053558	0.020786	0.028979
BBY*	0.074026	0.070584	-0.0269	0.034545	0.29595	0.282191	0.13811	0.02688	0.025631	0.012544
RSHCQ*	-0.17685	-0.20821	-0.06231	-0.20574	-0.85455	-1.00609	-0.99416	-0.10017	-0.11793	-0.11653
TGT	0.105518	0.084996	0.042517	-0.03807	0.300053	0.241696	-0.10824	0.06245	0.050304	-0.02253
WMT	0.132925	0.121428	0.078567	0.080121	0.324577	0.296504	0.195641	0.055898	0.051063	0.033693
MSFT	0.176351	0.176739	0.165816	0.140235	0.329038	0.329762	0.261652	0.319683	0.320385	0.254212
FISV	0.128382	0.111088	0.07196	0.08	0.351744	0.30436	0.219186	0.238847	0.206672	0.148835
FDS	0.446604	0.448444	0.286977	0.312608	0.574091	0.576456	0.401844	0.328379	0.329732	0.229854
ACN	0.247174	0.247012	0.195743	0.169064	0.734304	0.733824	0.502255	0.134919	0.134831	0.092283
QCOM	0.160485	0.186587	0.154821	0.169348	0.200656	0.233293	0.211739	0.285045	0.331408	0.300789
CSCO	0.090585	0.094172	0.103478	0.076123	0.161414	0.167805	0.135643	0.198231	0.20608	0.166582
CACC	0.161301	0.161301	0.110848	0.102016	0.579632	0.579632	0.366591	0.631224	0.631224	0.39922
AXP	0.057546	0.057546	0.034967	0.037667	0.447659	0.447659	0.293012	0.262189	0.262189	0.171614
GS	0.013981	0.013981	0.008692	0.009591	0.152561	0.152561	0.104658	0.357883	0.357883	0.245511
BAC	0.003259	0.003259	0.005302	0.002298	0.028793	0.028793	0.0203	0.081368	0.081368	0.057367
WFM	0.165573	0.167701	0.101734	0.102641	0.242881	0.246002	0.150566	0.065802	0.066648	0.040792
FDO	0.11139	0.111734	0.125252	0.075194	0.258181	0.258979	0.174286	0.040179	0.040303	0.027123
KMX	0.080071	0.077841	0.045619	0.04797	0.308041	0.299464	0.184547	0.06988	0.067934	0.041865
HTZ	0.061503	0.027702	0.011869	0.014463	0.557809	0.251245	0.131174	0.13667	0.061558	0.032139
VZ	0.077343	0.06026	0.046051	0.037983	0.359311	0.279947	0.176457	0.154227	0.120161	0.07574
FTR	0.046052	0.009179	0.006566	0.007464	0.212608	0.042379	0.034459	0.171806	0.034246	0.027846
CAKE	0.125822	0.120443	0.103196	0.088044	0.255288	0.244375	0.178639	0.073221	0.070091	0.051237
CBRL	0.147777	0.135327	0.083543	0.093689	0.411598	0.376924	0.260951	0.077657	0.071115	0.049234
SBUX	0.276709	0.283768	0.000841	0.185733	0.631632	0.647745	0.423965	0.187326	0.192105	0.125737
MCD	0.224213	0.207932	0.155136	0.134197	0.550821	0.510825	0.32968	0.28968	0.268646	0.173381

Green: Top rated company by employees. Red: Bottom rated company by employees.

*BBY and RSHCQ measures are based on 2013 and below.

Table 7: Liquidity Ratios

Companies	NWC/A	NWC/S	CR
TCS	0.049159	0.042013	1.317335
HHG	0.244416	0.06423	1.533851
COF	**	**	**
BK	**	**	**
JWN	0.262196	0.189212	1.865714
DDS	0.240552	0.139006	2.133054
COST	0.096172	0.025564	1.220372
DG	0.137639	0.077699	1.777199
DISCA	-0.00706	0.080048	0.956605
DISH	0.382912	0.554073	3.058397
AAPL	0.021925	0.094945	1.080113
HPQ	0.062109	0.050483	1.146565
M	0.146452	0.108611	1.567738
SHLD	-0.01613	0.008991	0.964944
RAX	0.089285	0.090697	1.52409
NCR	0.118276	0.263693	1.491787
BBY*	0.217584	0.050531	1.410032
RSHCQ*	0.470337	0.255088	2.280192
TGT	0.056782	0.007897	1.200324
WMT	-0.00979	-0.01251	-0.01045
MSFT	0.398071	0.763938	2.504022
FISV	0	0.023687	1
FDS	0.184683	0.17508	1.962236
ACN	0.208939	0.116543	1.459221
QCOM	0.337629	0.580322	3.727424
CSCO	0.44995	0.961287	3.388056
CACC	**	**	**
AXP	**	**	**
GS	**	**	**
BAC	**	**	**
WFM	0.086873	0.049	1.396977
FDO	0.252253	0.083409	1.861816
KMX	0.12137	0.118076	2.606406
HTZ	-0.07738	-0.17014	0.654563
VZ	0.006699	0.179034	1.055552
FTR	-0.00137	0.030515	0.982816
CAKE	-0.07017	-0.03058	0.743645
CBRL	-0.01033	-0.00534	0.957063
SBUX	0.105088	0.037212	1.37187
MCD	0.041935	0.060451	1.523163

