INCLUSION ON THE DOW JONES SUSTAINABILITY INDEX (NORTH AMERICA):
IMPLICATIONS FOR MARKET CAPITALIZATION AND STOCK RETURN

A Thesis
by
ALEX WAYNE HELMS
May 2016

APPROVED BY:

Tammy Kowalczyk, Ph.D.
Chairperson, Thesis Committee

David Dickinson, Ph.D.
Member, Thesis Committee

Lynn Stallworth, Ph.D.
Member, Thesis Committee

Doug Roberts, Ph.D.
Chairperson, Department of Accounting

Max C. Poole, Ph.D.
Dean, Cratis D. Williams School of Graduate Studies

Abstract

INCLUSION ON THE DOW JONES SUSTAINABILITY INDEX (NORTH AMERICA):
IMPLICATIONS FOR MARKET CAPITALIZATION AND STOCK RETURN

Alex Helms
B.S.B.A., Appalachian State University
M.ACC., Appalachian State University

Chairperson: Tammy Kowalczyk, Ph.D.

This study seeks to understand the relationship between sustainability

practices (SP) and financial performance. While literature exists with conflicting conclusions,

many of these studies only examine sustainability through a one-dimensional view.

Additionally, much of the research linking financial performance to SP are international or

foreign-based studies. Using inclusion on the Dow Jones Sustainability Index North America

(DJSI), a multi-dimensional sustainability assessment tool, we analyze the relationship

between corporate sustainability practices (as measured by inclusion on the DJSI) and two

measures of financial performance: market capitalization and stock return. Specifically, we

test whether the relationship between traditional financial accounting predictor variables (i.e.

net income, long-term debt, total revenue, and basic earnings per share) and financial

performance indicators (market capitalization and stock return) is different for firms included

in the DJSI versus those not included.

Acknowledgments

I would like to express my sincerest gratitude to my thesis chair, Dr. Tammy Kowalczyk for her role in this process. Without Dr. Kowalczyk, I would have likely never pursued sustainability based research or found my own passion within sustainability. Dr. Kowalczyk continues to inspire students and lead the way for sustainability based curricula at Appalachian. Additionally, I would like to thank my thesis committee, Dr. David Dickonson and Dr. Lynn Stallworth, as they provided me with guidance and continual support. Their support was genuine, and I could not have asked for a better committee. Lastly, I give my gratitude to Appalachian's Accounting department. Through both my undergraduate and graduate experiences, the accounting department has exhibited an unparalleled passion for their students and their field, providing us with more opportunities than we afford.

Dedication

I would like to dedicate this thesis to the most amazing parents the Lord could have provided me with. Without their sincere love, encouragement, and support, I most certainly would not be where I am today. As it turns out, one child really was "enough". My hat is off to them.

Table of Contents

INCLUSION ON THE DOW JONES SUSTAINABILITY INDEX (NORTH AMERICA):
IMPLICATIONS FOR MARKET CAPITALIZATION AND STOCK RETURN

A Thesis
by
ALEX WAYNE HELMS

Submitted to the Graduate School
at Appalachian State University
in partial fulfillment of the requirements for the degree of
MASTER OF ACCOUNTANCY

May 2016
Department of Accounting

Inclusion on The Dow Jones Sustainability Index (North America): Implications for Market

Capitalization and Stock Return

Introduction

Throughout the past several decades, the idea of sustainable business practices and

corporate social responsibility has infiltrated the media, academia, and business alike. In the

age of globalization and mega international corporate giants that can have a footprint around

the entire planet, stakeholders from every corner are starting to question and consider the

impact of human activity on our environment and supply of natural and human resources. In

order to fully encompass the principle of sustainability, it is pertinent that the concept is

defined. One of the leading definitions of this concept comes from the *Report of the World*

Commission on Environment and Development: Our Common Future which states that

"Sustainable development is development that meets the needs of the present without

compromising the ability of future generations to meet their own needs" (30). With this

concept of sustainability, firms are beginning to be accountable for not only their financial

impact, but also their environmental and social impact as well.

Given the current paradigm of business, in which the corporation is responsible to the

shareholders, the argument has to be made that financial viability can be congruent with

positive environmental and social behavior. In the past century, much progress has been

made towards shifting how we think of business and their role on the markets. Research

concerning different theories of business (stakeholder, legitimization, and institutional) has

emerged (Carnevale & Mazzuca, 2014; Clarkson, 1995; López, Garcia, & Rodriguez, 2007;

López, Garcia, & Rodriguez, 2000; Campbell, 2007). These theories argue that businesses

are not solely accountable to their shareholders, but also to other stakeholders as well and are

often affected broadly by the society and economic conditions at hand. There are several pieces of literature that seek to specify the financial performance link to sustainable practices. Typically, these studies are event-studies and time-series analysis (Curran & Moran, 2007; Cheung, 2011; Karlsson & Chakarova, 2008; Tsai, 2007). Additionally, many of these studies are based on foreign companies or exchanges (Cormier & Magnan, 2007; Cormier, Magnan, & Van Velthoven, 2005; Semenova, Hassel, & Nilsson, 2010; Lopatta & Kasperteit, 2014; Chiu & Wang, 2015; Berthelot, Coulmont, & Serret, 2012; Pérez-Calderón, Milanés-Montero, & Ortega-Rossell, 2012; Ameer & Othman, 2012; Bachoo et al., 2013). What is lacking is information linking financial performance and sustainable practices for U.S. markets.

While there have been some studies that focus on U.S. markets, not many focus on financial impact based on accounting-based measures. In this study, we seek to analyze several factors. Using the Dow Jones Sustainability Index (DJSI) as an indicator of sustainable practices (SP), we test to see if there is any significance on market capitalization or stock return for firms listed on the DJSI versus those not listed. Additionally, we seek to understand whether or not accounting based performance measures including net income, basic earnings per share (BEPS), revenue, and long-term debt have varying impacts on market capitalization or stock return for companies on the DJSI versus those not. Findings reveal a significant positive relationship exists between revenue and market capitalization for those firms listed in the DJSI, as well as long-term debt. Additionally, net income was shown to have a positive significance on market capitalization for firms not listed on the DJSI. For stock return, we found that BEPS is positively associated with stock return for all companies, regardless of DJSI inclusion. In regards to inclusion on the index and the direct affect that

has on financial performance, we did not find any evidence to suggest that DJSI inclusion

alone has an impact on market capitalization or stock return.

Role of the Article

The demand for sustainability reporting (SR) is burgeoning as consumers and media

are becoming cognizant of the ethical implications posed in conducting business. With this

proliferation, companies are being forced to consider their sustainable practices. Firms are

now being pressured to cater to all stakeholder groups equally rather than just appeal to one

group (i.e. shareholders). Synonymous with this pressure is the demand for more

transparency. Currently, there is much flexibility in what and how companies report their SP,

with a plethora of reporting frameworks. Many companies are choosing to voluntarily report

their sustainable practices. One of the first attempts to create a system for measuring

sustainable practices was that by Post and Preston (1974), in which they developed the

corporate social response matrix (Post & Preston, 2012). This model was later revised and

improved upon by Carroll (1979). In addition to the efforts to develop internal measurement

frameworks for internal rework, there has also been a plethora of external reporting

mechanisms that can be viewed by potential investors. According to research by Lackmann,

Ernstberger, and Stich (2012), investors appear to positively value the objective external

reporting by companies on their sustainable practices. Additionally, investors are shown to

consider the reliability of such information in their investment decisions (Lackmann,

Ernstberger, & Stich, 2012). Though most of these frameworks (i.e. Greenhouse Gas

Protocol, etc.) are not independently verified or comparable, they do signal a move by

companies to disclose other non-financial information in a way that investors can use in their decision-making process.

