## Happy Employees, Stock Returns, and Portfolio Performance

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**Abstract**

Fortune magazine publishes the list of "100 Best Companies to Work for in America" (BCs, hereafter) every year since 1998. The Great Place to Work Institute compiles the list of top 100 companies by incorporating both direct responses from employees and the institute's own evaluation of work place environment and employee satisfaction. The metrics used in the evaluation process includes job satisfaction, fairness, attitude towards management, camaraderie, pay and benefits programs, culture, demographic makeup, and other factors. It is highly likely that happy employees in a company would lead to a higher score for that company, and thus end up in the top 100 companies in the ranking. Employer-employee relation is an important intangible asset that is difficult to measure and may not be properly reflected in the current stock price leading to undervaluation. Finding and investing in undervalued assets is the key to achieving superior returns compared to the market on a risk-adjusted basis. This paper examines whether investing in a portfolio of these BCs investors can achieve superior returns when compared to S&P$_{500}$. This study employs Jensen, Sharpe, and Treynor measures to evaluate portfolio performance. The empirical findings suggest that it may be possible for investors to achieve superior return by investing in these BCs.

**Keywords**: Happy Employees, Risk-adjusted Return, Portfolio Performance

## I.    Introduction

The Holy Grail of investing is to find investments that offer higher risk-adjusted returns. One of the ways it can be achieved is by investing in undervalued assets. Based on the Efficient Market Hypothesis, it is difficult to 'beat' the market on a consistent basis if the market is informationally efficient in the weak-form or semi-strong form. However, there is abundance of examples of market anomalies. The EMH assumes that all relevant information is reflected in the current security price. It is relatively easy to price the tangible assets of a firm compared to its intangible assets. It is conceivable that an abnormal return is possible (anomalies) if the value of intangible assets is not properly reflected in the current stock price. Although intangible assets may appear on the balance sheets of many of the publicly traded firms, these assets are difficult to measure in the context of market valuation. Employer-employee relation is an important intangible asset that is difficult to measure and may not be fully reflected in the current stock price resulting in undervaluation. This may contribute significantly to a firm's performance in the future when measured by tangible majors (earnings) leading to higher risk-adjusted return.

Fortune magazine publishes the list of "100 Best Companies to Work for in America" (BCs, hereafter) every year since 1998. The Great Place to Work Institute, headed by Robert Levering and Milt Moskowitz, compiles the top 100 list on an annual basis. It is important to note that Fortune magazine has no direct involvement in the evaluation process and it simply publishes the list at the beginning of each year. The ranking is calculated on the basis of the total score received on two components. Two-thirds of the score comes from employee responses covering the topics such as job satisfaction, fairness, attitude towards management, and camaraderie. One-third of the scores comes from the Institute's own evaluation of a company's other factors such as pay and benefits programs, culture, and demographic makeup. The companies are scored in four areas: respect, fairness, pride/camaraderie and credibility. Based on the metrics use in the evaluation process, it is highly conceivable that

happy employees in a company would lead to a higher score for that company, and thus end up in the top 100 companies in the ranking. This paper examines whether investing in a portfolio of these BCs investors can achieve superior returns compared to S&P$_{500}$. Section II presents a brief literature review. Section III discusses the methodology, data, and variables used in this study. Section IV discusses the empirical results. The final section provides a brief conclusion.

## II.    Literature Review

A number of studies, in the field of human resource management, have investigated the relationship between employee satisfaction and firm performance. A positive relationship is expected because happy workers make better workers and influence firm performance through improved productivity, customer satisfaction, and reduced employee turnover. However, some studies (7, 8) have found a weak relationship between an employee's satisfaction and his/her own job performance. Given the weak relationship at the individual level, the relation may be stronger at organizational level (10, 11, and 12) where outcomes depend on interaction among employees. Employees who are satisfied may not themselves be more productive, but contribute to productivity of their coworkers. Using meta-analysis, Harter, Schmidt, and Hays (6) find a correlation coefficient of 0.37 between employee satisfaction and a composite measure of performance at organizational level, which is much stronger, compared to the correlation coefficient at the individual level.