Green: Top rated company by employees. Red: Bottom rated company by employees.

*BBY and RSHCQ measures are based on 2013 and below.

**Financial institutions will not be compared on Liquidity Ratios and other measures due to their nature of business.

Table 8: Leverage and Growth Ratios

Companies	LTD/A	TD/A	R&D/S
TCS	0.424903	0.435505	0
HHG	0	0	0
COF	0.154044	0.822411	**
BK	0.052592	0.850993	**
JWN	0.337804	0.33867	0
DDS	0.196808	0.19701	0
COST	0.154221	0.154433	0
DG	0.235157	0.24417	0
DISCA	0.377545	0.446672	0
DISH	0.623424	0.654249	0
AAPL	0.125031	0.152239	0.033048
HPQ	0.155408	0.189185	0.030928
M	0.338521	0.342062	0
SHLD	0.235446	0.287683	0
RAX	0.005508	0.030191	0.065208
NCR	0.403393	0.425119	0.039903
BBY*	0.115036	0.118247	0
RSHCQ*	0.385244	0.385935	0
TGT	0.306854	0.309052	0
WMT	0.214486	0.247322	0
MSFT	0.119762	0.131364	0.131068
FISV	0.397451	0.407304	0
FDS	0	0	0
ACN	0.001473	0.001491	0.020063
QCOM	0	0	0.206781
CSCO	0.194048	0.19888	0.133512
CACC	0.501975	0.629174	**
AXP	0.364261	0.663759	**
GS	0.204172	0.810932	**
BAC	0.115531	0.792915	**
WFM	0.010446	0.010794	0
FDO	0.125535	0.129735	0
KMX	0.668178	0.690189	0
HTZ	0.663297	0.663297	0
VZ	0.474999	0.486752	0
FTR	0.499926	0.515612	0
CAKE	0	0	0
CBRL	0.261826	0.279281	0
SBUX	0.190488	0.190488	0
MCD	0.437255	0.437255	0

Green: Top rated company by employees. **Red:** Bottom rated company by employees.

*BBY and RSHCQ measures are based on 2013 and below.

**Financial institutions will not be compared on Liquidity Ratios and other measures due to their nature of business.

TD for financial institutions includes total company debt as well as total deposits.

R&D/S (Research and Development divided by total Sales) is used as the growth ratio measure.

Table 9: Tobin's Q, Size, and Assets in Place Ratios

Companies	Tobin's Q Previous Year	Tobin's Q Current Year	LN(A)	(INV+GPPE)/A
TCS	2.6396	1.584781	6.645165	0.577522
HHG	0.436931	0.362653	6.147675	1.27867
COF	0.973629	0.970538	12.64062	**
BK	0.957986	0.968924	12.86179	**
JWN	1.644208	1.905529	9.131838	1.056896
DDS	1.150161	1.31916	8.335688	1.377818
COST	1.780114	1.759165	10.40499	0.942678
DG	1.9025	2.057157	9.325819	0.582325
DISCA	1.86124	1.406347	9.681219	0.096291
DISH	1.973555	2.176587	10.00367	0.32004
AAPL	2.17901	2.70149	12.3538	0.17739
HPQ	0.653743	0.828521	11.54448	0.316522
M	1.229716	1.355879	9.973993	0.881133
SHLD	0.443799	0.545604	9.488654	1.003558
RAX	3.745212	4.092069	7.392822	1.420445
NCR	1.113517	0.995934	9.060331	0.19124
BBY*	0.461406	0.700743	9.547741	0.924213
RSHCQ*	0.430111	0.549821	7.372244	1.186777
TGT	1.113981	1.447255	10.63113	1.204087
WMT	1.454429	1.593946	12.22443	1.118156
MSFT	2.129387	2.124393	12.05748	0.176722
FISV	1.997912	2.233811	9.14174	0.112884
FDS	6.42462	8.028207	6.497095	0.304146
ACN	2.856022	2.969831	9.794256	0.142016
QCOM	2.494778	2.579058	10.79084	0.146951
CSCO	1.51801	1.460401	11.56299	0.134219
CACC	1.797802	1.637908	7.932147	**
AXP	1.295196	1.261987	11.97731	**
GS	0.933004	0.908798	13.66031	**
BAC	0.88608	0.882809	14.5596	**
WFM	3.927247	2.37435	8.655911	1.001045
FDO	2.381581	2.488777	8.257721	1.337241
KMX	1.564826	1.752246	9.487836	0.361573
HTZ	0.957922	1.186731	10.11003	0.841055
VZ	0.854547	1.322001	12.35754	0.995501
FTR	0.768182	0.868013	9.850826	0.89311
CAKE	2.414033	2.142874	7.070258	1.33322
CBRL	2.018387	1.886936	7.267001	1.419131
SBUX	5.146718	5.429997	9.282931	0.899478
MCD	3.00954	3.069111	10.44236	1.14453