Though companies are not directly required by regulation to report on their sustainable performance, companies all over the globe are beginning to experience the benefits of voluntary disclosure through less volatility and positive market valuation – this includes stock price, cost of equity, and expected future returns (J. Przychodzen & W. Przychodzen, 2013; Lackmann, Ernstberger, & Stich, 2012; Bachoo, Tan, & Wilson, 2013). While literature does exist linking financial performance to sustainable businesses practices, more research is needed on the market effects of public companies that are sustainability oriented. Over the course of several decades, researchers have investigated the link between financial performance and SP. Conclusions from these studies vary from a negative association to a positive association, with some empirical findings showing a neutral link (Abagail & Siegel, 2000). A majority of the literature is focused on foreign-based companies (Cormier & Magnan, 2007; Cormier, Magnan, & Van Velthoven, 2005; Semenova, Hassel, & Nilsson, 2010; Lopatta & Kasperteit, 2014; Chiu & Wang, 2015; Berthelot, Coulmont, & Serret, 2012; Pérez-Calderón, Milanés-Montero, & Ortega-Rossell, 2012; Ameer & Othman, 2012; Bachoo et al., 2013). What is lacking are empirical findings regarding U.S. publicly traded companies. Through the use of the DJSI (North America) as a measure of SP for U.S. publicly traded companies, this study seeks to compare financial performance in terms of accounting measures for companies listed on the DJSI versus those not listed. In terms of financial performance, this study looks at the impact of accounting-based measures on two variables; market capitalization and stock return.

The first measure that this study seeks to analyze is market capitalization. Because

sustainably oriented companies tend to have less volatile stock prices and a more

consistent/moderate growth cycle (J. Przychodzen & W. Przychodzen, 2013), this study

looks at whether or not accounting based measures such as basic earnings per share (BEPS),

net income, long-term debt, and total revenue have a greater impact on overall investment

(i.e. market capitalization) for companies listed on the DJSI relative to their peers not chosen

for inclusion on the DJSI. The rationale behind looking at the relationship between

accounting based measures is because they are believed to be among some of the most

scrutinized measures by investors seeking investment opportunities.

In addition to testing the relationship between SP and market capitalization, and

because SP tend to be associated with more steady revenue streams and greater long-term

debt, we analyzed whether or not these accounting-based measures could translate into

higher stock returns. In order to assess the impact of accounting measures on stock return for

sustainable versus non-sustainable companies, we included in our models net income, total

revenue, BEPS, and long-term debt. The study builds on the work of (Pérez-Calderón et al.,

2012; Dilling, 2008; Consolandi, Jaiswal-Dale, Poggiani, & Vercelli, 2009) by studying the

effect of inclusion on the DJSI for publicly traded companies on U.S. stock exchanges. This

study differs from existing studies in two ways. First, this study uses the DJSI North America

Index as an indicator of SP, which incorporates a multi-faceted dimension of sustainability

that includes not only environmental factors but also the social aspect. Secondly, this study

differs in the sense that we use financial market based indicators of corporate financial

performance rather than just accounting measures. Additionally, the accounting measures we

use differ from most related literature, which commonly analyzes the effects of SP on return

on assets (ROA), return on equity (ROE), and the book value of equity (Özçelik, Avci

Öztürk, & Gürsakal, 2014; Guenster, Bauer, Derwall, & Koedijk, 2011; Waddock & Graves,

1997; Russo & Fouts, 1997; Konar & Cohen, 2001; King & Lenox, 2002; Telle, 2006). The

reason market capitalization and stock return are of interest as to their relation to sustainable

businesses is twofold. First, market capitalization is seen as a signal to managers that

investors maintain a certain level of confidence in the company and generally view the

company as profitable and stable going forward. Secondly, stock return is used as an

indicator of profitability and likely future growth.

   Using the inclusion on a stock index as an indicator of corporate social responsibility

is not a novel task, as similar research has been conducted using a reputational index as a

proxy (Oberndorfer, Schmidt, Wagner, & Ziegler, 2013; Abagail & Siegel, 2000; Becchetti,

Di Giacomo, & Pinnacchio 2008). While there have been several studies that look at the Dow

Jones World Sustainability Index and the Dow Jones European Sustainability Index, there

have been almost no studies that look at the impact of inclusion on the Dow Jones

Sustainability Index North America (Eccles, Ioannou, & Serafeim, 2014). Many of these

studies tend to be event-studies, where a window around a particular occurrence is examined,

or time-series analysis (Curran & Moran, 2007; Cheung, 2011; Karlsson & Chakarova, 2008;

Tsai, 2007). Additionally, many prior studies that specifically focused on sustainable indices

sought to examine a whole portfolio (Sauer, 1997). Unlike prior studies, this study seeks to

analyze a set of companies across various industries listed on U.S. stock exchanges at a point

in time rather than over a period of time as to assess the relationship between firms currently

exhibiting SP and their current financial performance in terms of accounting-based measures.

Literature Review

A prevalent issue in our financial markets is the level of information asymmetry that exists between key stakeholders. Fundamental to the field of accounting is reducing the amount of information asymmetry through the publication of financial reports prepared according to a set framework that allows for comparability and verifiability. As environmental issues continue to demand more attention from society and businesses alike, there is an increasing demand to seal the information asymmetry that exists between investors and managers in regards to environmental performance and SP in general. According to literature on voluntary disclosure, the relationship between a firm's stock market value and voluntary disclosure strategy is dependent on the information asymmetry that exists between investors and the firm (Kajander, Sivunen, Vimpari, Pulkka, & Junnila, 2012). Much of this demand stems from a series of theories that justify corporate social responsibility (CSR). The assumption that voluntary disclosures are necessary for investors can be found in proposed stakeholder, legitimization, and institutional theories (Carnevale & Mazzuca, 2014).

Stakeholder, Legitimization, and Institutional Theories

Stakeholder theory proposes that firms are responsible to more than just shareholders alone. From a social and political lens, a firm is not only a source, and thus accountable, to shareholders, but also to its customers, employees, and secondary stakeholders, such as the government, media, and community (Carnevale & Mazzuca, 2014). Stakeholder theory challenges the traditional paradigm of corporate success and responsibility as being limited to the creation of wealth for shareholders. Rather, stakeholder theory places accountability on

firms for their direct and indirect externalities on consumers, the community, and its human resources (Clarkson, 1995). Clarkson (1995) supports this theory in suggesting that the increase in shareholder wealth as a singular objective for an organization is self-defeating. According to stakeholder theory, organizations should not value one stakeholder above another, and all stakeholders should receive equal attention and devotion (Clarkson, 1995). After all, it must be remembered that growth is not indefinite and exponential, and sustainable development is achieved through proper resource management (economic, social, cultural, political, environmental, and natural) (López, Garcia, & Rodriguez, 2007).

Legitimacy theory argues that firms use voluntary disclosure in order to find legitimacy among their various stakeholders (Carnevale & Mazzuca, 2014). Legitimacy theorists suggest that firms must operate in a way that meets the approval of society as a means of survival. The idea of legitimacy stems from the concept of a harmonious relationship between society and businesses. The lack of a harmonious relationship could jeopardize the survival of the company, suggesting that organizations are to coincide with the needs of society in a way that the two fulfill the needs of each rather than work against each other (López et al., 2007).

Institutional theory suggests that a firm's behavior can be analyzed through the operational convergence of various institutions that are stakeholders in the firm (Carnevale & Mazzuca, 2014). A study conducted by Campbell (2007) found that organizations' participation in sustainable activities is a likely result of the economic conditions at hand. Additionally, the study found that the economic conditions are mitigated by other institutional conditions such as state regulation, non-governmental organizations, collective industrial self-regulation, engagement in institutionalized conversation with stakeholders,

other independent organizations that monitor firms, a normative institutional environment that encourages socially responsible behavior, and membership in industrial or employee associations.

Because these theories all point towards the demand for firms to assume sustainable practices, it is dire for research to be conducted as to understand the implications and externalities that could persist.

