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GLASSDOOR'S BEST PLACES TO WORK INTERNATIONAL: ARE THEY BEST FOR SHAREHOLDERS?

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ABSTRACT

In 2015, Glassdoor published its first international Best Places to Work list in the United Kingdom. Since then, Glassdoor has begun publishing 10 different Best Places to Work lists in 9 different countries. Glassdoor's Best Places to Work lists are unique in that rankings are solely based upon employee reviews and is not influenced by self-nominations or a cost paid by a company. With 67 million unique visitors each month, these Glassdoor lists have the potential to impact investors. In this paper, we explore whether firms appearing on lists for Canada, France, Germany, and the United Kingdom result in short-term announcement effects or long-term superior holding period returns on a raw and risk-adjusted basis. We find that our Canadian sample earns statistically significant abnormal returns in the announcement window five days after the announcement date. The Canadian sample also earns statistically significant abnormal returns in the longer-term holding periods according to Jensen's alpha, and the 3-factor and 4-factor Fama-French model. The Canadian sample also outperforms its matched sample and local index according to risk-based measures.

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Chapter 1

Introduction

The effects of employee satisfaction have been analyzed for almost a century. Fred DeArmond was among the first to publish an article on the impact of employee satisfaction DeArmond writes in *Nation's Business* in 1938 that employee satisfaction increases employees' loyalty, exaggerates their good traits, and ultimately leads to a company having a better reputation (DeArmond 1938).

As employee satisfaction became a more popular topic, *Fortune* tried to quantify it by publishing their first "100 Best Places to Work" in 1998. It was the first list of its kind. They surveyed 161 companies and created a ranked list of the top 100 companies. Filbeck and Preece (2003) are among the first to investigate the relationship of being listed on *Fortune's* "100 Best Places to Work" and long-term holding period returns. They find a statistically significant positive response from a company being ranked on *Fortune's* list.

Since *Fortune* published its initial ranking, many other organizations began publishing their own Best Companies to Work for lists. One of those companies was Glassdoor.com. Glassdoor published their first list in 2008 and their first international list (Canada) in 2015. Glassdoor's list is unique in that it only takes into account employee reviews to create the rankings for their Best Places to Work list.

This research explores the value that Glassdoor's Best Places to Work lists, published in Canada, France, Germany, and the United Kingdom, offer to investors. We analyze portfolios of companies listed on each country's Glassdoor's Best Places to Work to see if they earn

statistically significant abnormal returns associated with the announcement of inclusion in the list and over longer holding periods on a raw and risk-adjusted basis. Overall, we find Glassdoor's Best Places to Work list in Canada offers value to investors based on both short-term announcement effects and over longer holding periods..

The organization of the rest of the paper is as follows: Chapter 2 reviews the literature and explains the methodology used by Glassdoor to create their Best Places to Work lists. Chapter 3 presents our hypothesis, methodology, and data sample. Chapter 4 details our empirical results and Chapter 5 discusses our results and conclusions.

Chapter 2
Literature Review

Empirical studies of corporate social responsibility (CSR) has long been impeded by the difficulty of measuring a firm's CSR. Aupperle, Carroll, and Hatfield (1985) use an elaborate, forced-choice survey administered to 818 CEOs listed in the 1981 edition of *Fortune's Annual Directory* to measure a firm's CSR. In three total mailings, they obtain 241 usable responses from the CEOs. These CEOs were asked to assign ten points to each of four categories through 20 sets of statements to determine which CSR factor was the most important. The four categories included economic, legal, ethical, and discretionary. The weights of each of the four components were economic = 3.50, legal = 2.54, ethical = 2.22, discretionary = 1.30. These weights represent the mean value of the CEOs' responses. To measure profitability, they use return on assets (ROA), on short-term (1 year) and long-term (5 years) basis. In analyzing the results, Aupperle et al. find no relation between a firm's financial performance and their CSR score for both the short run and the long run.

In a later study, McGuire, Sundgren, and Schneeweis (1988) find a connection to a firm's CSR and their subsequent firm performance. They use data from *Fortune's* annual survey of corporate reputations to score a company's CSR. McGuire et al. then measure the firm's CSR score against that firm's financial performance in both the market and on the basis of an accounting metric. For the market performance, they use risk-adjusted returns and total returns. Market risk is measured as beta and the standard deviation of total returns. The accounting-based performance is measured by ROA, total assets, sales growth, asset growth, and operating income growth. They analyze the data in two separate time periods (1982-1984 and 1983-1985). They find no correlation between stock market performance and CSR. However, they do find that ROA and total assets are positively correlated with a firm's CSR and operating income growth is negatively correlated with CSR.

In another study, Preston and O'Bannon (1997) find a strong positive correlation between CSR and financial performance. Like McGuire, Sundgren, and Schneeweis, Preston and O'Bannon use *Fortune's* annual corporate reputation survey to measure CSR. However, unlike McGuire, Sundgren, and Schneeweis they use ROA, return on equity (ROE), and return on investment as their financial performance metrics. They investigate 67 firms who appear in the annual corporate reputation survey between 1982 and 1992, and they do not find any significantly significant correlation coefficients out of 270 calculated correlations. This finding leads Preston and O'Bannon to conclude that financial performance either precedes or is contemporaneous with CSR performance.

Waddock and Graves (1997) arrive at a similar conclusion to that of Preston and O'Bannon. They find that Corporate Social Performance (CSP) is positively correlated with prior financial performance and future financial performance. To measure CSP, Waddock and Graves

use the KLD Index which is an independent index that rates companies on eight attributes associated with CSP or CSR. The eight attributes include community relations, employee relations, performance with respect to the environment, product characteristics, treatment of women and minorities, military contracting, participation in nuclear power, and involvement in South Africa. The involvement in South Africa is relevant for the time period of this study. To measure financial performance, Waddock and Graves use ROA, ROE, and return on sales (ROS). After eliminating some of the firms from the S & P 500 index because of missing data, they test 469 companies. They interpret their findings that improved CSP causes improved financial performance and improved financial performance causes improved CSP. They also conclude that this relation is the result of good management practices: the better firms are managed, the better they will do both socially and financially.

Does investing in one's employees and stakeholders translate to stronger financial performance? von Arx and Ziegler (2014) investigate this idea by exploring the effect of CSR on the financial performance of a firm. They analyze firms in both Europe and the United States and find that financial markets in both regions value the environmental and social activities of a firm when compared to other firms in its industry. Because CSR matters to the market, firms that are more engaged environmentally and socially see higher stock returns compared to those in the same industry.

Al-Malkawi and Javiad (2018) study the impact of CSR on firms in Saudi Arabia. They measure CSR using Zakat as a proxy which, in Islamic Law, is the duty one owes to the community. In comparing publicly traded companies in Saudi Arabia from 2004 to 2013 including their ranking on the Basic Needs Deficiency Index, which is a measure of a firms Zakat; they find a strong positive relationship. Al-Malkawi's and Javiad's finding is significant

because it shows that firms who take actions that are good in the public's eyes will be reciprocated with better performance across cultures.