Green: Top rated company by employees. Red: Bottom rated company by employees.

*BBY and RSHCQ measures are based on 2013 and below.

**Financial institutions will not be compared on Liquidity Ratios and other measures due to their nature of business.

Tobin's Q is the sum of the market capitalization plus total debt and preferred stock dividend divided by total assets.

The natural logarithm of total Assets (LN(A)) is used as the measure for size.

(INV+GPPE)/A(Inventory plus Gross Property, Plant and Equipment divided by total Assets)is used as the assets in place ratio.

Table 10: Revenue Growth Ratios

Companies	1-year	5-year
TCS	4.45	8.37
HHG	-8.95	6.78
COF	-1.27	8.40
BK	4.26	14.15
JWN	7.70	9.38
DDS	1.32	1.72
COST	7.12	9.54
DG	8.03	9.90
DISCA	13.19	12.25
DISH	5.31	4.65
AAPL	6.95	33.63
HPQ	-0.75	-0.55
M	0.62	3.65
SHLD	-13.79	-6.66
RAX	16.91	23.33
NCR	7.64	7.40
BBY*	6.49	-1.19
RSHCQ*	-10.36	-4.06
TGT	1.88	2.13
WMT	1.96	3.54
MSFT	11.54	8.24
FISV	5.23	4.44
FDS	7.25	8.15
ACN	4.87	6.59
QCOM	6.52	20.52
CSCO	-3.01	5.47
CACC	6.07	13.70
AXP	3.05	6.13
GS	-1.93	-4.95
BAC	-6.41	-8.75
WFM	9.89	12.06
FDO	0.94	7.23
KMX	13.48	13.82
HTZ	19.41	4.79
VZ	5.42	3.34
FTR	0.23	17.64
CAKE	5.26	4.29
CBRL	1.48	2.54
SBUX	10.45	10.97
MCD	-2.36	3.83

Green: Top rated company by employees. Red: Bottom rated company by employees.

*BBY and RSHCQ measures are based on 2013 and below.

Table 11: Stock Performance Ratios

Companies	Total Return on Stock Performance (ROI) 1-year	Total Return on Stock Performance (ROI) 5-year
TCS**	-0.5249	-0.5709
HHG**	-0.29298	-0.60805
COF	0.107127	1.180389
BK	0.182138	0.40205
JWN	0.34492	1.42834
DDS	0.313656	6.456323
COST	0.253973	1.75462
DG	0.169464	1.80351
DISCA	-0.27716	0.943931
DISH	0.244945	3.285104
AAPL	0.525263	3.111758
HPQ	0.340426	-0.11059
M	0.195467	3.252929
SHLD	0.237887	-0.51733
RAX	0.247734	1.493414
NCR	-0.26115	1.172097
BBY*	1.363036	0.50357
RSHCQ*	-0.3465	-0.78963
TGT	0.378763	0.656167
WMT	0.19925	0.849764
MSFT	0.2	0.841198
FISV	0.279572	2.184725
FDS	0.326242	1.338255
ACN	0.132252	1.401982
QCOM	-0.01756	0.993777
CSCO	0.289711	0.345868
CACC	-0.01933	1.564637
AXP	0.021482	1.445429
GS	0.101876	0.278967
BAC	-0.0859	0.024407
WFM	-0.02114	2.93297
FDO	0.232005	1.614475
KMX	0.379517	2.016481
HTZ	-0.18101	1.05695
VZ	0.025545	1.186385
FTR	0.535545	0.408696
CAKE	0.17984	1.535697
CBRL	0.372526	3.023141
SBUX	0.135959	2.920635
MCD	0.0038	0.71688

Green: Top rated company by employees. **Red:** Bottom rated company by employees.

