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Investing in Green Mutual Funds: Determining the Environmental Screens Applied in Actively Managed Funds

Brian V. Kelly
Olivet Nazarene University, bkelly@olivet.edu

INVESTING IN GREEN MUTUAL FUNDS: DETERMINING THE ENVIRONMENTAL SCREENS APPLIED IN ACTIVELY MANAGED FUNDS

by

Brian V. Kelly

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Paul R Williams, Ph.D.	May 6, 2010
Dissertation Adviser	Date
David A Vance, PhD	May 6, 2010
Dissertation Reader	Date
[signature]	May 1, 2010
Dissertation Coordinator	Date
Debra Welch, Ph.D.	May 1, 2010
Director of the Ed.D. program	Date
[signature]	May 5, 2010
Dean of School of Graduate and Continuing Studies	Date
[signature]	5-5-2010
Vice-President for Academic Affairs	Date

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DEDICATION

I dedicate this work to my son Timothy, whose heart is so big it fills every room he enters. Also to my daughter Caitlyn, who has the whole package: beauty, brains, and an infectious spirit to live life to the fullest.

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ABSTRACT

by
Brian V. Kelly, Ed.D.
Olivet Nazarene University
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Managers of environmentally focused mutual funds hold a leadership position with investors, and have an ethical responsibility to explain the environmental screens. The public filings of environmentally focused, actively managed funds were reviewed to determine what non-financial screening information was made public. Content analysis was conducted on the screening verbiage for environmental key words as a means of identifying screen passages within the prospectus. Quantitative analysis was conducted to determine the commonality of the holdings for environmentally focused funds. The results identified few patterns or search terms that could be effectively used on the textual content. The holdings had little commonality between the funds, except for the specific environmental investment sectors of alternative energy, climate change, and water.

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CHAPTER I

INTRODUCTION

As the first decade in the third millennium comes to a close, issues such as global warming and crude oil prices have pushed environmental sustainability center stage in the United States. In April of 2008, the popular news magazine, *Newsweek,* dedicated an entire issue to the environment and leadership. Even those publications not noted for their environmental concern, such as *Vanity Fair*, jumped on the Earth Day bandwagon and released *green* issues. In 2002, when three world leaders, Thabo Mbeki, President of South Africa, Fernando Henrique Cardoso, President of Brazil, and Goran Persson, Prime Minister of Sweden, wrote an article on the global importance of this issue, they voiced "the fact that there is no individual future, but that we all share 'only one Earth'" (Mbeki, Cardoso, & Persson, 2002, p. 1). The impact of this focus even reaches to Wall Street. The number of investors continues to rise who desire not just solid financial returns, but that those returns come from companies who are acting in an environmentally responsible way. "Investor demand is growing for portfolio opportunities in clean and green technology, alternative and renewable energy, green building and responsible property development, and other environmentally driven businesses" (Social Investment Forum [SIF], 2008, p. vi).

Environmentally focused mutual funds belong to the larger category of Socially Responsible Investment (SRI) funds (Kinder & Domini, 1997; SIF, 2008). Over the past several years, investment companies have steadily increased their mutual fund offerings

to this growing market. According to the SIF, in 1995, the total number of funds that conducted social screening was 55; by 2007 that number rose to 260. Not only was there an increase in the number of funds, but also in total net assets managed by those funds. In 1995, the total amount of money invested was $12 billion; by 2007 that number had grown to $202 billion (SIF). Applying the effect of inflation in the United States from 1995 to 2007 based upon the Bureau of Labor and Statistics Consumer Price Index, the $12 billion in 1995 dollars would have been $16.59 billion in 2007. Taking the $202 billion and dividing by the inflation-adjusted $16.59 billion, the result is over a twelve-fold jump in total net assets under management by these funds. Environmental issues continue to have a leadership role in the broader SRI market (Little, 2008). The number of environmentally focused SRI funds available have gone from a few specific funds issued by those investment firms noted for SRI offerings to funds being offered by general purpose investment houses. Some funds are even stratified by the type of environmental focus they have such as hydro energy, solar energy, hazardous waste cleaning, and renewable resources (Krosinsky & Robins, 2008).

With more focus on environmental sustainability, coupled with the broad acceptance of socially responsible mutual fund investing and the increased offerings from investment firms, investors are unsure about where to invest and still meet their environmentally focused social objectives (Gunther, 2005; McGee, 2007). While independent auditing of the financial reports and oversight bodies such as the Securities and Exchange Commission (SEC) provide financial transparency, little has been done to define the largely qualitative environmental screening process used by mutual fund management to determine asset selection (Stone, 1999). Koellner, Weber, Fenchel, and

Scholz (2005) state that "fund managers are not able to set up standards for non-financial performance, and thus they are unable to account for this aspect to investors and their stakeholders" (p. 55). This leaves investors with a myriad of fund choices available, but with cloudy definitions as to the process used to include or exclude firms from a fund. Michelson, Wailes, Van der Laan, and Frost (2004) maintain, in regards to reporting on social and environmental performance, "that the inter-related issues of transparency and disclosure are clearly important considerations at the company or firm level. This is no less relevant for the funds themselves" (p. 4).

Statement of the Problem

Many mutual funds state that they are investing *green*, but it is difficult for the investor to determine alignment of his/her individual environmental social objective with that of the mutual fund manager (Dunfee, 2003; Kinder, 2005; Marquardt, 2007; McGee, 2007; Michelson et al., 2004; Sandoval, 1995; Stone, 1999). The purpose of this research study was to analyze information available in the public domain, thus, available to all investors, to discern whether the environmental screening process used by actively managed mutual funds which claim to invest in environmentally sustainable ways was determinable. McGee states that "even as assets continue to flow into the growing number of green investment products, the debate over what companies and investment products should carry the green label continues" (p. 59). This is hardly a new issue as Sandoval reported the problem back in 1995: "it is up to each fund to choose its own shade of green" (p. 31). Kahlenborn (1999) stated that it may be difficult for the average investor to determine if "a particular environmental investment fund actually satisfies its own claim" (p. 74).

Much of the confusion surrounding *green* investing comes from imprecise terminology in the financial community regarding SRI. “The terms *social investing, socially responsible investing, ethical investing, socially aware investing, socially conscious investing, green investing, values based investing, and mission based or mission-related investing* all refer to the same general process and are often used interchangeably” (Schueth, 2003, p. 189). However, other sources define *green* investing more narrowly as “the choosing of investments of companies that have a positive environmental record. Green investing is a special category of social investing” (Scott, 2003, green investing, ¶ 1). “Green investing involves putting money into companies that actively promote environmental responsibility” (Smith, 2008, ¶ 2).

> There isn't a huge difference between socially responsible investing (SRI) and green investing; green investing is actually a form of socially responsible investing. Both of these terms refer to investment philosophies that are backed by ethical guidelines that help to steer the investment selection process. The biggest difference between the two is the overall scope of the investment philosophies' focus: green investing is more narrow in its focus when compared to socially responsible investing.
>
> Green investing is mainly focused on investing in companies and technologies that are deemed to be good for the environment. This includes individual companies that have a solid track record of reducing the environmental impact of their operations, as well as companies that offer alternative energy technologies such as solar and wind power. Green investors will also avoid investing in companies that have a negative impact on the environment, such as companies

with poor emissions standards. ("Is there a difference between socially responsible investing (SRI) and green investing," 2008, ¶ 1)

Kahlenborn (1999), after acknowledging that there is "no general definition of 'green investment'" (p. 66), presents two schools of thought regarding the term. The first is "any form of financial investment whereby the investor pays attention to [positive] ecological goals as well as the traditional aims of investment" (Kahlenborn, p. 66). The second viewpoint is "an investment that successfully counteracts negative influences on the environment, or serves to produce goods or offer services that have positive effects on the environment" (Kahlenborn, p. 66). Kahlenborn states that despite the subjective nature of the first viewpoint, it predominates usually because the criteria necessary for distinguishing between the possible products required for the second viewpoint cannot be ascertained by the market. He also points to the global appeal of the first viewpoint through the integration of the "various perceptions of green investment in the different countries" (Kahlenborn, p. 67).

This study used the consensus viewpoint of investors paying attention to positive ecological goals in their investments for the definition of *green* investing. It specifically used the environmental screening definition of the Social Investment Forum, "the inclusion or exclusion of companies based on issues of beneficial products and services, energy use, pollution prevention, recycling, hazardous waste, regulatory problems, ozone depleting or agriculture chemicals, substantial emissions, climate change, or environmental management systems" (SIF, 2008, p. 68).

Several organizations, such as Natural Investments and the Social Investment Forum, attempt to help investors identify potential funds by publishing a social

responsibility scale for mutual funds (Natural Investments, LLC., 2008; SIF, 2008). Natural Investments is a portfolio management firm that has been involved in socially responsible investing for over 20 years. Firm leadership has authored several articles and books on SRI. The Social Investment Forum is an association of financial professionals "dedicated to advancing the concept, practice, and growth of socially and environmentally responsible investing" (SIF, p. 59). The Social Investment Forum uses a checkbox methodology to indicate compliance with screens used by member funds. The checkbox is marked if the fund reports to the Social Investment Forum that they use the applicable social or environmental screen. The environmental screen is a single column in the chart (SIF, 2009). This provides only minimal guidance as the mutual fund screening chart only includes Social Investment Forum member funds, and there is no audit of how the mutual fund applies the screen.

> The methodology for the Natural Investment Services Heart rating is as follows. Natural Investments developed its proprietary NI Social Rating SM ("the Rating") in 1990 to provide investors with a social rating system based on objective, standardized criteria. The presentation of the rating, from ♥ to ♥♥♥♥♥, similar to the star-rating used by Morningstar to track financial performance (www.Morningstar.com), provides a quick and convenient overview of the breadth and depth of social responsibility criteria applied by each fund. The methodology used to compile the Rating addresses the three main strategies of Corporate SRI - Avoidance and Affirmative Screening, and Shareholder Activism - along with Community Investing. The mutual fund's application of each element is weighted and scored, and then the funds are ranked. Those in the lowest

> percentile group (0-20%) are awarded ♥, those in the highest percentile group (81-100%) ♥♥♥♥♥. Each fund is reviewed annually to determine its rating. (Natural Investments, LLC., 2008, Methodology, ¶ 1)

This scale, like the checkbox method, provides only the most basic guidance to an investor. It is a proprietary rating scale, so the exact process of mutual fund evaluation cannot be determined; nor can the screen components be validated. Furthermore, the scale includes other factors besides environmental screening in mutual fund evaluation.

While scales such as these provide some initial assistance, they are too broad for differentiating specific SRI subset groups, such as environmental issues. The investor may find the simplicity of the scale appealing; however, they are of little value for identifying environmental sustainability funds, as the scale does not clearly define the screens used by the funds, and the scales include other social factors besides environmental sustainability. This study viewed the source documents of the fund and specifically looked at those screening criteria associated with environmental factors. While scales may be a good starting point for the investor, it remains the investor's responsibility to choose which specific funds match their personal environmental sustainability values. The need for accurate screen disclosure in the published fund documents is necessary for proper alignment of an investor's values with that of the fund manager.

Background

While some (Kinder, 2005; Schueth, 2003; Schwartz, 2003) make the claim that SRI has a foundation in the Old Testament of the Bible, it is generally viewed as having originated in the 17th century with Quakers who wanted to avoid profiting from war and

slave trading (Jennings & Martin, 2007; Schueth; Schwartz). There is some debate as to which fund was the first SRI fund. Schwartz and Michael Jantzi Research Associates (2003) both point to the Pioneer Fund, founded in 1928, which screened against alcohol and tobacco. Kinder (2004) and Pax World Funds (Pax World Management Corporation, 2008) find the Pax World Fund, launched in 1971, as the first SRI mutual fund which screened against military stocks during the Vietnam War.

The genesis of the environmental segment of SRI took a bit longer to emerge, though it too has deep roots in the human stewardship ethic. "The unofficial mottoes of Christian stewardship reflect its evangelical orientation: 'to be Christian is to be ecologist' and 'to be saved means saving the creation'" (Kearns, 1996, p. 59). Kearns points out that "the Christian stewardship ethic begins with the Bible, especially the Genesis commandment (1:26-28) which gives humans dominion over the earth" (p. 58). This stewardship ethic isn't limited to Christianity. The Coalition on the Environment and Jewish Life (COEJL) states in their Environmental Policy Platform: "The diversity of life is sacred and should be protected because of its intrinsic value and its contributions to the well-being of humankind. Humankind's unique place in the natural order enables us to transform the natural world to pursue human development and requires us to safeguard ecological systems so that the diversity of life can thrive." (COEJL, 2005, Stewardship, ¶ 1). The Islamic faith also has an environmental stewardship ethic.

> Khalifa or the role of guardianship is the sacred duty Allah has imposed upon the human race. We are a lot more than friends of the earth - we are its guardians. This responsibility comes from the fact that unlike any other sentient being we have been given the privilege of being able to reason and thus be ultimately

accountable for our actions. (Islamic Foundation for Ecology and Environmental Sciences, 2008, ¶ 1)

Three key events took place in the 1970s that helped foster the growth of the environmental segment within SRI. The first was the founding of the Environmental Protection Agency (EPA) in 1970 (Little, 2008). The second key event was the growth of the mutual fund industry brought about by the shift to personal investing and defined contribution plans, such as 401k and IRAs, and away from the corporate pension system in America (Vinzant, 2006). The third key event was a new awareness on the part of investors opposed to supporting companies whose policies they found objectionable (Kinder, 2004; Little, 2008; Vinzant).

The founding of the EPA was a watershed event in the American environmental movement. Little (2008) states, "prior to that, enforcing laws protecting the environment was difficult and often bogged down in court" (Little, p. 50). With the creation of the EPA, the federal government had the ability to force companies, and even state and local governments, to control pollution. One of the EPA's greatest tools is their ability to require developers to conduct an environmental impact study prior to granting permission for many projects. Impact studies were matters of public record which found their way into corporate annual reports and slowed the company's expansion activities as the company needed to comply with these new environmental regulations. With this agency providing environmental protection documentation, public awareness grew and investors could begin to identify offending firms (Little).

In 1978, Congress amended the Internal Revenue Code, adding section 401k which began to shift the onus of retirement planning from corporate governance to the

employee. This change moved specific investment instrument decisions downstream to the employee. The employee became responsible for saving for retirement through this tax deferred investment vehicle (Tyson, 2007). These investment programs proved beneficial to both the employee and the employer. The employee was able to put more money away than previously allowed in an IRA as the 401k had higher limits. Additionally, the employee gained a tax advantage as the money placed into 401k plans was excluded from income when calculating tax withholding. The benefit for corporations was reduced cost. The corporation paid for just the managing of the 401k plan versus the cost of both funding and managing a defined benefit pension. Additionally, the financial performance risk for the plan shifted from the company to the employee. The company costs were now limited to plan administration and employee contribution matching (Gremillion, 2005). Companies also had flexibility in matching employee contributions. They could limit the percentage of match, the matching ratio, set caps, or not match at all. If firms chose to match, they could require an employee vesting period before ownership of those funds transferred.

During this time the first funding crisis for Social Security became apparent (Schieber & Shoven, 1999). This also influenced participation rates in these new investment plans. While companies encouraged employees to participate in the plans, they needed to control administration costs. Allowing employees to pick any stock would prove very costly to administer. To meet the requirements of ERISA 404(c) rules, employers looked to mutual funds as the investment vehicle for 401k plans which further increased mutual fund access to the individual investor (Malonis & Cengage, 2000).

In the 1970s two key social issues drove investors away from certain companies. Those companies losing support were either involved in the unpopular Vietnam War or had ties to the South African government, which was still practicing apartheid (Kinder, 2005; Munteanu, 2007; Schueth, 2003; Schwartz, 2003). While the group of investors wasn't large, they still drew unwanted attention to the firms, mainly defense contractors. The SRI community views the withholding of investment during this period as having had an impact and forcing policy changes at the governmental level (Little, 2008). Out of this movement several new investment firms emerged whose offerings were solely SRI mutual funds. Environmental issues have long been a central focus of SRI and continue to be today (Gunther, 2005; McGee, 2007; Little; Uldrich, 2008). With "vast amounts of new information about global warming and ozone depletion coming to the attention of the American public, the environment moved to the forefront of socially concerned investors' minds" (Schueth, p. 190).

Mutual funds offer a distinct advantage to the average investor because they are professionally managed. "Professional managers add value to mutual funds that most investors can't because they have the expertise and time to devote to the investments" (Little, 2008). Part of the process that mutual funds use when managing an investment portfolio includes investment screens that are used to determine the asset mix. Common investment screens are based on standard financial fund objectives such as value, growth, capitalization, and geographic focus. SRI funds have an extra, non-financial screen objective which is based upon social, environmental, or religious factors. The largest body of research surrounding SRI screens is related to the impact that these screens have on investment performance. The consensus appears to be that the SRI funds have

basically the same returns and risks as funds without such screens, assuming the same financial objectives (Benson, Brailsford, & Humphrey, 2006; Diltz, 1995; Hamilton, Jo, & Statman, 1993; Statman, 2000). "Investors can expect to lose nothing by investing in socially responsible mutual funds" (Hamilton et al., p. 66).

The social, non-financial screening process for deciding which firms are included or excluded from a fund is a complicated and largely subjective process of the fund managers (Little, 2008; Rockness & Williams, 1988; Stone, 1999). There are two basic types of screens: inclusion, also known as positive, screens where a company meets the specified criteria; and the more common exclusion, also referred to as negative, screens where a company is deselected because it does not meet the fund objectives (Kinder, 2005; Little; Michelson et al., 2004). The methodology of inclusion and exclusion apply to the financial screens used in all mutual funds, as well as to the social and environmental screens used in SRI based mutual funds. These techniques are often used together in the same fund.

When applying exclusionary screens, companies that participate in the excluded industries are not considered for the specific fund. Exclusionary screens come in two formats: absolute and threshold. An absolute screen "means that if the company is connected in any way to an excluded product or activity, the company is excluded" (Little, 2008, p. 122). A threshold screen would allow a company to be included in the fund if only a certain small percentage of the company's activities were offending. Threshold screens introduce the element of subjectivity in the screening process. For some fund managers a screen threshold may only be 5%, where for another manager this limit could be as high as 20% (Little; Michelson et al., 2004). Additionally, these

exclusionary screens do little to change corporate behavior (Little; Schwartz, 2003). Changing corporate behavior is frequently an objective for ecologically minded investors.

Inclusion screens are also referred to as qualitative screens because many factors of a company's activities contribute to their inclusion in an SRI mutual fund (Kinder & Domini, 1997). This screening methodology typically involves choosing from more diverse industry sectors than may be traditional for a given SRI fund class, such as environmental sustainability (Little, 2008). Those firms that hold a leadership position in a given social or environmental area within their sector may be chosen (Kinder & Domini). Additionally, those corporations that are showing improvement in select areas and open to change may also be included, even though their degree of progress may be below peer firms. Schwartz (2003) stated that, "companies which otherwise might be violating are still invested in but only if they are engaging in activities which stand out from others in the industry" (p. 210). These qualitative inclusion screens are often difficult to define. Full disclosure of the inclusion screening process to investors is equally difficult. They may even change as market conditions change (Schwartz).

Environmental *green* screens provide even more challenges when it comes to the SRI fund screening process. In environmental SRI mutual funds, those firms that are involved in nuclear activities are usually excluded from the asset pool (Little, 2008; Sandoval, 1995). Those firms involved in nuclear energy were traditionally screened out due to the radioactive waste created by the spent fuel rods. However, some funds now view nuclear energy as acceptable for *green* funds. McGee (2007) claims that nuclear energy "may be acceptable as a viable, cleaner-burning alternative to fossil fuels, especially in the absence of a large scale, environmentally benign power source" (p. 60).

Gunther (2005) underscores the challenge of the individual investor discerning the environmental fund screens with his examples of the Sierra Club Stock Fund and the Pax World Funds. While the Sierra Club Stock Fund states that it will "invest for sustainable growth", Gunther found "the fund does not own shares in a single company that promotes alternative energy, organic farming, or other solutions to environmental problems" (p. 106). In the case of Pax World Funds, Gunther discovered that while the fund claims to invest in ecologically supportive firms, their holdings include oil and gas companies that most other *green* funds would exclude.

The complexity of determining what constitutes an acceptable company is further blurred by the breadth of the definition of environmentally supportive or sustainable. The breadth of topics include industries such as clean technology, alternative energy, wind energy, solar energy, bio-fuels, organic farming, recycling, energy conservation, waste management, and sustainable forestry (Munteanu, 2007). Since as early as 1982, there have been specific SRI mutual funds that screen for only one, or a few, of these environmental areas, such as the New Alternative Fund and the Guinness Atkinson Alternative Energy Fund. There are even Exchange Traded Funds (ETF) and indexed mutual funds that focus on specific environmental areas, such as those offered by Invesco PowerShares (McGee, 2007; SIF, 2008).

The burden of evaluating the alignment of a given environmental screen used by an SRI mutual fund to the environmental objectives of the individual investor ultimately rests with the investor. Gunther (2005) stated that "the lesson for social investors is to dig into the mutual funds' practices when they can" (p. 108). Sandoval (1995) also emphasized that "it is up to each fund to choose its own shade of green, and the rule for

investors is caveat emptor" (p. 31). "So if there are particular industries or companies you find intolerable, it's up to you to check a fund's list of holdings" (Vinzant, 2006, p. 3). While fund investment types, growth, value, income, etc. are closely regulated by the SEC, there is no such oversight as to the social screens used (Dunfee, 2003). Mutual fund industry analysts such as Morningstar and Lipper can add some insight here, but there are no set disclosure requirements for the SRI screens used by the mutual fund (Dunfee).

The study by Schwartz (2003) of SRI mutual funds found screen disclosure to be inadequate; however, it did find that "at least a certain degree of disclosure is taking place" (p. 199). Investors may find that mutual fund web sites and other advisory services can be of assistance in uncovering the screening process; however, the definitive sources are the three SEC mandated publications. These are the prospectus, the annual report, and the semi-annual report. The narrative sections of these documents can help to provide some insight as to the social screening process (Gunther, 2005; Little, 2008). One objective of this research project was to determine to what extent environmental screening information is generally reliable and available to the investor through the use of these documents.