Several studies have examined the performance of BCs based on accounting measures. These studies (3, 4, and 9) find that BCs exhibit superior contemporaneous accounting performance than peers. However, market-oriented data, such as stock returns, is more appropriate for analysis. The Great Place to Work Institute (www.greatplacetowork.com) reports an annualized rate of return of 11.8% for BCs compared to 6.04%for S&P$_{500}$ over the period 1997-2013.  It is tantalizing for a common investor to hold a portfolio of BCs and make much higher nominal returns when compared to an index fund. However, the annualized returns for BCs are not risk-adjusted. The returns must be risk-adjusted for valid comparison and to infer whether these firms outperform the market. Using stock returns, Goenner (5) finds that portfolios consisting of BCs offered higher risk-adjusted returns than the S&P 500 over the period 1998-2005. Using a data set for the period 1984-2009, Edmans (2) finds that "firms with high levels of employee satisfaction generate superior long-horizon returns, even when controlling for industries, factor risk, or a broad set of observable characteristics. These findings imply that the market fails to incorporate intangible assets fully into stock valuation." The implication of these findings is important for both investors and corporation. A corporation that promotes work environment that is employee-friendly serves the interest of the stockholders. From investors' point of view, they can hold a portfolio of BCs to earn superior risk-adjusted return.

This study extends the empirical study of Goenner (5) by incorporating and analyzing data for the period 2007-2014. A simple buy-and-hold strategy and a minimum holding period of 5 years is used in the analysis. For 2007 BCs, holding periods of 5 years (2007-2011), six years (2007-2012), 7 years (2007-2013), and 8 years (2007-2014) are used.  Similarly, holding periods of 5 years (2008-2012), 6 years (2008-2013), 7 years (2008-2014) are used for 2008 BCs  and holding periods of 5 years (2009- 2013) and 6 years (2009-2014) are used for 2009 BCs in this analysis. Using the statistical procedures outlined in Goenner (5), portfolios constructed with these BCs will be evaluated using Sharpe, Treynor, Jensen measures which are widely used in finance literature (1).

**III.     Methodology, sample, and variable descriptions**
The price and dividend information for 2007 BCs, 2008 BCs, and 2009 BCs are collected from Yahoo Finance (http://finance.yahoo.com). Since some of the companies drop out of the top 100 list from year to year, the companies that remain in the top 100 list over the entire sample period are used in the analysis. The sample consists of 44 companies for 2007 BCs, 42 companies for 2008 BCs, and 41 companies for 2009 BCs. Based on numerous studies in the field of portfolio performance evaluation, monthly data is used for Jensen measure and annual data is used for Sharpe and Treynor measures.

To employ the Jensen technique, the monthly returns for each of these companies and $S\&P_{500}$ are calculated.  An equally-weighted portfolio of these companies is constructed at the beginning of the sample period. A buy-and-hold strategy is used to compare the portfolio performance to the market ($S\&P_{500}$). For 2007 BCs, the monthly returns for the portfolio and the market are computed over the holding periods of 5 years (2007-2011), 6 years (2007-2012), 7 years (2007-2013), and 8 years (2007-2014). For 2008 BCs, the monthly returns for the portfolio and the market are computed over the holding periods of 5 years (2008-2012), 6 years (2008-2013), and 7 years (2008-2014). Similarly, for 2009 BCs, the monthly returns for the portfolio and the market are computed over the holding periods of 5 years (2009-2013) and 6 years (2009-2014). Using Jensen's approach to examine whether the portfolio outperformed the market ($S\&P_{500}$), the following model is estimated:

$$R_p \text{ - } R_f = \alpha + \beta \left( R_m - R_f \right) + e \qquad\qquad (1)$$
where:
$R_p$ = monthly rate of return on the portfolio
$R_f$ = monthly risk-free rate of return
$R_m$ = monthly rate of return on $S\&P_{500}$
$\alpha$ = Jensen's $\alpha$
$\beta$: beta of the portfolio

A simple linear regression method is used to estimate the model. If $\alpha > 0$, it indicates that the portfolio outperformed the market on a risk-adjusted basis. If $\alpha < 0$, it indicates that the portfolio underperformed the market on a risk-adjusted basis. However, the statistical significance of '$\alpha$' is extremely important to infer the superior performance of the portfolio over the market.