Italics: Company had no Dividends or Stock Splits issued during the period in review.

Total return on stock performance (ROI) inputs are taken from finance.yahoo.com with monthly stock price data, and calculated with the adjusted close price which has been adjusted for dividends and splits (1-year based on Jan 1, 2014 to Jan 15, 2015 and 5-year based on Jan 1, 2010 to Jan 15, 2015).

*BBY and RSHCQ measures are based on 2013 and below.

**TCS only has been public since Nov 1, 2013, TCS and HHG have 5-year based on Nov 1, 2013 to Jan 15, 2015.

Table 12: Benchmark Analysis Ratios

Industry	ROE	ROC	OM	P/EPS	P/BV	ND/EBITDA
TCS	11.36	6.57	6.01	45.47	4.55	3.97
Russell 2000 Consumer Discretionary Index	6.44	3.60	5.12	27.73	3.02	2.73
HHG	-55.23	-54.52	-4.67	367.46	1.21	--
COF	10.34	5.04	29.47	10.79	1.06	4.80
S&P 500 Financials Sector Index GICS Level 1	8.51	2.78	20.38	15.29	1.42	--
BK	6.83	2.69	22.71	12.53	1.26	4.80
JWN	31.86	14.95	9.80	21.11	6.19	1.26
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
Russell 1000 Consumer Discretionary Index	19.50	10.61	9.30	22.01	4.46	1.52
DDS	16.55	13.17	8.44	16.26	2.55	0.51
COST	17.79	12.84	2.86	30.48	5.04	-0.52
S&P 500 Consumer Staples Sector Index GICS Level 1	22.46	12.83	9.12	20.62	5.30	1.62
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
DG	19.17	13.45	9.36	20.32	3.76	1.02
DISCA	12.87	10.29	32.90	19.64	2.70	2.83
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
Russell 1000 Consumer Discretionary Index	19.50	10.61	9.30	22.01	4.46	1.52
DISH	63.19	8.99	12.46	36.39	16.72	1.69
AAPL	33.61	31.08	31.51	15.66	5.66	-2.05
S&P 500 Information Technology Sector Index GICS Level 1	22.34	17.17	21.90	18.91	4.07	-1.16
HPQ	18.57	10.89	6.45	12.64	2.76	0.38
M	26.25	13.60	9.96	14.92	4.16	1.33
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
Russell 1000	19.50	10.61	9.30	22.01	4.46	1.52

Consumer Discretionary Index						
SHLD	--	-34.60	-4.83	--	1.93	--
RAX	10.38	9.98	9.11	60.79	6.14	-0.31
S&P 500 Consumer Staples Sector Index GICS Level 1	8.18	5.82	5.14	31.26	3.27	1.05
NCR	10.49	5.84	5.36	15.62	2.63	--
BBY*	15.10	10.06	2.69	18.92	3.47	-0.67
S&P 500 Consumer Discretionary Sector Index GICS Level 1*	21.71	11.92	10.46	20.83	4.36	1.12
RSHCQ*	-99.42	-33.34	-10.02	--	1.26	--
TGT	-10.82		6.25	17.98	3.47	1.59
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
S&P 500 Consumer Staples Sector Index GICS Level 1	22.46	12.83	9.12	20.62	5.30	1.62
WMT	20.76	17.17	21.90	18.91	4.07	-1.16
MSFT	--	--	--	17.59	4.26	--
S&P 500 Information Technology Sector Index GICS Level 1	22.34	17.17	21.90	18.91	4.07	-1.16
FISV	21.92	11.81	23.88	25.04	5.18	2.17
FDS	40.18	--	32.84	28.61	11.51	-0.41
S&P 500 Consumer Staples Sector Index GICS Level 1	8.18	5.82	5.14	31.26	3.27	1.05
S&P 500 Information Technology Sector Index GICS Level 1	22.34	17.17	21.90	18.91	4.07	-1.16
ACN	55.02	54.21	13.49	19.83	10.23	-1.00
QCOM	21.17	21.17	28.50	16.09	3.17	-3.68
S&P 500 Information Technology Sector Index GICS Level 1	22.34	17.17	21.90	18.91	4.07	-1.16
CSCO	13.57	10.87	19.82	16.83	2.51	-2.65
CACC	36.66	11.58	63.12	10.87	4.00	7.31
Russell 2000 Financial Services Index	8.10	3.46	19.65	19.14	1.56	--
S&P 500 Financials Sector Index GICS	8.51	2.78	20.38	15.29	1.42	--