Research Questions

For this study two questions guided the research.

1) What terms and patterns were the managers of actively managed environmentally focused SRI mutual funds using in the official public domain documents; namely the prospectus, the annual, and semi-annual reports; to convey to the investment community the environmental screens that were employed by the fund managers?

2) While each actively managed, environmentally focused, SRI mutual fund may have a different environmental screen methodology, for those funds chosen in question 1, having a similar financial investment objective, as defined by having the same Morningstar Style Box™ classification as of December 31, 2008, what are the assets common among the mutual funds from January 2007 to June 2009?

The answers to these questions illuminate the SRI environmental screening process. The investor is responsible for interpreting the screening process used by the fund manager. It is reported that investors are uncomfortable with the hazy information they get today (Munteanu, 2007). Kahlenborn (1999) stated, when referring to the qualitative environmental information provided by financial organizations, that "low market transparency could become a serious obstacle to further market growth" (p. 66). Answers to these questions may provide investors a methodology for better understanding the screen choices of the fund managers. Michelson et al. (2004) stated "that each investor's idea of ethical or socially responsible investment is different, the need for clear reporting procedures about how the funds actually invest is crucial" (p. 4).

Description of Terms

Actively managed mutual fund. An actively managed mutual fund is a mutual fund with assets that are professionally chosen and managed by an individual or group of individuals who are compensated by the fund.

Exchange Traded Funds (ETF). An ETF is very similar to an indexed mutual fund in that it is tied to a specific index or group of underlying stocks and bonds. It differs

from an index mutual fund in that it trades directly on the exchange and will have multiple price changes throughout the trading session.

Morningstar Style Box™. The Morningstar Style Box™ is a nine-square grid published by the Morningstar Incorporated which represents the investment positioning of a mutual fund (Morningstar, 2002). For equity funds the horizontal axis categories are the portfolio investment styles of value, blend, and growth; the vertical axis categories are the median size of the holdings: small, mid, and large capitalizations. For bond funds the horizontal axis categories are duration (interest rate sensitivity) of short, medium, and long; the vertical axis categories represent the credit quality of high, mid, and low.

Mutual fund. A mutual fund is a financial instrument that is professionally managed with stated investment goals and objectives. A mutual fund is a liquid investment, as investors may buy or sell shares of the mutual fund during market trading hours. The underlying assets of the fund are managed by the fund issuing firm that decides which assets to buy or sell as well as when to trade while maintaining the stated strategy of the fund.

Socially Responsible Investing (SRI). SRI is an investment strategy where qualitative factors in addition to financial factors are used to determine asset selection. These factors are usually of a religious, moral, political, environmental, social, or ethical nature. SRI is "the process of integrating personal values and societal concerns into investment decision making" (Schueth, 2003, p. 190).

Significance of the Study

Extensive work has been done on the financial aspects of SRI investing, but there has been little examination of the social screening process used by actively managed

mutual funds (Dunfee, 2003; Schwartz, 2003). "The assessment of non-financial performance (i.e. ecological and social performance) is rather underdeveloped" (Koellner et al., 2005, p. 55). This study has practical as well as academic value. It is reported that the number of investors desiring to invest in environmentally sustaining ways is increasing (Kahlenborn, 1999; Koellner et al.). As the number of investors grows, so does the number of environmentally focused SRI mutual funds available for investment (SIF, 2008). This study provides investors with a methodology towards understanding the dynamic process of environmental screens. This study may also help mutual fund managers find better ways to disclose their environmental screening criteria in the narrative sections of financial reports. Better disclosure generates improved credibility for these instruments in the investment community. It may also provide a broader syntax necessary for any attempt at standardizing the qualitative decision-making process across funds.

Stone (1999) developed, through content analysis, a three-tiered taxonomy of corporate social responsibility. Stone stated a purpose of the taxonomy as, "in addition to its usefulness in providing comparability with future studies, the taxonomy will provide an avenue for discussion as to the make-up of future public reporting standards for corporate social responsibility information" (p. 128). This study applied Stone's taxonomy to the narrative sections of the mutual fund documents. The goal was to determine if the fund manager's environmental screening process is reflected in what they report in the fund publications.

Process to Accomplish

The methodology used to answer the research questions was both qualitative and quantitative in nature. The first question used a content analysis approach to determine to what extent phrases in the prospectus, annual, or semi-annual reports either explicitly or implicitly disclosed the environmental screens used by fund management. This is determined through direct inspection of the narrative sections of the selected funds as listed in Appendix A. The second question used a univariant variability study examining the underlying assets of environmental SRI mutual funds.

The validity of the technique used in question one is supported by Leedy and Ormrod's (2005) definition of content analysis. "Content analysis is a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes, or biases. Content analyses are typically performed on forms of human communication" (Leedy & Ormrod, p. 142). This technique has been justified in Stone's (1999) work. Stone used it to generate the taxonomy for Corporate Social Responsibility (CSR) terms as disclosed in annual reports, press releases, and other corporate documents. In this study the narrative sections of those funds using environmental screens were examined. Fund selection was determined using several sources. The first step applied the environmental checkbox from the Social Investment Forum Screening and Advocacy Chart (SIF, 2009) to those funds listed in Appendix 2 of the Social Investment Forum report (SIF, 2008). Additional funds were added by reviewing other published sources such as Morningstar (Nuwire Investor, 2008) and SocialFunds.com (SRI World Group, 2009). Web sites such as www.morningstar.com, www.lipper.com, and finance.yahoo.com were also used to scan for other funds that may

use environmental screens. The goal was to gather the population of environmentally focused United States issued mutual funds. The prospectus, annual, and semi-annual reports issued from January of 2007 through June of 2009 were reviewed. The analysis was computer-facilitated with Microsoft Access, Microsoft Word, Microsoft Internet Explorer, Adobe Reader software, and the SEC IDEA database. A comparison to the taxonomy presented by Stone was also conducted.

The validity of the techniques used in question two is supported by both Leedy and Ormrod (2005) and Benson et al. (2006). Leedy and Ormrod suggest several statistical methods to determine central tendency and variability. This study used a similar process to that used by Benson et al. but took a more granular approach, examining the specific underlying assets rather than grouping the assets into industries. The researcher first separated mutual funds into groups based upon their Morningstar Style Box™ value. The underlying asset allocations for each selected fund within Morningstar Style Box™ group were calculated for each six-month period of the study. Asset allocation is the non-zero value less than one that an individual asset represents of the total investment value of a fund. It is computed as dollar value of the asset divided by the dollar value of all assets being held in the fund. The study had five periods starting with January 2007 and ending with June 2009. Those funds reporting during January to June were considered to be in the first six-month period of the given year. Those funds reporting during July to December were considered to be in the second six-month period of the year.

The study analyzed the level of dispersion and the amount of clustering around the mean. McGee (2007) found that: “Most [SRI] funds, … end up investing in very

similar industries and companies" (p. 62). A review of the differences among funds was conducted by this study. Statistical analysis was computer facilitated using Microsoft Access, Microsoft Excel software, and the SEC IDEA database.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

This chapter examines the literature that relates to investing in environmentally focused mutual funds. A brief history of mutual funds is presented as a foundation for the industry under examination. Next, is a review of the United States Securities and Exchange Commission [SEC] regulations, with a specific interest on the disclosure requirements of mutual funds. Several studies are examined which find a generally limited level of environmental disclosure. The unique characteristics of bond and equity financial classifications as used in mutual funds in the United States are also discussed. Narrative accounting information and the appropriateness of using content analysis on this information is the next topic. Finally, the history and background of Socially Responsible Investing [SRI] including the religious roots is presented as supporting material for the subset category of environmental *green* investing.

The Origins of Mutual Funds

The origins of the open-end mutual fund have their roots in closed-end funds, which stem from the investment trusts of England and Holland (Gremillion, 2005; Rouwenhorst, 2004). In 1774 Abraham van Ketwich, an Amsterdam broker, solicited subscriptions to Eendragt Maakt Magt. This trust is considered the first mutual fund (Rouwenhorst). The purpose of the trust was the same as the purpose for

today's mutual funds. "Van Ketwich's aim was to provide small investors with limited means an opportunity to diversify" (Rouwenhorst, p. 1).

> Investors were promised a dividend of 4 percent, with adjustments depending on the annual investment income of the portfolio. The initial plan was to dissolve the negotiatie after twenty-five years, at which time the liquidation proceeds would be distributed among the then remaining investors. Subscription was open to the public until all 2,000 shares were placed; thereafter participation in the fund would only be possible by purchasing shares from the existing shareholders in the open market. Investors had a choice to either receive shares registered in their name, or purchase shares in bearer form (in blanco). The transfer of bearer shares was easier because it did not require registration with the issuer, but both types were freely tradable. Based on these characteristics, *Eendragt Maakt Magt* would most likely be classified today as a closed-end investment trust, which issues a fixed number of shares representing ownership of a portfolio of tradable securities. (Rouwenhorst, p. 6)

The prospectus of Eendragt Maakt Magt required that the portfolio would be diversified into 20 different classes; each class was to have 20 to 25 different securities (Rouwenhorst, 2004). Van Ketwich took his fiduciary responsibility very seriously, as the prospectus required an annual accounting to the commissioners and, if requested, full disclosure to all interested members (Rouwenhorst).

In 1868, the first investment trust outside of the Netherlands was created in London and called the Foreign and Colonial Government Trust (Gremillion, 2005; Grow, 1977; Rouwenhorst, 2004). The goal of this trust was similar to that of the earlier Dutch

offerings, providing investors of moderate means a diminished risk by spreading the investment over a number of securities (Gremillion; Rouwenhorst). In the 1890s, despite the United States being a debtor nation, a limited number of investment trusts were formed in the United States to address the needs of the wealthy few who were able to take advantage of them (Gremillion). These funds were closed-end funds like their European predecessors (Gremillion; Rouwenhorst). However, the disclosure standards had fallen below those of the initial European investment trusts (Gremillion; Zweig, 1999). The small investor would buy an investment trust for more than the value of its portfolio and then "shell out a 10% sales charge and fork over up to 12.5% of your [the small investor] profits for the manager's annual fees. And your [the small investor] 'trust' would probably refuse to tell you what stocks and bonds it held" (Zweig, p. 94).

The first open-end mutual fund in any country was created by Edward G. Laffler on March 21, 1924, in the United States, titled the Massachusetts Investors Trust [MIT] (Gremillion, 2005; Grow, 1977; Mintzer, 2000; Zweig, 1999). MIT had a minimum investment of $250 and a 5% sales charge which was very reasonable for the time (Gremillion; Zweig). However, closed-end funds were the predominant trust investment vehicle until the U. S. stock market crash of 1929. There were 89 closed-end investment trusts valued at $3 billion versus 19 open-end funds valued at just $140 million (Gremillion). Open-end funds gained in popularity as the abuses and losses of closed-end funds came to light during the 1930s (Gremillion; Zweig). The lack of disclosure by closed-end funds allowed for insider trading, borrowing money to inflate the size of the funds, and indeterminate underlying asset valuation (Gremillion; Grow; Zweig). The result was that closed-end funds went from trading at 50% above the value of their assets

to 90% below by 1932 (Gremillion; Zweig). Open-end funds, such as MIT, lost only 83% compared to an 89% drop in the Dow Jones Industrial Average (Gremillion). Because share price was always tied to net asset value for open-end funds, they were very liquid as their value could easily be determined. The fact that share price was tied to net asset value discouraged speculation in open-end funds (Gremillion). Redemption-on-demand required a different level of disclosure for open-end funds, leading to "a policy of relatively full disclosure through shareholder reports during a period, the 1920's, when most corporations were sparing in the information they released" (Grow, p. 91). The combination of all of these factors led to the rise of the open-end mutual fund as the predominant mutual fund offering (Gremillion, Grow, Zweig).

Regulation and Mutual Fund Disclosure Requirements

The Securities Act of 1933 was the initial legislation aimed at improving the disclosure of investment offerings (Gremillion, 2005; Grow, 1977). The Securities Act of 1933 required that anyone wanting to offer securities for sale must first register them and provide a prospectus that "adequately disclosed the nature of the offering" (Gremillion, p. 19). The Securities and Exchange Commission [SEC] was created by the Securities Exchange Act of 1934, which focused on publicly traded securities. It required that mutual funds register transfer agents and standardized the requirements for record keeping and reporting (Gremillion; Grow; Securities Exchange Act, 1934). While open-end funds had traditionally disclosed more information than closed-end funds, "there is no question that the Act [Securities Act of 1933] imposed even more full disclosure" (Grow, p. 446).

In 1940, the Investment Company Act and the Investment Advisors Act were passed (Gremillion, 2005; Grow, 1977; Investment Advisors Act, 1940; Investment Company Act, 1940). The Investment Company Act was crafted by both the SEC and the investment industry representatives. The goal of this Act was to provide investor protection while not strangling the mutual fund industry (Gremillion; Grow). The Investment Company Act of 1940 is the foundation for all mutual fund regulation since (Gremillion). There were eight targeted areas of prior abuse on which the Act focused (Gremillion).

1) Inadequate disclosure to the shareholders by the investment companies regarding strategies, holdings, and activities.
2) The pursuit of investment company management objectives over those of the shareholders.
3) Share issuance with unequal voting rights.
4) Concentration of control issues that led to abuses such as pyramiding.
5) An unsound accounting procedure that was also unaudited.
6) Restructuring the fund without first gaining shareholder approval.
7) Borrowing against fund assets.
8) Fund operation with inadequate assets or reserves.

The Investment Company Act of 1940 addressed all of these issues (Gremillion; Grow). There are several sections of the Act that focus on disclosure which are of particular interest to this study. Section 10 requires that an investment company must register with the SEC and provide a statement of policies and procedures (Investment Company Act). Sections 30 and 31 require the mutual fund to file annual and semi-annual reports and to

keep adequate records that must be audited by independent auditors (Investment Company Act).

The information required to be given to shareholders is quite specific (U.S. Securities and Exchange Commission, 2008). Table 1 summarizes the reporting requirements. All investment companies must provide a prospectus to customers.

Table 1

SEC Mutual Fund Reporting Requirements

Required Filings	Frequency of Filing	Provided to Investors
Prospectus	Annually	Automatically
Investor Report	Semi-annually	Automatically
Holdings Report	Quarterly	SEC IDEA database
Voting Report	Annually	SEC IDEA database
Statement of Additional Information	Annually	Upon Request

The prospectus must include the fees and expenses, the investment objectives, investment strategies, risks, performance and pricing of the fund. Some funds may optionally produce a "profile", while allowed, it isn't a requirement. If a "profile" is produced, it must summarize key information from the prospectus such as the fund's investment objectives and strategies, risks, performance, fees, and expenses. It must also identify the fund's investment advisor and investment requirements. Mutual funds are further required to file Statements of Additional Information [SAI] (U.S. Securities and Exchange Commission). The SAI is required to be filed with the SEC, but it is not required to be mailed to the investors. It must be provided to the investor, upon the investor's request, without charge. The information in the SAI is supplemental

information that the SEC feels "is not necessary or appropriate in the public interest or for the protection of investors to be in the prospectus, but that some investors may find useful" (U.S. Securities and Exchange Commission, p. 6). The SAI generally includes additional information regarding the financial statements, the history of the fund, fund policies as to borrowing or concentration, officers and directors who control the fund, and brokerage commissions paid.

There are three other public disclosures required of mutual funds (U.S. Securities and Exchange Commission, 2009). They are the quarterly disclosure of the fund's holdings on SEC Form N-Q, the annual disclosure of how the fund voted on the proposals of the underlying securities on SEC Form N-PX, and the report to shareholders that must be made every six months. The shareholder report must be produced within 60 days after the end of the fund's fiscal year and the fund's fiscal mid-year. The shareholder report specifically contains updated financial information and a list of the fund's portfolio securities (U.S. Securities and Exchange Commission). This study focused on those documents which are required to be provided directly to the investor, either electronically or by mail, without the investor having to request them. Those documents are the prospectus, the annual, and the semi-annual reports.

The disclosure requirements are summarized in the Implementation of Investment Objectives section in SEC Form N-1A (U.S. Securities and Exchange Commission, 2008). The fund must report their principal investment strategy which includes the type of securities in which the fund will invest. Form N-1A goes on to broadly define a strategy as "any policy, practice, or technique used by the Fund to achieve its investment objectives" (U.S. Securities and Exchange Commission, p. 18). The SEC provides further

guidance by defining "principal strategy" to mean any strategy that is expected to impact the fund's risks and returns, as well as the anticipated impact of the policy on the fund's objectives. A negative strategy, defined as one which does not invest in a specific type of security, is not viewed as a principal strategy by the SEC. A fund must also disclose if more than 25% of the fund's holdings will be in a "particular industry or group of industries" (U.S. Securities and Exchange Commission, p. 18). The broadest category covered by this section relates to asset selection. "Explain in general terms how the Fund's advisor decides which securities to buy and sell" (U.S. Securities and Exchange Commission, p. 18). The mandated reporting requirements of the prospectus and the report to shareholders provide the narrative foundational material used in conducting this study. The next section reviews the literature as it specifically relates to environmental disclosures.

Environmental Disclosures

The area of environmental disclosures has been an area of high interest and recent study (Mathews, 2000). Gamble, Hsu, Kite, and Radtke (1995) specifically looked at the environmental disclosure of 234 companies through their 10K and annual reports. Gamble et al. developed a standardized coding scheme that included both voluntary and mandatory disclosures. The coding scheme was based on the SEC and FASB guidelines as well as coder interpretation of voluntary disclosures in the annual reports and 10K. The mandatory environmental disclosures were based upon SEC Regulation S-K; Items 101, 103, and 303; and Staff Accounting Bulletin Number 92. The industries cited were those whose actions could result in a negative environmental impact namely oil and gas, chemical production, plastics, resins, soap, detergent, perfume, cosmetics, paints,

varnishes, petroleum refining, steel works, motor vehicle production, and hazardous waste management. Gamble et al. found that the total number of disclosures in the annual reports had increased since 1989, and that the most detailed disclosures came from petroleum refining, hazardous waste management, steel works, and blast furnace industries. The study also found that, from 1989 to 1991, there was a significant increase in the number of disclosures reported in both the 10K and the annual reports. However, Gamble et al. also found that the overall quality of disclosures was low, and a lack of standard SEC and FASB regulations was troubling.

Kreuze, Newell, and Newell (1996) analyzed the 1991 annual reports of 645 Forbes 500 companies for environmental disclosures. Kreuze et al. found that 74% of the firms made no mention of environmental issues anywhere in the annual report. Seventeen percent of the firms studied reported environmental information only in the letter to shareholders section of the report. Kreuze et al. found that these disclosures were rather cursory and provided little detail as to the overall management philosophy in regards to the environment. The remaining 9% did report additional information in the footnotes or elsewhere in the annual report. Similar to Gamble et al. (1995), Kreuze et al. found that those companies in energy, steel, chemicals, pulp and paper, and utilities had a higher incidence of environmental disclosure. Kreuze et al. suggest 17 points that would improve the level of environmental disclosure if included in the corporate reports.

Fekrat, Inclan, and Petroni (1996) reviewed the scope and accuracy of environmental disclosures of 168 companies in six industries. They also performed a modest test of the voluntary disclosure hypothesis in the context of environmental disclosures. The voluntary disclosure hypothesis posits that it is reasonable to expect that

competitive market forces will cause firms to rise to the highest level of voluntary disclosure set by rival firms, thus avoiding the negative investor consequences of withholding information (Darrough, 1993; Fekrat et al.). The relationships between the mean scores of the environmental disclosures were compared with the environmental performance of the firms. No significant relationship was found. Because there were significant variations in the disclosures, Fekrat et al. found no support for the voluntary disclosure hypothesis.

Walden and Schwartz (1997) examined environmental disclosures in light of the 1989 Exxon Valdez oil spill off the coast of Alaska. The study examined 53 companies across four industries between 1988 and 1990, for both the quality and quantity of environmental disclosure. The authors found that both the quality and quantity of disclosures had positive improvements year over year. Walden and Schwartz conclude that the disclosures were driven by specific events and were in the self-interest of the firms due to perceived public policy pressure.

Brown and Deegan (1998) reviewed the levels of environmental disclosure and print media coverage for the following Australian industries: chemicals, forestry and forest products, gold, oil and gas, other general metals, pastoral and agriculture, sand mining, solid fuels, and Uranium. The study covered five years between 1981 and 1994. The purpose was to determine if there was any relationship between the level of print media coverage and the amount of environmental disclosure. Brown and Deegan found that higher levels of media attention were positively associated with higher levels of environmental disclosure in the annual reports.

Freedman and Stagliano (2002) looked at a select group of public firms, those doing an initial public offering (IPO). They chose 26 IPO firms identified as potentially responsible parties (PRP) in Superfund sites with a closely matched group of publicly held PRPs. Superfund sites are areas designated by the EPA as abandoned hazardous waste sites. The purpose of the study was to determine if there was an increased level of environmental disclosure for those firms under the scrutiny of an IPO. Freedman and Stagliano studied the annual reports and 10K using content analysis. The study found no significant difference in the level of PRP-status disclosure. Freedman and Stagliano determined that "the same relatively low level of disclosure by companies already admitted to the public securities markets is mimicked by those firms that are 'going public' for the first time" (p. 103). As a result of their findings, Freedman and Stagliano call for enforcement of the existing SEC disclosure rules through fines against violating companies and their auditors.

This section of the literature review has shown that environmental disclosures are generally lacking in information, even when mandated. Prior studies have focused on disclosures at the corporate level, which provided the foundation for this study to examine the specific disclosures of environmentally focused mutual funds. The next section reviews the financial classifications used by equity and bond funds in the United States as support for the financial groupings used in this study.