To employ Sharpe's measure (S) and Treynor's measure (T) of portfolio evaluation, following numerous studies on this topic, annual returns are used. The annual returns for each company and the market are calculated. An equally-weighted portfolio of these companies is constructed at the beginning of the sample period. A buy-and-hold strategy is used to compare the portfolio performance to the market portfolio ($S\&P_{500}$) using Sharpe and Treynor measures. Those measures are discussed below:

**Sharpe Measure (S)**
$$S = \frac{R_p - R_f}{\sigma_p} \qquad\qquad (2)$$

**Treynor's Measure (T)**
$$T = \frac{R_p - R_f}{b_p} \qquad\qquad (3)$$

where:
$Rp$ = average yearly return on the portfolio over the holding period
$R_f$ = average annual risk-free rate over the holding period
$\sigma_p$ = standard deviation of annual portfolio returns over the holding period
$b_p$ = beta of the portfolio over the holding period computed in Jensen's model above
If $S_p > S_m$, it indicates superior performance of the portfolio over the market.
Similarly, if $T_p > T_m$, it indicates superior performance of the portfolio over the market.  The Sharpe's measure evaluates the portfolio on the basis of total risk whereas the Treynor's measure evaluates the portfolio on the basis of systematic risk.  The use of Sharpe's measure to evaluate portfolio performance may be more appropriate if the portfolio under analysis is not fully diversified.

## IV.    Empirical results

To estimate equation 1, the following steps are taken:  (1) the monthly return for each stock and the S&P 500 is calculated, (2) the portfolio monthly return is computed by using equal weights for each of the stocks in the portfolio, (3) the excess monthly return for the portfolio and the index (S&P$_{500}$) are calculated. A simple linear regression model is used to calculate Jensen's alpha as shown in equation 1. The empirical results are reported in Table I for 2007 BCs, in Table II for 2008 BCs, and in Table III for 2009 BCs.

**Refer Table I**

Jensen's Alpha (α) is positive for all holding periods under analysis. It shows that the portfolio consisting 44 BCs earned excess return on a risk-adjusted basis compared to the market index (S&P$_{500}$).  However, it is not statistically significant for holding periods of 5 years, 6 years, and 7 years.  The 'α' is only statistically significant at 10% level for the 8-year holding period (2007-2014). The portfolio beta is highly significant for each holding period suggesting that portfolio return is driven by portfolio beta, which is consistent with the Capital Asset Pricing Model. As indicated by $R^2$, the portfolio is not fully diversified. Approximately 87% of portfolio excess return can be explained by the market excess return. This suggests that the portfolio consisting 44 of 2007 BCs do have some unsystematic risk and the Sharpe measure may be more appropriate in evaluating the portfolio performance.

**Refer Table II and Refer Table III**

Jensen's Alpha (α) is positive for all holding periods for both 2008 BCs and 2009 BCs. The empirical findings demonstrate that the portfolio consisting of 42 of 2008 BCs and 41 of 2009 BCs earned excess return on a risk-adjusted basis compared to the market index (S&P$_{500}$).  The Jensen's α is statistically significant at more than 10% level for all holding periods for 2008 BCs. However, it is only significant for the 5-year holding period for 2009 BCs. The portfolio beta is highly significant for all holding periods for both 2008 BCs and 2009 BCs, which suggests that portfolio return is primarily driven by portfolio beta, which is consistent with the Capital Asset Pricing Model. As indicated by $R^2$, the portfolio is not fully diversified. Approximately 86% to 91% of portfolio excess return can be explained by the market excess return. This suggests that the portfolios have some unsystematic risk and the Sharpe measure may be more appropriate in evaluating the portfolio performance.