Value Relevance and Environmental Disclosure

There have been a number of studies that demonstrate investors' desire to have more than just financial-based information but rather voluntary disclosure on nonfinancial data and a commitment to business ethics (Choi & Jung, 2008; Pae & Choi, 2011; Lapointe-Antunes, Cormier, Magnan, & Gay-Angers, 2006; Clarkson, Richardson, & Vasvari, 2008). In regards to the type of disclosures that are value relevant for investors, financial or non-financial, a study by Moneva and Cuellar (2009) finds that financial disclosure regarding environmental performance is value relevant while non-financial environmental disclosure is not value relevant to investors. Despite this finding, there are still studies that point to value relevance in nonfinancial reporting as well (Hughes, 2000; Konar & Cohen, 2001; Clarkson & Richardson, 2004). Hughes (2000) found value relevance for high polluting electric companies that issue a nonfinancial pollution disclosure as a result of the Clean Air Act. Even firm size can prove to have impact on value relevance for non-financial disclosure. A German study concluded that large companies were more likely to report extensively on environmental performance than small companies. Also, the study found that public pressure is positively related to environmental disclosure (Cormier et al., 2005). In the same study, it

was further found that French firms did not value such information. Other studies also point

to the fact that investors take external information into account (Moneva & Cuellar, 2009). In

a study by Clarkson (2004), it was found that the market specifically incorporates

environmental disclosures as a means of estimating unrecorded environmental liabilities.

Other studies also suggest that upon the initial release of environmental disclosure, the stock

market tends to negatively assess this information (Moneva & Cuellar, 2009).

Environmental Disclosures and Financial Performance

In addition to the value relevance associated with the publication of voluntary

environmental disclosures, there has been research revolving around the link between

environmental disclosure alone (excluding the other tiers of sustainability) and financial

performance. Related literature has sought to examine the impact of environmental disclosure

(i.e. CSR report, reputational index, philanthropy, voluntary frameworks) on financial

performance measures, with varying results (Pérez-Calderón et al., 2012). In aggregate, two

prevailing theories emerge in regards to the externalities associated with firms that adopt and

exhibit good environmental practices. The first school of thought proposes that improving

environmental performance is too costly for firms to achieve and can end up having a

negative impact on a company's financial performance. Studies such as that by Pérez-

Calderón et al. (2012) suggest that the investment required to adopt an environment

protection policy will reduce yearly results and thus stifle investment and growth (Pérez-

Calderón et al., 2012). Another study found that pollution reduction did not necessarily

translate into increased profits but that waste reduction was a common underachieved profit

gaining strategy. An additional study, focusing solely on pollution control, found that

investors followed the "rational economic investor" concept and viewed pollution mitigation tactics as a drain on resources and as a costly alternative to profitable investment opportunities (Mahapatra, 1984). On the contrary, a differing school of thought proposes that positive environmental performance is associated with improved resource management, reduced legal liability, technological advancement, increased product quality, and better stakeholder management (Pérez-Calderón et al., 2012; ÖZÇELİK et al., 2014). It is also argued that increased environmental performance is connected with more positive public relations and thus increased sales and market share. These benefits, in return, are believed to exceed the initial cost of investment. According to Porters Hypothesis, companies with good environmental performance experience positive economic results. The main argument is that pollution is a source of inefficiency and a sign of poor management in the sense that it is an inefficient use of resources and an indicator of poor technological advances (Porter, 1996; Porter & Kramer, 2002). According to several studies (Hart & Ahuja, 1996; Sharma & Vredenburg, 1998; Majumdar & Marcus, 2001), adopting environmentally friendly policies is a win-win strategy that increases differentiation amongst competitors and attracts more customers through their environmental appeal. These studies further assert that greater environmental performance increases competition, which in turn drives innovation, leads to more technological advances, and can improve a firm's economic efficiency and profitability (Hart & Ahuja, 1996; Sharma & Vredenburg, 1998; Majumdar & Marcus, 2001).

Sustainable Practices and Financial Performance

Not only have studies been conducted that seek to understand the impact of environmental performance and voluntary disclosure on financial performance; many studies

have sought to examine the impact of multidimensional sustainable performance (environmental, social, and economic) on financial performance. The issue with studies that use a one dimensional view of sustainability is the fact that they typically look at only environmental performance and usually through a narrow scope, such as emissions of a particular pollutant. Because many studies only use one dimension of sustainability in the operationalization, they are ignoring the multifaceted idea of sustainability that includes both social and environmental aspects in addition to financial, making these studies difficult to compare. In contrast, there are several studies that do incorporate multidimensional measures of sustainable practices into account (Abagail & Siegel, 2000; Preston & O'bannon, 1997; Waddock & Graves, 1997). Some of these studies have used stock returns and market capitalization as an indicator of financial performance (J. Przychodzen & W. Przychodzen, 2013; Van Stekelenburg, Georgakopoulos, Sotiropoulou, & Vasileiou, 2015). The majority of studies looking to link financial performance and SP have used accounting based measures, such as return in assets (ROA), return on equity (ROE), and Tobin's Q as indicators of financial performance (Waddock & Graves, 1997; Russo & Fouts, 1997; Konar & Cohen, 2001; Oberndorfer et al., 2013; King & Lenox, 2001; King & Lenox, 2002). In addition, several studies have examined the impact of being on a reputational index and its impact on financial measures (Oberndorfer et al., 2013; Diltz, 1995; Hassel, Nilsson, & Nyquist, 2005).

Generally, studies that use financial or accounting data as indicators of corporate financial performance are either event studies or long-term studies. In the case of event-studies, the research methodology revolves around whether or not abnormal returns are affected by some kind of ethically responsible or irresponsible act. Event-studies are limited

in scope because of their focus on the short-term financial impact of such ethical activities. Again, these studies tend to display mixed results with some studies showing a positive link, others negative, and some show no link whatsoever. Wright and Ferris (1997) found a negative relationship, Teoh, Welch, & Wazzan, 1999 found that a neutral relationship existed, and Posnikoff, 1997 found that a positive relationship existed (Abagail & Siegel, 2000).

Other than event studies, there are several studies that seek to analyze the long-term impact of SP on financial performance through examining accounting and financial measures of profitability (Abagail & Siegel, 2000). Consistent with the event-studies, these studies have also exhibited mixed results. Waddock and Graves (1997) found a significantly positive relationship between being listed on a reputational index and accounting based profitability measures such as ROA. Aupperle, Carroll, and Hatfield (1985) failed to find a significant relationship between SP and profitability. Interestingly, McGuire et al. (1988) found that past performance is more significantly related to SP than future performance. Again, these studies are usually conducted over a period of time versus a point in time.

Background on the Dow Jones Sustainability Index

Being listed on the DJSI is a reputational metric that testifies to a firm's commitment to environmental causes. The North American index is comprised of the top twenty percent of the largest 600 U.S. and Canadian firms listed on the S&P Global Broad Market that lead in their sustainability efforts. The metric used for sustainability evaluation is based on the RobecoSAM sustainability assessment. RobecoSAM has always held the ideal that extra-financial information is absolutely necessary in order to have a complete profile of a firm. As

such, in 1999, RobecoSAM developed the Corporate Sustainability Assessment (CSA) as a

means of more efficiently selecting companies that are able to adapt to emerging trends

regarding sustainability issues, resource management, and risk mitigation. RobecoSAM

follows an integrated approach to assessment with a diverse team of analyst's designs and

monitors used to better identify value creation opportunities and risk mitigation strategies.

Unlike other metrics used to identify a company's corporate sustainability activities, which

have traditionally relied on public disclosure, RobecoSAM uses questionnaires, which are

sent directly to and filled out by the firms themselves. These questionnaires are generally

between 80 and 120 questions, depending on the industry, that companies fill out online

directly. The questions revolve around sustainability factors that can potentially have an

impact on long-term value creation. The assessment is performed annually and is used to

identify those companies that are more likely to outperform others as a result of their SP.

Companies can receive a score between 0 and 100 and are ranked relative to other companies

in their industry. The overall assessment consists of three dimensions (social, environmental,

and economic) with between six and ten criteria with each criteria having between two and

ten questions. See **Figure 1** below for a diagram of the assessment process.