Financial Classifications in the United States

There are several classification schemes in place for mutual funds in the United States. Classification allows for comparisons and imposes order on the fund market (Gremillion, 2005). Comparisons can be made from fund to fund allowing fund managers

to compare against one another and, from fund to indices so investors can determine the effectiveness of the fund management against an industry yardstick (Bogle, 1994; Gremillion). This ability to facilitate fund-to-fund comparisons is the reason this study used the Morningstar Style Box™ as a classification scheme to group funds having similar financial investment objectives. There are three major mutual fund classifications in use today (Gremillion). Each organization uses a unique classification system designed to best serve the needs of their constituents, but all breakdown the industry into three major categories: stock or equity funds, bond or fixed income funds, and money market funds (Bogle, Gremillion). The Investment Company Institute [ICI], a mutual fund industry association, publishes 33 specific investment objectives within six broad-based categories. Lipper is an advisory service focused on the mutual fund industry. The Lipper fund classification scheme is periodically updated. The latest version contains 83 equity fund classifications grouped in eight categories. The fixed income sector has 39 classifications grouped into six categories. The money market fund has eight categories (Lipper, 2008). Morningstar is an advisory service focused on the individual investor, which has 72 classifications grouped into six asset classes: U.S. stock, balanced, international stock, alternative, taxable bond, and municipal bond (Morningstar, 2008a). Morningstar also has two categories for money market funds: taxable and tax-free.

Historically, these classifications were based upon information derived from the prospectus of the fund (Gremillion, 2005; Morningstar, 2008a). However, using prospectus information caused inaccurate classifications because fund managers were often quite liberal in stating their objectives. These inaccuracies appeared frequently in equity funds where the investment strategy was broad enough to allow funds to shift into

different categories from those initially assigned. “For example, many funds claimed to be seeking ‘growth,’ but some were investing in established blue-chip companies while others were seeking growth by investing in small-cap companies” (Morningstar, p. 6). The solution to building a more consistent classification methodology was to base it on the more quantifiable portfolio holdings, rather than the verbiage of the prospectus. Lipper only applies a portfolio ranking in specific cases. “Only those funds that are considered ‘diversified,’ meaning they invest across economic sectors and/or countries, will also have a portfolio-based classification” (Lipper, 2008, p. 2). Morningstar uses the portfolio holdings of the prior three years to determine the category for a given fund.

While these classifications are useful in grouping funds together, the number of categories is large. The Morningstar Style Box™ was created in 1992 to provide a means of quickly communicating the investment style of a fund to both advisors and individual investors (Morningstar, 2008b). Morningstar classifies funds as being in three market capitalization levels, large-cap, mid-cap, and small-cap, based upon the holdings of the fund. The large-cap category is defined as those stocks within the top 70% of the cumulative capitalization within the style zone. The mid-cap is defined similarly as 70% to 90% of the cumulative capitalization within the style zone. Finally, small-cap represents the 90% to 100% using the same capitalization formula (Morningstar, 2008b). Classification is also based upon the value or growth orientation of the holdings of the fund. These categories are value, blend, and growth. The nine possible combinations are arranged in graphical format with size being the vertical axis and style being the horizontal axis. There are 10 factors used in the model, five for each style and growth, to further classify the value-growth orientation of a fund (Morningstar). There are seven

global geographic zones of style used in the classification. The United States is a single zone. This zoning is done to gain relative comparability across the globe. For example, a large-cap stock in Japan would have significantly different characteristics than a large-cap in the United States. Using geographic zones allows for a flexible cut point between the groups on the size axis (Morningstar).

Kim, Shukla, and Tomas (2000) found, while comparing mutual fund self-reported classifications to actual fund make-up, that the funds were misclassified half of the time. Hayes (2005) conducted a similar study of SRI mutual fund classifications using classifications provided by Morningstar and Lipper. The result was a 20% misclassification. Information regarding whether Morningstar or Lipper had more or fewer misclassifications was not provided. To minimize the level of misclassifications that may occur from using the prospectus verbiage, the Morningstar Style Box™ was used in this study to classify the funds in the study into similar investment categories. The following section reviews the applicability of using content analysis techniques to examine accounting narratives.

Applicability of Content Analysis in the Examination of Accounting Narratives

Content analysis is a research technique used to analyze textual material for the contexts presented (Krippendorff, 2004; Weber, 1990). The value of using this technique on accounting narratives is well documented (Ingram & Frazier, 1980; Smith & Taffler, 1995; Stone, 1999). While the value of the technique was supported, Stone found that "content analysis is a research tool that has rarely been used in accounting research" (p. 24). A more recent study by Tregidga, Milne, and Kearins (2007) finds a shift from what

Stone reported in 1999; the dominant method for analyzing financial narratives is now content analysis. The report goes on to state that the technique is especially useful in "identifying 'how much of what' is being reported by whom" (Tregidga et al., p. 6).

For content analysis to be effective there exists a recording or coding process to reduce the raw data into units that permit accurate description of the underlying content (Krippendorff, 2004; Neuendorf, 2002). The scheme begins with the selection and definition of categories (Krippendorff; Neuendorf; Weber, 1990). There are three distinct units in content analysis. These units are the recording or coding unit, the context unit, and the sampling unit (Krippendorf). Recording or coding units are "units that are distinguished for separate description, transcription, recording, or coding" (Krippendorf, p. 99). This is the first step in designing a content analysis, as it defines the themes or categories that will be reviewed.

One of the earliest studies to show the value of content analysis for account narratives is by Ingram and Frazier (1980), where they used content analysis to examine corporate annual reports for environmental disclosure. They scored the disclosures along 20 pre-selected content categories. When they compared the results using a regression analysis of the content analysis to a performance index on environmental compliance, they found no association. This finding confirmed the hypothesis by Ingram and Frazier that environmental disclosures were lacking.

In 1982, a seminal work by Wiseman conducted a content analysis similar to that of Ingram and Frazier (1980). The Wiseman study also reviewed the environmental disclosures in corporate annual reports. There were 18 items that aggregated into four categories. Five were associated with economic factors, two were categorized as

environmental litigation, five were classified as pollution abatement, and the remaining six were placed in the environmental disclosures group (Wiseman, 1982). Spearman rank order correlation was performed against the same Council on Economic Priorities environmental performance index used by Ingram and Frazier. There was no significant association between the disclosure index developed by Wiseman and the environmental performance index.

Bansal and Clelland (2004) used content analysis on articles written about firms in the Wall Street Journal. Bansal and Clelland extracted "full-text articles electronically using the company's name and one or more of the following modifiers: 'environmental,' 'toxic,' 'pollution,' and 'Superfund.'" (p. 97). The coding scheme reviewed the impact of the article on the environmental legitimacy of the firm, assigning a zero for neutral impact, one for negative impact, and two for positive impact. These scores were then compared to the residual of the capital asset pricing for the firm using regression analysis. The comparison showed moderately significant results such that firms with higher corporate environmental legitimacy will experience lower unsystematic risk (Bansal & Clelland).

Another study by Freedman and Wasley (1990) analyzed the pollution disclosures from the annual and SEC 10K reports using content analysis. The technique was the same as that used by Wiseman (1982). Freedman and Wasley compared 50 U.S. companies to the Council on Economic Priorities environmental performance index. Spearman rank order correlation tests were conducted to evaluate an association between the annual report disclosures and the environmental performance index. The results showed that the

disclosures from the annual report or the SEC 10K were not indicative of the actual environmental performance of the firm (Freedman & Wasley).

In 1998, Stagliano and Walden analyzed annual reports for environmental disclosure. Their study reviewed both the financial and narrative sections of the annual report. A comparison was made to an index derived from the Council on Economic Priorities. The researchers examined 53 firms using Spearman rank correlations. The study determined that there is wide variability as to the amount and location of environmental disclosures in the annual reports. They also found that the majority of the environmental disclosures occurred in the nonfinancial section of the reports. Stagliano and Walden found no relationship between environmental disclosure and environmental performance. They concluded that many firms do not provide adequate and informative environmental disclosures.

Philippe (2006) used several different techniques in the content analysis of annual reports to determine the impact of environmental communication on the legitimacy of an organization. In study one, Philippe analyzed the annual reports of 18 firms which have had at least one environmental disclosure during a four-year period from 2001 through 2004. Three themes emerged from the study: recognition, credibility, and exemplarity. The reports of all 18 firms had these themes. While the sample size was small, the analysis "seems to support the legitimacy theory when it postulates that organizational environmental communication is a reaction to the pressures of the institutional environment" (Philippe, p. 19). In study two, Philippe used an adaptation of the Wiseman (1982) coding scheme. A regression analysis was conducted against the Fortune magazine global reputation score for the year 2003. The analysis showed no significant

association between the environmental disclosures in the annual reports and the legitimacy index (Philippe).

Hughes, Anderson, and Golden (2001) also adopted a Wiseman (1982) index in their study of environmental disclosures made by 51 U. S. firms. They examined specific areas within the annual report: the President's letter, the management discussion, and notes sections. They compared these to the Council of Economic Priorities environmental performance index and found no association for the groups designated as good or mixed. They did find that firms who were ranked as poor made more disclosures, which they attributed to increased governmental scrutiny (Hughes et al.).

Two studies, one by Patten (2002) and one by Al-Tuwaijri, Christensen, and Hughes (2004), venture from the previous content analysis methodologies by using the Toxics Release Inventory [TRI] as the index of environmental performance instead of the Council of Economic Priorities environmental performance index. Patten sampled 131 U.S. firms using an adaptation of the Wiseman (1982) index in reviewing the annual reports from 1990. The study finds a positive association between the disclosure level and TRI index. However, Patten suggests a negative relation between environmental disclosure and environmental performance. In the study by Al-Tuwaijri et al. a content analysis was conducted on disclosures required due to environmental accidents. The four categories are defined as potential responsible parties' designation, toxic waste, oil and chemical spills, and environmental fines and penalties. While the testing methodology of employing simultaneous equations differs from prior studies, the results are similar in the finding of a positive association between environmental performance and environmental disclosure (Al-Tuwaijri et al.). The results are logically consistent because those firms

which have a high level of toxic emissions are required to disclose many of the conditions.

Clarkson, Li, Richardson, and Vasvari (2008) used content analysis to review the environmental disclosure of 191 U.S. firms. Clarkson et al. looked for a positive association between discretionary environmental disclosures and environmental performance. To ensure that the disclosures were discretionary, the study used web-based information provided on corporate web sites such as environmental reports. Clarkson et al. broke from using the Wiseman (1982) index and developed an index based upon the Global Reporting Initiative Sustainability Reporting Guidelines of 2002. The study, using an econometric model, found a positive association between the environmental disclosures and environmental performance of the firms (Clarkson et al.).

Stone (1999) developed the taxonomy of corporate social responsibility based on the expertise of the fund managers interviewed. This taxonomy supports environmental or *green* investing as being a subset of socially responsible investing. The taxonomy is organized into three tiers. At the highest level are the categories, followed by concepts, and the most granular level is titled criteria. "The top level categories represent the overriding ideals of corporate social responsibility according to the survey respondents" (Stone, p. 91). The study derived the 18 categories listed in Table 2 based upon the input from fund managers participating in the study. Stone created the mid-level concepts from the detailed screening criteria gathered from the survey of fund managers. The concepts reduce the abstraction of the criteria and provide "a way to organize the rather lengthy list of detailed screening criteria included in the taxonomy" (Stone, p. 92). The list of taxonomic concepts for the environmental category is presented in Table 3. Low-level

criteria are the smallest division and represent specific questions that may be used in determining the social performance of the subject firm (Stone). An example of low-level criteria for the dedication concept within the environment category is shown in Table 4. The taxonomy presented in Stone (1999) was used by this study to examine to what degree the fund managers reported their screens in the public filings.

Table 2

Top-Level Taxonomic Categories from Stone (1999)

Category
Abortion
Affordable Housing
Alcohol/Tobacco/Gaming
Animal Rights
Charitable Giving
Community
Contraception
Defense/Weapons/Firearms
Disclosure of Information
Environment
Ethical Practices
Health Care
Human Rights/Equality
Labor Issues
Lending as a Primary Business (Islamic Principles)
Nuclear Power
Pornography
Product or Services

Table 3

Mid-Level Taxonomic Concepts for the Environment Category from Stone (1999)

Concept
Civil Lawsuits, Superfund Sites, Remediation Efforts
Dedication, Proactive, Commitment
Development of New Products or Processes/Innovation
High Achievement
Lack of Negative Trends/Isolated Incidents/Steps or Efforts to Improve
Policies/Programs/Environmental Audits
Public Reporting/Communication/Disclosure
Quantitative Data on Emissions/Pollution
Recycling Efforts
Regulatory Compliance/Environmental Liabilities

Table 4

Low-Level Taxonomic Criteria, Dedication Concept, Environment Category - Stone (1999)

Criteria
1) Is the company dedicated to the conservation of energy and natural resources, with emphasis on the impact of operations on the local community?
2) Is the company proactive in its environmental efforts?
3) Has the company demonstrated a commitment to change with respect to its environmental performance?

Socially Responsible Investing

The origins of socially responsible investing stretch back to early biblical times, as there were many Jewish laws that defined how to invest ethically (Schueth, 2003). In the early years of the United States, the Christian faithful who embraced peace and nonviolence avoided investments in weapons manufacturers and slave trading (Schueth; Schwartz, 2003). Islamic investing is guided by two major tenants: one which forbids imposing financial interest and a second which emphasizes social responsibility (Shaw, 2007). Socially responsible investing [SRI] is defined as an approach to investing where the values of the investor are taken into consideration in the selection of the assets that are held (Kinder, 2005; Little, 2008; Schueth). These values can be as broad or as narrow as each individual investor (Kinder). Investors incorporate personal, moral, religious, and ethical perspectives in decisions regarding what investment vehicles should or may be chosen (Little). They may use different sources for their information, but they invest in ways consistent with their beliefs. Entire investment sectors, such as banking in the case of investors following Islamic principles, may be unavailable as they violate the values of the investor (Shaw). The basis for socially responsible investing is that if the investor is morally opposed to goods or services produced by a given firm, then investment in that firm is equally objectionable (Kinder; Little; Schueth). Wayne Silby, the founder of the largest U.S. SRI fund, the Calvert Group, defines SRI in this way:

> When we invest our money, it's like voting for the kind of world we want to create. It's expressing our values. Do we want a company that believes in diversity, in terms of the values in our society? Do we want companies that have no regard for how they do their ethical drug trials in developing countries? Where

> is that responsibility? When you, as an investor, have that ability to have a say, you have a responsibility to exercise that say. So, the movement is really about joining together to express our values, and make sure that money makes the world we want. That change involves values. (Henderson, 2006, p. 221)

There are two general categories in which socially responsible investors fall. The first group includes investors who align their investments with their personal values (Kinder, 2005; Schueth, 2003). Kinder defines this type of investment strategy as values-based. The second group views their investments from a proactive stance. "This group is more focused on what their money can do to catalyze positive change in society at large" (Schueth, p. 190). Proactive investors work to change companies that have low performance records in areas that are morally important to the investor (Little, 2008). Stock ownership provides investors with ownership and control rights that, when combined with other likeminded investors, give the investor the ability to influence the operational policies of the firm (Kinder; Little; Schueth). Investors seeking to put their money to work in disadvantage and low-income communities are an example of proactive SRI (Little).

For both the values-based and proactive categories of SRI investors, the implementation strategies for SRI can be organized into the same three groups: social screening, community investing, and shareholder advocacy (Budde, 2008; Henderson, 2006; Schueth, 2003). Social screening is a common SRI implementation strategy. This is the practice of including or excluding an investment asset based upon the environmental, social, or governance criteria which are applied directly to the company, in the case of individual investment, or by mutual fund manager (Budde; Henderson; Schueth). The

stock and bonds of a cigarette manufacturer may be excluded from the investment portfolio if the investor finds tobacco to be socially objectionable. An electric utility that is generating more energy from wind turbines this year than it did last year may be included due to an improving track record of environmental sustainability. Social screens are derived from the financial screening process that is already familiar to investors (Little, 2008). Investing on the capitalization level or growth tendencies of a firm was discussed in the Financial Classifications of the United States section of this chapter. Social screening methods are of two primary types: inclusion, also known as positive screening, and exclusive, also known as negative screening (Budde; Little; Schueth). Positive screens involve searching out investments that match the values of the investor. Those firms that are in alignment are included in the portfolio. Negative screens block firms whose policies are found to be out of alignment with the values of the investor, and are therefore, excluded from the portfolio.

A large body of work has looked at SRI screened funds in comparison to non-screened funds. Studies to evaluate if SRI mutual funds have a different level of financial return predominate. Bello (2005) compared the financial returns of 42 SRI funds to 84 conventional funds. Bello used the Morningstar March 2001 Principia Pro database to identify the SRI funds. All of the selected funds were issued by firms within the United States. The study used the same database to obtain the monthly return data. Bello applied three different measures of investment performance to compare the two fund groups. The tests were Jensen's alpha, Sharpe information ratio, and excess standard deviation adjusted return. Bello found no difference in asset characteristics, portfolio diversification, or investment performance between the two fund groups.

Derwall and Koedijk (2005) conducted a slightly different study by examining SRI bond funds. Their study selected eight United States bond funds from the Social Investment Forum. Each SRI fund was then matched to a weighted group of five conventional funds. The funds were also compared to the Citigroup United States Broad Investment-Grade Bond Index. Jensen's alpha and a multi-factor analysis were conducted. Derwall and Koedijk concluded "that SRI bond funds provided average factor-adjusted returns similar or superior to those of their conventional counterparts" (p. 18).

Girard, Rahman, and Stone (2007) reviewed 116 mutual funds and compared them against a style benchmark. The funds were selected from Lipper's social fund list. The period of study was January 1984 through December 2003. Girard et al. found that socially responsible mutual fund managers showed poor stock selection and market timing as compared to Lipper's active benchmark indices. The study also found that SRI funds have less diversification than the benchmark. This lack of diversification is a supporting concept for the second question of the current study, as environmentally sustainable fund managers may have even fewer assets from which to choose. Girard et al. found the size of the fund had no impact on performance.

A recent study by Barnett and Salomon (2006) found an interesting result when segmenting the SRI mutual funds by screening methodology. The study examined 61 SRI mutual funds selected from the SIF, looking at monthly financial performance data from 1972 to 2000. Prior studies grouped all SRI funds together, regardless of the screening methodology. Barnett and Salomon grouped the funds using the 12 screen categories tracked by the SIF. This grouping produced a screening intensity value. The more screens

employed, the smaller is the universe of stocks from which to choose. “Thus, a large value for screening intensity indicates an increasing tendency toward a narrower SRI portfolio, while a small value for screening intensity reflects a more diversified SRI portfolio” (p. 1109). The study used a risk adjusted performance to compare the fund returns to the market return as defined by the Standard and Poor 500 index. Barnett and Salomon found that there was a curvilinear relationship between the number of screens used by a fund and the financial performance of the fund. The conclusion of the study is that those funds which employ multiple screens effectively eliminate underperforming assets from their portfolio, enhancing performance. Those funds with only a few screens benefit from the increase in diversification of the portfolio. Funds in the middle may give up diversification without being able to eliminate enough underperforming firms to improve their financial position.

The second category of SRI implementation strategy is community investing (Budde, 2008; Henderson, 2006; Little, 2008; Schueth 2003). Community investing involves providing funds to disadvantaged, low-income communities, or those activities that are creating a positive social or environmental impact (Budde; Schueth). To implement this strategy, an investor may purchase certificates of deposit in a local bank that provides financial services and loans to the underserved areas of the community. The microloan industry is another area where investors seeking community involvement can put their money. “Housing for low-income individuals is one of the primary focuses of community investment” (Little, p. 15). This is a frequent area of investment for those who are faith-mission focused (Schueth).

Shareholder activism or advocacy makes up the third SRI implementation strategy (Budde, 2008; Henderson, 2006; Little, 2008; Schueth 2003). Investors implementing this strategy have a desire to effect change in a direct manner. Under this strategy, the investor owns stock in a firm and attempts to influence corporate behavior in several ways: through election of directors, presenting or voting on proposals, or even direct interaction with company management (Budde). Advocacy efforts are usually focused at positively influencing corporate behavior. The investor attempts to steer company management in a direction which the investor believes will produce larger financial rewards while enhancing all of the stakeholders of the company, including customers, employees, vendors, the environment, the community, as well as the stockholder (Schueth). The following section examines the impact of religious faith on socially responsible investing.

The Impact of Religion on Socially Responsible Investing

As discussed previously, personal values are the underpinnings of socially responsible investing. These values stem from the specific religious teachings the investor has received (Budde, 2008). Faith-based investing is a segment of SRI applied to those individuals who choose to invest based, primarily, upon the tenants of their religion (Budde). Faith-based investing generally refers to investment strategies based upon Christian, Islamic, or Jewish beliefs. While the differences between general SRI investors and faith-based investors are not large, faith-based investors avoid companies that are involved in industries which the tenants of their religion find objectionable. Faith-based investing is done largely through mutual funds (Little, 2008).

Ghoul and Karam (2007) found few differences in the screening methodology employed by Christian mutual funds. Kearns (1996) reported on three ethical models of Christian related eco-theology. "These three eco-theologies reflect the differences and tensions among conservative, mainline, and liberal Christian theologies" (Kearns, p. 57). The Ghoul and Karam study used Catholic mutual funds for the Christian comparison. The investment guidelines for Catholic funds are clearly defined and focus on three tenants. The first tenant is do no harm; the second is active corporate participation, and the third is promoting the common good (United States Conference of Catholic Bishops [USCCB], 2003). The screens proposed by these guidelines are very specific. The negative screens listed are against firms that participate in or support abortion, contraception, embryonic stem cell research, racial or gender discrimination, pornography, and weapons. The positive screens are to encourage corporate responsibility through disclosure, environmental protection, improved labor standards, affordable housing, access to needed pharmaceuticals, and respect for human rights (USCCB). Ghoul and Karam, reported that there were no appreciable differences in the investment indices of Christian faith-based funds versus the general market.