In an earlier study and in contrast with other studies, Nelling and Webb (2008) find much less of a link between CSR and financial performance. They use the KLD Index to measure a firm's CSR or CSP. Instead of using traditional statistical analyses, Nelling and Webb use a time series fixed effects approach to correct for variables such as corporate culture that are unobservable but differ between firms. Nelling and Webb score each firm in the KLD Index using a weighted average based on the weights developed by Waddock and Graves (1997). These scores are compared to financial metrics such as ROA, stock returns, sales, asses, and finical leverage. Nelling and Webb conclude that CSR has little to no effect on financial performance. Their results suggest that strong financial performance is what drives CSR investment.

While mixed results exist when comparing CSR investment and financial performance, could investment in CSR lead to risk reduction? Lee (2016) shows that CSR reduces the risk of a stock's price crashing in the emerging Taiwanese stock market. Those firms with higher CSR ratings are less likely to experience a stock price crash. This relation occurs because firms with higher CSR ratings tend to have higher standards of financial reporting transparency thus reducing the tendency to hoard bad news.

Lins, Servaes, and Tamayo (2017) also find that firms with high CSR benefit from reduced risk in that if the market suffers a negative shock, high-CSR firms are less likely to feel negative effects. In their study of the 2008-2009 financial crisis, they find firms built up social capital from CSR, which created a higher level of public trust than firms with a low level of CSR. This buildup of social capital served as a type of insurance against the decline in the

overall market. Firms with higher CSR had higher stock returns by 4-7 percent. In addition, these firms experienced higher profitability, more growth, and higher sales per employee when compared to other similar firms. In this study, the firms with higher investment in CSR were repaid with trust from their investors allowing them to perform better during the financial crisis of 2008-2009.

Companies with high CSR often share similar characteristics to those firms who show attention to their employees, the surrounding communities, and the environment. These characteristics are also shared by companies listed on *Fortune's* Most Admired Companies list. According to Fortune.com, the list is derived from thousands of survey responses from executives and directors. They rate companies on nine criteria including investment value, quality of management, social responsibility to the community and environment, and the ability to attract talent. The list was first published in 1983 and continues to be published annually.

Being listed on *Fortune's* Most Admired Firms list is held in high regard. There are few greater praises for a company than to be ranked as one of the most admired by its peers. With over five million readers, *Fortune* magazine has a broad reach and is one of the most respected publications in business journalism. Because of this reputation, some began to hypothesize that it was possible for *Fortune's* Most Admired Companies list to outperform their peers.

Filbeck, Gorman, and Preece (1997) is one of the first papers to study the effects of appearing on *Fortune's* Most Admired Companies list on a firm's stock price. They created portfolios made of the top 50 most admired firms and portfolios of the bottom 50 least admired firms. They find that in most time periods, the portfolio of most admired firms outperformed both the portfolio of least admired firms and the S & P 500 index based on raw returns.

In agreement with Filbeck, Gorman, and Preece (1997), Antunovich and Laster (1999) also find that a portfolio of the most admired firms outperform the S & P 500 and a portfolio of the least admired firms. In contrast to Filbeck et al., Antunovich and Laster use the top ten percent of firms ranked on *Fortune's* Most Admired Companies list to make up their most admired portfolio and the bottom ten percent to make up their least admired portfolio. They examine two holding periods, one year and three years. They find that the portfolio of the most admired firms outperformed the market and the portfolio of least admired firms. In the first year after the survey was published, the portfolio has abnormal returns of 3.2 percent, three years after publication the same portfolio has abnormal returns of 8.3 percent. This finding shows that those firms on the most admired list outperform their peers.

Because these most admired firms were outperforming the market, was it a correct to equate a great company with a great investment? For a long time, many investors thought it was a mistake to think a great company was a great investment because their virtues must already be factored into their stock price. However, Anderson and Smith (2006) find this notion to be untrue. They find that if a company is bought as late as 20 days after the publication of *Fortune's* Most Admired Companies survey, it will still outperform the S & P 500. They show that being a most admired firm is an intangible asset that is not factored into a firm's stock price. In a revisit of this study, Smith (2016) reaffirms his findings with 11 additional years of data.

In many earlier studies, firms listed on *Fortune's* Most Admired Companies list are compared against the market and against the least admired firms. Lee and Roh (2012) investigate the effect of being listed on *Fortune's* Most Admired Companies list using two different samples, one consisting of high-tech firms and one consisting of low-tech firms to determine if corporate reputation has more of an effect on firms operating in a high-technological industry.

They use data between 2001 and 2005 on 230 firms (108 high-tech and 122 low-tech) from COMPUSTAT's *Research Insight* and use the primary two-digit SIC code to identify which firms are in high and low tech industries. Lee and Roh analyze firm performance using both accounting and market measures. They use average ratio of net profit after tax to total assets and after-tax rate of return on shareholders' equity to as the accounting-based measures and Tobin's Q and the five-year revenue growth rate as the market-based performance measures. They find that regardless of whether the firm is in a high or low tech industry, corporate reputation has a positive and statistically significant effect on market performance, but has no effect on accounting performance.

While many earlier studies analyze data from the 1980s and 1990s when the most admired survey was a newer survey, Sum (2012) focuses on a more recent data set, using data from 2006-2011. He creates a portfolio of the most admired firms to determine if being ranked on the most admired survey would uphold earlier findings. He finds that in both one-year and three-year holding periods, the portfolio of most admired firms had higher risk premiums than an equally weighted portfolio of matched firms not listed on *Fortune's* Most Admired Companies list in every year except 2010. He concludes that by investing in a portfolio consisting of most admired firms, one can yield superior returns in comparison to the market. These finding are in congruence with earlier works.

Fortune's Most Admired Companies list takes many factors into account, but being listed on the survey did not imply that company was a great place for employees to work. In 1998, *Fortune* debuted its "100 Best Companies to Work For" list. *Fortune* partnered with the Great Places to Work Institute to survey a group of employees from thousands of companies. A company's score was based on the "Trust Index Employee Survey" which, according to *Fortune*,

asks questions about employees' attitudes and thoughts about management creditability, overall job satisfaction, and workplace camaraderie. Their score was also based on a "Cultural Audit," which includes detailed questions answered by employees with topics ranging from their pay and benefits to operational questions such as how employees communicate internally, what training is available, and what diversity efforts in which the firms are engaged. These aggregated scores make up the rankings of *Fortune's* 100 Best Companies to Work For.