Level 1						
AXP	29.07	7.27	26.22	17.47	4.60	4.80
GS	11.15	1.59	35.79	10.75	1.13	4.80
S&P 500 Financials Sector Index GICS Level 1	8.51	2.78	20.38	15.29	1.42	--
BAC	1.71	0.60	8.14	12.95	0.84	4.80
WFM	15.06	--	6.58	32.32	4.77	-0.52
S&P 500 Consumer Staples Sector Index GICS Level 1	22.46	12.83	9.12	20.62	5.30	1.62
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
FDO	17.43	14.23	4.02	25.92	5.42	0.53
KMX	18.45	5.29	6.99	24.94	4.41	8.16
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
Russell 1000 Consumer Discretionary Index	19.50	10.61	9.30	22.01	4.46	1.52
HTZ	--	--	--	22.96	4.05	--
VZ	37.65	10.00	15.42	13.94	15.80	2.83
S&P 500 Telecommunication Services Sector Index GICS Level 1	12.79	7.51	12.23	14.76	3.39	2.74
FTR	3.37	5.45	17.18	36.47	1.83	4.65
CAKE	17.86	18.35	7.32	25.56	4.51	--
S&P 400 Consumer Discretionary Sector Index GICS Level 1	15.20	9.56	6.82	24.18	3.42	--
S&P 600 Consumer Discretionary Sector Index GICS Level 1	8.91	6.16	5.68	25.25	2.81	2.58
CBRL	26.10	15.92	7.77	25.55	6.34	1.01
SBUX	42.41	32.20	18.73	31.14	11.66	0.05
S&P 500 Consumer Discretionary Sector Index GICS Level 1	22.30	12.06	10.42	20.94	4.67	1.35
MCD	32.97	17.68	28.97	19.44	7.02	1.35

Green: Top rated company by employees. Red: Bottom rated company by employees. Blue: Industry benchmark. -- means information is unavailable.

APPENDIX B: T-TESTS

Table 13: Wilcoxon Signed Rank Test

Category	Ratio	Sum Positive	Sum Negative	Sample Size	Significance (p-value)
Revenue Growth	1-year	190	20	20	p<0.005*
	5-year	180	30	20	p<0.005*
Profitability Ratios	EBIT/A	187	23	20	p<0.005*
	PTI/A	193	17	20	p<0.005*
	NI/A (ROA) Current year	185	25	20	p<0.005*
	NI/A (ROA) Previous year	163	47	20	p<0.025*
	EBIT/E	136	74	20	p not <0.025
	PTI/E	160	50	20	p<0.025*
	NI/E	151	59	20	p not <0.025
	EBIT/S	178	32	20	p<0.005*
	PTI/S	192	18	20	p<0.005*
	NI/S	185	25	20	p<0.005*
Leverage Ratios	LTD/A	75	135	20	p not <0.025
	TD/A	54	156	20	p not <0.025
Liquidity Ratios	NWC/A	62	91	17	p not <0.025
	NWC/S	75	78	17	p not <0.025
	CR	79	74	17	p not <0.025
Benchmark Analysis	P/BV	158	52	20	p=0.025
Tobin's Q	Current year	177	33	20	p<0.005*
	Previous year	191	19	20	p<0.005*
Size Ratio	LN(A)	97	113	20	p not <0.025
Assets in Place	(INV+GPPE)/A	51	102	17	p<0.025
Stock Performance	Total Return (ROI) 1-year	108	102	20	p not <0.025
	Total Return (ROI) 5-year	134	76	20	p not <0.025

*It is significant (unlikely to occur by chance). Test assumes one-tailed significance level values.