Islamic law prohibits the earning or charging of interest; the focus is rather on partnerships and risk-sharing (El-Gamal, 2000; Ghoul & Karam, 2007). Additionally, "ownership in bonds or preferred stocks is not allowed because both promise a fixed rate of return" (Ghoul & Karam, p. 96). This practice violates Islamic law in that all shareholders are to be equal, and receiving interest would favor some over others. As of 2004, there were 130 Islamic funds across the globe (Ghoul & Karam). Negative screens are employed to prevent investments in firms related to alcohol, pornography, tobacco,

gambling, weapons, music, entertainment, pork, and hotels and airlines which serve alcohol (El-Gamal; Ghoul & Karam). There are additional restrictions on the debt, interest, and receivables a firm may carry (El-Gamal; Ghoul & Karam). In 2005, Girard and Hassan studied the performance of Islamic indices as compared to equivalent general market indices. The study used a variety of measures to indicate selectivity and diversification. It also examined the persistence of performance using a four factor pricing model. The conclusion was that there is no difference between the indices on any of the measures, risk, diversification, or performance (Girard & Hassan).

Schwartz, Tamari, and Schwab (2007) define seven basic investment principles for ethical Jewish investors. The first is abiding by Jewish Law, such that investors would be obliged to avoid firms that are fraudulent, oppressive, deceptive, practice unfair competition, or cause physical or spiritual harm to people. The firms must also abide by the rules of their host country; therefore, investment would be avoided in firms that accept or pass bribes, evade taxation, or conduct money laundering. The second principle is abetting. Abetting involves any firm that supports another firm in failing to heed Jewish law, such as advertisers, consultants, and advisors. Justice and goodness are the third principle, which encourages investment in firms that are improving the overall condition of society thorough corporate philanthropy and community involvement. The fourth principle is abiding by contracts such that investment should be directed to those firms who consistently uphold their obligations. The fifth principle on preserving life encourages investment in firms that find ways to improve or lengthen human life and can be extended to those firms who operate in environmentally sustainable ways. Settlement of the world, the next principle, addresses stewardship for the environment. Those firms

who efficiently use resources are to be supported. The final principle is the Sabbath. Firms that uphold the Sabbath and only produce kosher products are good targets for investment (Schwartz et al.).

Conclusions

Mutual funds have become a significant investment vehicle. Adequate disclosure to the investor still remains a challenge. While legislative changes have improved the financial aspect of disclosure, the regulations regarding narrative accounting disclosures can be widely interpreted. Many studies have employed content analysis as a technique to examine the disclosures in the accounting narratives as it relates to environmental objectives. Fair, honest, and forthright disclosures from the mutual fund managers are of critical importance to the socially responsible investor. This information allows the investor to ensure that their money is being invested consistent with their personal values. These values rest solidly on the rich spiritual principles of the investor. Managers of mutual funds, through their fiduciary responsibility, are in a leadership role for the investor. Managers of mutual funds, which claim to be investing in socially responsible ways, have an ethical obligation to fully disclose their asset selection process. This obligation could even be viewed as a legal obligation, because it significantly impacts how assets are selected for the portfolio. The next chapter examines the methodology used to examine the level of disclosure for a subset of SRI funds, those that state an environmentally responsible objective.

CHAPTER III

METHODOLOGY

Introduction

The prior chapter showed that while there has been some environmental disclosure at the corporate level, the information has been found deficient, even when mandated by federal regulation. Content analysis was shown to be an effective method for examining the textual content of financial reports. The first research question looks at the textual content reported by mutual funds that have an environmental focus. This study asked, what terms and patterns were the managers of actively managed environmentally focused SRI mutual funds using in the official public domain documents; namely the prospectus, the annual, and semi-annual reports; to convey to the investment community the environmental screens that were employed by the fund managers? Additionally, this study examined the holdings of mutual funds with a primary environmental focus. Different funds with the same investment objective may invest in the same underlying assets, especially those funds that have limited the stocks available for investment based upon a corporation's environmental activities. The second study question asked: while each actively managed, environmentally focused, SRI mutual fund may have a different environmental screen methodology, for those funds, chosen in question 1, having a similar financial investment objective, as defined by having the same Morningstar Style Box™ classification as of December 31, 2008, what are the assets common among the

mutual funds from January 2007 to June 2009? The following section provides an overview of the methods and procedures used to conduct this study.

Research Design

The study had both qualitative and quantitative components. The first question used a content analysis approach in determining to what extent the phrases in the prospectus, annual, or semi-annual reports, either explicitly or implicitly, disclosed the environmental screens used by fund management. Direct inspection of the narrative sections of the selected funds was conducted. Support for this qualitative approach in analyzing financial textual material was documented in Chapter II. The definition of content analysis is "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use" (Krippendorff, 2004, p. 18). This study employed a technique similar to that used in other accounting textual studies, such as Bansal and Clelland (2004), of selecting subject text segments based upon a group of modifiers. The frequency of "go words", a term defined by Krippendorf as the inclusive list of keywords, was calculated. This frequency was then used further to analyze the narrative for contextual relevance of the keywords. The paragraphs that contained the selected keywords in context were then chosen for detailed analysis. An application of the Environmental Taxonomy presented in the dissertation of Stone (1999) was also conducted during the qualitative phase of this study.

The second question used descriptive statistics to address the quantitative portion of the research. This study examined the specific underlying assets held by each selected fund during each reporting period of the study. The funds were grouped by financial objective for the analysis using the Morningstar Style Box™ value assigned to each fund

as of December 31, 2008. Funds were regrouped based upon their environmental sustainability objectives as presented later in the Population section of this chapter. This was performed to determine if environmental sustainability objectives might have a higher level of similarity than the financial objectives of the environmentally focused funds. Those stocks found to be in the holdings of more than 50% of the funds in an analyzed group were considered majority holdings because they were chosen by the majority of the fund managers.

A mean, median, and standard deviation on the asset allocation percentage for the majority holdings that each fund held of the asset was calculated. Asset allocation percentage is the value, greater than or equal to zero and less than one, that an individual asset represents of the total investment value of a fund. It is computed as the dollar value of the asset divided by the dollar value of all assets being held in the fund. The definition of a fund would be broken if the asset allocation percentage had a value of one because there would be no other assets in the fund. During this study two separate analyses were conducted on the asset allocation percentage. The first holding analysis included only the non-zero funds, while the second included funds that had zero holdings in computing the descriptive statistics. The study had five semi-annual periods starting with January 2007 and ending with June 2009. This was done to capture the fund holdings allocation data from both the annual and semi-annual reports. Those funds reporting during January to June were considered to be in the first six-month period of the given year. Those funds reporting during July to December were considered to be in the second six-month period of the year.

The variability of the asset allocation percentage among the funds in a specific group was examined. Three different measures were used. The number of assets that were considered majority holdings was compared to the total number of assets in the study group. This was conducted to show the variability of the majority holdings to the entire pool of assets in the group of funds. For example, in one analysis there may be 10 holdings that make up the majority while the total asset pool may be 50 holdings, versus a different analysis where there are still 10 holdings but there are 400 holdings in the pool. The first case would indicate less variability than the second as the 10 funds were held in common of a pool of 50, versus 10 funds from a pool of 400. The variability was also reviewed by calculating the standard deviation, the kurtosis, and the skew from the arithmetic mean. The standard deviation represents the average distance from the mean (Salkind, 2008; Schmuller, 2009; Spiegel & Stephens, 2008). Skewness indicates how symmetrically the scores are distributed about the mean (Ott, 1993; Salkind; Schmuller). Kurtosis represents how flat or peaked a distribution is (Salkind; Schmuller; Spiegel & Stephens). Lastly, the range of values was also reported for the majority holdings of all funds in the study group. "The range is the most general measure of variability" (Salkind, p. 36). The study also reviewed nonparametric tests for goodness of fit, such as chi square, Anderson-Darling, and Kolmogorov-Smirnov (Burch, 2009). The low number of majority holdings and funds in each group of the study made these tests unsuitable. The general rule for the chi square test is that the expected frequency in each cell must be five or greater (Ben-Horim & Levy, 1984). "In general, for a goodness-of-fit test, the potential for committing a Type II error is high if *n* is small" (Ott, p. 361).

Population

At the end of 2008, the Investment Company Institute Fact Book for 2009 reported 8,022 mutual funds available in the United States market (Investment Company Institute, 2009). Several steps were necessary to identify the population because there is no single source that lists all of the environmentally sustainable funds. As noted in Chapter II, environmentally sustainable funds are often considered a subset of SRI funds. This study used the mutual funds listed in Appendix 2 of the 2007 Report on Socially Responsible Investing Trends in the United States as the starting point for the study's population because it is a thorough and researched listing of SRI funds. There were 173 different funds reported in the publication (SIF, 2008). Not all of the 173 funds had an environmental screen component. An initial review was conducted by matching the funds in the report to those listed as having environmental screens in the Screening and Advocacy Chart (SIF, 2009) also published by the Social Investment Forum. A character string scan was performed on the prospectus of all 173 funds for the stem "environment". This would return positive results for not just "environment" but for terms such as "environmental" and "environments" as well. The previous chapter stated that some funds use exclusionary screens in their environmentally sustainable selection process. These exclusionary screens often reject firms involved in the generation of nuclear power as having a negative environmental impact. For this reason, the stem "nuclear" was also used as a search stem to select funds using this term in an exclusionary screen process. Those funds that had contextual hits for these terms were included in the study. In several cases entire fund families were included as the investment company applied an environmental screen to all funds in the family. Many of the original 173 funds had a

specific social screening methodology based upon the religious background of the investment company. As reported in Chapter II, there is support for an argument that, in the broadest sense of stewardship, as defined by the various religious groups, all of the funds could be implicitly included in an environmentally focused investment. However, this study only included those funds that had an explicit statement of intent to screen investments based on environmental or nuclear factors. While the selected funds may have also screened for compliance to other social guidelines, the core criteria for inclusion in this study is that they must have had a specific statement in the prospectus regarding environmental or nuclear screening.

A limitation of the Screening and Advocacy Chart (SIF, 2009) is that it only includes SIF member firms. Further review of the funds was required because of this limitation. During the course of the study, it was also possible that new funds may have emerged that employed an environmental screen as the 2007 Report on Socially Responsible Investing Trends (SIF, 2008), which is only published biannually, included information as of the end of 2007. This study covered both 2008 and the first six months of 2009. While the mutual fund analyst firms such as Lipper and Morningstar do not maintain a specific category for identifying environmentally focused funds, they do periodically release lists of those funds that their analysts deem to have such a focus. The Morningstar list (CNBC.com, 2009; Nuwire Investor, 2008) was used to add additional funds to the population. Another list of socially responsible funds is produced by SocialFunds.com (SRI World Group, 2009). In the list of Social Issues within the Mutual Funds Center there is the ability to sort funds by environmental screens. This list was also compared against study subject funds, resulting in some additions.

The Morningstar web site also provides the functionality to search for fund names. A search was conducted on several terms including “environment”, “green”, “alternative”, “energy”, “water”, and “climate”. While these terms were similar to those used in the data analysis process, in this instance they were used as an additional scan to ensure a complete environmentally sustainable fund pool. This same term search was conducted on the Yahoo Finance website as well. As a result of these searches, several funds were added to the study. Both of these additional searches, the Morningstar and Yahoo Finance websites, added funds that represent themselves as sector-based rather than socially responsible, which is a reason that they may not have appeared in the initial report (SIF, 2008) used for fund selection. Because these sector-based funds still use a screening methodology that has a non-financial component focused on the environment, they were added to the study. The majority of these sector-based funds are focused on alternative energy, clean technology, or water. Use of the search term “energy” required some additional analysis of the prospectus to determine inclusion of a fund in the study. For inclusion, a fund needed to be exclusively focused on alternative energy investing. Several funds were not included because they invested broadly in energy companies, including alternative and traditional energy firms.

Once all of the funds to be included in the study were identified, to minimize the chances of misclassification, it was a design of this study to assign ticker symbols to uniquely identify the funds and the assets they held. A mutual fund may issue several different classes of shares assigning a different financial ticker symbol to each class. This study did not distinguish between the share classes as fund share price was not under review in the study. For the purpose of the study, the share class available for individual

purchase was the class and associated ticker symbol selected for fund identification during the analysis.

The cumulative result of these various selection processes produced 92 funds for the study. This list was then reviewed for four further criteria. The first selection requirement was that a fund be available for investment at the end of the study. Those funds which were liquidated prior to the end of the study period on June 30th, 2009, were removed. This reduced the fund pool by two funds. The second selection criterion was that the fund be actively managed. Index funds are closely tied to an external basket of assets, the chosen index, and therefore do not allow fund management to add specific screens. Index funds were also removed from the pool of funds used in this study because this study examined fund manager disclosure of environmental screens employed in asset selection. There were six index funds removed from the fund pool. This brought the population of selected funds down to 84. The third selection criterion was that the fund be comprised of individual stocks and bonds. There were a few funds whose holdings were comprised of other funds rather than specific stocks and bonds. These funds-of-funds were excluded for the same reason as index funds, that fund managers do not personally select the individual assets. Three funds-of-funds were removed from the study. The fourth selection requirement was that a fund has an explicit environmental sustainability screen in the prospectus. There were four funds that, while the Screening and Advocacy Chart (SIF, 2009) indicated an environmental screen, no explicit screen was found in the prospectus. All of the funds that were removed from the study are listed in Appendix B. The final result is that there were 77 funds selected in the study as listed in Appendix A.

All 77 funds were included in the qualitative analysis of this study. As a result of the qualitative analysis, only those funds whose primary objective was linked to environmental sustainability were included in the quantitative examination. While many funds had a component of environmental interest in their social screens environmental sustainability was not a primary focus of the fund. Having many other non-environmental social screens dilutes the impact of the environmental screens. It was a goal of this study to concentrate on funds where the investment focus was directly on selecting firms based upon their level of environmental sustainability. The quantitative analysis examined the potential commonality of investments chosen by fund managers. The more narrow the scope of the investment objectives, the smaller the pool of possible investments. The smaller the investment pool, the more likely fund managers will choose similar assets for investment. The determination of primary was a byproduct of the content analysis as a direct examination was made of the text presented in the most recent prospectus issued prior to the study end date of June 30th, 2009. This resulted in 28 funds being selected for the quantitative study. Five funds were included because they focused on the quality and availability of water. Four more funds were included because they concentrated on alternative energy which includes renewable energy, technologies that enable alternative energy, and energy conservation or efficiency. Eight funds that were included invest in firms with positive and proactive environmental initiatives. There were eight funds that solely focused on those firms that have made a commitment to environmental sustainability. The differentiation for the proactive group from the sole focus group was based on additional social screening criteria, as well as verbiage that indicated an environmental focus was important, but not exclusive. Those funds that also included

other social screens, such as a tobacco or firearms exclusion, were included in the proactive group. Three funds invest exclusively in those firms that are developing and implementing ways to mitigate climate change; they were also included. The list of funds used in the quantitative portion of the study is presented in Appendix C.

Data Collection

The qualitative and quantitative data were collected using the official Securities and Exchange Commission (SEC) website. This website was previously known as EDGAR. The latest generation is now titled IDEA for Interactive Data Electronic Applications. It is the repository for all SEC filings. As noted in Chapter II, mutual funds come under the supervisory control of the SEC. They are required to submit copies of their annual and semi-annual reports as well as the prospectus of the fund. Each fund has a unique ticker symbol. For this study the ticker symbols were determined using the Yahoo Finance website and validated against the latest submitted report to the SEC, prior to being assigned to a fund in the analysis.

To collect the data for this study the IDEA website at http://www.sec.gov/idea/searchidea/mutualsearch.htm was accessed first by the assigned fund ticker symbol. Not all funds file using their ticker symbol. In those cases where IDEA did not find the requested fund ticker symbol, the mutual fund name was used to conduct the IDEA search. When searching IDEA by the mutual fund name, all investment classes may appear. However, as noted in the Population section above, this study used the previously identified individual investor class. A list of reports filed by the fund is then displayed. The reports used for this study included the N-CSR which is the annual report, the N-CSRS which is the semi-annual report, and the 485APOS and

485BPOS which are the prospectus filings. The documents were selected if the filing date was between or including January 1st, 2007 and June 30th, 2009. This process was repeated for all funds in the study as listed in Appendix A.

Analytical Methods

The content analysis utilized several processes and tools. The first step involved using a character string analysis applying "go-words". This methodology is supported by Krippendorf (2004) and Neuendorf (2002). Several stems were identified for the "go-words" list. These included, "environment", "green", "climate", "sustainab", "social", "screen", "alternative energy", "water", and "nuclear". The version of Microsoft Internet Explorer used provides a count of the number of times the "go-word" occurs in the subject document. It also highlights each occurrence of the term. This facilitated a context review. The number of terms was small enough for manual inspection so that a more detailed keyword in context (KWIC) analysis was unnecessary. A Microsoft Access database was created for each fund. Pairs of columns were used to track the frequency counts, both overall and within context, for each of the "go-words". Sections of the reports used in this study were copied to the database as they related directly to the screening methodology employed. This was done because many of the screen sections were scattered throughout the document. Putting all of the screen information in one place facilitated the content analysis. These narrative sections were also used to build a Microsoft Excel spreadsheet that applied the Environmental Taxonomy presented by Stone (1999). Each fund's screen narrative was examined for the 10 mid-level concepts of the Environment taxonomic category using the low-level criteria from Figure IV-V of Stone (1999 p. 95-97). This was done because Stone created the taxonomy from direct

reviews with fund managers. This portion of the study examined if the information the fund managers disclosed to Stone as critical screening elements appeared in the published public documents. A single researcher applied the criteria to eliminate any inter-rater reliability differences. If any question was addressed by the narrative the mid-level category was flagged as being met.

A Microsoft Access database was employed to store the detailed holdings information for the quantitative analysis. The mutual fund database table contained an entry for each fund ticker symbol from all of the funds in Appendix A, the name of the fund, the Morningstar Style Box™ value, the name of the investment company which issued and managed the fund, the inception date of the fund, a flag for the environmental screen used to include a fund in the quantitative portion of the study, and the screen verbiage from the most recent prospectus. The mutual fund database table was used for both the qualitative and quantitative analyses. Another table, the asset database table, was created to store the stock or bond ticker symbol and the stock or bond name. The holdings database table contained the detail from the semi-annual and annual reports examined. Each row of the table recorded the stock or bond ticker symbol, the fund ticker symbol, the report date, the report year, the report semiannual period which indicated either the first half or second half of the year, the shares held, the value of those shares, and the percentage of asset allocation attributed to the stock or bond. The fund report totals database table contained the fund ticker symbol, the report date, and the total share value of the fund for the report date. This database table was created using an update query on the holdings table to calculate the total share value of the fund for the specific report date. These database relationships are shown in Appendix D.

To shorten the time for analysis, as well as to minimize the introduction of errors into the analysis, it was necessary to transcribe the holding data values presented in the published documents into a format that a computer could analyze. Because many of the documents were lengthy, several hundred pages in some instances, the databases were populated by first cutting and pasting the sections of the NCSR and NCSRS reports that listed the assets held by the fund into a Microsoft Word document (MWD). In many cases the holdings information was reported by the name of the company. These names would vary from fund to fund making comparisons difficult. For example, one fund may identify the name of the company as IBM, another as International Business Machines, and a third as International Business Machines, Inc. To facilitate the comparability of the holdings across funds, the researcher assigned and used financial market ticker symbols rather than company names. Each MWD was printed to make it easier to assign the ticker symbols. In a few instances, the ticker symbols were reported with the company name in the NCSR and NCSRS, though this was rare. A source was necessary to ensure that the ticker symbols were correctly assigned. The Yahoo Finance website provided a means to conduct a financial search using the name of the stock or bond and returned the associated financial market ticker symbol. These ticker symbols were then written on the MWD. As a final check to minimize misclassifications, all of the ticker symbols were validated against the asset database table. New symbols were only added if the asset name did not match any existing names in the database table. This study was only concerned with comparing the long term assets held by the funds. However, to validate that all of the holding information had been entered correctly, and to calculate the asset allocation percentage, all of the holdings needed to be entered. To shorten the time for

analysis, and to provide better comparability across funds, three categories of holdings information were aggregated. Each fund contained an entry in the holdings section of the NCSR and NCSRS that represented a timing difference during the calculation of the net asset values. A ticker symbol was created to represent this value across all funds. Many of the funds invested short-term cash, awaiting long term investment, in two different types of short-term holdings, either short-term bonds or short-term money market instruments. A ticker symbol was created for short-term bonds, and another for short-term money market instruments to represent these values across all funds. Once the MWD was assigned financial market ticker symbols, the holdings information was entered into the holdings database table. It was also necessary to compute the percentage of asset allocation for each of the holdings because this value was only presented in the annual and semi-annual reports for the top 10 holdings of a fund. This was accomplished by running an update query that totaled the value of the shares of the holdings database table by fund ticker and reporting date. This computed value was stored in the fund report totals database table. As a means of ensuring data entry accuracy, the computed total was verified against the final total as reported on the MWD. The asset allocation percentage was then computed using a different update query against the holdings database table by joining it with the fund report totals database table and dividing the value of the shares by the total share value of the fund.

Several queries were constructed and run against the database to conduct the comparisons of holdings in grouped funds. The initial query provided a count for all of the funds within each Morningstar Style Box™ value. This was necessary to determine how many environmentally focused funds had similar financial investment objectives.

Those funds with similar financial investment objectives are more likely to select the same assets for investment than funds with dissimilar financial investment objectives. To extract the holdings data for these grouped funds it was necessary to run a query joining the fund ticker symbol of mutual fund database table with the holdings database table based upon the timeframe, and specific Morningstar Style Box™ value, for the group being analyzed. The result of these queries was used to calculate the statistical values for central tendency and variation that were the basis of the quantitative portion of this study. This was accomplished by extracting the results of these queries into a Microsoft Excel spreadsheet. Microsoft Excel was chosen as the analytical tool because the statistical analysis functions necessary for this study are incorporated into the software. The descriptive statistics tool of Microsoft Excel was applied to the extracted spreadsheet because it automatically calculates the statistical measures of central tendency and variation. The purpose of these tests was to determine the amount of commonality in the holdings between the funds.