This survey soon became the focal point of investigations about whether being identified as a company in which employees loved to work impacted its market performance. Fulmer, Herhart, and Kimberly (2003) are one of the first researchers to study this relationship. They find a portfolio consisting of publicly traded companies listed on the 100 Best Companies to Work survey outperforms the broader market in the long run, but not on an annual basis. However, it does not significantly outperform a portfolio of matched firms that do not appear on *Fortune's* 100 Best Companies to Work For list.

In contrast to Fulmer et al. study, Filbeck and Preece (2003) find that a portfolio of firms listed on the 100 Best Companies to Work For survey outperforms a portfolio of matched firms not listed on the survey on both a raw and risk-adjusted return basis. It also outperforms the portfolio of matched firms in the same industry with a similar market cap in the long run.

Goenner (2008) draws similar conclusions to that of Filbeck and Preece. Goenner compares a portfolio consisting of the top 25 ranked firms on *Fortune's* 100 Best Companies to Work For to the S & P 500 index. Goenner finds that the portfolio of the top 25 best places to work outperformed the market in all seven years of the study leading him to conclude that being list on the best places to work survey was an intangible benefit indicative of superior stock performance.

Being listed as one of the 100 Best Companies to Work For shows how employees truly feel about working at their company. Those who give their company a very high score are often the most satisfied with their job. Edmans (2011) uses the 100 Best Companies to Work For as a proxy for employee satisfaction. He investigates the link between job satisfaction (being listed on the 100 Best Companies to Work For survey) and financial performance. He finds that a positive link exists between employee satisfaction and long-run stock returns. Edmans also concludes that in the years examined, 1984-2009, a portfolio consisting of firms from the 100 Best Companies to Work For survey will have a four-factor alpha 2.1 percent above the S & P 500 index. In a similar study investigating the impact of job satisfaction and CSR on firm performance, Edmans (2012) finds a similar conclusion. In the period studied from 1984 – 2011, firms that appeared on the 100 Best Companies to Work For generated stock returns between 2.3 and 3.8 percent higher returns than a sample of matched firms not ranked on the 100 Best Companies to Work For survey. These firms were matched based on characteristics-adjusted benchmark used by Daniel, Grinblatt, Titman, and Wermers (1997) and Wermers (2004) in which the trial portfolio is matched with a control portfolio based on size, book-market ratio, and momentum. In addition, Edmans also finds that certain dimensions of CSR can improve a firm's stock returns. Lastly, Edmans concludes that being listed on the 100 Best Places to Work For survey is an intangible asset that is not appropriately accounted for in the market, making it possible to achieve abnormal returns in the long run.

While Edmans' findings primarily focus on long-term performance, Sum (2014) finds evidence that being a great place to work can provide financial benefits in both the short and long-term. He examines a portfolio consisting of firms from *Fortune's* 100 Best Places to Work For survey and finds that firms that are included on this survey exhibit positive risk premiums

and risk-adjusted excess returns from the Fama-French 4-factor model (Carhart 1997) 64 percent of the time over the trial period from 1998-2011. Sum concludes that making a firm a great place for its employees will lead to better financial performance in both the short run and the long run.

Being thought of as a great place to work often is associated with having happy employees. Mishra (2018) uses the 100 Best Companies to Work For survey as a proxy for employee happiness to investigate if employee happiness affects stock price and portfolio performance. Mishra creates three sample portfolios. The three samples are 44 firms from the "100 Best Companies to Work for in America" list from 2007, 42 from the 2008 list and 41 from the 2009 list. The number of companies differs because Mishra analyzes the same companies year to year to the keep the study more consistent as some companies drop out of the 100 best places to work list. Mishra uses the Jensen (1968), Sharpe (1966), and Treynor (1965) ratios to measure each sample portfolio's performance and finds that all three portfolios consisting of best companies to work for outperform the market. This finding leads to the conclusion that making a firm a great place to work and ensuring employees are happy are beneficial both for the employees and the shareholders.

Since *Fortune* launched two of the most well-respected business surveys, many other surveys have followed suit. *Business Ethics* first published their list of the 100 Best Corporate Citizens in 1999. To compile these rankings, every company on the Russell 1000 was ranked based on 134 factors with an emphasis on ESG transparency and performance according to CR Magazine, who has managed the list since 2007. In addition to the Business Ethics survey, other surveys include Working Mother's 100 Best Companies for Working Mothers, Gallup's Employee Satisfaction Survey, Achievers.com's 50 Most Engaged Workplaces, and Careerbliss.com's 50 Happiest Companies in America just to name a few.

Because *Business Ethics* 100 Best Corporate Citizens survey has such an emphasis on ESG, Verschoor and Murphy (2002) use this survey as a proxy when comparing firms with higher commitment to social and environmental issues. They find that conclusive empirical evidence that firms who pay more attention to social and environmental issues that their stakeholders find important will outperform matched firms who do not show commitment to these issues (i.e., are not ranked on *Business Ethics* 100 Best Corporate Citizens). Furthermore, they conclude that a firm's commitment to the ''triple bottom line'' approach, focusing not only on the financials, but on social and environmental impacts, will outperform firms that focus solely on the financials.

In another analysis of the *Business Ethics* 100 Best Corporate Citizens, Brammer, Brook, and Pavelin (2009) investigate the short- and long-term effects of a firm being listed on this survey in comparison to their stock performance. In contrast with Verschoor and Murphy (2002), Brammer et al. find that an equally rated portfolio consisting of all 100 companies will see small positive abnormal returns in a 21-day trading period after announcement of the list. However, in a one-year holding period, this portfolio underperforms the S & P 500 index by 3.3 percent.

While *Business Ethic's* 100 Best Corporate Citizens is an influential survey, does it have any more of an impact than others? Filbeck, Gorman and Zhao (2013) examine the impact of a business being listed on one of at least four different surveys: *Fortune*'s ''Most Admired Companies'' and ''100 Best Companies to Work For,'' Business Ethics ''Best Corporate Citizens,'' and Working Mother's ''100 Best Companies for Working Mothers.'' They find that firms who are listed on one or more of these surveys add value to a portfolio. In addition, for each additional survey in which a firm is listed, incremental value is added to the portfolio. They

also find that of the four surveys, *Fortune's* Most Admired Firms and *Business Ethic's* 100 Best Corporate citizens were the two surveys that added the greatest value.

Harter, Schmidt and Hayes (2002) use data from the Gallup Employee Satisfaction Survey to examine if employee satisfaction affects certain operating metrics. They focus on customer satisfaction, profitability and productivity. They conclude that a high employee satisfaction rating lead to increased performance in these three operating metrics. Using a different survey, Bryson, Forth, and Stokes (2017) study the effects of employee satisfaction on workplace performance. The employee satisfaction data comes from Workplace Employee Relations Survey 2011 from the Department for Business, Innovation & Skills. Workplace performance is measured by the financial performance of a firm. In both a cross-sectional and a panel analyses, a strong positive relation exists between high employee satisfaction and financial performance. They also conclude that raising job satisfaction levels could lead to better financial performance.