Table of Critical Values for Wilcoxon's test statistic used: <http://users.sussex.ac.uk/~grahamh/RM1web/WilcoxonTable2005.pdf>

Table 14: T-Test for Two-Sample Assuming Equal Variances

<u>Category</u>	<u>Ratio</u>	<u>Green or Red</u>	<u>Mean</u>	<u>Variance</u>	<u>Pooled Variance</u>	<u>t-Stat</u>	<u>P one tail</u>	<u>T Critical one tail</u>	<u>P two tail</u>	<u>T Critical two tail</u>
Revenue Growth	1-year	Green	6.89873	23.58483	38.96669	3.036087*	0.002156	1.685954	0.004313	2.024394
		Red	0.9055	54.34856						
	5-year	Green	9.981956	75.00604	56.85701	2.366576*	0.011576	1.685954	0.023153	2.024394
		Red	4.338924	38.70798						
Profitability Ratios	EBIT/A	Green	0.140169	0.009356	0.011125	2.250746*	0.015134	1.685954	0.030268	2.024394
		Red	0.065096	0.012894						
	PTI/A	Green	0.135833	0.010219	0.011851	2.425754*	0.010067	1.685954	0.020134	2.024394
		Red	0.052324	0.013483						
	NI/A (ROA) Current Year	Green	0.088882	0.006181	0.008392	2.180718*	0.017732	1.685954	0.035464	2.024394
		Red	0.025708	0.010604						
	NI/A (ROA) Previous Year	Green	0.081292	0.005627	0.00502	1.236572	0.111917	1.685954	0.223835	2.024394
		Red	0.053585	0.004414						
	EBIT/E	Green	0.344235	0.023711	0.277536	1.261829	0.10735	1.685954	0.214701	2.024394
		Red	0.134021	0.53136						
	PTI/E	Green	0.325208	0.023957	0.29846	1.587058	0.060393	1.685954	0.120787	2.024394
		Red	0.051027	0.572963						
	NI/E	Green	0.204167	0.015665	0.266301	1.446512	0.078116	1.685954	0.156233	2.024394
		Red	-0.03189	0.516937						
	EBIT/S	Green	0.192514	0.024446	0.017706	2.03242*	0.024572	1.685954	0.049143	2.024394
		Red	0.106992	0.010967						
	PTI/S	Green	0.187898	0.025549	0.018214	2.350644*	0.012016	1.685954	0.024033	2.024394
		Red	0.087578	0.010878						
	NI/S	Green	0.128403	0.013478	0.009907	2.245232*	0.015326	1.685954	0.030651	2.024394
		Red	0.057733	0.006336						
Leverage Ratios	LTD/A	Green	0.225474	0.038004	0.036953	-0.86617	0.195916	1.685954	0.391832	2.024394
		Red	0.278128	0.035902						
	TD/A	Green	0.304959	0.074479	0.067779	-0.894	0.188475	1.685954	0.37695	2.024394
		Red	0.37856	0.061078						
Liquidity Ratios	NWC/A	Green	0.123691	0.015356	0.022497	-0.44774	0.328678	1.693889	0.657356	2.036933
		Red	0.146725	0.029638						
	NWC/S	Green	0.150682	0.043252	0.05552	0.04398	0.482597	1.693889	0.965193	2.036933
		Red	0.147128	0.067788						
	CR	Green	1.618262	0.549132	0.630962	0.282449	0.389709	1.693889	0.779418	2.036933
		Red	1.541308	0.712792						

Benchmark Analysis	P/BV	Green	5.383256	13.19294	13.63307	0.949328	0.174226	1.685954	0.348453	2.024394
		Red	4.274814	14.07319						
Tobin's Q	Current Year	Green	2.311181	3.023715	1.830931	1.930025	0.030547	1.685954	0.061093	2.024394
		Red	1.485336	0.638146						
	Previous Year	Green	2.265754	2.282885	1.445634	2.249979*	0.015161	1.685954	0.030321	2.024394
		Red	1.410278	0.608382						
Size	LN(A)	Green	9.809783	4.368006	4.296416	-0.23898	0.406201	1.685954	0.812402	2.024394
		Red	9.966431	4.224827						
Assets in Place	(INV+GPPE)/A	Green	0.735252	0.196474	0.219621	-0.32936	0.372016	1.693889	0.744032	2.036933
		Red	0.788194	0.242769						
Stock Performance	Total Return (ROI) 1-year	Green	0.196995	0.132448	0.095731	0.793517	0.216202	1.685954	0.432404	2.024394
		Red	0.119355	0.059013						
	Total Return (ROI) 5-year	Green	1.468161	0.988143	1.877021	0.599823	0.276092	1.685954	0.552185	2.024394
		Red	1.20829	2.765899						

Green: Top rated company by employees. **Red:** Bottom rated company by employees.

T-test implies alpha of 0.05 and a hypothesized mean difference of 0.

All 6 financial institutions will not be compared on Liquidity Ratios and other measures due to their nature of business.

*T-stat of 1.96 or greater are considered significantly different.