Limitations

One of the greatest limitations on this study was the economic climate during the timeframe of the study. According to the Federal Reserve Bank of Chicago (Strauss & Engel, 2009) the United States economy peaked in December of 2007. A recession began in January of 2008. This economic downturn occurred in the middle of the study period. The gross domestic product (GDP) actually rose 2.2% during the first half of 2008; however it dropped significantly during the second half and ended the year down .8% (Strauss & Engel). Per the Bureau of Economic Analysis (2009) the United States GDP dropped 7.4% during the first half of 2009. The recession impacted the investment ability

of mutual funds in two ways. The first is a reduction in Net Asset Value (NAV) of the fund due to the decline in value of the securities held for investment. The second impact is a reduction in fund value when fund distributions exceed fund receipts. Distributions exceed receipts when more investors sell their fund shares than there are investors who purchase fund shares. This places significant pressure on fund managers to maintain valuation. For this study, 60% of the time is impacted by the recession. While this is unlikely to affect the results as they pertain to the first study question, it may have impacted the results for the second study question as managers had less money to invest which may have further limited their ability to diversify the assets in the fund.

The period of the study is also a limitation. It reviewed only a 30-month window. Longer studies may be able to detect trends in the disclosure that the length of this study did not permit. Longer studies would also reduce the impact of swings in the economy, either up or down.

The nature of this dissertation format focused heavily on a single researcher conducting the study. Input and guidance were provided by supporting faculty. A limitation of this study is that data collection and analysis were performed by a single researcher. A collaborative study can provide other insights that a single researcher study is unable to achieve.

A limitation of this study is that only United States mutual funds were examined. Environmental investing is relatively new to the United States investment market. European funds with an environmental focus are more numerous and better developed than in the United States. Given more time and a continued focus by the United States government on environmental sustainability, it is likely that more mutual funds will

appear in the United Sates market. The impact this had on the study is that 47% of the funds in the study had been in existence less than five years. While this would not necessarily impact the level of disclosures analyzed in the first question, it did limit the quantitative comparisons as the 2007 groupings often had fewer funds in a group compared to the 2008 and 2009 groupings. This growth of United States environmentally focused mutual funds may further establish environmental funds as a unique investment category in their own right, separating from socially responsible funds. Additional impact to this study was that a large portion of the funds analyzed apply religious or other social screens to their investment strategy. It is difficult to separate the impact on the holdings when multiple screen types are employed.

Determining which funds are environmentally focused is another limitation. As was discussed in the Population section above, there is no single source for identifying which funds apply an environmentally sustainable screen. The population selection terms of "environment" and "nuclear" were broad; however, other terms, such as the entire list of terms used in the analysis phase, may uncover additional funds. While environmental screens have their roots in socially responsible investing, as this study discovered, they are not totally contained within that category. The added burden of determining the various levels, and importance of the environmental screens to the fund managers, is also challenging. As the environmentally focused mutual fund category expands, it is likely that one, or more, of the mutual fund industry analytic firms, such as Lipper or Morningstar, may develop a standardized method for classifying funds.

CHAPTER IV

FINDINGS AND CONCLUSIONS

Introduction

In this chapter are the findings of the analysis conducted to answer the two study questions. The conclusions and implications of this research are also presented. The prior chapters documented challenges presented to an individual investor in obtaining information about the environmental screens used in actively managed mutual funds that state they will invest in environmentally responsible firms. The types of screens and history of the problem was presented in the first chapter. The second chapter showed that the literature in this area supports the position that the information provided to investors has been found deficient even when mandated by federal regulation. This was supported by examining the literature that addressed the public disclosure by corporations with regards to their environmental performance. The second chapter reported on the usefulness of content analysis as a means for analyzing narrative accounting information. A history of mutual fund development was presented as a means of setting the stage for the development of socially responsible investing, as well as highlighting the continued growth of mutual funds as an investment vehicle. Socially responsible investing was reviewed showing that investors may choose financial instruments based on personal values, not just the perceived risk, and potential returns, of the investment. The impact of faith-based investing on the SRI industry was reviewed; as the religious concept of stewardship provides a link to environmental responsibility. The third chapter outlined

the process, tools, and data used to conduct this study. The difficulty in defining the population of environmentally sustainable mutual funds, as well as the procedure used in this study, was reported in the third chapter. The analytical methods included a Microsoft Access database as well as statistical functions incorporated in Microsoft Excel, and a description of how the data were collected from the SEC IDEA website. The third chapter closed describing the limitations the study encountered, which included the impact of a recessionary economy on the data, as well as timeframe and geography constraints.

The first research question, utilizing content analysis, qualitatively examined the textual content reported by mutual funds that have an environmental focus. Specifically it asked, what terms and patterns were the managers of actively managed environmentally focused SRI mutual funds using in the official public domain documents; namely the prospectus, the annual, and semi-annual reports; to convey to the investment community the environmental screens that were employed by the fund managers? Additionally, a quantitative study examined the holdings of mutual funds with a primary environmental focus. Funds with a similar financial investment objective may invest in the same underlying assets, especially those funds that have limited financial instruments available for investment based upon a corporation's environmental activities. Specifically, the second question asked, while each actively managed, environmentally focused, SRI mutual fund may have a different environmental screen methodology, for those funds, chosen in question 1, having a similar financial investment objective, as defined by having the same Morningstar Style Box™ classification as of December 31, 2008, what

are the assets common among the mutual funds from January 2007 to June 2009? The following section provides the results of the analyses from this study.

Findings

This section addresses each of the two questions of the study individually. The first subsection reports on the qualitative analysis of the narrative portions of the public documents, raised in the first question. The following subsection, addressing the second question, will discuss the results of a quantitative analysis on the holdings of environmentally focused funds.

Qualitative Results – Terms and Patterns in the Narrative

This subsection addresses the first study question as to what terms and patterns of the environmental screens appear in the narrative sections of the public mutual fund reports. The prospectus, annual, and semi-annual reports of the funds listed in Appendix A were scanned for the following nine terms: “environment”, “sustainab”, “green”, “climate”, “social”, “screen”, “alternative energy”, “water”, and “nuclear”. Total occurrence count was automatically calculated by the program. Each term was highlighted by the search routine. The researcher read each occurrence to determine if the term was being used in context. Out of context usage was defined as the term used in a fund name, the name of an individual, such as a director or fund manager, or in a way not related to the asset screening process. It was discovered, early in the examination, that many of the fund issuers combined multiple funds into a single document when creating their public reports. The impact to this study of combining multiple funds in a single published document would be an overstatement of individual fund counts, both in and out of context. A further challenge, that multiple funds in a report present, is that the counts

were identical for any of the involved funds. To address the issue of multiple funds in a filing, the reports were analyzed for fund combinations within a single published document. Word counts were only completed for funds listed on the left hand side of Table 5 due to these combinations.

Table 5

Combined SEC Filed Fund Reports

Fund Report Analyzed	Included Funds
AHA Socially Responsible Equity	
Alger Green	
Allianz RCM Global Eco Trends	Allianz RCM Global Water
Appleseed Fund	
Ariel	Ariel Appreciation
	Ariel Focus
Calvert Capital Accumulation	Calvert International Opportunity
	Calvert World Values International
Calvert Global Water	Calvert Global Alternative Energy
	Calvert Large Cap Growth
	Calvert Mid Cap Value
	Calvert Small Cap Value
Calvert Large Cap Value	

(table continues)

Table 5 (cont.)

Fund Report Analyzed	Included Funds
Calvert New Vision Small Cap	
Calvert Social Investment Balanced	Calvert Social Investment Bond
	Calvert Social Investment Enhanced Equity
	Calvert Social Investment Equity
Domini Social Equity	Domini Euro PacAsia Social Equity
	Domini Euro Social Equity
	Domini PacAsia Social Equity
	Domini Social Bond
Dreyfus Global Sustainability	
Dreyfus Third Century	
DWS Climate Change	
Eventide Gilead	
Fidelity Select Environmental	
Firsthand Alternative Energy	
Flex-funds Total Return Utilities	
Gabelli SRI Green	
Green Century Balanced	

(table continues)

Table 5 (cont.)

Fund Report Analyzed	Included Funds
Guinness Atkinson Alternative Energy	
Integrity Growth and Income	
Kinetics Water Infrastructure	
Legg Mason Partners Social Awareness	
LKCM Aquinas Fixed Income	LKCM Aquinas Growth
	LKCM Aquinas Small Cap
	LKCM Aquinas Value
MMA Praxis Core Stock	MMA Praxis Intermediate Income
	MMA Praxis International
	MMA Praxis Small Cap
Neuberger Berman Climate Change	
Neuberger Berman Socially Responsive	
New Alternatives	
Parnassus	Parnassus Mid Cap
	Parnassus Small Cap
	Parnassus Workplace
Parnassus Equity Income	Parnassus Fixed Income

(table continues)

Table 5 (cont.)

Fund Report Analyzed	Included Funds
Pax World Balanced	Pax World Global Green
	Pax World Growth
	Pax World High Yield
	Pax World International
	Pax World Small Cap
	Pax World Women's Equity
PFW Water	
Portfolio 21	
Robeco SAM Sustainable Climate	Robeco SAM Sustainable Water
Sentinel Sustainable Core Opportunity	Sentinel Sustainable Growth Opportunity
TIAA-CREF Social Choice Equity	
Walden Social Equity	Walden Small Cap
	Walden Social Balanced
Wells Fargo Adv Social Sustainability	
Winslow Green Growth	Winslow Green Solutions

The analysis showed that terminology rarely changed across the various document publication periods. Once the screen phrasing was established, it changed in subsequent issues only when there was a change in fund management. Due to the rarity of change in

the terminology, the researcher performed the content analysis on the most recent reports filed of the prospectus and annual or semi-annual report. The study also discovered that not all funds included the screening detail in the annual and semi-annual reports.

There was no consistency in the placement of the environmental screening passages. Some were found at the beginning of the fund description, incorporated with the financial objectives. Others were placed further into the text in a fund management section. Still others placed this information in the supplement or in an appendix to the main report. The length of the sections describing the environmental screens varied significantly among the funds, having a mean of 1,000 words with a standard deviation of 646 words. The range was from 252 words to 2,961 words.

Table 5 resulted in 80 reports being extracted, one prospectus and one semi-annual or annual report for each of the 40 funds. Table 6 shows the number of report hits for the screening keyword terms, both in total occurrence and in context. A maximum value would be 80, indicating that the term was found in every report. The percentage of the time that a screen term was used in context ranged from a low of 45.6% for the term "green" to a high of 100% for the term "nuclear". Five of the content analysis screening terms had a contextual hit of 76% or above. Four of the terms ("green", "screen", "sustainab", and "water") were below 67%. Terms such as "green", "screen", and "water" are short and appear in other contexts in the reports, such as the names of directors or auditors.

The researcher also found that words and phrases such as, "attempt to ensure", "seeks to avoid", "reviewing research", "attempt to influence", "subjective interpretation", "reasonable period", "consider", "evaluates", "awareness", and

Table 6

Number of Report Hits per Screen Search Term

	Occurs	In Context	Context Percentage
Alternative Energy	27	26	96.3%
Climate	42	32	76.2%
Environment	79	66	83.5%
Green	57	26	45.6%
Nuclear	30	30	100.0%
Screen	40	23	57.5%
Social	75	65	86.7%
Sustainab	59	31	52.5%
Water	65	43	66.2%

"generally applies" were contained in those funds that had broadly defined environmental screens. Phrases and words such as, "focuses", "commits", "concentrates", "examines", "substantially engaged", "significantly involved", "derives at least x%", "principally engaged", and "technologies that enable" were found in those funds that provided specific, detailed information regarding their environmental screens.

The results of the taxonomic review were quite varied. The review was conducted using the taxonomy as proposed by Stone in 1999. Stone constructed the taxonomy from interview data with fund managers. As noted in the second chapter, the taxonomy had three levels: high-level categories, mid-level concepts, and low-level criteria. The purpose of applying Stone's taxonomy for this study was to determine if the fund

managers actually let the investors know the details of their process in screening for environmental funds. For this portion of the study, all 77 funds from Appendix A were included, even though the environmental screening verbiage was identical for many of the funds, such as the Domini and LKCM Aquinas funds. Table 7 shows the total number of funds that included a mid-level concept in their environmental screening text. The narrative sections of the published documents, related to the environmental screens, were examined using the low-level criteria questions from Stone's taxonomy. The results were binary, the environmental screen either addressed at least one of the questions or it did not. As Table 7 indicates, three of the mid-level concepts were rarely noted, less than 3%, in the environmental screening textual information of the fund. Table 7 also shows that three of the mid-level concepts were frequently present, over 70%, as they appeared in at least 54 of the 77 funds analyzed. One mid-level concept appeared in all but one fund screen description.

Table 7

Number of Funds per Taxonomy Mid-Level Environmental Concept

Taxonomy Mid-Level Environmental Concepts	Funds
Civil Lawsuits/Superfund Sites/Remediation Efforts	11
Dedication/Proactive/Commitment	76
Development of New Products or Processes/Innovation	37
High Achievement	2
Lack of Negative Trends/Isolated Incidents/Efforts to Improve	54
Policies/Programs/Environmental Audits	55
Public Reporting/Communications/Disclosure	0
Quantitative Data on Emissions/Pollution	1
Recycling Efforts	26
Regulatory Compliance/Environmental Liabilities	34

Figure 1 looks at the same data as Table 7, from a different perspective. The histogram shows the frequency distribution of mid-level concepts across funds. The x-axis represents the number of funds, while the y-axis represents the number of mid-level concepts from the environmental category of Stone's taxonomy. The results were highly centered as the mean was 3.87 concepts per fund, with a standard deviation of 1.30. Additionally both the mode and median were 4 concepts per fund. The range was from 2 to 7 concepts per fund. Further inspection of the counts indicated that among funds, from the same fund issuer, the mid-level concepts disclosed were very similar.

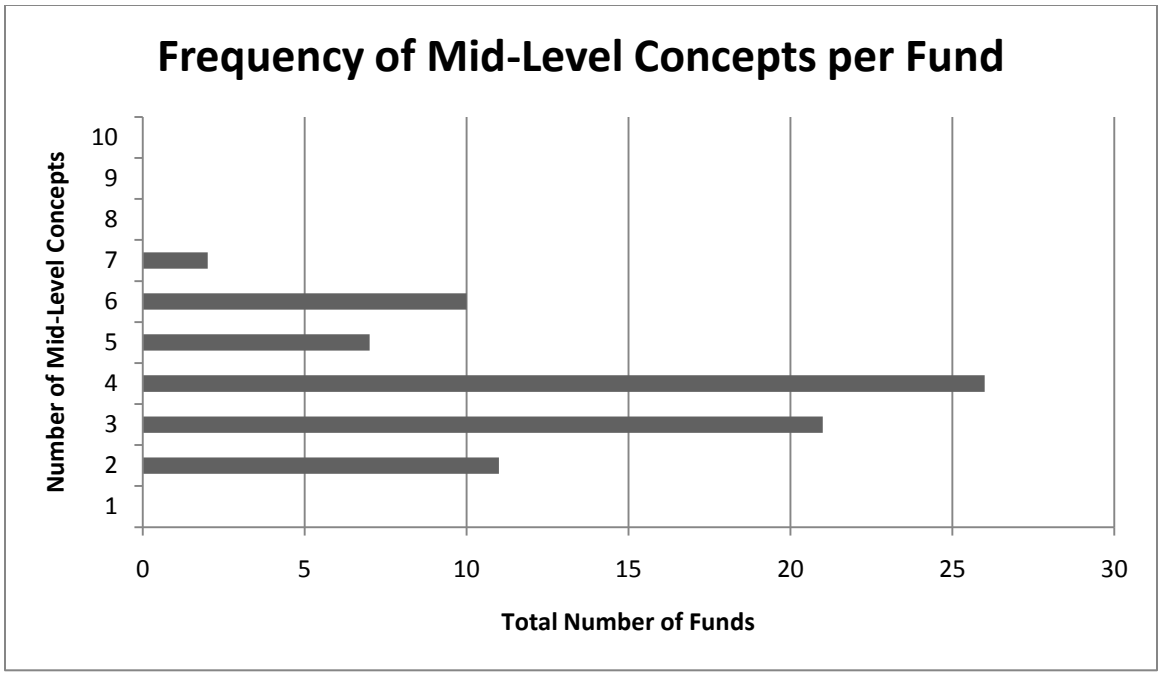


Figure 1: Frequency histogram of taxonomy mid-level environmental concepts per fund.

Quantitative Results – Holdings of Environmentally Focused Funds

This subsection addresses the second study question regarding the commonality of holdings among environmentally focused funds with similar financial investment objectives. The holdings of the funds listed in Appendix C were analyzed for five periods, from January 2007 through June 2009. Each period was 6 months long. Those funds that published, being defined as the posting date on the SEC website, between January and June of 2007 were in period 1, July to December of 2007 was period 2, January to June of 2008 was period 3, July to December of 2008 was period 4, and January to June of 2009 was period 5. The funds were categorized by Morningstar Style Box™ classification as those funds with similar financial investment objectives are more likely to have similar holdings. Table 8 indicates the distribution of the 28 funds among the nine Morningstar Style Box™ categories.

Table 8

Morningstar Style Box™ Fund Frequencies

	Value	Blend	Growth
Large Capitalization	1	2	3
Medium Capitalization	2	4	13
Small Capitalization	0	1	2

This study looked at those holdings that were common among the majority of funds in each of the nine investment categories. Majority was defined as the asset appearing in over half of the funds in the investment category. Table 9 indicates the number of funds in each of the Morningstar Style Box™ categories for each of the five periods in the study. The inception date for some funds occurred during the study period which accounts for the differing totals from Table 8. The drop in the Large Capitalization Growth and Medium Capitalization Value categories can be attributed to timing of the report filings. In each of these cases, one of the funds did not file their 2009 first half report prior to June 30, 2009.

As can be seen in Table 9, the limited number of funds in the Small Capitalization categories restricted analysis to only the Growth category. The Small Capitalization Growth category was limited to just two funds. Large Capitalization had similar characteristics. The Large Capitalization Blend and Growth categories were limited to two and three funds, respectively, for the analysis. Medium Capitalization provided the largest opportunity for analysis. While the Value and Blend categories had a maximum of four funds, the Growth category had as many as 13. This coincides with the information presented in Table 8. There were 28 funds in the quantitative portion of the study, 13 of

them were in the Medium Growth category representing 46.43% of the funds. Table 10 indicates that a holding must be found in at least the indicated number of funds to be considered a majority holding. A majority holding being defined by multiplying the corresponding column and row in Table 9 by 0.51, where any fractional remainder requires moving up to the next integer.

Table 9

Number of Funds per Morningstar Style Box™ Category by Period

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value	0	0	0	0	0
Blend	0	0	1	1	1
Growth	1	2	2	2	2
Medium Capitalization					
Value	2	2	2	2	1
Blend	1	1	2	3	4
Growth	4	6	10	12	13
Large Capitalization					
Value	0	0	0	0	1
Blend	2	2	2	2	2
Growth	3	3	3	3	2

Tables 11 and 12 show the number of holdings in each of the Morningstar Style Box™ categories and study periods. Table 11 indicates the number of stock or bond holdings across all of the funds in the category for the period. A holding is only counted

once even if it appears in more than one fund in the category. Table 12 shows the number of stock or bond holdings that met the threshold requirements for majority by being a holding in at least as many funds as indicated in the corresponding category and period as established in Table 10.

Table 10

Number of Funds Required for a Holding to be Included in the Majority

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth		2	2	2	2
Medium Capitalization					
Value	2	2	2	2	
Blend			2	2	3
Growth	3	4	6	7	7
Large Capitalization					
Value					
Blend	2	2	2	2	2
Growth	2	2	2	2	2

Table 13 is the first variability table which indicates the percentage of the number of majority holdings to the entire pool of holdings held by all of the funds. The percentage is computed by taking the values in Table 12 and dividing by the corresponding values found in Table 11.

Table 11

Number of Unique Holdings Across All Funds

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend			48	55	46
Growth	36	72	85	87	82
Medium Capitalization					
Value	73	71	71	70	31
Blend	34	35	72	106	124
Growth	193	256	409	441	432
Large Capitalization					
Value					78
Blend	88	87	86	99	88
Growth	232	245	241	253	175

The following example is used to help clarify the relationships between the tables presented in this subsection. The Medium Blend category for the first half of 2009 will be used for the example. Table 8 indicates that there were four funds defined by Morningstar, Inc. as belonging to the Medium Capitalization Blend category. Table 9 shows that all four of these funds filed an annual or semiannual report during the first six months of 2009. The three funds in Table 10 represent that for a stock or bond to be considered as being a majority holding, it must be found in at least three of the funds. In Table 11, the number 124 in the related column and row represents that among the four

Table 12

Number of Holdings Meeting Majority Threshold

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth		0	1	1	5
Medium Capitalization					
Value	0	0	0	0	
Blend			1	23	19
Growth	2	2	4	7	10
Large Capitalization					
Value					
Blend	3	4	5	7	5
Growth	24	24	38	38	16

different funds there were 124 unique stocks or bonds. These stocks or bonds may be held by multiple funds. If, for example, IBM is held by both fund "A" and fund "B", it is still counted only once in computing this total number, which represents the total pool of assets available for the category and period. The number 19 in Table 12 indicates that there were 19 stocks or bonds held by at least three of the funds during this period. The 15.32% in Table 13 is computed by dividing the corresponding column and row value from Table 12 by the corresponding column and row value from Table 11, and then

multiplying the result by 100. In this case, 19 divided by 124 equals 0.15323 when multiplied and rounded to two decimal places yields 15.32%.

Table 13

Variability 1 – Percentage of Majority Holdings to Pool of Assets in All Funds

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			1.18%	1.15%	6.10%
Medium Capitalization					
Value					
Blend			1.39%	21.70%	15.32%
Growth	1.04%	0.78%	0.98%	1.59%	2.31%
Large Capitalization					
Value					
Blend	3.41%	4.60%	5.81%	7.07%	5.68%
Growth	10.34%	9.80%	15.77%	15.02%	9.14%

The quantitative portion of the study was focused on determining the amount of commonality among the holdings of funds with the same financial investment objective. While Tables 8 through 13 represent counts, the subsequent tables are focused on the value that those holdings represent of the total fund value. From Table 14 forward, asset allocation percentage is being analyzed. Asset allocation percentage is computed by

totaling the value of the assets in question, then dividing this sum by the total value of the fund, and multiplying the result by 100.