Figure 1: Structure of the RobecoSAM Corporate Sustainability Assessment
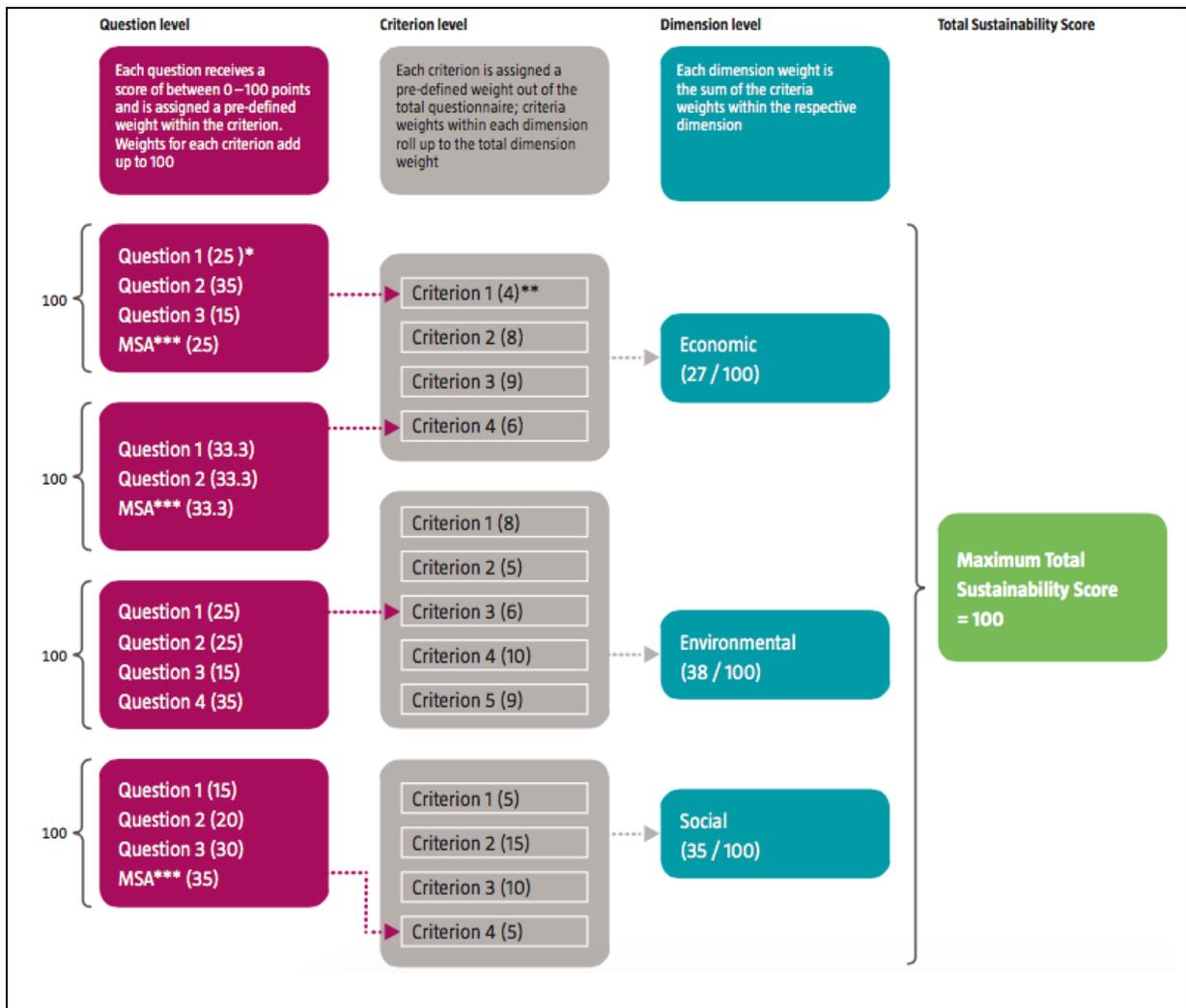
Hypothesis Development and Methodology

This study aims to add to existing literature regarding whether or not companies can experience positive financial performance in terms of market capitalization and stock return. Because many other studies focus on event-studies and time-series analysis, this study analyzes at a point in time whether or not accounting based performance measures for publicly traded companies listed on U.S. exchanges that are currently listed on the DJSI

North America exhibit either a positive or negative relationship with market capitalization or stock return versus other similar U.S. publicly traded companies that are not listed on the DJSI North America. To test this theory, our first hypothesis is as follows:

H_1: A firm's inclusion on the DJSI has no relationship with their market

capitalization.

Additionally, because we also want to test the impact of accounting-based performance measures for companies listed in the DJSI versus those not, we form the following hypothesis:

H_2: Common accounting based performance measures exhibit neither a greater or

lessor impact on market capitalization for firms listed on the DJSI versus those not

listed.

In order to test whether or not DJSI inclusion has an impact on stock return, we form the following hypothesis:

H_3: A firm's inclusion on the DJSI has no relationship with their stock return.

As with market capitalization, we also want to analyze the impact of accounting-based performance measures on stock return for firms listed on the DJSI versus those not listed, leading us to the following hypothesis.

H_4: Common accounting based performance measures exhibit neither a greater or

lessor impact on stock return for firms listed on the DJSI versus those not listed.

Our first hypothesis follows in suit with other studies in terms of the impact of SP on market capitalization but these studies are often derived from the Ohlson model (Ohlson, 1995; Ohlson, 1990), which relates a firm's market capitalization to its book value of equity. Evidence as to the relationship between earnings measures used by accountants and

managers, alike, and SP is lacking in severity. Our second hypothesis is derived from several other studies that incorporated different statistical methodologies and models to test the impact of corporate social responsibility (CSR) on stock return (J. Przychodzen & W. Przychodzen, 2013, Cheung, 2011; Van Stekelenburg et al.2015).

Model Development

In order to test our hypothesis, we use ordinary least squares multiple regression. For our hypotheses regarding market capitalization and stock return, we tested several regression models, which all included the following independent variables: net income, revenue, basic earnings per share (BEPS), and long-term debt. The rationale for this specific pool of variables is based on several factors; their relative significance regarding the performance of sustainably oriented companies (i.e. revenue and long-term debt) and the heavy emphasis placed on them through earnings management and financial performance (i.e. net income and BEPS).

Because companies that incorporate SP into their business model often experience more expenses in terms of compliance and CSR, which requires sufficient cash flows, they are likely to incur more long-term debt, making them more risky to investors. Aligned with increased risk is the chance for better payoffs in the future. Given the risk factor regarding long-term debt and the risk assumed by sustainably oriented firms, we include long-term debt. By including long-term debt, we are able to better view the relationship that long-term debt plays in our sample data regarding market capitalization and stock return.

In addition to long-term debt, we also examine the relationship that exists between revenue and market capitalization, and revenue and stock returns. We look at revenue

because it is the ultimate determinant of all earnings and taxes and is the starting point for increased growth. Studies that have looked at revenue from the lens of sustainability have found that, while companies incorporating SP may experience smaller revenue growth rates, they tend to exhibit steadier streams of revenue, which can be quite attractive for investors looking for stable and reliable long-term investments (J. Przychodzen & W. Przychodzen, 2013). As such, this study seeks to analyze if firms listed on the DJSI exhibit a relationship between total revenue and both market capitalization and stock return.

For accountants, and many managers alike, revenue, net income, and BEPS are some of the most scrutinized income measures. Because any changes in expenses or revenue has an impact on net income, and thus BEPS, almost half of all transactions for a company end up affecting net income (Lackmann, et al., 2012). Additionally, because net income, revenue, and BEPS are feature measures of the income statement, they provide investors with pertinent information regarding a company's current earnings position and can be used to forecast future revenues and earnings. Studies have shown the relative importance of net income to investors and found net income to be one of two main functions of equity value (Lackmann, et al., 2012). Lackamnn et al.(2012) found that firms incorporating SP in their business practices tend to outperform their counterparts in terms of net income and stock price. Due to the emphasis placed on net income and its relative importance regarding period of time measures for firms, we have chosen to include net income in our model, similar to that of Lopatta & Kaspereit (2014). Though we are not asserting that these variables maintain the strongest relationship with either market capitalization or stock return, from an accountancy lens, we want to test the impact if any, of these measures on market capitalization and stock return relative to each other. In terms of summary earnings measures,

we also include BEPS because of its scrutiny by investors and in order to follow suit with

other studies that link BEPS with equity value and market capitalization.