Of all the surveys and rankings of places to work, one list has been has revolutionized how rankings are done by taking anonymous input from employees. Glassdoor.com debuted its Best Places to Work list in 2009 that lists the 50 best places to work in the United States. Since 2009, Glassdoor.com has published many other lists including Best Places to Work lists in many other countries and its Best Places to Work in The United States has grown from 50 to 100 companies. The reason Glassdoor is gaining so much attention is that any employee from any business is able to leave an anonymous review of their place of work. The Best Place to Work winners are based on these reviews. According to Glassdoor, no self-nomination exists. In order to win a best place to work award from Glassdoor, companies must rely solely on reviews from their own employees over the course of that year. While Glassdoor accepts reviews from former

employees up to five years, reviews considered for Best Places to Work list must be from employees or former employees that worked there, at most, two years ago or less.

In addition, Glassdoor puts specific emphasis on the quantity, quality, and consistency of reviews for companies looking to make a Best Place to Work for List. For example, if a company wants to make the 100 Best Places to Work – U.S. large companies, they need to have at least 75 ratings over the eight workplace attributes Glassdoor considers. Those eight attributes are overall company rating, career opportunities, compensation and benefits, culture and values, senior management, work-life balance, recommend to a friend, and six-month business outlook. In addition, those firms wanting to be on the list must end the eligibility time frame with at least 1,000 employees.

Besides the number of reviews, Glassdoor uses a proprietary algorithm developed by their economics team to consider what reviews are helpful (whether good or bad) in determining what companies are truly great places to work and what reviews are not helpful. However, it is not good enough for a company to just have good reviews. They just have consistently good reviews over time. Glassdoor's algorithm also takes this into account. If a company lacks quality and/or consistent reviews it will negatively impact their score.

With the growing popularity of Glassdoor, which sees 64 million unique visitors per month Smith (2020), it is becoming a powerful tool to see how employees perceive their employer. Before Glassdoor began publishing its best places to work list, it was still a site in which hundreds of thousands of employees and former employees posted first-hand reviews about what it was like to work at their companies. One of the first papers to use these Glassdoor reviews is Melian-Gonzalez, Bulchand-Gidumal and Lopez-Vaslcarcel (2015) who examine the effects on employees' job satisfaction with the financial performance of their firm. They analyze

employee satisfaction by using a five-point Likert scale which is a scale that uses the same eight unique characteristics of a firm that Glassdoor uses in their reviews. The information for this is gathered from reviews of 475 different companies in 47 different business sector on Glassdoor.com between 2008 and 2012. Melian-Gonzalez et al. use ROA, operating margin, and revenue per employees to assess the financial performance of a firm. They conclude that a positive association exists between employee's satisfaction and a firm's financial performance.

In a similar study Huang, Li, Meschke, and Guthrie (2015) also examine the effect of employee satisfaction in family-owned firms, and if satisfaction levels impact financial performance of U.S. firms. Using over 100,000 employee surveys from Glassdoor.com between 2008 and 2012, they find that employees who work for family-owned firms have higher satisfaction levels than those who do not. They also investigate if this higher job satisfaction impacts financial performance of those firms using Tobin's q and ROA as financial performance measures. Huang et al. conclude that employee satisfaction using Glassdoor surveys is positively and significantly correlated with firm performance.

In a more recent study, Symitis, Stamolampros, and Daskalakis (2018) examine the relation of employee satisfaction based on online employee reviews and corporate performance using surveys from Glassdoor.com. They use survey reviews for U.S. public firms from 2009-2016 with over 500 reviews. Symitis et al. focus their study on reviews from current employees to avoid disgruntled former employees. They also use Tobin's q and ROA to measure a firm's performance. They find a statistically significant, positive association between a firm's rating on Glassdoor and their financial performance. In addition, they find that a portfolio made up of high-ranking firms on Glassdoor produces higher abnormal returns for investors.

Individual employee satisfaction is very important and, as previous literature suggests, it appears to lead to better performance for a firm. Individual employee satisfaction is also important because it heavily influences corporate culture. Moniz (2017) investigates the relation between corporate culture and financial performance. He uses reviews from 2008-2015 for 2,237 different companies from Glassdoor.com to gather data on corporate cultures. He compares the Glassdoor rating (stars out of 5) to a firm's future earnings surprise and Tobin's q. He finds a statistically significant relationship exists between a company's corporate culture and a firm's financial performance.

Glassdoor Rankings Summary

Glassdoor publishes 10 different lists of best places to work in nine different countries. However, the criteria used to create the lists remain the same no matter the country. Glassdoor rankings are solely based upon anonymous employee reviews. In these reviews, employees are asked the pros and cons of working at their specific company. These pros and cons are divided into eight categories: company rating, career opportunities, compensation and benefits, culture and values, senior management, work-life balance, recommend to a friend and six-month business outlook. In addition to written responses, each employee gives a score out of 5 to each of these categories. Glassdoor then compiles these reviews and uses a proprietary algorithm to rank the companies based on the quantity, quality, and consistency of their reviews.

For a company to be considered, it must have a minimum number of reviews. For example, to be considered for the 100 Best Places to Work – U.S. large companies, a firm must have at least 75 ratings from U.S. employees across the eight categories from October 23, 2018

to October 21, 2019. They also must have at least 1,000 employees at the end of the scoring timeframe. Each list has a number of reviews needed for a company to be considered. The specific requirements for each list in the countries that we are examining include the following:

- 25 Best Places to Work – Canada: At least 25 ratings across the eight workplace attributes from Canada-based employees; at least 1,000 employees at the end of the eligibility time frame.
- 50 Best Places to Work – UK: At least 30 ratings across the eight workplace attributes from UK-based employees; at least 1,000 employees at the end of the eligibility time frame.
- 25 Best Places to Work – France: At least 20 ratings across the eight workplace attributes from France-based employees; at least 1,000 employees at the end of the eligibility time frame.
- 25 Best Places to Work – Germany: At least 20 ratings across the eight workplace attributes from Germany-based employees; at least 1,000 employees at the end of the eligibility time frame.

In addition to these quantitative requirements, Glassdoor considers the quality of reviews. For a firm to be considered for a Best Places to Work list, it must have an overall score no lower than a 3.5 and no individual category score below 2.5. In addition to full-time employees, Glassdoor also considers reviews from, part time, contract, and freelance employees. These reviews are scored the same as full-time employees. Reviews from interns are not used in the rankings for the Best Places to Work list. Glassdoor also considers the written portions of employees' reviews such as what they like about the company, what could be improved, and advice to senior management. These aspects are all considered in the quality of the reviews.