APPENDIX C: REGRESSIONS

Table 15: Tobin's Q Regression Analysis with Lagged Performance

SUMMARY OUTPUT				
<i>Regression Statistics</i>				
Adjusted R Square	0.87651768			
Observations	34			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-0.6555	0.7833	-0.8369	0.4103
Leverage	0.0246	0.5969	0.0411	0.9675
Risk	-0.0064	0.0169	-0.3762	0.7098
Growth	-0.8747	2.5009	-0.3498	0.7293
Size	0.0668	0.0644	1.0362	0.3096
A in Place	-0.0274	0.2469	-0.1108	0.9127
Lag Perf	1.1011	0.0919	11.9878	0.0000
Green	-0.0761	0.2172	-0.3504	0.7289

Green: Top rated company by employees.

Focus is on dependant variables for overall profitability.

Leverage is TD/A, Risk is Revenue Growth for 1-year, Growth is R&D/Sales, Size is the logarithm of total assets, Lagged performance is profitability measure in previous year, and Assets in place is (inventory+gross PPE)/A.

Financial institutions are not to be included in the Regression Analysis.

Regression for 95% confidence level.

Table 16: Tobin's Q Regression Analysis with no Lagged Performance

SUMMARY OUTPUT				
<i>Regression Statistics</i>				
Adjusted R Square	0.22386173			
Observations	34			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	4.8001	1.5983	3.0034	0.0057
Leverage	-2.9643	1.3596	-2.1803	0.0381
Risk	0.0708	0.0392	1.8053	0.0822
Growth	-4.8340	6.2150	-0.7778	0.4434
Size	-0.1822	0.1529	-1.1914	0.2439
A in Place	-0.7763	0.5989	-1.2962	0.2059
Green	0.2489	0.5402	0.4608	0.6486

Green: Top rated company by employees.

Focus is on dependant variables for overall profitability.

Leverage is TD/A, Risk is Revenue Growth for 1-year, Growth is R&D/Sales, Size is the logarithm of total assets, and Assets in place is (inventory+gross PPE)/A.

Financial institutions are not to be included in the Regression Analysis.

Regression for 95% confidence level.

Table 17: ROA Regression Analysis with Lagged Performance

SUMMARY OUTPUT				
<i>Regression Statistics</i>				
Adjusted R Square	0.71843388			
Observations	34			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	-0.2333	0.0823	-2.8369	0.0087
Leverage	-0.0737	0.0627	-1.1757	0.2504
Risk	0.0034	0.0018	1.9395	0.0634
Growth	-0.1238	0.2626	-0.4714	0.6413
Size	0.0237	0.0068	3.5020	0.0017
A in Place	-0.0275	0.0259	-1.0603	0.2988
Lag Perf	0.0546	0.0096	5.6629	0.0000
Green	-0.0163	0.0228	-0.7164	0.4802

Green: Top rated company by employees.

Focus is on dependant variables for overall profitability.

Leverage is TD/A, Risk is Revenue Growth for 1-year, Growth is R&D/Sales, Size is the logarithm of total assets, Lagged performance is profitability measure in previous year, and Assets in place is (inventory+gross PPE)/A.

Financial institutions are not to be included in the Regression Analysis.

Regression for 95% confidence level.

Table 18: ROA Regression Analysis with no Lagged Performance

SUMMARY OUTPUT				
<i>Regression Statistics</i>				
Adjusted R Square	0.39443651			
Observations	34			
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	0.0373	0.0982	0.3799	0.7070
Leverage	-0.2220	0.0835	-2.6576	0.0131
Risk	0.0073	0.0024	3.0191	0.0055
Growth	-0.3202	0.3818	-0.8388	0.4090
Size	0.0113	0.0094	1.2078	0.2376
A in Place	-0.0646	0.0368	-1.7572	0.0902
Green	-0.0002	0.0332	-0.0064	0.9949

Green: Top rated company by employees.

Focus is on dependant variables for overall profitability.

Leverage is TD/A, Risk is Revenue Growth for 1-year, Growth is R&D/Sales, Size is the logarithm of total assets, and Assets in place is (inventory+gross PPE)/A.

Financial institutions are not to be included in the Regression Analysis.

Regression for 95% confidence level.