Tables 14 and 15 indicate the minimum and maximum percentage, respectively, that one of the funds had invested in the majority holdings. These numbers are one statistical indicator of the variation between the funds. For the Medium Capitalization Blend category in the second half of 2008, the percentages from Tables 14 and 15 indicate that at least one fund manager invested 3.87% of their portfolio in these majority holdings, while another invested 78.90% of their portfolio in the same majority holdings.

Table 14

Minimum Cumulative Percentage by a Fund of Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			1.84%	0.41%	10.12%
Medium Capitalization					
Value					
Blend			2.91%	3.87%	3.07%
Growth	0.00%	0.00%	0.00%	0.00%	1.46%
Large Capitalization					
Value					
Blend	4.80%	6.59%	7.07%	8.03%	8.48%
Growth	14.27%	13.08%	18.13%	23.04%	15.46%

Table 15

Maximum Cumulative Percentage by a Fund of Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			3.10%	2.07%	17.33%
Medium Capitalization					
Value					
Blend			3.91%	78.90%	67.94%
Growth	3.94%	4.70%	18.15%	17.67%	27.22%
Large Capitalization					
Value					
Blend	13.50%	16.69%	19.48%	35.10%	23.36%
Growth	28.69%	25.33%	32.56%	32.14%	16.09%

The range values, shown in Table 16, are calculated by subtracting the value in the corresponding column and row of Table 14, from the corresponding column and row value from Table 15. A small range between the minimum and maximum invested values indicates that each fund manager places a similar value on these majority holdings. The smallest range is that of the Large Capitalization Growth category for the first half of 2009. The largest range is that of the Medium Capitalization Blend category in the second half of 2008.

Table 16

Variability 2 -Range of Cumulative Percentage by a Fund of Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			1.26%	1.66%	7.21%
Medium Capitalization					
Value					
Blend			1.00%	75.03%	64.87%
Growth	3.94%	4.70%	18.15%	17.67%	25.76%
Large Capitalization					
Value					
Blend	8.70%	10.10%	12.41%	27.07%	14.88%
Growth	14.42%	12.25%	14.43%	9.10%	0.63%

Returning to the example using the Medium Capitalization Blend values from the first half of 2009, the detail of those holdings held by a minimum of three, the value from the corresponding column and row of Table 10, of the four funds is presented in Table 17. The total for fund CAAPX, of 3.07%, is the value that appears in Table 14 as the minimum cumulative value. The total for fund AWTAX, of 67.94%, is the value that appears in Table 15 as the maximum cumulative value. For Table 17 the mean was calculated using only non-zero fund values, which meant that the denominator was three.

Table 17

Fund Majority Holdings for Medium Capitalization Blend, First Half of 2009

Asset Ticker	SMWNX	CFWAX	CAAPX	AWTAX	M^a
270 HK	4.14%	0.92%		1.75%	2.27%
AWR	0.58%	0.49%		1.47%	0.85%
CWT	0.54%	0.49%		1.74%	0.93%
GEBN VX	2.02%	2.93%		9.80%	4.91%
ITRI	2.31%	2.25%		0.90%	1.82%
KTWIF PK	1.55%	3.07%		3.84%	2.82%
MWC PM	0.31%	1.83%		0.83%	0.99%
NLC	2.15%	2.05%		4.42%	2.88%
PNN LN	0.62%	2.41%		3.54%	2.19%
PNR	0.86%	4.63%		2.81%	2.77%
ROP	4.56%	5.52%		2.04%	4.04%
SBS	1.30%	2.87%		2.28%	2.15%
SVT LN	1.72%	3.60%		3.92%	3.08%
SZE FP	4.97%	5.23%		5.71%	5.30%
TMO	6.62%		3.07%	0.85%	3.51%
UU LN	0.78%	4.02%		7.38%	4.06%
VE	3.56%	3.01%		6.22%	4.27%
VMI	0.79%	0.46%		3.39%	1.55%
WTR	1.01%	2.06%		5.05%	2.71%
Total	40.39%	47.86%	3.07%	67.94%	53.09%

[a] computed using non-zero values.

Tables 18 and 19 indicate the mean percent of the portfolio that all funds in the category invested in the majority holdings. Table 18 is calculated by taking the arithmetic mean of all funds that contribute to each holding and summing for all holdings in the majority. The result shows that only those funds which actually invest in a specific

Table 18

Mean Percentage Contributing Funds Invested in Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			2.47%	1.24%	13.72%
Medium Capitalization					
Value					
Blend			3.41%	64.98%	53.09%
Growth	3.16%	3.74%	11.13%	15.59%	23.47%
Large Capitalization					
Value					
Blend	9.15%	11.64%	13.28%	21.56%	15.92%
Growth	29.22%	28.64%	36.99%	39.16%	15.78%

holding are used to compute the mean. Therefore, when computing the mean using only the contributing fund values, the result will have a higher value than that of Table 19 for the same category and period. The reason is that Table 19 is calculated by summing all of the investments a fund makes in the majority holdings and taking the arithmetic mean of

all of the funds. The result is that even if a fund does not invest in one of the majority holdings, it is counted as a zero investment. Table 18 calculates the mean only for the funds that invest in the holding, while Table 19 counts all funds across all holdings. Although the difference is worth reviewing, for this study it had a limited impact, because there is only a potential difference in the means when there are more than two funds under analysis. This occurred mainly in Large Capitalization Growth and Medium Capitalization Growth categories.

Table 19

Mean Percentage all Funds Invested in Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			2.47%	1.24%	13.72%
Medium Capitalization					
Value					
Blend			3.41%	44.32%	39.81%
Growth	2.37%	2.49%	7.28%	10.22%	15.26%
Large Capitalization					
Value					
Blend	9.15%	11.64%	13.28%	21.56%	15.92%
Growth	20.24%	19.42%	26.61%	27.68%	15.78%

Returning to the example using the Medium Capitalization Blend values from the first half of 2009, the value for Table 18 of 53.09% can be seen as the total value from the mean column of Table 17. To compute the value presented in Table 19 of 39.81%, the sum of the totals for each fund, in this case from Table 17, 40.39%, 47.86%, 3.07%, and 67.94%, is calculated which yields 159.26%. The sum is then divided by the total number of funds in the category and period, which in the example is four, which yields 39.81%.

Table 20 presents the standard deviations for the means presented in Table 19. The standard deviation is the most frequently used measure of variability (Salkind, 2008).

Table 20

Variability 3 - Standard Deviation - Mean Percentage of Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			0.89%	1.18%	5.09%
Medium Capitalization					
Value					
Blend			0.71%	37.86%	27.12%
Growth	1.68%	2.13%	6.99%	5.40%	7.79%
Large Capitalization					
Value					
Blend	6.15%	7.14%	8.78%	19.14%	10.52%
Growth	7.52%	6.14%	7.54%	4.55%	0.45%

Table 21 lists the kurtosis for the values used to compute the arithmetic mean in Table 19. Kurtosis indicates how flat or peaked a distribution is. The computation in Microsoft Excel returns a positive value for those distributions that are leptokurtic or peaked, while a negative value indicates a platykurtic or flat distribution. To calculate the kurtosis at least four funds were necessary for the analysis. This only occurred in the Medium Capitalization Blend for the first half of 2009, and all of the Medium Capitalization Growth periods.

Table 21

Variability 4 - Kurtosis - Mean Percentage of Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth					
Medium Capitalization					
Value					
Blend					1.6176
Growth	2.3420	-2.2987	-1.3442	0.2248	-0.7925
Large Capitalization					
Value					
Blend					
Growth					

Table 22 indicates the skew of the distribution. Skew measures the lack of symmetry of a distribution (Salkind, 2008). A positive skew value represents a right skewed distribution which indicates a small number of occurrences at the high end of the distribution. A negative skew value represents a left skewed distribution which indicates a small number of occurrences at the low end of the distribution. Skew is the third power of deviation, which for this study required at least three funds for the analysis. This only occurred in the Medium Capitalization Blend for the last two periods, all of the Medium Capitalization Growth periods, and the first four periods of Large Capitalization Growth.

Table 22

Variability 5 - Skew - Mean Percentage of Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth					
Medium Capitalization					
Value					
Blend				-0.6795	-0.8971
Growth	-1.3003	-0.3582	0.5876	-0.7658	-0.0361
Large Capitalization					
Value					
Blend					
Growth	1.3207	-0.3094	-1.3396	-0.1839	

The median, another measure of central tendency, is shown in Table 23 for each category and period. The median was calculated in the same manner as the arithmetic means in Table 19, by summing all of the investments a fund makes in the majority holdings, then placing those results in order and taking the median of all of the funds.

Table 23

Median Percentage all Funds Invested in Majority Holdings

	2007		2008		2009
Half Year	First	Second	First	Second	First
Small Capitalization					
Value					
Blend					
Growth			2.47%	1.24%	13.72%
Medium Capitalization					
Value					
Blend			3.41%	50.17%	44.12%
Growth	2.77%	2.95%	4.18%	10.55%	13.33%
Large Capitalization					
Value					
Blend	9.15%	11.64%	13.28%	21.56%	15.92%
Growth	17.77%	19.84%	29.14%	27.87%	15.78%

Returning to the example using the Medium Capitalization Blend values from the first half of 2009, the total values from Table 17 for the four funds of 40.39%, 47.86%, 3.07%, and 67.94%, were used to compute the median of 44.12% for Table 23, the

standard deviation of 27.12% for Table 20, the kurtosis of 1.6176 for Table 21, and the skew of -0.8971 for Table 22.

The researcher reviewed the data more broadly than just from the Morningstar Style Box™ perspective. The funds were also grouped by the focus of their environmental screen verbiage as defined in Chapter III. The reason for this comparison is to understand any commonalities that may be environmental sector related. The same process was followed as for the Morningstar Style Box™ grouping. Table 24 indicates the number of funds in each of the environmental categories for the five periods in the study. It is similar in structure to Table 9. The difference is that Table 9 is grouped by Morningstar Style Box™ designations, where Table 24 is grouped by environmental screen category. There are fewer categories, five, when compared to Table 9 with nine categories.

Table 24

Number of Funds per Environmental Category by Period

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	2	3	4	4	4
Climate Change	0	0	2	3	3
Proactive Environment	6	7	7	8	7
Sole Focus	5	5	6	6	7
Water	0	1	3	4	5

The fund distribution is also more balanced in Table 24 as compared to Table 9. It is expected that the variability will be greater, grouping the funds by environmental

screen category, as the financial investment objective is not a factor in the grouping of the funds. There were still 28 funds in this portion of analysis. Table 25 indicates that a holding must be found in at least the indicated number of funds to be considered a majority holding, similar to the computation for Table 10. A majority holding is defined by multiplying the corresponding column and row in Table 24 by 0.51, where any fractional remainder requires moving up to the next integer.

Table 25

Number of Funds Required for Holding Inclusion in Environmental Majority

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	2	2	3	3	3
Climate Change			2	2	2
Proactive Environment	4	4	4	5	4
Sole Focus	3	3	4	4	4
Water			2	3	3

Tables 26 and 27 show the number of holdings in each of the environmental categories and study periods. Table 26 indicates the number of stock or bond holdings across all of the funds in the category for the period. A holding is only counted once even if it appears in more than one fund in the category. Table 27 shows the number of stock or bond holdings that met the threshold requirements for majority by being a holding in at least as many funds as indicated in the corresponding category and period as established in Table 25.

Table 26

Number of Unique Holdings Across All Funds in Environmental Categories

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	93	121	141	137	126
Climate Change			142	148	144
Proactive Environment	222	251	263	333	304
Sole Focus	286	298	314	330	336
Water		33	118	123	127

Table 27

Number of Holdings Meeting Majority Threshold, Environmental Categories

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	8	27	14	21	17
Climate Change			26	29	28
Proactive Environment	0	0	1	0	0
Sole Focus	7	7	7	6	6
Water			30	19	31

Table 28 is the first variability table for the environmental category which indicates the percentage of the number of majority holdings to the entire pool of holdings held by all of the funds. The percentage is computed by taking the values in Table 27 and dividing by the corresponding values found in Table 26.

Table 28

Variability 1e – Percentage of Majority Holdings to Pool of Assets, All Funds

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	8.60%	22.31%	9.93%	15.33%	13.49%
Climate Change			18.31%	19.59%	19.44%
Proactive Environment			0.38%		
Sole Focus	2.45%	2.35%	2.23%	1.82%	1.79%
Water			25.42%	15.45%	24.41%

When comparing the number of holdings meeting the majority threshold to the number of unique holdings, the result shows that for three categories; Alternative Energy, Climate Change, and Water; the values are at least as high as the Morningstar Style Box™ values for Large Growth and Medium Blend groups which were the highest in the Morningstar Style Box™ analysis.

As in Tables 14 and 15, Tables 29 and 30 indicate the minimum and maximum percentage that one of the funds had invested in the majority holdings. While range is an indicator of variation (Spiegel & Stephens, 2008), in this study the actual values for the minimum and maximum provide insight into the data that might be lost by looking solely at the range. For example, 50.2% is the range for water in the first half of 2009. The minimum is 40.45% which indicates that the least amount invested, in the majority holdings by any fund in this category, was 40%. Looking at Table 30 for the same category and timeframe, the value is 90.65%. This indicates that there was at least one fund with over 90% of the portfolio invested in these majority holdings. A range of

50.2% could also represent a 0.0% minimum and a 50.2% maximum, which would indicate a very different condition.

Table 29

Minimum Cumulative Percentage, Fund of Majority Holdings – Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	16.31%	43.29%	16.88%	22.66%	19.51%
Climate Change			24.49%	33.26%	30.59%
Proactive Environment			0.00%		
Sole Focus	2.39%	1.85%	1.60%	1.11%	0.00%
Water			38.90%	20.07%	40.45%

Table 30

Maximum Cumulative Percentage, Fund of Majority Holdings - Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	25.29%	60.91%	47.69%	46.77%	35.92%
Climate Change			46.87%	41.86%	43.33%
Proactive Environment			3.84%		
Sole Focus	16.17%	13.47%	18.14%	15.35%	19.64%
Water			49.49%	69.27%	90.65%

The range values, shown in Table 31, are calculated by subtracting the value in the corresponding column and row of Table 29, from the corresponding column and row value from Table 30. As in the Morningstar Style Box™ analysis, a small range between

the minimum and maximum invested values indicates that each fund manager places a similar value on these majority holdings. The smallest range is that of the Proactive Environment category for the first half of 2008. The maximum value for this period was only 3.84% which highlights the necessity for looking at both the maximum and minimum values, as well as the range, in review of these results. The largest range is that of the Water category in the first half of 2009. In this case, the smallest amount of commonality was 40.45% while another fund had over 90% of their assets invested in the majority holdings common to the funds of the period. While the range indicates the highest disparity between funds, the category and period had one of the largest minimum values indicating significant commonality for the majority holdings.

Table 31

Variability 2e – Range Cumulative Percentage, Majority Holdings, Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	8.98%	17.62%	30.81%	24.11%	16.41%
Climate Change			22.38%	8.60%	12.74%
Proactive Environment			3.84%		
Sole Focus	13.78%	11.62%	16.54%	14.24%	19.64%
Water			10.59%	49.20%	50.20%

As in Tables 18 and 19, Tables 32 and 33 indicate the arithmetic mean percent of the portfolio that all funds in the category invested in the majority holdings. Table 32 is calculated by taking the mean of the funds that contribute to each holding and summing for all holdings in the majority. The result shows that only those funds that actually invest

in a specific holding have the mean computed. Therefore, when computing the mean using only the contributing fund values, the result will have a higher value than that in Table 33 for the same category and period. The reason is that Table 33 is calculated by summing all of the investments a fund makes in the majority holdings and taking the arithmetic mean of all of the funds. The result is that even if a fund does not invest in one of the majority holdings, it is counted as a zero investment. Table 32 calculates a mean only for the funds that invest in the holding, while Table 33 counts all funds across all holdings. In the Morningstar Style Box™ analysis, this difference had a limited impact as only a few of the periods had more than two funds. Having more than two funds occurred more frequently during this segment of analyzing by environmental category. Because all but two of the categories and time periods had more than two funds, there are many differences between the two tables. Table 34 presents the standard deviations for the means presented in Table 33.

Table 32

Mean Percentage Contributing Funds Invested in Majority - Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	20.80%	63.45%	41.13%	47.38%	36.49%
Climate Change			35.68%	50.77%	45.16%
Proactive Environment			2.19%		
Sole Focus	10.43%	9.08%	11.73%	9.19%	13.13%
Water			61.38%	49.44%	78.17%

Table 33

Mean Percentage all Funds Invested in Majority Holdings – Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	20.80%	52.41%	34.07%	38.15%	29.47%
Climate Change			35.68%	38.89%	36.19%
Proactive Environment			1.46%		
Sole Focus	7.91%	6.44%	8.56%	6.13%	7.96%
Water			43.57%	38.79%	56.13%

Table 34

Variability 3e – Standard Deviation - Mean Percentage Majority Holdings, Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	6.35%	8.83%	12.79%	11.19%	7.63%
Climate Change			15.82%	4.88%	6.51%
Proactive Environment			1.69%		
Sole Focus	5.85%	5.45%	7.50%	5.44%	7.91%
Water			5.40%	21.96%	20.83%

Table 35 lists the kurtosis for the values used to compute the arithmetic mean in Table 33. Kurtosis indicates how flat or peaked a distribution is. As noted in the Morningstar Style Box™ analysis, to calculate the kurtosis at least four funds were necessary for the analysis. There were fewer environmental categories than in the

Morningstar Style Box™ analysis, which lead to more funds in each category. More funds per category led to more periods where there were at least four funds available for kurtosis calculation. Table 36 indicates the skew of the distribution. Skew measures the lack of symmetry of a distribution (Salkind, 2008). As noted in the Morningstar Style Box™ analysis, to calculate the skew at least three funds were necessary for the analysis. This occurred frequently for the environmental categories.

The median, another measure of central tendency, is shown in Table 37 for each environmental category and study period. The median was calcualted in the same manner as in the Morningstar Style Box™ analysis. Brown (1997) suggested "when reporting central tendency for skewed distributions, it is a good idea to report the median in addition to the mean" (p. 21).

Table 35

Variability 4e – Kurtosis – Mean Percentage Majority Holdings, Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy			1.6820	0.6858	-1.2345
Climate Change					
Proactive Environment			-0.8648		
Sole Focus	-1.4972	-2.6790	-2.2981	0.4883	-0.8766
Water				1.0227	2.1104

In reviewing the skewness and kurtosis of both the Morningstar Style Box™ analysis as well as the environmental category analysis, all of the values are within two standard errors of skewness or kurtosis. Many of the sample sizes are small, less than 10

observations, which limit the applicability of these statistics. However, these distribution statistics are within the expected range of chance fluctuations, which indicates that the distributions have no significant skewness and are mesokurtic.

Table 36

Variability 5e – Skew – Mean Percentage Majority Holdings, Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy		-0.3194	-0.8050	-1.2382	-0.8421
Climate Change				-1.7239	1.0033
Proactive Environment			1.0469		
Sole Focus	0.7953	0.6578	0.4609	1.0434	0.5145
Water			0.9875	1.2344	1.5643

Table 37

Median Percentage all Funds Invested in Majority Holdings, Environment

	2007		2008		2009
Half Year	First	Second	First	Second	First
Alternative Energy	20.80%	53.04%	35.85%	41.58%	31.22%
Climate Change			35.68%	41.54%	34.66%
Proactive Environment			0.57%		
Sole Focus	4.76%	3.48%	6.24%	4.89%	7.85%
Water			42.31%	32.91%	46.41%

Conclusions

The first question of this study asked, what terms and patterns were the managers of actively managed environmentally focused SRI mutual funds using in the official public domain documents; namely the prospectus, the annual, and semi-annual reports; to convey to the investment community the environmental screens that were employed by the fund managers? From the results of the study, only a few patterns emerged. The verbiage of the environmental screens varied greatly as to the level of detail presented and placement within the documents. The average length was 1,000 words with a standard deviation of 646. The range was from 252 to 2,961 words. This much variance makes comparisons between funds difficult. In addition, the investor would find it difficult to locate the screen information within the public reports. Several reports were combination reports as shown in Table 5. In these reports, keyword scans are of limited use because too many results are returned requiring the person conducting the search to review many terms that are not in context or are unrelated to the query. Some phrases, such as “social”, “environment”, and “green”, are also part of the name of a fund, which increases the number of matches while reducing the number of context hits per search. In combination reports, the fund managers often place the environmental screens in a common area, deep inside the report or in the supplement, making it even more difficult for an investor to locate.

The environmental screen formats also vary from negative screens, to general statements, to positive screens. There is no set format or phrasing upon which the investor can rely. Much of the screen information is related to items in the broader social responsibility area, while being less environmentally focused. A pattern discovered by

the researcher is that funds which were focused upon a sector within the environmental area, such as water or climate, had more detail. These sector-focused funds were better able to communicate their objectives and screens, improving the confidence level of a discerning investor that their environmental objectives were in alignment with those of the fund manager. The following is an example of such detailed verbiage, from the April 2009 posted prospectus of the Allianz RCM Global Water Fund.

> The Fund seeks to achieve its investment objective by investing, under normal circumstances, at least 80% of its net assets (plus borrowings made for investment purposes) in common stocks and other equity securities of companies that are represented in one or more of the S&P Global Water Index, the Palisades Water or Global Water Indices or the Janney Water Index (Composite), or that are substantially engaged in water-related activities. The portfolio managers consider "water-related activities" as those commercial activities that relate to the quality or availability of or demand for potable and non-potable water and include but are not necessarily limited to the following: water production, storage, transport and distribution; water supply-enhancing or water demand-reducing technologies and materials; water planning, control and research; water conditioning, such as filtering, desalination, disinfection and purification; sewage and liquid waste treatment; and water delivery-related equipment and technology, consulting or engineering services relating to any of the above-mentioned activities. (p. E-35)

The Allianz RCM Global Water Fund uses a positive, inclusionary screen to provide significant detail as to those firms that will meet the investment objective. Another

example is taken from the Neuberger Berman Climate Change prospectus posted in December of 2008.