Finally, Glassdoor considers the consistency of reviews on a firm. Glassdoor's algorithm analyzes trends of reviews over time and factors these trends into the rankings of a firm. This process also helps Glassdoor protect against attempts to leave false reviews, coercion of employees to submit positive reviews, and attempts to suppress reviews which would cause a company to be ineligible for a Best Places to Work award.

Chapter 3

Hypothesis and Methodology

Our alternative hypothesis is that investors can use Glassdoor's Best Places to Work lists in Canada, France, Germany, and the United Kingdom as an indicator for firms that will achieve statistically significant abnormal returns. In order to analyze this, we test the short-term and long-term performance of portfolios consisting of companies ranked on Glassdoor's Best Places to Work list against a matched portfolio for each sample and against each country's local market index. We analyze the abnormal returns of 11 trading days surrounding the announcement date of each survey, from five days before to five days after, to test the abnormal returns in the short run. To test the abnormal returns and performance in the long run, we use several different methods. First, we use raw returns of each portfolio, the Sharpe ratio (Sharpe 1966), Treynor ratio (Treynor 1965), and Jensen's Alpha (Jensen 1968) to analyze each portfolio's performance. We also use the 3-factor (Fama and French 1993) and 4-factor (Jegadeesh and Titman 1993) Fama-French models to measure expected return to see if the test samples outperform their expected return. Finally, we use a buy-and-hold abnormal return methodology to measure

whether the test samples achieved abnormal returns compared to its matched samples during the holding period.

Data Sample

Our data for testing our hypothesis comes from DataStream database. DataStream is published by Refinitiv, which is headquartered in London, UK and is jointly owned by Blackstone Group who owns a 55% stake and Thompson Reuters who owns a 45% stake. Refinitiv boasts 6 billion dollars in annual turnover and over 190 corporate clients. DataStream, one of Refinitv's top products of the 130 different fintech products offered, is a time series data retrieval service which has over 35 million unique indicators and instruments. DataStream offers 65 years of data across 175 countries. They supply data on macroeconomic indicators, various types of securities, fund fundamentals, market trends, economic cycles and many other topics.

Our sample includes data from December 10, 2014 (2015 survey) to December 10, 2019 (2020 survey) and includes private and publicly traded companies in Canada, the United Kingdom, France, and Germany. In our analysis, we exclude the private firms from our samples because of a lack of financial and return data. We also exclude negative price to book ratios and any data points under 0.01 units of the home currency to try and eliminate some of the skews in our samples. Our sample data is separated into four subsamples which are the four countries of study, and an overall whole event sample. In our calculations, we use the home currency of the company that was being analyzed. Our test samples are broken down further into 10 different industries designated by the TR1 Code in Table 1 and is comprised on 91 different companies. The United Kingdom has the largest test sample made up of 32 different companies in a given

year. The top three industries in our test samples are consumer cyclicals with 18 companies, technology with 18 companies, and industrials with 14 companies.

In order to test the performance of the Best Companies to Work for samples, we compare them to a matched portfolio that we use as a benchmark. Our matched portfolio is based on the country which the test sample is from, the previous year end's market capitalization and the price to book value ratio (PTBV).

The previous year's market capitalization is retrieved from DataStream. We define price to book value as the stock price divided by the book value of equity per share. We remove companies with negative price to book value ratios and companies with missing market capitalization. In addition, if a company was previously ranked as a Best Company it is excluded from being a matched company. Our remaining pool of potential matched firms comes from the remaining companies in the same country that have data available through DataStream. To ensure we have the best possible match for each firm in each Best Company sample, we calculate the match score (MS) for each Best Company shown in Equation 1.

$$MS = \left[\frac{X_1^B - X_1^M}{(X_1^B + X_1^M)/2}\right]^2 + \left[\frac{X_2^B - X_2^M}{(X_2^B + X_2^M)/2}\right]^2 \quad (1)$$

where:

X_1 represents the first matching characteristics: market capitalization

X_2 represents the second matching characteristics: the BE/ME ratio

B refers to the Best Companies to Work sample

M refers to the remaining stock universe in the same industry

Then, for each stock in the Best Companies to Work sample, we select the stock with the smallest MS. We repeat the same procedure for each sample year and country in our study.

Table 2 shows the characteristics of the whole sample, the Best Companies to Work samples by country, and the matched sample. Overall, the mean price to book value ratio is very similar between the test sample and the matched sample. A large difference exists in the price to book ratio in the Canadian test sample compared to the matched firms. This finding occurs because the largest companies in the matched sample have a much higher price to book value ratio than the test sample. However, the firms in the Canadian sample and its matched sample are extremely similar in market capitalization.

The mean market capitalization is similar between the test samples and the matched samples. The largest difference is in the United Kingdom because the lower 50 percentile of the matched firm have a much lower market capitalization. However, their price to book ratios are much closer.

Chapter 4

Empirical Results

To investigate the short-term effects of the announcement, we compare the abnormal returns of each sample to the market. For each subsample, we define the announcement day as the day Glassdoor published their list of the Best Companies to Work. The abnormal returns were calculated by subtracting the expected returns from the realized returns. In order to find the expected return, we calculated it using Capital Asset Pricing Model as shown in Equation 2.

$$R_i = R_{ft} + \beta(R_{mt} - R_{ft}) \quad (2)$$

Where:

R_i = the excepted return of the portfolio

R_{ft} = the risk free rate

β = beta of the portfolio

R_{mt} = average return of the market

In Panel A of Table 3 we calculate the abnormal returns around the event date from five days prior to five days after because of the possibility of news leakage or a delayed market acknowledgment of the survey release. In the days leading up the announcement, no positive abnormal returns are observed indicating no news leakage. No significant results existed on the day of the announcement. The day after the announcement, the Canadian and German samples saw statistically significant positive returns, while the French sample had positive and statistically significant returns on the fourth day after the announcement. Overall, the combined subsamples saw significantly positive returns on the first and fourth day after the announcement. The United Kingdom sample did not see any statistically significant returns after the announcement date.

In Panel B, we compare the cumulative abnormal returns from four different event windows surrounding the event date, i.e., five days prior to two days prior, one day prior to the event date, one day after to five days after, and five days prior to five days after the event date. In the windows leading up to the event, there were no positive abnormal returns. Because of this, we can also conclude there was no leakage of information. In the window after the announcement, each sample saw statistically significantly positive abnormal returns with the exception of the United Kingdom sample, which had statistically negative abnormal returns. The Canadian sample saw the highest abnormal returns of 1.60% in the window after the

announcement. These findings show that firms, when listed on Glassdoor's Best Companies to Work survey, observe returns in excess of their projected returns according to the CAPM model. These results provide evidence that Glassdoor's Best Companies to Work can offer positive and statistically significant abnormal returns.