 To examine the performance of each individual company, the annual return for each company in the sample for 2007 BCs and the S&P$_{500}$ is computed for each year over the period 2007-2014.  The average return for each company and the S&P$_{500}$ over the holding

periods of 5 years, 6 years, 7 years and 8 years are then calculated. The standard deviation over each holding period is calculated for both companies and the benchmark. The coefficient of variation (CV) of returns for each company and the benchmark are computed by dividing the risk (standard deviation) by average return over each holding period. It is important to note that CV represents risk-to-reward ratio on the basis of total risk without taking into account diversifiable risk in the context of a portfolio. As expected, some companies outperformed S&P 500 whereas other companies underperformed. Over the 5-year holding period (2007-2011), 98% of BCs outperformed the benchmark whereas the other 2% underperformed. However, this performance is not consistent over different holding periods. Over 2007-2012, 84% of BCs outperformed the index whereas 16% underperformed.  Over the 7-year holding period (2007-2013), 59% of the companies outperformed and 41% underperformed the benchmark. Over the 8-year holding period (2007-2014), 55% of BCs outperformed the S&P 500 and 45% underperformed. Since the objective is to compare the portfolio performance to the S&P$_{500}$, portfolios are constructed using equally-weighted scheme over various holding periods. The average return and standard deviation associated with the portfolio and the market index are computed for various holding periods. The empirical findings are reported in Table IV for 2007 BCs.

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**Refer Table IV**

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Based on CV, the portfolios consisting of 44 of 2007 BCs dominate the benchmark for each holding period under analysis. Based on stand-alone risk, BCs offer better risk-return tradeoffs. To evaluate the portfolio performance using (2) and (3), the Sharpe and Treynor's measures are used and the results are reported in Table V.

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**Refer Table V**

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The results reported in Table V are robust with respect to portfolio performance. Based on Treynor's measure, the portfolio outperformed S&P$_{500}$ for each holding period. The same conclusion can be drawn if the portfolio performance is judged on the basis of Sharpe measure. For 2007 BCs, irrespective of holding periods, the portfolio outperformed the benchmark based on both measures.

The same procedure is used to analyze and evaluate the performance of individual company in the sample for 2008 BCs and 2009 BC. To examine the performance of each individual company, the annual returns for each company in the sample for 2008 BCs, 2009 BCs, and the S&P$_{500}$ are computed. As expected, some companies outperformed the S&P$_{500}$ index whereas other companies underperformed the index. For 2008 BCs, 71% of BCs in the sample outperformed the benchmark and 29% underperformed based on CV over the 5-year holding period (2008-2012). However, this performance is not consistent over different holding periods. Over the 6-year holding period (2008-2013), 69% of BCs outperformed the benchmark and 31% of companies underperformed. Over the 7-year holding period (2008-2014), 60% of the BCs outperformed the index whereas 40% underperformed. Similar analysis is conducted for 2009 BCs. Over the 5-year holding period (2009-2013), 7% of BCs outperformed the benchmark and 93% of companies underperformed. Over the 6-year holding period (2009-2014), only 5% of BCs in the sample outperformed the benchmark and 95% of companies underperformed. Since the objective is to compare the portfolio performance of the BCs in the sample to the S&P$_{500}$, portfolios are constructed using equally-weighted scheme over various holding periods for both 2008 BCs and 2009 BCs. The average return and standard deviation associated with the portfolio and the market index are

computed for various holding periods. The empirical findings are reported in Tables VI and VII.