Data and Results

In order to conduct this study, a database, originally consisting of 180 firms, was

constructed using the most recent annual, publically available information. The sample data

for this study consists of 149 companies that are traded on U.S. stock exchanges, largely the

New York Stock exchange and the NASDAQ. Of the 149 firms used in the sample, 73 of

them are not listed on the DJSI, with the other 76 listed. Companies in the sample were

selected randomly from a list of the largest U.S. publicly traded companies not on the DJSI

and then from those listed on the DJSI. Currently, there are 145 companies that are on the

DJSI North America. After an initial selection of 160 companies with half being listed on the

DJSI and half not, certain firms were eliminated based on the availability of information

regarding the measures implemented in our models. The sample is diverse in industry and

sector. The following is a list of data that was collected on each firm: reporting date,

industry, sector, net income, market capitalization, revenue, basic earnings per share, stock

price, dividends declared, and long-term debt. From those variables, we computed each firms

stock return as the difference between their current stock price (as of the most recent annual

reporting date) and prior stock price (that of prior annual reporting date) plus any dividends

declared over their prior stock price. Firm industry and sector came from information

provided by yahoo finance. Net Income, BEPS, revenue, reporting date, and dividends

declared were all pulled from the individual companies' annual fillings (10-K) on the SEC

website (sec.gov). Yahoo finance was used as a source to link to the SEC fillings. Stock

price, market capitalization, and long-term debt measures were provided through Wolfram Alpha. Wolfram Alpha uses Morningstar as their source of information.

Because this study is not a time-series study or an event-study, we only collected data for companies based on their most recent annual filling and not over a course of time, making this study unique in the fact that its sample is taken at a point in time, allowing us to see if inclusion on the DJSI does in fact exhibit a relationship on financial performance. In order to test our hypothesis, we estimated several multiple linear regression models using the pool of collected variables. Our models fall into two categories, those that are used to predict market capitalization and those used to predict stock return. Both of our models are pooled regressions, including those firms listed on the DJSI and those firms not listed on the DJSI. For each model, we first ran an OLS regression on the variables chosen to predict the dependent variable. Then, we regressed each model with an added dummy variable to indicate inclusion on the sustainability index, with 1 representing inclusion on the DJSI. The added dummy variable serves to estimate the relative effect of inclusion on the DJSI on market capitalization and stock return. Then, to each model we added variables interacting the DJSI dummy variable with each of the other independent variables. These interaction variables allow us to estimate whether any of the standard independent variables effect market capitalization or stock returns differently for companies listed on the DJSI compared to those not listed on the DJSI.

Model 1

Results for our Model 1 estimations are as follows:

Variable	Model 1a Coef (SE)	Model 1b Coef (SE)	Model 1c Coef (SE)
Intercept	18758.16 (7426.04)***	17781.20 (9615.64)***	20651.49 (7259.25)***
Net Income	0.12 (.10)	0.12 (.10)	11.72 (.96)***
Revenue	0.75 (.10)***	0.75 (.10)***	0.11 (.10)
LTD	0.83 (.24)***	0.84 (.25)***	0.16 (.19)
BEPS	756.06 (1204.36)	774.09 (1213.65)	-1202.02 (1025.50)
DJSI (=1)	---	1679.60 (10448.99)	-11353.59 (11185.60)
DJSI*Net Income	---	---	-11.66 (.96)***
DJSI*Revenue	---	---	0.64 (.17)***
DJSI*LTD	---	---	1.86 (.68)***
DJSI*BEPS	---		1740.10 (1878.99)
R-squared	.451	.451	.738

, * indicate significance at the .05 and .01 levels, respectively, for the 2-tailed test
Numbers are rounded to the nearest tenth

In testing our first null hypothesis, we included two earnings measures, net income and BEPS, along with revenue and long-term debt as predictors of market capitalization. The following is our first empirical approach to model market capitalization:

(1a) $m_i = \beta_0 + \beta_1\,NI_i + \beta_2\,REV_i + \beta_3\,LTD_i + \beta_4\,BEPS_i$

where m_i represents market capitalization at time i, NI_i represents net income at time i, REV_i represents total revenue as of time i, and $BEPS_i$ is basic earnings per share at time i. In Model **1a**, both revenue and long-term debt are shown to have a statistically significant relationship with market capitalization. The fact that our sample shows revenue to have a statistically significant effect on increasing market capitalization, while net income and BEPS do not significantly effect market capitalization, appears plausible given that companies with higher market capitalization are generally more mature companies with larger revenue streams. According to our data in model **1a** (without consideration of DJSI inclusion), a million dollar increase in revenue results in a \$750,700 increase in market capitalization. As would be

anticipated that larger companies experiencing more investment would have more robust revenue streams, it is known that calculations of net income and BEPS are more complex than revenue, which leads to more variation across firm and industry. Long-term debt is also estimated to have a statistically significant positive effect on market capitalization. Our model estimates that a one million dollar increase in long-terms debt results in an \$830,012 increase in market capitalization (without consideration of DJSI inclusion). Because long-term debt and revenue tend to be associated with more capital generation, investors may be more willing to look at them, at least in terms of long-term investment strategies, as an indicator of potential growth relative to more scrutinized and variable earnings measures such as net income. With the dummy variable DJSI added, we arrive at the following equation:

(1b) $m_i = \beta_0 + \beta_1\,NI_i + \beta_2\,REV_i + \beta_3\,LTD_i + \beta_4$

$$BEPS_i + \beta_5\,DJSI_i$$

where $DJSI_i$ is DJSI inclusion at time i. Consistent with Model **1a** results, revenue and long-term debt still remain the only statistically significant indicators of market capitalization. Interestingly, inclusion in the DJSI does not significantly affect market capitalization. However, inclusion of the DJSI interaction variables in model **1c** will allow us to estimate whether DJSI impacts market capitalization by altering the effect of other variables on market capitalization. Model **1c** adds the DJSI interaction variables to Model **1b** to arrive at the following equation:

(1c) $m_i = \beta_0 + \beta_1\,NI_i + \beta_2\,LTD_i + \beta_3\,REV_i + \beta_4$

$$BEPS_i + \beta_5\,DJSI_i + \beta_6\,NI_i \times DJSI_i + \beta_7\,LTD_i \times$$

$$DJSI_i + \beta_8\,REV_i \times DJSI_i + \beta_9\,BEPS_i \times DJSI_i$$

In Model **1c**, we see that revenue and long-term debt are only significant for those companies included on the DJSI. This could explain that investors are more concerned with long-term capital generation for sustainable firms that tend to be geared towards a long-term focus, especially in terms of summary earnings figures. It must be noted that, with the dummy variable and interaction terms added to the model, for firms listed on the DJSI, a one million dollar increase in revenue increases market capitalization by $642,198 and a one million dollar increase in long-term debt increases market capitalization by $1.863 million.

In contrast to the prior estimations, model **1c** reveals net income is significantly related to market capitalization for firms not listed on the DJSI, with a one million dollar increase in net income resulting in an $11.722 billion increase in market capitalization for non-DJSI listed firms. For DJSI listed companies, all significance of net income is factored out. Perhaps this signals that investors are more short-term oriented towards non-sustainable investments, exhibiting greater risk aversion. In terms of sustainable firms, which tend to assume a greater amount of long-term debt, results could indicate investors' willingness to assume more risk in prospects of a more sustainable form of capital generation in the long run. Because net income appears to only be significant for non-sustainable firms, more research is needed to explore what investors in sustainable firms are looking at and whether it is financial or nonfinancial information. In terms of risk, the sample dataset appears to indicate that investment in sustainable firms is aligned with stronger revenue and a willingness to assume greater long-term debt than BEPS or net income. Investors could be placing more emphasis on revenue because of its simplicity as an indicator of capital generation and because it is subject to less scrutiny across firm and industry than net income. Because long-term debt also appears to have a greater impact on market capitalization, we

see that investors seem to consistently be more focused on the long-term prospects of

sustainable companies relative to their peers. Again, this could imply that investors are not as

concerned with short term measures for sustainable firms but, instead, look to other financial

or nonfinancial data.