In table 4, we compare the raw monthly returns and risk adjusted returns of each sample against the matched sample and against each country's local market index. We define the holding period as the time of Glassdoor announcing their list until the announcement of the next year's list. We use a paired difference test, shown in Equation 3, to calculate a t - test statistic with n–1 degrees of freedom to analyze raw returns statistically against each benchmark.

$$t \equiv \frac{\bar{d}}{s_d}\sqrt{n} \tag{3}$$

where:

$\bar{d}$= the mean difference between the market and portfolio return each day

s_d = the standard deviation of the daily difference between the returns of the market and portfolio

n = equals the number of days corresponding to the annual holding period.

In addition to the raw returns, we calculate several commonly used forms of risk-adjusted returns, the Sharpe (1966) ratio and the Treynor (1965) ratio.

We calculate the Sharpe ratio for each sample. The Sharpe ratio, shown in Equation 4, shows excess return per unit of risk, using the standard deviation as the measure of risk.

$$Sharpe\ Index = \frac{d}{S_d} \tag{4}$$

where:

d = mean daily difference between the Best Companies to Work portfolio (or the matched sample) and the T-bill return, calculated over respective holding periods

s_d= the sample standard deviation of the daily return differences

We also calculate the Treynor ratio for each sample. The Treynor ratio, shown in Equation 5, measures excess return per unit of risk, where risk is measured using beta representing systematic risk.

$$Treynor\ Index = \frac{d}{\beta}\sqrt{n} \quad (5)$$

where:

d = mean daily difference between the return on the Best Companies to Work portfolio (or the matched sample) and the T-bill return, calculated over respective holding periods

β = portfolio beta

n = number of days in the respective holding periods

The Sharpe and Treynor ratios are useful in different situations. If an investor is holding a poorly diversified portfolio, the Sharpe ratio is a more relevant measure because it also considers the non-systematic risk within the portfolio. However, if an investor has a well-diversified portfolio, the Treynor ratio is a much more appropriate measure.

In addition, we also calculate Jensen's (1968) alpha for each sample. Jensen's alpha is a measure of the difference between the subsample return and the return predicted by the capital asset pricing model. We calculate Jensen's alpha, α, as the intercept term of the regression of the

excess returns on the portfolio of the Best Companies to Work firms (or matched samples) against the excess returns of the market as shown in Equation 6.

$$R_{pt} - R_{ft} = \alpha + \beta(R_{mt} - R_{ft}) + e_{pt}, \quad (6)$$

A portfolio with a positive Jensen's Alpha is considered undervalued, while a negative Jensen's Alpha indicates a portfolio is overvalued.

Our results are found in Table 4. Of the test samples, the Canadian test sample had the highest Sharpe and Treynor ratios. It also has a higher Sharpe and Treynor ratios than its matched sample and local index. This finding shows that the Canadian sample outperforms the other samples on a risk adjusted basis. It also outperforms its matched sample and its local index on a risk-adjusted basis.

Of all the Jensen's alpha results, only one comparison was statistically significant, which is that the Canadian Best Companies to Work sample outperforms the matched sample. Thus only in Canada does the Glassdoor selected firms add additional value beyond what would be predicted by the capital asset pricing model.

We also test the long-term risk-adjusted performance of each sample using the Fama-French 3-factor (Fama and French 1993) and 4-factor (Jagadeesh and Titman 1993) models. We use the 3-factor model by creating a regression of the daily excess returns and use 3 factors in our regression (a market factor, a size factor, and a book-to-market factor). The 4-factor model adds an additional factor that captures the one-year momentum anomaly. The 3-factor and 4-factor models are shown below in Equations 7 and 8, respectively.

$$R_{pt} - R_{ft} = a_i + b(R_{mt} - R_{ft}) + s\,SMB_t + hHML_t + e_t; \quad (7)$$

$$R_{pt} - R_{ft} = a_i + b(R_{mt} - R_{ft}) + s\,SMB_t + hHML_t + m\,UMD_t + e_t; \quad (8)$$

where:

R_{pt} = the simple portfolio return on the Best Companies sample

R_{ft} = the return on one-month T-bills

R_{mt} = the return on a value-weighted market index

SMB_t = the return on a value-weighted portfolio of small stocks less the return on a value-weighted portfolio of big stocks

HML_t = the return on a valued-weighted portfolio of high book-to-market stocks less the return on a value-weighted portfolio of low book-to-market stocks

UMD_t = the return on the two prior high return portfolios less the returns on the two prior low return portfolios

A statistically significant, positive intercept means that after accounting for the systematic factors in the regression, the sample performance shows added value. To determine statistical significant, we calculate the t-statistic for each regression factor and intercept.

The results for our 3-factor and 4-factor models are shown in Table 5. In the 3-factor model, only the Canadian sample has significantly positive intercept showing that the Canadian Glassdoor firms added statistically significant value. None of the other samples had significant results. The 4-factor model, the Canadian sample again offers the only positive and statistically significant result. As in the 3-factor model, the other samples do not have significant results in the 4-factor model.

We also examined long-term performance by using buy-and-hold abnormal returns (BHARs) (Barber and Lyon 1997). For each survey year, we defined the holding period as the period from the announcement of Glassdoor's Best Companies to Work list until the

announcement of the next year's list. BHAR is defined as the difference between the buy-and-hold return of a company appearing on the Glassdoor survey minus the buy-and-hold return of the selected matched company from the matched sample. BHARs are then aggregated into portfolios containing all securities within a year for a specific subsample. The specific calculation we use for BHAR is found in Equation 9.

$$t_{BHAR} = \overline{BHAR}_{it} / (\sigma(BHAR_{it}) / \sqrt{n}) \quad (9)$$

where :

$\overline{BHAR}_{it}$ = average buy-and-hold abnormal return

$\sigma(BHAR_{it})$ = cross-sectional standard deviation of the buy-and-hold abnormal returns

n = the number of matched comparisons

We use our matched sample as our benchmark for our BHAR calculations. Therefore, the BHAR is the buy-and-hold return of Glassdoor's Best Companies minus the buy-and-hold return of their matched company.

Results of the BHARs are reported in Table 6. In the results, only the German subsample exhibited statistically significant results and the performance was positive. This positive result implies that an investor can make a positive abnormal return from a portfolio made of German firms listed on Glassdoor's Best Companies to Work survey. While not statistically significant because of smaller sample size, the Canadian subsample had a BHAR of 0.12%.

In summary, mixed results exist across test samples. In the short-term, three of the four test samples achieved positive significant abnormal returns in the five days following the announcement. In the long-run most samples did not achieve positive, significantly significant

abnormal returns. However, the Canadian sample did see a statistically significant Jensen's Alpha, which indicates the sample outperformed expectations. In addition, the Canadian sample saw a higher Sharpe ratio and Treynor ratio compared to the matched sample and to the Canadian market. The Canadian test sample also was the only sample to have a significant positive intercept in both the 3- and 4-factor Fama-French models. The German test sample was the only sample to have statistically significant positive buy and hold abnormal returns.