**Refer Table VI and Refer Table VII**

As evidenced in Table VI, the portfolios consisting 2008 BCs dominate the benchmark on the basis of the risk-to-reward ratio (CV) for all holding periods in this study. In contrast, the empirical findings suggest the reverse for 2009 BCs (Table VII). The S&P$_{500}$ index offers better risk-return trade-offs compared to the portfolio consisting 2009 BCs. To evaluate the portfolio performance, the Sharpe and the Treynor's measures are used and the results are reported in Tables VIII and IX.

**Refer Table VIII and Refer Table IX**

The results reported in Table VIII for 2008 BCs are robust with respect to portfolio performance. Based on both the Sharpe and the Treynor's measures, the portfolio outperformed the S&P$_{500}$ for every holding period.  However, the results are not as consistent with respect to 2009 BCs as reported in Table IX. Based on the Treynor's measure, the portfolio outperformed the S&P$_{500}$index whereas the Sharpe's measure indicates underperformance.

## V.    Conclusion

The Efficient Market Hypothesis suggests that it is difficult to outperform the market on a risk-adjusted basis consistently. Moreover, active investment strategy that involves market timing and stock picking may not produce superior returns on a consistent basis over a long period of time after adjusting for risk and transaction costs. Based on abundant empirical findings, many professionals and researchers suggest that it is prudent for an average investor to invest passively in a market index such as S&P$_{500}$ to earn a reasonable return over a long investment horizon. An investor can achieve superior risk-adjusted return if the investor is able to invest consistently in undervalued stocks.  The Efficient Market Hypothesis assumes that the market price of a stock reflects all relevant information pertaining to that stock. Although the tangible assets of a firm can be priced relatively well with confidence, it is much more difficult to price the intangible assets. The employer-employee relation is an intangible asset, which may not be fully reflected, in the current stock price resulting in undervaluation of a company's stock. Investing in undervalued assets is the key to outperforming passive investment strategy. Using both direct and indirect measures, the Great Place to Work Institute compiles the list of top "100 Best Companies to Work for in America" every year. This study examined whether investing in a portfolio of these companies, investors can achieve superior return compared to the market on a risk-adjusted basis. The sample incorporated 44 BCs of the 100 listed for the year 2007, 42 BCs of the 100 listed for the year 2008, and 41 BCs of the 100 listed for the 2009 for various holding periods. Employing Jensen, Sharpe, and Treynor measures, the performance of these portfolios were evaluated. The empirical findings of this study suggest superior performance of these portfolios over the market index. The results are consistent with previous studies in this area. However, the reader should be cautious that this empirical study did not incorporate the entire top 100 companies in the list. The portfolios were constructed with companies if they appeared in the top 100 list each year of the holding period under analysis. As a result, the findings could be affected by survivorship bias. The history is just a guide, not a perfect predictor of the future. As a practical matter, the investor should examine if a company appeared in the top 100 list at least over a period of last 5 years while selecting the stock for

the portfolio.  The investor should design a portfolio of at least 40 stocks and hold it for at least five years with an expectation to achieve superior returns on a risk-adjusted basis. The future studies may investigate the companies listed in the list from 2010 to 1012 and examine whether results can be duplicated.

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**Table I**
**(2007 BCs)**

| Holding Period | Alpha | Beta | $R^2$ |
|---|---|---|---|
| 5-Year (2007-2011) | 0.0040069 (1.1730639) | 1.23667 (19.63777)* | 0.869264 |
| 6-Year (2007-2012) | 0.0043072 (1.4613213) | 1.229754 (21.32948)* | 0.866653 |
| 7-Year (2007-2013) | 0.0037772 1.4602733 | 1.217783 (23.01459)* | 0.865941 |
| 8-Year (2007-2014) | 0.0042042 1.8335344* | 1.20348 (24.41874)* | 0.863822 |

*\* T-statistic shown in parenthesis*

**Table II**
**(2008 BCs)**

| Holding Period | Alpha | Beta | $R^2$ |
|---|---|---|---|
| 5-Year (2008-2012) | 0.007337 (2.6918059)* | 1.174833668 (23.58079303)* | 0.90554 |
| 6-Year (2008-2013) | 0.0060718 (2.557797)* | 1.157280423 (25.18390534)* | 0.90060 |
| 7-Year (2008-2014) | 0.4823 (2.2829827)* | 1.15007103 (26.50793922)* | 0.89550 |