> The Fund normally invests at least 80% of its net assets, plus the amount of any borrowings for investment purposes, in the stocks of companies that are positioned to directly or indirectly benefit from efforts to address the long-term effects of climate change ("climate change-related companies"). These companies may include those that are involved in or may benefit from existing practices or innovations designed to curb or mitigate the long-term effects of global warming and other opportunities associated with climate change. To capitalize on trends related to global climate change, the Fund may invest in companies whose businesses are involved with energy production resources, such as wind, solar and hydroelectric technologies; low emission automobile innovations; and alternative fuels. Other examples of climate change-related companies may include companies involved in the following areas:
>
> Power Equipment and Construction
>
> Nuclear Energy
>
> Natural Gas Equipment and Services
>
> Energy Efficient Buildings
>
> Insurance
>
> Water Resources
>
> Clean Coal Technologies
>
> Automobiles/Hybrids
>
> Environmental Equipment

Agriculture

Carbon Trading

Conservation

Telecommunications (p. 2)

Similar to the previous example, the Neuberger Berman Climate Change Fund provides thorough positive, inclusionary screen details about those firms that will be included in the holdings of the fund. In contrast to these sector-focused funds are those funds that invest in the broader environmental market. The following example was taken from the February 2009 posting of the Alger Green Fund.

> The Fund invests at least 80% of its net assets, plus any borrowings for investment purposes, in equity securities of companies of any size that, in the opinion of the Manager, conduct their business in an environmentally sustainable manner, while demonstrating promising growth potential. Companies that conduct their business in an environmentally sustainable manner are companies that have developed or are developing or marketing products or services that address human needs without undermining nature's ability to support our economy into the future, have a positive or neutral impact on the environment on a relative basis, or recognize environmental sustainability as a challenge and opportunity as demonstrated through their business strategies, practices or investments. (pp. 58-59)

This fund uses broad terms such as “any size”, “in the opinion of the Manager”, “without undermining nature’s ability to support”, and “relative basis”. While these terms and phrases give the fund manager a great deal of flexibility in selecting firms for investment,

they give the investor only a general idea of what companies might be selected by the environmental screens. This pattern of using broad terms with broadly defined screens, and more specific terms with detailed screens, was seen in the detailed review of the accounting narratives. This example also demonstrates that positive, inclusionary screens can be written in both specific and general terms. Merely having a positive screen offers no assurance that the fund screen verbiage, written by the fund manager, will provide details on the manager's environmental investment strategy.

Several additional patterns emerged from the content analysis. The use of sub-advisors for screen selection resulted in very little detail being provided about the screening process. While this possibly occurs due to a the sub-advisor being another layer removed from the fund manager, there is nothing in the documents that limits the sub-advisor information from being included in the reports. Another pattern was that those firms using specific environmental terms in their screens provided more detail about the screen. An example of these terms is "desalination", "decontamination", "carbon emissions", and "geothermal". When these terms were present, the screen information provided was focused. Another pattern that emerged was in regards to placement. If a manager placed the environmental screen information in the first couple of sentences in the opening strategy section of the prospectus, the following screen information was detailed. The researcher found that the environmental screens in accounting narratives rarely change. This boilerplate nature of the screen information was another pattern the research uncovered.

Application of the environmental taxonomy that Stone (1999) developed also supported the position that the environmental screen verbiage does not provide sufficient

insight into the fund manager's asset selection strategy. Stone identified 10 environmental mid-level concepts that fund managers use to identify assets. Figure 1 shows that no fund had more than seven concepts disclosed in the prospectus verbiage. The mode was much lower at only four concepts. Table 7 indicates that three of the concepts only had two or less funds that disclosed these concepts in the screen verbiage. While Stone determined these concepts to be important to the fund managers, the information isn't adequately relayed to investors in the published fund documents. The detail is insufficient, making it difficult for the investor to determine if their personal objectives, regarding environmental sustainability, are aligned with the environmental screen objectives of the fund manager.

The second question of this study asked, while each actively managed, environmentally focused, SRI mutual fund may have a different environmental screen methodology, for those funds, chosen in question 1, having a similar financial investment objective, as defined by having the same Morningstar Style Box™ classification as of December 31, 2008, what are the assets common among the mutual funds from January 2007 to June 2009? Tables 18 and 19 provide the specific statistical answers to this question. A majority definition was used to define assets in common. Conceptually, the process simulated having all of the environmentally-focused fund managers, for a specific investment objective category, gathered in a room during one of the study periods and putting all of their assets on a table. Then, the fund managers were allowed to vote for inclusion of each asset in a common pool. Only those assets getting more than 50% of the vote would be included in the common pool. This was the concept for

majority holdings. The researcher considered each fund manager as voting with their money through the inclusion of an asset in their holdings for the given study period.

The category with the highest amount of commonality was Medium Capitalization Blend with percentages over 50% when considering just those funds contributing to the arithmetic mean during the last two six-month periods of the study. During the first half of 2009, those funds having an environmental focus and a financial objective of investing in medium capitalized blended assets, would, on average, have 53.09% of their holdings in common. However, the idea that it might not matter what the fund managers disclose in the verbiage of the prospectus because they invest in the same assets is not true. Even in the case of the Medium Capitalization Blend category, which provides the most support for that idea, nearly half the value of the fund's portfolio was not held in common, being unique assets to the specific funds. In reviewing the results presented in Table 19, excluding the Medium Capitalization Blend category, no category and period combination exceeded 28% holdings in common, and only four combinations exceeded 20%. Looking at other measures of variability, such as the standard deviation, only Large Capitalization Growth shows asset commonality close to 20% and standard deviations below 10%. For Large Capitalization Growth, the median was also close in value to the mean. The number of funds in each category period combination was so small that both skewness and kurtosis provide little insight into the data patterns. Overall, commonality of assets was low while the variability, how much each fund manager invests in a given asset, was high.

The study also examined the funds from a different perspective. While compiling the information to address the second question, one pattern did emerge. There are some

environmental specialties, such as water and climate, which may have a higher degree of commonality and less variability. The funds were analyzed after being regrouped into five environmental focus categories. The impetus for this regrouping came after examining the results from the Medium Capitalization Blend category which had three out of the four funds in the first half of 2009 having an environmental focus of water. The commonality shown in this group appears to be driven less by the financial investment style than it is driven by the environmental focus. Examining the first half of 2009 for the Water category, the arithmetic mean using all funds is 56.13%. Even with two of the five funds not in the same Morningstar Style Box™ investment category, the value is larger than the Medium Blend Capitalization category for the same period. The percent of commonality for the Water, Climate Change, and Alternative Energy categories suggests that sector similarity is a strong determining factor in regards to portfolio similarity across funds. The total number of unique holdings was very similar when examining the Water category versus the Medium Capitalization Blend category, 124 versus 127, even though the water group had one additional fund. A reason for this may be the limited pool of investments available based on the narrowed environmental scope of the fund's strategy. There are only so many publicly traded firms that directly address potable water. A narrow environmental focus is necessary to achieve these numbers, as broader groupings, such as those funds in the Sole Focus and Proactive Environmental categories, have limited common holdings. Examining the same category and period, the percentage is only 7.96% in the Sole Focus category. In these broader categories there are enough unique environmentally qualifying assets to allow for differing financial investment

objectives. Four different Morningstar Style Box™ categories were represented in the Sole Focus category.

The variability statistics also support the similarity of environmental specialty sector orientation. The number of assets in the majority compared to the total pool of assets is consistently higher for the sector-focused groups. The standard deviations are generally larger values, but given that the means are higher, represent a narrower deviation than the groups in the Morningstar Style Box™ classifications. The minimum and maximum values are higher for these sector focus funds as well. The median values are also close to the means for these environmental specialty groups. The skewness and kurtosis values were within two standard errors, providing no indication of any lack of distribution symmetry or flatness. The study concludes that for the environmental specialties of alternative energy, climate change, and water, there is a higher degree of commonality than for those funds with a broader environmental objective.

Implications and Recommendations

In the 10 years since Stone (1999) created his taxonomy, little has changed. Information provided by fund managers in the text portions of the public reports is still vague and hinders an investor's ability to align the investor's environmental objectives with those of a given fund manager. The holdings of a fund are only similar in specific sectors within the environmental area. Even for those specific sector funds, there are enough unique investments that investors are still encouraged to study the fund holdings.

With the adoption within the United States of the International Accounting Standards there exists the possibility for better environmental screen reporting. Some environmental reporting standards already exist in European markets. A future study of

European environmentally-focused funds may show more pronounced patterns and terms. A detailed analysis of environmental screen placement within documents could help define a best practice for consistency in reporting. The study also suggests that the SEC could enforce the regulations better. The focus on financial objectives needs to be extended to those nonfinancial factors that impact the strategy as well. Broad terminology makes it difficult for investors to align their objectives with the strategy of the fund.

More research into the impact of highly focused sectors is also recommended. While prior studies have examined the herd mentality of fund managers, it would be worth knowing to what degree commonality among funds is driven by the size of the possible pool of investments. To what degree do funds in highly focused sectors behave as one, operating similar to an index, is a question that future studies may examine.

As mentioned earlier, this study was impacted by the recession that began in 2008. The total value of the funds decreased during the last two periods of the study. There was also a significant shift to short-term holdings during the final two periods. As funds become smaller they have less money to invest. It would be worth studying the degree to which commonality rises and falls in relation to total value of the fund rising and falling. A related question, which was not examined in this study, is the impact of the degree of change in the asset mix of a fund between periods. The impact on asset mix of a change in the perceived level of environmental sustainability for a company would also be of interest. These questions attempt to look at what conditions, and at what frequency, a fund manager actually changes the asset mix based on environmental screen changes versus investment return changes.

A further look at the taxonomy is also warranted. There are several indices that rank the environmental sustainability of publicly traded firms. Future research should look at the individual holdings and map them to the taxonomy. The result would provide insight into the fund manager's actions versus intent.

While this study focused on the environmental subset of socially responsible investing, it would be useful to know if these same challenges exist in other subsets, such as those funds that avoid investment in tobacco, alcohol, pornography, and gambling. In these other areas, do the same problems of varied screen location and vague definitions exist?

A closing question is related to the return of the fund. No fund exists without investors. Investors have a return expectation. The question is, to what extent are the returns of a fund related to the level of information provided about the screening process? A related question could also be examined from the investor's point of view. Examining the information given to an investor, is there a relationship to the information and an investor's willingness to put money into the fund?

Environmental concerns continue to increase. Issues such as global warming, reduction in rain forest size, oil drilling on protected lands, demand for potable water, and wild habitat reduction must be balanced against the economic needs of the populace. With an increase in environmental awareness comes an increase in firms willing to invest in environmental areas. The number of environmentally focused mutual funds increased 100% during the two and half years of this study. The growth level of environmentally focused mutual funds is an indicator that more money is flowing into this market. The

investor and fund manager need to get better aligned to avoid potential disagreements. This study suggests there is much work left to be done.

REFERENCES

Al-Tuwaijri, S., Christensen, T., & Hughes, K. (2004). The relations among environmental disclosure, environmental performance, and economic performance: A simultaneous equations approach. *Accounting, Organizations, and Society, 29*(5), 447-471.

Bansal, P., & Clelland, I. (2004). Talking trash: Legitimacy, impression management, and unsystematic risk in the context of the natural environment. *Academy of Management Journal, 47*(1), 93-103.

Barnett, M., & Salomon, R. (2006). Beyond dichotomy: the curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal, 27*(11), 1101-1122.

Bello, Z. (2005). Socially responsible investing and portfolio diversification. *The Journal of Financial Research, 28*(1), 41-57.

Ben-Horim, M., & Levy, H. (1984). *Statistics, decisions and applications in business and economics*. New York: McGraw-Hill Publishing Company.

Benson, K. L., Brailsford, T. J., & Humphrey, J. E. (2006). Do socially responsible fund managers really invest differently? [Electronic version] *Journal of Business Ethics, 65*(4), 337-57.

Bogle, J. C. (1994). *Bogle on mutual funds: New perspectives for the intelligent investor*. New York: Dell Publishing.

Brown, J. D. (1997, April). Questions and answers about statistics: Skewness and kurtosis [Electronic version]. Shiken: JALT Testing & Evaluation SIG Newsletter, 1(1), 20-23.

Brown, N., & Deegan, C. (1998). The public disclosure of environmental performance information--a dual test of media agenda setting theory and legitimacy theory. *Accounting and Business Research, 29*(1), 21-41.

Budde, S. (2008). *Compelling returns: A practical guide to socially responsible investing*. Hoboken, NJ: John Wiley & Sons, Inc.

Burch, M. (2009, February). *Chi-square*. Notes presented during class session of course Education 908 Research: Methods and Techniques II at Olivet Nazarene University, Bourbonnais, IL.

Bureau of Economic Analysis. (2009). *Economy declines in the second quarter: "Advance" estimate of GDP.* Retrieved July 31, 2009, from http://www.bea.gov/newsreleases/national/gdp/2009/pdf/gdp2q09_adv_fax.pdf

Clarkson, P., Li, Y., Richardson, G., & Vasvari, F. (2008). Revisiting the relation between environmental performance and environmental disclosure: An empirical analysis [Electronic version]. *Accounting, Organizations and Society, 33*(4), 303-327.

CNBC.com. (2009, April 17). *A guide to green investing*. Retrieved July 27, 2009, from http://www.cnbc.com/id/30155250/

Coalition on the Environment and Jewish Life. (2005, March). *Environmental policy platform*. Retrieved November 21, 2008, from http://www.coejl.org/about/policy0305.php

Darrough, M. N. (1993, July). Disclosure policy and competition: Cournot vs. Bertrand. *The Accounting Review,* 534-561.

Derwall, J., & Koedijk, K. (2005). *The performance of socially responsible bond funds*. Paper presented at the annual meeting of the Financial Management Association, Chicago, IL.

Diltz, J. D. (1995). The private cost of socially responsible investing [Electronic version]. *Applied Financial Economics, 5*, 69-77.

Dunfee, T. (2003). Social investing: Mainstream or backwater? *Journal of Business Ethics, 43*(3), 247. Retrieved July 20, 2008, from ABI/INFORM Global database.

El-Gamal, M. (2000). *A basic guide to contemporary Islamic banking and finance*. Retrieved January 6, 2009, from http://www.ruf.rice.edu/~elgamal/files/primer.pdf

Fekrat, M., Inclan, C., & Petroni, D. (1996). Corporate environmental disclosures: Competitive disclosure hypothesis using 1991 annual report data. *The International Journal of Accounting, 31*(2), 175.

Freedman, M., & Stagliano A. (2002). Environmental disclosure by companies involved in initial public offerings. *Accounting, Auditing & Accountability Journal, 15*(1), 94-105.

Freedman, M., & Wasley, C. (1990). The association between environmental performance and environmental disclosure in annual reports and 10Ks. *Advances in Public Interest Accounting, 3*, 183-193.

Gamble, G., Hsu, K., Kite, D., & Radtke, R. (1995). Environmental disclosures in annual reports and 10Ks: An examination [Electronic version]. *Accounting Horizons, 9*, 34-54.

Ghoul, W., & Karam, P. (2007). MRI and SRI mutual funds: A comparison of Christian, Islamic (morally responsible investing), and socially responsible investing mutual funds [Electronic version]. *Journal of Investing, 16*(2), 96-102.

Girard, E., & Hassan, M. (2005). *Faith-based ethical investing: The case of Dow Jones Islamic indexes*. Paper presented at the 2006 Financial Management Association Annual Meeting, Chicago, IL.

Girard, E., Rahman, H., & Stone, B. (2007). Socially responsible investments: Goody-two-shoes or bad to the bone? *Journal of Investing, 16*(1), 96-110.

Gremillion, L. (2005). *Mutual fund industry handbook: A comprehensive guide for investment professionals.* Hoboken, NJ: John Wiley & Sons, Inc.

Grow, N. R. (1977). *The 'Boston-Type open-end fund'-Development of a national financial institution: 1924-1940.* Cambridge, MA: Harvard University. Retrieved January 4, 2009, from Dissertations & Theses: Full Text database. (Publication No. AAT 0322163).

Gunther, M. (2005, February 7). Are green funds true to their colors? *Fortune, 151*(3), 106-108. Retrieved February 26, 2008, from Business Source Elite database.

Hamilton, S., Jo, H., & Statman, M. (1993). Doing well while doing good? The investment performance of socially responsible mutual funds [Electronic version]. *Financial Analysts Journal, 49*, 62-66.

Hayes, S. (2005). Socially responsible mutual funds: Issues to consider when investing with your conscience. *Journal of Financial Service Professionals, 59*(5), 59-63.

Henderson, H. (2006). *Ethical markets: Growing the green economy*. White River Junction, VT: Chelsea Green Publishing Company.

Hughes, S., Anderson, A., & Golden, S. (2001). Corporate environmental disclosures: Are they useful in determining environmental performance? *Journal of Accounting and Public Policy, 20*, 217-240.

Ingram, R., & Frazier, K. (1980). Environmental performance and corporate disclosure. *Journal of Accounting Research, 18*(2), 614-622.

Investment Advisors Act, 15 U.S.C. § 80b-1 – 21. (1940).

Investment Company Act, 15 U.S.C. § 80a-1 – 64. (1940).

Investment Company Institute. (2009). *2009 Investment company fact book, 49th edition.* Washington, DC: Author. Retrieved July 1, 2009, from http://www.icifactbook.org

Is there a difference between socially responsible investing (SRI) and green investing? (2008). *Investopedia.* Retrieved August 18, 2008, from http://www.investopedia.com/ask/answers/07/socially-responsible-green-investing.asp

Islamic Foundation for Ecology and Environmental Sciences. (2008). *Guardians of the earth*. Retrieved November 21, 2008, from http://ifees.org.uk/index.php?option=com_content&task=view&id=12&Itemid=28

Jennings, W. W., & Martin, G. W. (2007, Summer). Socially enhanced indexing: Applying enhanced indexing techniques to socially responsible investment. *Journal of Investing, 16*(2), 18-31.

Kahlenborn, W. (1999). Transparency and the green investment market. *Greener Management International 27,* 65-78.

Kearns, L. (1996). Saving the creation: Christian environmentalism in the United States [Electronic version]. *Sociology of Religion. 57*(1), 55-70.

Kim, M., Shukla, R., & Tomas, M. (2000). Mutual Fund Objective Misclassification. *Journal of Economics and Business, 52*(4), 309-323.

Kinder, P. D. (2004). *Values and money: A research practitioner's perspective on values for money* [Electronic version]. Boston, MA: KLD Research & Analytics.

Kinder, P. D. (2005). *Socially responsible investing: An evolving concept in a changing world* [Electronic version]. Boston, MA: KLD Research & Analytics.

Kinder, P. D., & Domini, A. L. (1997). Social screening: Paradigms old and new [Electronic version]. *The Journal of Investing, 6*(4), 12-19.

Koellner, T., Weber, O., Fenchel, M., & Scholz, R. (2005). Principles for sustainability rating of investment funds [Electronic version]. *Business Strategy and the Environment, 14*(1), 54-70.

Kreuze, J., Newell, G., & Newell, S. (1996). Environmental disclosures: What companies are reporting. *Management Accounting, 78*, 37-40+.

Krippendorf, K. (2004). *Content analysis an introduction to its methodology*. Thousand Oaks, CA: Sage Publications.

Krosinsky, C., & Robins, N. (2008). *Sustainable Investing: the art of long-term performance*. Sterling, VA: Earthscan.

Leedy, P. D., & Ormrod, J. E. (2005). *Practical research planning and design*. Upper Saddle River, NJ: Pearson Education.

Lipper. (2008). *U.S. Open-end, closed-end, variable annuity, and overseas fund classification descriptions* [Electronic version]. New York, NY: Thomson Reuters Lipper.

Little, K. (2008). *Socially responsible investing*. New York, NY: Alpha Books.

Malonis, J. A., & Cengage, G. (2000). 401(k) Plans. *Encyclopedia of Business*. Retrieved April 4, 2010, from http://www.enotes.com/biz-encyclopedia/401-k-plans

Marquardt, K. (2007, April 3). What it means to be green. *Kiplinger's Personal Finance*. Retrieved July 24, 2008, from http://www.kiplinger.com/columns/fundwatch/archive/2007/fundwatch0403.htm

Mathews, M. (2000). *The development of social and environmental accounting research 1995-2000*. Palmerston North: Massey University, School of Accountancy.

Mbeki, T., Cardoso, F. H., & Persson, G. (2002, August 28). Only one Earth: We can do this good work together. *International Herald Tribune*. Retrieved May 4, 2008, from http://www.iht.com/articles/2002/08/28/edpers_ed3_.php

McGee, S. (2007, August). Green investing takes root [Electronic version]. *Financial Planning, 37*(8), 58-63.

Michael Jantzi Research Associates. (2003). *Socially responsible investing in Canada: A market backgrounder* [Electronic version]. Toronto, Ontario: Author.

Michelson, G., Wailes, N., Van der Laan, S., & Frost, G. (2004). Ethical investment processes and outcomes. *Journal of Business Ethics, 52*(1), 1-10. Retrieved July 20, 2008, from ABI/INFORM Global database.

Mintzer, R. (2000). *The everything mutual funds book.* Holbrook, MA: Adams Media Corporation.

Morningstar. (2002). *Fact sheet: the new Morningstar style box methodology* [electronic version]. Chicago, IL: Morningstar, Inc.

Morningstar. (2008a). *The Morningstar Category™ classifications* [Electronic version]. Chicago, IL: Morningstar, Inc.

Morningstar. (2008b). *The Morningstar Style Box™ methodology* [Electronic version]. Chicago, IL: Morningstar, Inc.

Munteanu, S. (2007). *Achieving sustainability via the market for green funds: Perceived and underlying reasons influencing the green investors* [Electronic version]. Unpublished master's thesis, Lund University, Sweden.

Natural Investments, LLC. (2008). *Heart rating*. Retrieved July 30, 2008, from http://www.naturalinvesting.com/content/blogsection/8/32/

Neuendorf, K. (2002). *The Content Analysis Guidebook*. Thousand Oaks, CA: Sage Publications, Inc.