Chapter 5

Conclusion

In this paper, we examine if Glassdoor's Best Places to Work provide meaningful information to shareholders in order to identify companies that have potential to achieve abnormal returns in the future. Glassdoor's survey is unique because it is solely made up of input from current and former employees. Companies cannot self-nominate or pay a fee to be ranked on Glassdoor's list. Because Glassdoor sees 64 million unique visitors a month, their Best Places to Work lists, specifically for Canada, France, Germany, and the United Kingdom, have the ability to influence investors. This influence can be measured in both the short run and the long run.

The short run results clearly show that in Canada, France, and Germany; a portfolio consisting of companies listed on Glassdoor's Best Companies to Work lists can earn statistically significant positive abnormal returns in the 5-day window after the announcement date.

In the long run, the results are mixed. One result that is consistent across most measures is the ability to earn superior long-term results from portfolios consisting of the Canadian Best

Companies to Work sample. The Canadian sample has a significantly positive Jensen's Alpha meaning it outperformed its expected returns relative to the capital asset pricing model. The Canadian sample also has higher return per unit of risk according to both the Sharpe ratio and the Treynor ratio in comparison to its matched sample and the market overall. In addition, the Canadian sample has a statistically significant positive intercept in the 3-factor and 4-factor models, meaning that after accounting for additional systematic factors, the sample outperformed expectations. In the BHAR comparisons, the Canadian sample did have positive abnormal returns, but they were not significant. Only the German sample had statistically significant positive abnormal returns.

In conclusion, while overall we observe mixed results across samples in the short and long term, the Canadian sample saw significant positive abnormal returns in the short term and significantly outperformed matched samples and its expected return in the long run. Therefore Glassdoor's Best Companies to Work in Canada list does provide value to investors.

Table 1. Sample Descriptions

Industry	Total Companies	TR1 Code	Canada Test Sample	France Test Sample	Germany Test Sample	UK Test Sample
Best Companies test sample			14	27	18	32
Consumer Cyclicals	18	53	2	6	7	3
Technology	18	57	2	3	5	8
Industrials	14	52	2	4	2	6
Financials	11	55	3	4	0	4
Consumer non-Cyclicals	9	54	0	3	1	5
Energy	6	50	2	1	0	3
Utilities	5	59	2	1	0	2
Telecommunication Services	4	58	1	1	2	0
Basic Materials	3	51	0	3	0	0
Healthcare	3	56	0	1	1	1

Table 2. Matched Samples

	Number of Observations	Mean	Standard deviation	Percentile				
				Min	25	50	75	Max
Market capitalization (in local currency)								
Canada sample	18	22,301.20	17,523.91	173.37	7,902.81	20,433.22	39,728.14	51,959.27
Matched sample		22,384.02	17,283.48	163.97	9,165.69	18,689.65	33,074.06	54,105.21
France sample	68	44,538.64	36,925.22	612.37	17,966.08	36,276.52	62,137.20	147,330.90
Matched sample		38,127.63	34,937.21	643.31	14,030.99	29,515.65	51,156.32	209,349.50
Germany sample	53	52,694.61	33,673.20	1,006.90	24,000.71	48,982.46	75,665.25	147,813.70
Matched sample		52,494.41	33,448.48	1,004.43	24,150.71	49,116.20	75,744.38	147,813.70
UK sample	52	23,866.67	35,861.59	140.37	2,077.67	4,838.41	48,636.39	153,265.00
Matched sample		15,215.29	22,815.99	165.02	2,123.58	4,653.39	16,299.71	93,871.25
Whole sample	191	39,078.17	36,279.37	140.37	7,697.58	26,016.34	59,067.72	153,265.00
Matched sample		34,392.62	33,373.55	163.97	8,818.93	25,576.57	51,124.26	209,349.50
Price to book ratio (PTBV)								
Canada sample	18	15.34	51.67	1.07	1.39	1.94	3.22	222.10
Matched sample		3.93	4.21	1.10	1.66	1.88	4.22	17.25
France sample	68	3.19	2.87	0.59	1.29	1.90	4.18	13.28
Matched sample		2.80	1.75	0.77	1.23	2.44	3.64	8.09
Germany sample	53	2.42	1.62	0.61	1.18	1.97	3.36	8.14
Matched sample		2.41	1.62	0.61	1.18	1.97	3.34	8.11
UK sample	52	8.58	15.09	0.77	1.64	3.87	6.73	68.23
Matched sample		6.93	12.25	0.72	1.71	3.76	5.98	64.52
Whole sample	191	5.59	17.89	0.59	1.34	2.26	4.57	222.10
Matched sample		3.92	6.87	0.61	1.42	2.53	4.28	64.52

Note: Matched sample is matched by country, market cap and PTBV.

Table 3. Event Study Results

	Whole Best Companies Sample		Canada Sample		France Sample		Germany Sample		UK Sample	
Panel A. Abnormal returns (%) around event date										
Day	AR	t-stat	AR	t-stat	AR	t-stat	AR	t-stat	AR	t-stat
-5	-0.20	-2.08**	-0.46	-1.08	-0.27	-1.80*	-0.10	-0.58	-0.17	-0.84
-4	-0.31	-2.75***	-0.34	-0.81	-0.26	-1.33	-0.30	-1.35	-0.38	-1.99*
-3	-0.32	-3.18***	-0.28	-0.78	-0.16	-0.87	-0.49	-2.48**	-0.33	-2.04**
-2	0.04	0.31	-0.69	-1.23	-0.16	-0.95	0.38	2.07**	0.12	0.38
-1	-0.09	-1.01	0.05	0.17	0.35	1.81*	-0.32	-2.16**	-0.40	-2.73***
0	-0.10	-0.96	0.07	0.15	-0.01	-0.05	-0.17	-1.00	-0.19	-0.81
1	0.29	2.50**	1.54	2.97**	0.11	0.64	0.52	2.46**	-0.18	-0.90
2	0.06	0.66	-0.61	-1.46	-0.06	-0.42	0.26	1.57	0.19	1.16
3	0.17	1.08	0.31	0.78	0.11	0.70	0.33	0.92	0.01	0.04
4	0.37	2.99***	0.19	0.63	0.90	3.10***	0.21	1.44	-0.04	-0.18
5	-0.08	-0.77	0.17	0.60	-0.20	-1.21	-0.23	-1.46	0.16	0.68
Panel B. Cumulative abnormal returns (%) around event date										
Interval	CAR	t-stat	CAR	t-stat	CAR	t-stat	CAR	t-stat	CAR	t-stat
(-5, -2)	-0.80	-3.74***	-1.75	-1.68	-0.85	-2.56**	-0.52	-1.84*	-0.75	-1.53
(-1, 0)	-0.20	-1.38	0.12	0.21	0.34	1.34	-0.49	-2.13**	-0.59	-2.24**
(1, 5)	0.81	3.39***	1.60	2.00**	0.87	2.88***	1.09	2.07**	0.15	0.33
(-5, +5)	-0.18	-0.59	-0.04	-0.04	0.37	0.82	0.08	0.13	-1.19	-2.09**