Model 2

Results for model 2 estimations are as follows:

Table 2: OLS Regressions. Dependent Variable=Stock Return

Variable	Model 1a Coef (SE)	Model 1b Coef (SE)	Model 1c Coef (SE)
Intercept	0.01 (0.03)	0.04 (0.03)	0.02 (.03)
Net Income	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
LTD	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Revenue	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
BEPS	0.01 (0.00) **	0.01 (0.00)m **	0.01 (.01) **
DJSI (=1)	---	-0.05 (0.03)	0.01 (.05)
DJSI*Net Income	---	---	-0.00 (0.00)
DJSI*LTD	---	---	-0.00 (0.00)
DJSI*Revenue	---	---	0.00 (0.00)
DJSI*BEPS	---		-0.01 (.01)
R-squared			0.0630

, * indicate significance at the .05 and .01 levels, respectively, for the 2-tailed test
Numbers are rounded to the nearest tenth

In testing our second hypothesis, we included the same measures we used in the

model for market capitalization (two earnings measures, net income and BEPS, along with

revenue and long-term debt) as predictors of stock return. Again, these measures are used as

a means of testing their relationship with stock return for sustainable versus non-sustainable

firms. The following is our first empirical approach to model stock return:

(4a) $sr_i = \beta_0 + \beta_1\,\mathrm{NI}_i + \beta_2\,\mathrm{LTD}_i + \beta_3\,\mathrm{REV}_i + \beta_4\,\mathrm{BEPS}_i$

where sr$_i$ represents stock return at time i, NI$_i$ represents net income at time i, LTD$_i$

represents long-term debt at time i, REV$_i$ represents total revenue as of i, and BEPS$_i$ is basic

earnings per share at time i. The only significance found in Model **4a** is BEPS. For each

dollar increase in BEPS, stock return is predicted to increase by 0.79%. Because the

coefficient for BEPS is relatively small, the added stock return per an increase in BEPS

would only be material for those firms that have a relatively small stock return. For example,

according to our model, a one dollar increase in IHS Inc. BEPS could increase their current

stock return of 0.694% to between 1.172% to 2.156%, a change that is material. On the

contrary, a firm like Starbucks with a current stock return of 56% would only see an increase

in stock return to between 56.6% and 57.6%. Because stock return is based on the increase in

stock price over the year plus any dividends declared, we would expect BEPS to have a

major impact on investors and the price they are willing to pay for a share of stock.

Surprisingly, net income, revenue, and long-term debt proved to have no statistical

relationship regarding stock return. This is most likely as result of BEPS being so closely

related to stock price since it is one of the more scrutinized earnings measures by short-term

investors. The DJSI dummy variable is added to our equation to arrive at the following

equation:

(4b) $sr_i = \beta_0 + \beta_1\,\mathrm{NI}_i + \beta_2\,\mathrm{REV}_i + \beta_3\,\mathrm{LTD}_i + \beta_4\,\mathrm{BEPS}_i +$

$\qquad\qquad \beta_5\,\mathrm{DJSI}_i$

where DJSIi is DJSI inclusion at time i. After adding the dummy variable, essentially no

changes occur in the regression, with only the significance for BEPS decreasing slightly. In

estimation **2b**, a one-dollar increase in BEPS is expected to have a 0.73% increase on stock

return. We also see that companies in our sample listed on the DJSI do not appear to have

any positive or negative relation with their stock returns. The DJSI interaction variables were

added to model **3b** to arrive at the following equation:

$$\textbf{(4c)}\ sr_i = \beta_0 + \beta_1\,\text{NI}_i + \beta_2\,\text{REV}_i + \beta_3\,\text{LTD}_i + \beta_4\,\text{BEPS}_i +$$

$$\beta_5\,\text{DJSI}_i + \beta_6\,\text{NI}_i \times \text{DJSI}_i + \beta_7\,\text{REV}_i \times \text{DJSI}_i +$$

$$\beta_8\,\text{LTD}_i \times \text{DJSI}_i + \beta_9\,\text{BEPS}_i \times \text{DJSI}_i$$

where sr_i represents stock return at time i, NI_i represents net income at time i, REV_i

represents total revenue as of i, LTD_i respresents long-term debt at time i, and BEPS_i is basic

earnings per share at time i. With the DJSI interaction variables added, our regression retains

the same results, with only BEPS shown to statistically significantly increase stock returns.

In estimation **2c**, a one dollar increase results in a 0.97% increase in stock return. Also, it is

noteworthy that not only does significance decrease, but also the coefficient for BEPS on

stock return slightly increases.

Concluding Remarks

As a result of our models, we do find significance regarding revenue, net income,

long-term debt, and BEPS. In terms of stock return, we only significance regarding BEPS.

For market capitalization, we find both revenue and long-term debt are positively significant

for firms listed on the DJSI and net income is positively significant for those firms not listed

on the DJSI. Results seem to indicate that investors focus more on short-term earnings

measures for non-sustainable companies, but for sustainable companies, investors appear to

scrutinize measures related to long-term growth and stability. This is consistent with theory,

in that sustainable companies generally experience steady revenue streams and often assume

greater long-term debt (Przychodzen, 2013). For further research regarding market capitalization, it would be advantageous to specify the model in terms of which companies increased the amount of shares outstanding, because an increase in shares outstanding can also affect market capitalization without necessarily a higher demand being placed on a stock by investors.

In regards to stock return, while we did see significance in the model, we were unable to see any significance regarding companies listed on the DJSI alone. Relative to net income, long term debt, and revenue, BEPS was the only significant predictor of stock return. As with our results regarding market capitalization, investors appear to be more focused on short-term measures rather than long-term, without regard for SP. We believe an added variable to account for recent inclusion on the index would aid in specifying whether or not changes in stock price are as a result of such inclusion. Also, a variable could be introduced to account for the purchase of any treasury stock or stock splits. This would allow for a more robust understanding of the implications of DJSI inclusion on stock return.

In conclusion, our data seem to suggest that investors take SP into consideration and that accounting based performance measures such as net income, long-term debt, BEPS, and revenue can have differing impacts on market capitalization and stock return, based on whether or not the firms are sustainably oriented. While our data do not suggest that inclusion on a reputational index such as the DJSI or SP in general has a direct relationship with market capitalization or stock return, the data does indicate a more short-term orientation of investors in non-sustainable firms versus a long-term orientation by investors in sustainable companies. Also, the data show that investors could be looking for other financial or non-financial information as a result of a company's drive towards sustainability.

The "other information" that investors potentially use to assess a firm could be considered either positive or negative, depending on the firms' SP. In order to fully understand these implications, more research will inevitably need to be conducted.

References

Abagail, M., & Siegel, D. (2000). Corporate social responsibility and financial performance: correlation or misspecification. *Strategic Management Journal*, *21*(5), 603-609.

Adams, C., & Zutshi, A. (2004). Corporate social responsibility: why business should act responsibly and be accountable. *Australian Accounting Review*, *14*(34), 31-39.

Ameer, R., & Othman, R. (2012). Sustainability Practices and Corporate Financial Performance: A Study Based on the Top Global Corporations. *Journal of Business Ethics*, 108(1), 61-79. doi:10.1007/s10551-011-1063-y

Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal*, *28*(2), 446-463.

Bachoo, K., Tan, R., & Wilson, M. (2013). Firm Value and the Quality of Sustainability Reporting in Australia. *Australian Accounting Review*, 23(1), 67-87. doi:10.1111/j.1835-2561.2012.00187.x

Barth, M. E., Clement, M. B., Foster, G., & Kasznik, R. (1998). Brand values and capital market valuation. *Review of Accounting Studies*, *3*(1-2), 41-68.