Nuwire Investor. (2008, September 26). *Green Mutual Funds and ETF's*. Retrieved March 4, 2009, from http://www.nuwireinvestor.com/articles/green-mutual-funds-and-etfs-52027.aspx

Ott, R. L. (1993). *An introduction to statistical methods and data analysis*. Belmont, CA: Duxbury Press.

Patten, D. (2002). The relation between environmental performance and environmental disclosure: A research note. *Accounting, Organizations, and Society, 27*, 763-773.

Pax World Management Corporation. (2008). *Pax History*. Retrieved July 20, 2008, from http://paxworld.com/about/pax-history/

Philippe, D. (2006). Talking green: Organizational environmental communication as a legitimacy-enhancement strategy. In *Proceedings of the Academy of Management, Organizations and the Natural Environment*. Atlanta, GA: ONE.

Rockness, J., & Williams, P. (1988). A descriptive study of social responsibility mutual funds. *Accounting, Organizations, and Society, 13*(4), 397-411.

Rouwenhorst, K. G. (December 12, 2004). *The Origins of Mutual Funds.* New Haven, CT: Yale International Center for Finance Working Paper No. 04-48. Retrieved January 4, 2009, from http://ssrn.com/abstract=636146

Salkind, N. J. (2008). *Statistics for people who (think they) hate statistics (3rd ed.).* Thousand Oaks, CA: Sage Publications, Inc.

Sandoval, R. (1995). How green are the green funds? *Amicus Journal, 17*(1), 29-33. Retrieved April 10, 2008, from Wilson Select Plus database.

Schieber, S. J., & Shoven, J. B. (1999). *The real deal: The history and future of social security*. New Haven, CT: Yale University Press.

Schmuller, J. (2009). *Statistical analysis with Excel for dummies (2nd ed.)*. Hoboken, NJ: Wiley Publishing, Inc.

Schueth, S. (2003, March 15). Socially responsible investing in the United States [Electronic version]. *Journal of Business Ethics, 43*(3), 189-194.

Schwartz, M. S. (2003). The "Ethics" of ethical investing [Electronic version]. *Journal of Business Ethics, 43*(3), 195-213.

Schwartz, M., Tamari, M., & Schwab, D. (2007). Ethical investing from a Jewish perspective [Electronic version]. *Business and Society Review, 112*(1), 137-161.

Scott, D. (2003). *Green investing. Wall Street Words: An A to Z Guide to Investment Terms for Today's Investor*. Boston, MA: Houghton-Mifflin. Retrieved August 18, 2008, from http://financial-dictionary.thefreedictionary.com/green+investing

Securities Act, 15 U.S.C. § 77a *et seq.* (1933).

Securities Exchange Act, 15 U.S.C. § 78a *et seq.* (1934).

Shaw, R. (2007). *Islamic investing: Putting faith in your money*. Retrieved January 5, 2009, from http://seekingalpha.com/article/28119-islamic-investing-putting-faith-in-your-money

Smith, L. (2008). *What does it mean to be green?* Retrieved August 18, 2008, from http://www.investopedia.com/articles/basics/07/green-investing.asp?viewall=1

Smith, M., & Taffler, R. (1995). The incremental effect of narrative accounting information in organizational annual reports. *Journal of Business Finance and Accounting, 22*(8), 1195-1210.

Social Investment Forum. (2008). *2007 Report on socially responsible investing trends in the United States*. Washington, DC: Author.

Social Investment Forum. (2009). *Socially responsible mutual fund charts: Screening & advocacy*. Retrieved July 20, 2009, from http://www.socialinvest.org/resources/mfpc/screening.cfm?&pdf

Spiegel, M. R., & Stephens, L. J. (2008). *Schaum's Outline of theory and problems of statistics (4th ed.)*. New York, NY: The McGraw-Hill Companies, Inc.

SRI World Group. (2009). *Mutual funds center: Social issues*. Brattleboro, VT: Author. Retrieved July 31, 2009, from http://www.socialfunds.com/funds/chart.cgi?sfChartId=Social+Issues

Stagliano, A., & Walden, W. (1998). *Assessing the quality of environmental disclosure themes* [Electronic version]. Paper presented at the Second Asian Pacific Interdisciplinary Research in Accounting Conference, Osaka, Japan.

Statman, M. (2000). Socially responsible mutual funds [Electronic version]. *Financial Analysts Journal*, *56*(3), 30-39.

Stone, B. A. (1999). *Corporate social responsibility and institutional investment: A content analysis based portfolio screening model for socially responsible mutual funds*. Ann Arbor, MI: UMI. Retrieved April 10, 2008, from Proquest Digital Dissertations database.

Strauss, W. A., & Engel, E. A. (2009, August). *Economy to turn the corner in 2010* (Chicago Fed Letter No. 265a). Chicago, IL: Federal Reserve Bank of Chicago.

Tregidga, H., Milne, M., & Kearins, K. (2007). *The role of discourse in bridging the text and context of corporate social and environmental reporting* [Electronic version] (Discussion Papers 2007 Series). Christchurch, New Zealand: University of Canterbury, College of Business and Economics.

Tyson, E. (2007). *Mutual funds for dummies*. Hoboken, NJ: Wiley Publishing.

Uldrich, J. (2008). *Green investing*. Avon, MA: Adams Media.

United States Conference of Catholic Bishops. (2003, November 12). *Socially Responsible Investment Guidelines.* Retrieved January 6, 2009, from http://usccb.org/finance/srig.shtml

U.S. Securities and Exchange Commission. (2008). *Registration statement under the Investment Company Act of 1940 form N-1A* (SEC Publication No. SEC-2052). Washington, DC: Securities and Exchange Commission.

U.S. Securities and Exchange Commission. (2009). *Information available to investment company shareholders*. Retrieved January 5, 2009, from http://www.sec.gov/answers/mfinfo.htm

Vinzant, C. (2006, December 1). My money is greener than your money. *Living Green*. Retrieved March 7, 2008, from http://www.onearth.org/article/my-money-is-greener-than-your-money

Walden, W., & Schwartz, B. (1997). Environmental disclosures and public policy pressure. *Journal of Accounting and Public Policy, 16*(2), 125-154.

Weber, R. (1990). Basic Content Analysis. Newbury Park, CA: Sage Publications, Inc.

Wiseman, J. (1982). An evaluation of environmental disclosures made in corporate annual reports. *Accounting, Organizations and Society, 7*(1), 553-563.

Zweig, J. (1999, April). The history of mutual funds [Electronic version]. *Money, 28*(4), 94-98.

Appendix A

Funds Included in the Study

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
AHRAX	AHA Socially Responsible Equity	12-Aug-05	CNI Charter	Large Value
SPEGX	Alger Green	04-Dec-00	Fred Alger Management, Inc.	Large Growth
AECOX	Allianz RCM Global EcoTrends	31-Jan-07	RCM Capital Management LLC	Medium Growth
AWTAX	Allianz RCM Global Water	31-Mar-08	RCM Capital Management LLC	Medium Blend
APPLX	Appleseed Fund	08-Dec-06	Unified Financial Securities	Medium Value
ARGFX	Ariel	06-Nov-86	Ariel Investments	Medium Value
CAAPX	Ariel Appreciation	01-Dec-89	Ariel Investments	Medium Blend
ARFFX	Ariel Focus	30-Jun-05	Ariel Investments	Large Blend
CCAFX	Calvert Capital Accumulation	31-Oct-94	Calvert Investments	Medium Growth
CGAEX	Calvert Global Alternative Energy	31-May-07	Calvert Investments	Medium Growth
CFWAX	Calvert Global Water	30-Sep-08	Calvert Investments	Medium Blend

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
CIOAX	Calvert Intl Opp	31-May-07	Calvert Investments	Medium Growth
CLGAX	Calvert Large Cap Growth	31-Oct-00	Calvert Investments	Large Growth
CLVAX	Calvert Large Cap Value	29-Dec-99	Calvert Investments	Large Value
CMVAX	Calvert Mid Cap Value	01-Oct-04	Calvert Investments	Medium Blend
CNVAX	Calvert New Vision Small Cap	31-Jan-97	Calvert Investments	Small Growth
CCVAX	Calvert Small Cap Value	01-Oct-04	Calvert Investments	Small Blend
CSIFX	Calvert Social Investment Balanced	21-Oct-82	Calvert Investments	Large Growth
CSIBX	Calvert Social Investment Bond	24-Aug-87	Calvert Investments	Bond Small Value
CMIFX	Calvert Social Investment Enhance Eq	15-Apr-98	Calvert Investments	Large Blend
CSIEX	Calvert Social Investment Equity	24-Aug-87	Calvert Investments	Large Growth
CWVGX	Calvert World Values International Eq	02-Jul-92	Calvert Investments	Large Value
DUPFX	Domini Euro PacAsia Social Equity Inv	27-Dec-06	Domini Social Investments LLC	Large Value

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
DEUFX	Domini Euro Social Equity Inv	03-Oct-05	Domini Social Investments LLC	Large Value
DPAFX	Domini PacAsia Social Equity Inv	27-Dec-06	Domini Social Investments LLC	Large Value
DSBFX	Domini Social Bond Inv	01-Jan-00	Domini Social Investments LLC	Bond High Medium
DSEFX	Domini Social Equity Inv	03-Jun-91	Domini Social Investments LLC	Large Growth
DGYAX	Dreyfus Global Sustainability	15-Dec-08	Dreyfus Mutual Funds	Large Value
DTCAX	Dreyfus Third Century	31-Aug-99	Dreyfus Mutual Funds	Large Growth
WRMAX	DWS Climate Change	05-Sep-07	DWS Investments	Medium Growth
ETGLX	Eventide Gilead	01-Jul-08	Eventide Asset Management, LLC	Medium Growth
FSLEX	Fidelity Select Environmental	29-Jan-89	Fidelity Investments	Medium Growth
ALTEX	Firsthand Alternative Energy	29-Oct-07	Firsthand Funds	Medium Growth

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
FLRUX	Flex-funds Total Return Utilities	21-Jun-95	Meeder Asset Management, Inc	Medium Value
SRIAX	Gabelli SRI Green	01-Jan-07	Gabelli Funds, LLC	Medium Growth
GCBLX	Green Century Balanced	18-Mar-92	Green Century Capital Management, Inc.	Large Growth
GAAEX	Guinness Atkinson Alternative Energy	31-Mar-06	Guinness Atkinson Asset Management, Inc.	Medium Growth
IGIAX	Integrity Growth & Income	03-Jan-95	Integrity Money Management, Inc.	Medium Growth
KWINX	Kinetics Water Infrastructure	29-Jun-07	Kinetics Asset Management Inc.	Small Blend
SSIAX	Legg Mason Partners Social Awarenes	06-Nov-92	Legg Mason Partners	Large Growth
AQFIX	LKCM Aquinas Fixed Income	11-Jul-05	Luther King Capital Management Corporation	Bond Medium Value

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
AQEGX	LKCM Aquinas Growth	03-Jan-94	Luther King Capital Management Corporation	Large Growth
AQBLX	LKCM Aquinas Small Cap	03-Jan-94	Luther King Capital Management Corporation	Small Growth
AQEIX	LKCM Aquinas Value	03-Jan-94	Luther King Capital Management Corporation	Large Growth
MMPAX	MMA Praxis Core Stock	12-May-99	MMA Capital Management	Large Blend
MIIAX	MMA Praxis Intermediate Income	12-May-99	MMA Capital Management	Bond High Medium
MPIAX	MMA Praxis International	12-May-99	MMA Capital Management	Large Blend
MMSCX	MMA Praxis Small Cap	01-May-07	MMA Capital Management	Small Growth
NBCAX	Neuberger Berman Climate Change	01-May-08	Neuberger Berman Management, LLC	Medium Growth

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
NBSRX	Neuberger Berman Socially Responsive	16-Mar-94	Neuberger Berman Management, LLC	Large Blend
NALFX	New Alternatives	03-Sep-82	New Alternatives Fund Inc.	Medium Growth
PARNX	Parnassus	27-Dec-84	Parnassus Investments	Large Blend
PRBLX	Parnassus Equity Income	01-Sep-92	Parnassus Investments	Large Blend
PRFIX	Parnassus Fixed-Income	01-Sep-92	Parnassus Investments	Bond Medium Value
PARMX	Parnassus Mid-Cap	29-Apr-05	Parnassus Investments	Medium Growth
PARSX	Parnassus Small-Cap	29-Apr-05	Parnassus Investments	Small Blend
PARWX	Parnassus Workplace	29-Apr-05	Parnassus Investments	Large Growth
PAXWX	Pax World Balanced	30-Nov-71	Pax World Management Corp	Large Growth
PGRNX	Pax World Global Green	27-Mar-08	Pax World Management Corp	Medium Growth

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
PXWGX	Pax World Growth	11-Jun-97	Pax World Management Corp	Large Growth
PAXHX	Pax World High Yield	08-Oct-99	Pax World Management Corp	Bond Low Medium
PXINX	Pax World International	27-Mar-08	Pax World Management Corp	Large Blend
PXSCX	Pax World Small Cap	27-Mar-08	Pax World Management Corp	Small Growth
PXWEX	Pax World Women's Equity	01-Oct-93	Pax World Management Corp	Large Growth
PFWAX	PFW Water	01-Jul-07	SBG Capital Management Inc	Small Growth
PORTX	Portfolio 21	30-Sep-99	Portfolio 21 Investments	Large Growth
SMCNX	Robeco SAM Sustainable Climate	01-Oct-07	Robeco Investment Management	Medium Growth
SMWNX	Robeco SAM Sustainable Water	01-Oct-07	Robeco Investment Management	Medium Blend

(table continues)

Ticker	Fund Name	Inception Date	Issuer Name	Morningstar Style Box™
MYPVX	Sentinel Sustainable Core Opp	13-Jun-96	Sentinel Asset Management	Large Blend
WAEGX	Sentinel Sustainable Growth Opp	08-Feb-94	Sentinel Asset Management	Medium Growth
TICRX	TIAA-CREF Social Choice Equity	31-Mar-06	Teachers Advisors ,Inc.	Large Blend
WASOX	Walden Small Cap Innovations	27-Oct-08	Boston Trust Investment Management, Inc.	Small Growth
WSBFX	Walden Social Balanced	18-Jun-99	Boston Trust Investment Management, Inc.	Large Growth
WSEFX	Walden Social Equity	18-Jun-99	Boston Trust Investment Management, Inc.	Large Growth
WSSAX	Wells Fargo Advantage Social Sust	30-Sep-08	Wells Fargo Mutual Funds	Large Growth
WGGFX	Winslow Green Growth	02-Apr-01	Winslow Management Company	Small Growth
WGSLX	Winslow Green Solutions	01-Nov-07	Winslow Management Company	Medium Growth

Appendix B

Funds Dropped from the Study

Fund Ticker	Fund Name	Firm Name	Reason for Dropping
CAAAX	Calvert Aggressive Allocation	Calvert Investments	Drop Fund of Funds
CCLAX	Calvert Conservative Allocation	Calvert Investments	Drop Fund of Funds
SFHIX	Calvert High Yield Bond	Calvert Investments	Drop No Social
CFICX	Calvert Income	Calvert Investments	Drop No Social
CLDAX	Calvert Long Term Income	Calvert Investments	Drop No Social
CMAAX	Calvert Moderate Allocation	Calvert Investments	Drop Fund of Funds
CSDAX	Calvert Short Duration Income	Calvert Investments	Drop No Social
CSXAX	Calvert Social Index	Calvert Investments	Drop - Index Fund
GCEQX	Green Century Equity	Green Century Capital Management, Inc.	Drop - Index Fund

(table continues)

Fund Ticker	Fund Name	Firm Name	Reason for Dropping
MGNDX	MMA Praxis Growth Index	MMA Capital Management	Drop - Index Fund
MVIAX	MMA Praxis Value Index	MMA Capital Management	Drop - Index Fund
NSRIX	Northern Global Sustainability Index	Northern Trust Investments	Drop - Index Fund
SCFLX	Sierra Club Equity Income	Forward Funds	Drop - Fund Liquidated
SCFSX	Sierra Club Stock Fund	Forward Funds	Drop - Fund Liquidated
VFTSX	Vanguard FTSE Social Index	Vanguard Group	Drop - Index Fund

Appendix C

Environmentally Focused Funds

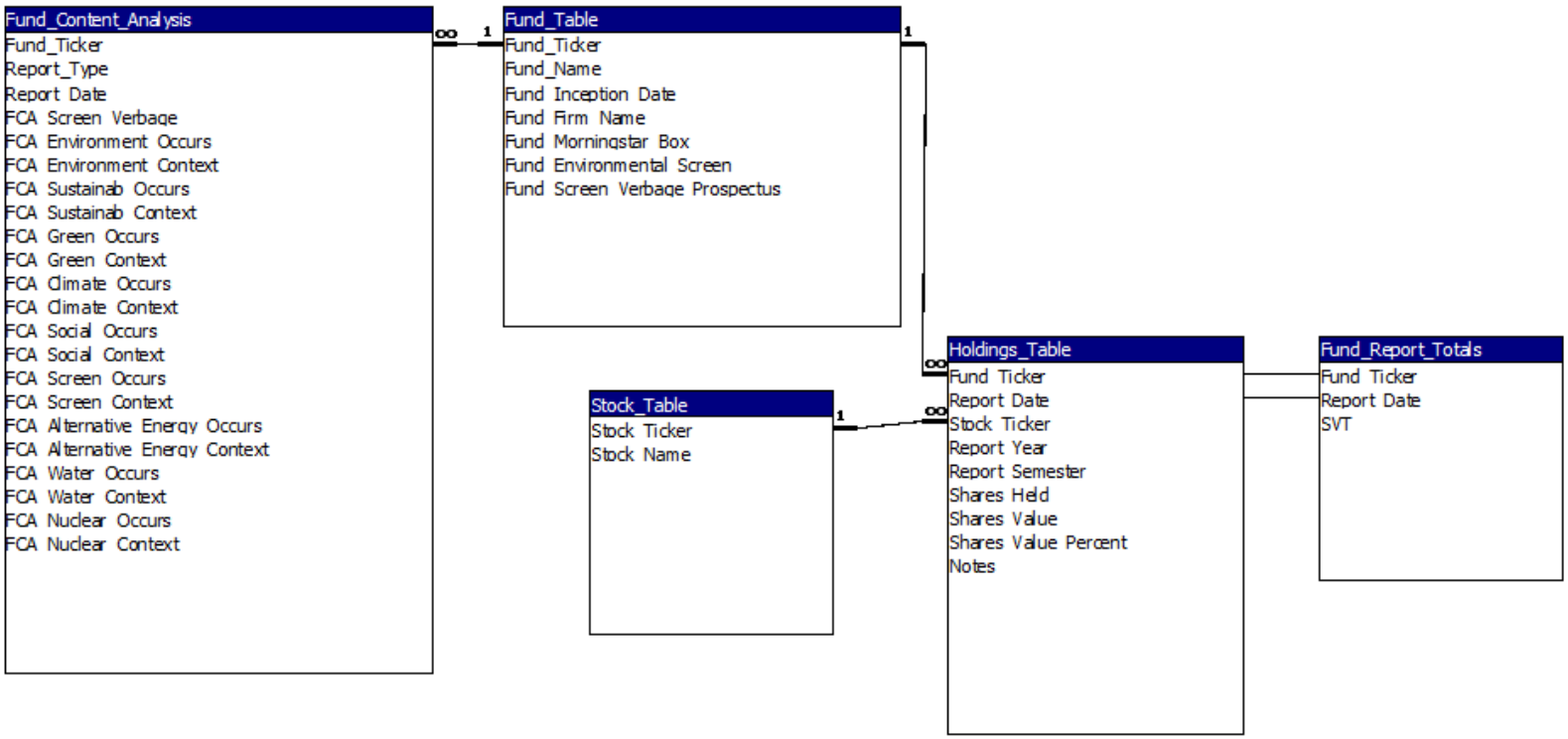
Ticker	Fund Name	Morningstar Style Box™	Inclusion Category
SPEGX	Alger Green	Large Growth	Sole Focus
AECOX	Allianz RCM Global EcoTrends	Medium Growth	Sole Focus
AWTAX	Allianz RCM Global Water	Medium Blend	Water
ARGFX	Ariel	Medium Value	Proactive
CAAPX	Ariel Appreciation	Medium Blend	Proactive
ARFFX	Ariel Focus	Large Blend	Proactive
CGAEX	Calvert Global Alternative Energy	Medium Growth	Alternative Energy
CFWAX	Calvert Global Water	Medium Blend	Water
DGYAX	Dreyfus Global Sustainability	Large Value	Sole Focus
WRMAX	DWS Climate Change	Medium Growth	Climate Change
FSLEX	Fidelity Select Environmental	Medium Growth	Sole Focus
ALTEX	Firsthand Alternative Energy	Medium Growth	Alternative Energy
FLRUX	Flex-funds Total Return Utilities	Medium Value	Proactive
SRIAX	Gabelli SRI Green	Medium Growth	Proactive
GCBLX	Green Century Balanced	Large Growth	Sole Focus
GAAEX	Guinness Atkinson Alternative Energy	Medium Growth	Alternative Energy

(table continues)

Ticker	Fund Name	Morningstar Style Box™	Inclusion Category
KWINX	Kinetics Water Infrastructure	Small Blend	Water
NBCAX	Neuberger Berman Climate Change	Medium Growth	Climate Change
NALFX	New Alternatives	Medium Growth	Alternative Energy
PGRNX	Pax World Global Green	Medium Growth	Proactive
PFWAX	PFW Water	Small Growth	Water
PORTX	Portfolio 21	Large Growth	Sole Focus
SMCNX	Robeco SAM Sustainable Climate	Medium Growth	Climate Change
SMWNX	Robeco SAM Sustainable Water	Medium Blend	Water
MYPVX	Sentinel Sustainable Core Opp	Large Blend	Proactive
WAEGX	Sentinel Sustainable Growth Opp	Medium Growth	Proactive
WGGFX	Winslow Green Growth	Small Growth	Sole Focus
WGSLX	Winslow Green Solutions	Medium Growth	Sole Focus

Appendix D

Database Table Relationships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