*\* T-statistic shown in parenthesis*

**Table III**
**(2009 BCs)**

| Holding Period | Alpha | Beta | $R^2$ |
|---|---|---|---|
| 5-Year (2009-2013) | 0.00529 (1.76383)* | 1.22845 (19.3307)* | 0.86564 |
| 6-Year (2009-2014) | 0.00368 1.41495 | 1.21846 (20.7005)* | 0.85958 |

*\* T-statistic shown in parenthesis*

**Table IV**
**(2007 BCs)**

| | Average Return | | Standard Deviation | | CV | |
|---|---|---|---|---|---|---|
| Holding Period | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ |
| 5-year (2007-2011) | 3.6736% | 0.2555% | 27.1107% | 21.0085% | 7.3799 | 82.2246 |
| 6-year (2007-2012) | 7.0085% | 2.4472% | 28.3147% | 21.6836% | 4.0400 | 8.8606 |
| 7-year (2007-2013) | 11.1977% | 6.3263% | 28.1237% | 22.2969% | 2.5116 | 3.5244 |
| 8-year (2007-2014) | 11.1314% | 6.9594% | 26.0382% | 20.7204% | 2.3392 | 2.9773 |

**Table V**
**(2007 BCs)**

| Holding Period | Sharpe Measure | | Treynor Measure | |
|---|---|---|---|---|
| | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ |
| 5 Years (2007-2011) | 0.0549 | (0.0918) | 0.0120 | (0.0193) |
| 6 Years (2007-2012) | 0.1788 | 0.0231 | 0.0412 | 0.0050 |
| 7 Years (2007-2013) | 0.3329 | 0.2014 | 0.0769 | 0.0449 |
| 8 Years (2007-2014) | 0.3580 | 0.2486 | 0.0775 | 0.0515 |

**Table VI**
**(2008 BCs)**

| Holding Period | Average Return | | Standard Deviation | | CV | |
|---|---|---|---|---|---|---|
| | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ |
| 5-year (2008-2012) | 10.1188% | 2.2307% | 27.0643% | 21.6771% | 2.6747 | 9.7176 |
| 6-year (2008-2013) | 13.9434% | 6.7925% | 26.1445% | 22.2627% | 1.8750 | 3.2775 |
| 7-year (2008-2014) | 13.4536% | 7.4494% | 24.2348% | 20.6740% | 1.8014 | 2.7753 |

**Table VII**
**(2009 BCs)**

| Holding Period | Average Return | | Standard Deviation | | CV | |
|---|---|---|---|---|---|---|
| | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ |
| 5-year (2009-2013) | 26.1583% | 15.8481% | 20.7422% | 11.3317% | 0.7929 | 0.7150 |
| 6-year (2009-2014) | 23.3625% | 15.1052% | 19.7760% | 10.2974% | 0.8465 | 0.6817 |

**Table VIII**
**(2008 BCs)**

| Holding Period | Sharpe Measure | | Treynor Measure | |
|---|---|---|---|---|
| | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ |
| 5 Years | 0.3203 | 0.0360 | 0.0738 | 0.0078 |
| 6 Years | 0.4796 | 0.2421 | 0.1084 | 0.0539 |
| 7 Years | 0.4959 | 0.2909 | 0.1045 | 0.0601 |

**Table IX**
**(2009 BCs)**

| Holding Period | Sharpe Measure | | Treynor Measure | |
|---|---|---|---|---|
| | Portfolio | S&P$_{500}$ | Portfolio | S&P$_{500}$ |
| 5 Years | 1.2069 | 1.2992 | 0.2038 | 0.1472 |
| 6 Years | 1.1202 | 1.3494 | 0.1818 | 0.1390 |

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