Becchetti, L., Di Giacomo, S., & Pinnacchio, D. (2008). Corporate social responsibility and corporate performance: evidence from a panel of US listed companies. *Applied Economics*, *40*(5), 541-567.

Berglöf, E., & Von Thadden, E. L. (1994). Short-term versus long-term interests: Capital structure with multiple investors. *The Quarterly Journal of Economics*, 109(4), 1055-1084.

Berthelot, S., Coulmont, M., & Serret, V. (2012). Do Investors Value Sustainability Reports?

A Canadian Study. *Corporate Social Responsibility & Environmental Management*, 19(6), 355-363. doi:10.1002/csr.285

Campbell, D. J. (2000). Legitimacy theory or managerial reality construction? Corporate social disclosure in Marks and Spencer Plc corporate reports, 1969–1997. *Accounting Forum,* 24(1), 80-100.

Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, *32*(3), 946-967.

Carnevale, C., & Mazzuca, M. (2014). Sustainability Report and Bank Valuation: Evidence from European Stock Markets. *Business Ethics: A European Review*, 23(1), 69-90.

Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of Management Review*, *4*(4), 497-505.

Chang, Y. K., Oh, W., & Messersmith, J. G. (2013). Translating corporate social performance into financial performance: exploring the moderating role of high-performance work practices. *International Journal of Human Resource Management*, 24(19), 3738-3756. doi:10.1080/09585192.2013.778312

Chen, H. H., Lee, H. Y., & Lee, H. Y. (2014). The Empirical Relationship Between Earnings Information and Stock Returns. *Emerging Markets Finance and Trade*, *50*(sup5), 186-196.

Chen, L., Feldmann, A., & Tang, O. (2015). The relationship between disclosures of corporate social performance and financial performance: Evidences from GRI reports in manufacturing industry. *International Journal of Production Economics*,170(Part B), 445-456. doi:10.1016/j.ijpe.2015.04.004

Cheung, A. K. (2011). Do Stock Investors Value Corporate Sustainability? Evidence from an

    Event Study. *Journal of Business Ethics*, 9(2). 145.

Chiu, T., & Wang, Y. (2015). Determinants of Social Disclosure Quality in Taiwan: An

    Application of Stakeholder Theory. *Journal of Business Ethics*, 129(2), 379-398.

    doi:10.1007/s10551-014-2160-5

Choi, T. H., & Jung, J. (2008). Ethical commitment, financial performance, and valuation:

    An empirical investigation of Korean companies. *Journal of Business Ethics*, *81*(2),

    447-463.

Clarkson, M. E. (1995). A Stakeholder Framework for Analyzing and

    Evaluating Corporate Social Performance. *Academy of Management Review*, 20(1),

    92-117. doi:10.5465/AMR.1995.9503271994

Clarkson, P. M., Li, Y., & Richardson, G. D. (2004). The market valuation of environmental

    capital expenditures by pulp and paper companies. *The Accounting Review*, *79*(2),

    329-353.

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2008). Revisiting the relation

    between environmental performance and environmental disclosure: An empirical

    analysis. *Accounting, Organizations and Society*, *33*(4), 303-327.

Cochran, P. L., & Wood, R. A. (1984). Corporate social responsibility and financial

    performance. *Academy of Management Journal*, *27*(1), 42-56.

Conner, S. L. (2010). Sustainability Stock Indices: Are Companies Missing Marketing

    Opportunities?. *Society for Marketing Advances Proceedings*, 173-176.

Consolandi, C., Jaiswal-Dale, A., Poggiani, E., & Vercelli, A. (2009). Global Standards and

    Ethical Stock Indexes: The Case of the Dow Jones Sustainability Stoxx Index.

Journal of Business Ethics, 87, 185-197.

Cormier, D., & Magnan, M. (2007). ANALYSIS: The revisited contribution of

    environmental reporting to investors' valuation of a firm's earnings: An international

    perspective. *Ecological Economics*, 62613-626. doi:10.1016/j.ecolecon.2006.07.030

Cormier, D., Magnan, M., & Van Velthoven, B. (2005). Environmental disclosure quality in

    large German companies: Economic incentives, public pressures or institutional

    conditions?. *European Accounting Review*, 14(1), 3-39.

    doi:10.1080/0963818042000339617

Curran, M. M., & Moran, D. (2007). Impact of the FTSE4Good Index on firm price: An

    event study. *Journal of Environmental Management*, *82*(4), 529-537.

D'Mello, R., & Miranda, M. (2010). Long-term debt and overinvestment agency

    problem. *Journal of Banking & Finance*, *34*(2), 324-335.

David Diltz, J. (1995). The private cost of socially responsible investing. *Applied Financial*

    Economics, *5*(2), 69-77.

Dilling, P. F. (2008). The effect of the inclusion to the Dow Jones Sustainability World Index

    on Firm value–an empirical event study. *Conference paper*.

Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The Impact of Corporate Sustainability on

    Organizational Processes and Performance. *Management Science*, 60(11), 2835-2857.

Freeman, R. E. (2010). *Strategic management: A stakeholder approach*. Cambridge

    University Press.

Glazer, J. (1994). The strategic effects of long-term debt in imperfect competition. *Journal of*

    Economic Theory, *62*(2), 428-443.

Guenster, N., Bauer, R., Derwall, J., & Koedijk, K. (2011). The economic value of corporate

eco-efficiency. *European Financial Management*, *17*(4), 679-704.

Hahn, R., & Lülfs, R. (2014). Legitimizing Negative Aspects in GRI-Oriented Sustainability

Reporting: A Qualitative Analysis of Corporate Disclosure Strategies. *Journal of Business Ethics*, 123(3), 401-420. doi:10.1007/s10551-013-1801-4

Harris, M., & Raviv, A. (1990). Capital structure and the informational role of debt. *The Journal of Finance*, *45*(2), 321-349.

Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment*, *5*(1), 30-37.

Hassel, L., Nilsson, H., & Nyquist, S. (2005). The value relevance of environmental performance. *European Accounting Review*, *14*(1), 41-61.

Hirschey, M., Richardson, V. J., & Scholz, S. (2001). Value relevance of nonfinancial information: The case of patent data. *Review of Quantitative Finance and Accounting*, *17*(3), 223-235.

Honghui, C., Noronha, G., & Singal, V. (2004). The Price Response to S&P 500 Index Additions and Deletions: Evidence of Asymmetry and a New Explanation. *Journal of Finance*, 59(4), 1901-1929. doi:10.1111/j.1540-6261.2004.00683.x

Hughen, L., Lulseged, A., & Upton, D. R. (2014). Improving Stakeholder Value through Sustainability and Integrated Reporting. *CPA Journal*, 84(3), 57-61.

Hughes, K. E. (2000). The value relevance of nonfinancial measures of air pollution in the electric utility industry. *The Accounting Review*, *75*(2), 209-228.

Karlsson, J., & Chakarova, Y. (2008). Does Corporate Social Responsibility Pay Off? An event study of the impact of corporate entry and exit from the Dow Jones

Sustainability World Index on the market value of a company. *Industriell och Finansiell Ekonomi*.

Kajander, J. K., Sivunen, M., Vimpari, J., Pulkka, L., & Junnila, S. (2012). Market value of sustainability business innovations in the construction sector. *Building Research & Information*, *40*(6), 665-678.

King, A. A., & Lenox, M. J. (2001). Does it really pay to be green? An empirical study of firm environmental and financial performance: An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology*, 5(1), 105-116.

King, A., & Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science*, *48*(2), 289-299.

Ko, K. (2009). Multiple regression model for market capitalization. *Journal of Global Business Issues*, *3*(2), 167.

Konar, S., & Cohen, M. A. (2001). Does the market value environmental performance?. *Review of Economics and Statistics*, *83*(2), 281-289.

Lackmann, J. j., Ernstberger, J. j., & Stich, M. m. (2012). Market Reactions to Increased Reliability of Sustainability Information. *Journal of Business Ethics*, 107(2), 111-128. doi:10.1007/s10551-011-1026-3

Lapointe-Antunes, P., Cormier, D., Magnan, M., & Gay-Angers, S. (2006). On the relationship between voluntary disclosure, earnings smoothing and the value-relevance of earnings: The case of Switzerland. *European Accounting Review*, *15*(4), 465-505.