Note:

1. *, ** and *** indicates 10%, 5% and 1% significance level.
2. We use market model to calculate the expected returns of a company.
3. Market return for each country retrieved from https://www.aqr.com/Insights/Datasets/Quality-Minus-Junk-Factors-Daily

Table 4. Monthly Raw Return and Risk-adjusted Measures

	Whole Best Companies Sample	Canada Sample	France Sample	Germany Sample	UK Sample
Monthly raw return (%)					
Test sample (1)	0.907	1.586	0.642	0.876	0.526
Matched sample (2)	1.190	0.941	0.777	0.789	0.885
Local Market Index (3)	1.013	0.662	1.061	0.605	0.569
(1) - (2)	-0.283	0.645	-0.135	0.087	-0.359
(1) - (3)	-0.106	0.924	-0.419	0.271	-0.042
Sharpe Ratio					
Test sample (1)	0.039	0.073	0.027	0.034	0.020
Matched sample (2)	0.055	0.044	0.035	0.030	0.038
Local Market Index (3)	0.054	0.039	0.054	0.034	0.027
Treynor Ratio					
Test sample (1)	0.047	0.114	0.032	0.039	0.028
Matched sample (2)	0.066	0.087	0.039	0.033	0.054
Local Market Index (3)	0.049	0.033	0.051	0.030	0.028
Jensen's Alpha					
Test sample (1)	-0.002	0.053*	-0.015	0.009	0.000
Matched sample (2)	0.014	0.026	-0.010	0.021	0.019

Note:

1. *, ** and *** indicates 10%, 5% and 1% significance level.

Table 5. Fama French 3-factor and 4-factor Models

		Whole Best Companies Sample	Canada Sample	France Sample	Germany Sample	UK Sample
Panel A. Fama-French 3-factor model						
Intercept	Coefficient	0.00	0.05	-0.02	0.01	0.00
	t-stat	-0.14	2.11**	-1.09	0.67	-0.18
MKTRF	Coefficient	0.64	0.63	0.62	0.81	0.76
	t-stat	32.96***	18.97***	28.19***	27.84***	33.00***
SMB	Coefficient	-0.56	-0.50	-0.49	-0.59	-0.21
	t-stat	-15.99***	-9.07***	-13.84***	-11.91***	-5.59***
HML	Coefficient	-0.25	-0.30	-0.11	0.04	-0.23
	t-stat	-8.32***	-8.27***	-3.33***	0.79	-5.81***
Panel B. Fama-French 4-factor model						
Intercept	Coefficient	0.01	0.05	-0.01	0.02	0.01
	t-stat	0.39	2.05**	-0.83	1.10	0.26
MKTRF	Coefficient	0.61	0.64	0.60	0.78	0.70
	t-stat	30.94***	19.18***	26.47***	26.61***	28.68***
SMB	Coefficient	-0.56	-0.53	-0.51	-0.57	-0.26
	t-stat	-16.36***	-9.49***	-14.16***	-11.54***	-6.88***
HML	Coefficient	-0.36	-0.29	-0.15	-0.04	-0.33
	t-stat	-10.38***	-8.06***	-4.26***	-0.87	-7.87***
UMD	Coefficient	-0.18	0.08	-0.10	-0.19	-0.24
	t-stat	-6.15***	2.88***	-3.14***	-4.97***	-6.29***

Note:

1. market return for each country, risk free rate and Fama-French factor loadings are retrieved from https://www.aqr.com/Insights/Datasets/Quality-Minus-Junk-F

Table 6. Buy and Hold Abnormal Returns (BHAR)

	BHR of Best Companies Sample (1)	BHR of Matched Sample (2)	BHAR: (1) - (2)	t-stat
Whole Best Companies Sample	0.09	0.10	0.00	-0.23
Canada Sample	0.20	0.09	0.12	1.38
France Sample	0.07	0.12	-0.05	-1.51
Germany Sample	0.09	0.09	0.01	1.69*
UK Sample	0.09	0.09	0.00	-0.03

Note:

1. *, ** and *** indicates 10%, 5% and 1% significance level.

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Matthew A. Warnaka

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EDUCATION

The Pennsylvania State University, Schreyer Honors College **May 2020**
Bachelor of Science
Majors: Finance and Interdisciplinary Business with Engineering Studies
Awards: Lawrence and Elizabeth Held Scholarship, Dean's List, Scholar All-Region, Academic All-Conference

WORK EXPERIENCE

FP&A Consolidations Intern, Textron Specialized Vehicles **6/19 – 8/19**
- Analyzed financial statements and market conditions to create forecasts for the Annual Operating Plan
- Rebuilt management reporting package making it fully automated
- Participated in a strategy recommendation business case and make-or-buy business case

Collaborative Solutions Administrator Intern, HM Health Solutions **5/19 – 8/18**
- Created an interface to sort invoices and predict future budget items
- Designed an excel database to help predict what SharePoint sector needed the most work
- Used analytics to predict where more work was needed

Sale Associate, Walmart **3/16 – 4/20**
- Trained new employees in the Lawn and Garden Department
- Practiced effective communication with other employees and customers
- Awarded employee of the month for December 2017

EDUCATIONAL EXPERIENCE

Lead Analyst - Student Managed Investment Fund **8/19 – 12/19**
- Evaluated companies using fundamental and technical analysis
- Used DDM, DCF, Accounting Based, and Relative models to estimate target prices
- Presented my research at weekly fund meetings
- Lead a team of two associate analysts

Senior Management Project **8/19 – 4/20**
- Created a system to better track rental companies inventory
- Showed venture was financially viable using NPV analysis, Pro Formas, market research
- Detailed our processes from prototyping to final implementation plan

Schreyer Honors Thesis **3/19 – 4/20**
- Used Jensen's Alpha, Treynor Ratio, Sharpe Ratio, Farma-French model to analyze portfolios
- Performed statistical analysis to evaluate the relevance of test results
- Summarized prior research, outlined experiment methodology, published results and conclusions

LEADERSHIP ACTIVITES

- **Vice President of Networking**: Financial Management Association
- Member of the Penn State Behrend **Men's Soccer Team**, the Outdoors Club and Ski Club
- Volunteer for Top Soccer – *special needs organization*
- Economics Teaching Assistant

RELEVANT SKILLS

- Financial Statement Analysis, Investment and Portfolio Analysis, Calculus II, Statistical Analysis
- Bloomberg Terminal Certified, Advanced Excel skills, Microsoft Office, DataStream, Various CAD software
- SAP experience