APPENDIX D: SUMMARY

Table 19: Summary of T-Test Results

Category	Ratio	Statistically Significant (+)	Direction (+)	Direction (-)	Statistically Significant (-)
Revenue Growth	1-year	X			
	5-year	X			
Profitability Ratios	EBIT/A	X			
	PTI/A	X			
	NI/A (ROA) Current year	X			
	NI/A (ROA) Previous year		X		
	EBIT/E		X		
	PTI/E		X		
	NI/E		X		
	EBIT/S	X			
	PTI/S	X			
	NI/S	X			
Leverage Ratios	LTD/A			X	
	TD/A			X	
Liquidity Ratios	NWC/A			X	
	NWC/S		X		
	CR		X		
Benchmark Analysis	P/BV		X		
Tobin's Q	Current year		X		
	Previous year	X			
Size	LN(A)			X	
Assets in Place	(INV+GPPE)/A			X	
Stock Performance	Total Return (ROI) 1-year		X		
	Total Return (ROI) 5-year		X		

Based on t-test with alpha of 0.05 and a hypothesized mean difference of 0.

X marks where the t-stat for each ratio and category falls.

A t-stat of ± 1.96 or greater is considered statistically significant.

Table 20: Summary of Wilcoxon Signed Rank Test Results

<u>Category</u>	<u>Ratio</u>	<u>Direction (+ or -)</u>	<u>Statistically Significant (at 0.025)</u>	<u>Statistically Significant (at 0.005)</u>
Revenue Growth	1-year	+		X
	5-year	+		X
Profitability Ratios	EBIT/A	+		X
	PTI/A	+		X
	NI/A (ROA) Current year	+		X
	NI/A (ROA) Previous year	+	X	
	EBIT/E	+		
	PTI/E	+	X	
	N/E	+		
	EBIT/S	+		X
	PTI/S	+		X
	NI/S	+		X
Leverage Ratios	LTD/A	-		
	TD/A	-		
Liquidity Ratios	NWC/A	-		
	NWC/S	-		
	CR	+		
Benchmark Analysis	P/BV	+	X	
Tobin's Q	Current year	+		X
	Previous year	+		X
Size	LN(A)	-		
Assets in Place	(INV+GPPE)/A	-	X	
Stock Performance	Total Return (ROI) 1-year	+		
	Total Return (ROI) 5-year	+		

Direction is marked by a '+' for positive and a '-' for negative.

X marks where the p-value for each ratio and category falls if significant at the 0.025 or 0.005 level.

Table 21: Summary of Regression Analysis T-Stat Results

<u>Regression</u>	<u>Measure</u>	<u>Statistically Significant (+)</u>	<u>Direction (+)</u>	<u>Direction (-)</u>	<u>Statistically Significant (-)</u>
<u>Tobin's Q with Lagged Performance</u>	Intercept (Tobin's Q)			X	
	Leverage		X		
	Risk			X	
	Growth			X	
	Size		X		
	A in Place			X	
	Lag Perf	X			
<u>Tobin's Q with no Lagged Performance</u>	Intercept (Tobin's Q)	X			
	Leverage				X
	Risk		X		
	Growth			X	
	Size			X	
	A in Place			X	
	Green		X		
<u>ROA with Lagged Performance</u>	Intercept (ROA)				X
	Leverage			X	
	Risk		X		
	Growth			X	
	Size	X			
	A in Place			X	
	Lag Perf	X			
<u>ROA with no Lagged Performance</u>	Intercept (ROA)		X		
	Leverage				X
	Risk	X			
	Growth			X	
	Size		X		
	A in Place			X	
	Green			X	

X marks where the t-stat for each measure and regression falls.

A t-stat of ± 1.96 or greater is considered statistically significant.

Regression for 95% confidence level.

Table 22: Summary of Regression Analysis P-Value Results

<u>Regression</u>	<u>Measure</u>	<u>Statistically Significant (at 0.025)</u>	<u>Statistically Significant (at 0.005)</u>
<u>Tobin's Q with Lagged Performance</u>	Intercept (Tobin's Q)		
	Leverage		
	Risk		
	Growth		
	Size		
	A in Place		
	Lag Perf		X
<u>Tobin's Q with no Lagged Performance</u>	Intercept (Tobin's Q)	X	
	Leverage		
	Risk		
	Growth		
	Size		
	A in Place		
	Green		
<u>ROA with Lagged Performance</u>	Intercept (ROA)	X	
	Leverage		
	Risk		
	Growth		
	Size		X
	A in Place		
	Lag Perf		X
<u>ROA with no Lagged Performance</u>	Intercept (ROA)		
	Leverage	X	
	Risk	X	
	Growth		
	Size		
	A in Place		
	Green		

X marks where the p-value for each measure and regression falls if significant at the 0.025 or 0.005 level. Regression for 95% confidence level.

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