Lipe, R. (1990). The relation between stock returns and accounting earnings given alternative

information. *Accounting Review*, 49-71.

Lopatta, K. k., & Kaspereit, T. t. (2014). The World Capital Markets' Perception of

Sustainability and the Impact of the Financial Crisis. *Journal of Business Ethics*,

122(3), 475-500. doi:10.1007/s10551-013-1760-9

López, M. V., Garcia, A., & Rodriguez, L. (2007). Sustainable development and corporate

performance: A study based on the Dow Jones sustainability index. *Journal of

Business Ethics*, *75*(3), 285-300.

Luo, X., Wang, H., Raithel, S., & Zheng, Q. (2015). Corporate social performance, analyst

stock recommendations, and firm future returns. *Strategic Management Journal*,

36(1), 123-136.

Mahapatra, S. (1984). Investor reaction to a corporate social accounting. *Journal of Business

Finance & Accounting*, *11*(1), 29-40.

Majumdar, S. K., & Marcus, A. A. (2001). Rules versus discretion: The productivity

consequences of flexible regulation. *Academy of Management Journal*, *44*(1), 170-

179.

Marsh, P. (1982). The choice between equity and debt: An empirical study. *The Journal of

Finance*, *37*(1), 121-144.

McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and

firm financial performance. *Academy of Management Journal*, *31*(4), 854-872.

Moneva, J. M., & Cuellar, B. (2009). The Value Relevance of Financial and Non-financial

Environmental Reporting. *Environmental and Resource Economics*, 44(3), 441-456.

doi:http://0-dx.doi.org.wncln.wncln.org/10.1007/s10640-009-9294-4

Ni, N., Egri, C., Lo, C., & Lin, C. (2015). Patterns of Corporate Responsibility Practices for

High Financial Performance: Evidence from Three Chinese Societies. *Journal of Business Ethics*, 126(2), 169-183. doi:10.1007/s10551-013-1947-0

Norman, W., & MacDonald, C. (2004). Getting to The Bottom of "Triple Bottom Line". *Business Ethics Quarterly*, 14(2), 243-262.

Oberndorfer, U., Schmidt, P., Wagner, M., & Ziegler, A. (2013). Does the stock market value the inclusion in a sustainability stock index? An event study analysis for German firms. *Journal of Environmental Economics and Management*, 66(3) 497-509. doi:10.1016/j.jeem.2013.04.005

Ohlson, J. A. (1995). Earnings, Book Values, and Dividends in Equity Valuation. *Contemporary Accounting Research*, 11(2), 661-687.

Ohlson, J. A. (1990). A Synthesis of security valuation theory and the role of dividends, cash flows, and earnings. *Contemporary Accounting Research*, 6(2), 648-676.

Özçelik, F., Avci Öztürk, B., & Gürsakal, S. (2014). Investigating The Relationship Between Corporate Social Responsibility and Financial Performance in Turkey. *Journal of Economics & Administrative Sciences*, 28(3), 189-203.

Pae, J., & Choi, T. H. (2011). Corporate governance, commitment to business ethics, and firm valuation: Evidence from the Korean stock market. *Journal of Business Ethics*, *100*(2), 323-348.

Park, A., & Ravenel, C. (2013). Integrating Sustainability Into Capital Markets: Bloomberg LP and ESG's Quantitative Legitimacy. *Journal of Applied Corporate Finance*, (3), 62. doi:10.1111/jacf.12030

Pava, M. L. (2007). A Response to "Getting to The Bottom of 'Triple Bottom Line'". *Business Ethics Quarterly*, 17(1), 105-110.

Pérez-Calderón, E., Milanés-Montero, P., & Ortega-Rossell, F. J. (2012). Environmental

    Performance and Firm Value: Evidence from Dow Jones Sustainability Index Europe.

    International Journal of Environmental Research, 6(4), 1007-1014.

Posnikoff, J. F. (1997). Disinvestment from South Africa: They did well by doing

    good. *Contemporary Economic Policy*, 15(1), 76-86.

Porter, M. (1996). America's green strategy. *Business and the Environment: A Reader*, *33*.

    London. Routledge

Porter, M. E., & Kramer, M. R. (2002). The competitive advantage of corporate

    philanthropy. *Harvard Business Review*, *80*(12), 56-68.

Preston, L. & Post, J. (2012). *Private management and public policy: The principle

    of public responsibility*. Stanford University Press.

Preston, L. E., & O'Bannon, D. P. (1997). The corporate social-financial performance

    relationship. *Business and Society*, *36*(4), 419.

Przychodzen, J., & Przychodzen, W. (2013). Corporate Sustainability and Shareholder

    Wealth. *Journal of Environmental Planning and Management*, 56(4), 474-493.

Russo, M. V., & Fouts, P. A. (1997). A resource-based perspective on corporate

    environmental performance and profitability. *Academy of Management

    Journal*, *40*(3), 534-559.

Sauer, D. A. (1997). The impact of social-responsibility screens on investment performance:

    Evidence from the Domini 400 Social Index and Domini Equity Mutual Fund. *Review

    of Financial Economics*, *6*(2), 137-149.

Semenova, N., Hassel, L. G., & Nilsson, H. (2010). The Value Relevance of Environmental

and Social Performance: Evidence from Swedish SIX 300 Companies.

Liiketaloudellinen Aikakauskirja, (3), 265-292.

Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the

development of competitively valuable organizational capabilities. *Strategic

Management Journal*, *19*(8), 729-753.

Telle, K. (2006). "It Pays to be Green"–A Premature Conclusion?. *Environmental and

Resource Economics*, *35*(3), 195-220.

Teoh, S. H., Welch, I., & Wazzan, C. P. (1999). The Effect of Socially Activist Investment

Policies on the Financial Markets: Evidence from the South African Boycott*. *The

Journal of Business*, *72*(1), 35-89.

Tsai, Chih-Chuan. "The Reputation Effect and Value in Corporate Social

Responsibility." *Unpublished Master Thesis, Department of Finance, Yuan Ze

University, Taiwan* (2007).

Van Stekelenburg, A., Georgakopoulos, G., Sotiropoulou, V., Vasileiou, K. Z., & Vlachos, I.

(2015). The Relation between Sustainability Performance and Stock Market Returns:

An Empirical Analysis of the Dow Jones Sustainability Index Europe. *International

Journal of Economics and Finance*, 7(7), 74-88.

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial

performance link. *Strategic Management Journal*, *18*(4), 303-319.

Wang, M., Qiu, C., & Kong, D. (2011). Corporate social responsibility, investor behaviors,

and stock market returns: Evidence from a natural experiment in China. *Journal of

Business Ethics*, *101*(1), 127-141.

World Commission on Environment and Development. (1987). Our common future. Oxford:

    Oxford University Press.

Vita

Alex Wayne Helms was born in High Point, North Carolina to David and Paula Helms. He received his bachelor's degree in Business Administration with a concentration in Accounting from Appalachian State University in August, 2013. As a university and college of business honors student, Alex completed an undergraduate thesis on capital gains tax policy. That summer, Alex began working as a consultant for TIAA-CREF in their alternative investments team. Later, Alex moved to TIAA's derivatives finance team. During April 2014, Alex accepted a full-time offer with TIAA's Banking division as a Financial Analyst on the Financial, Planning, and Analysis team. In January, 2015, Alex returned back to Appalachian State to pursue his master in Accountancy.

As a master's student, Alex has begun to seek out his Ph.D. in Accounting. As such, Alex serves on an interdisciplinary panel of professors, researchers, and graduate students conducting forest carbon research on behalf of the U.S. Forestry Service. Additionally, Alex works with a local publically traded company conducting both accounting and sustainability related services. Upon graduation, Alex plans to continue conducting research for the Research Institute for Environment, Energy, and Economics at Appalachian State and working with local businesses in the areas of sustainability and accounting until he enrolls in a Doctorate Program.