Essays on Institutional Investment and Socially Responsible Investing

Thesis submitted in partical fulfilment of the requirements

for the degree of Doctor of Philosophy

HENLEY BUSINESS SCHOOL

THE UNIVERSITY OF READING

ICMA Centre

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February 2017

Declaration

I confirm that this is my own work and the use of all material from other sources has been properly and fully acknowledged.

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Abstract

This thesis contributes to the growing body of research on socially responsible investing (SRI) and institutional investment. Throughout the three main chapters of the thesis, I empirically investigate how institutional investors incorporate environmental, social and ethical considerations into their investment practices. First, I assess the impact of different political dimensions on the equity holdings of 31 U.S. state pension funds. I provide evidence that pension funds with Democratic leaning members tend to tilt their portfolios more strongly towards companies with higher environmental and social performance and that pressures by Democratic state politicians intensify this tendency. Additionally, I show that the sample funds neither under- nor outperform on their politically-motivated SRI holdings, implying that their SRI preferences are unlikely financially-driven.

Next, I investigate how Scandinavian public asset owners balance their financial and ethical objectives through exclusionary screening. I empirically analyse the performance effect of the exclusion of "unethical" companies from the portfolios of two leading Nordic investors, Norway's Government Pension Fund-Global (GPFG) and Sweden's AP-funds. I show that the portfolios of excluded companies do not generate an abnormal return relative to the funds' benchmark indices, indicating that the exclusion decisions generally did not harm fund performance.

Finally, I evaluate the extent to which investors account for the financial materiality of environmental and social factors in their shareholder activism. I find that a considerable amount of investor resources is spent on advancing immaterial issues through shareholder proposals. While certain "dedicated" investors such as public pension funds, endowments, religious institutions and asset managers are better at targeting financially material issues, the overall shareholder base does not differentiate between the financial materiality, or otherwise, of a proposal. Material proposals neither receive greater vote support nor does the market react more positively to learning that a company has been targeted by a material proposal.

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List of Abbreviations

ATET	average treatment effects on the treated
AUM	assets under management
CAFR	Comprehensive Annual Financial Reports
CAR	cumulative abnormal returns
CEO	chief executive officer
CIO	chief investment officer
CRR	Centre for Retirement Research at Boston College
CSR	corporate social responsibility
ESG	environmental, social, governance
ETI	economically-targeted investments
Eurosif	European Social Investment Forum
CAPM	Capital Asset Pricing Model
GPFG	Government Pension Fund - Global
KLD	Kinder, Lydenberg, Domini (data providers for company-level ESG ratings)
LPM	lower partial moment
NAICS	North American Industry Classification Code
OECD	Organisation for Economic Co-operation and Development
PRI	Principles of Responsible Investing
S&P500	Standard & Poor's 500 index (U.S. stock market index)
SASB	Sustainability Accounting Standards Board
SEC	Security Exchange Commission
SIC	Standard Industry Classification
SICS	Sustainable Industry Classification System^{TM}
SIF	Social Investment Forum
SRI	socially responsible investing
SWF	sovereign wealth funds
U.K.	United Kingdom
U.S.	United States of America
UN	United Nations
USD	U.S. Dollar
USS	Universities Superannuation Scheme

1   INTRODUCTION

1.1   Motivation for the Thesis

The last decades have seen dramatic changes in the patterns of stock ownership of large corporations. Two trends particularly stand out: First, while in the 1950s and 1960s the main shareholders of corporations were individual investors, this ownership structure has dramatically shifted so that by now the dominant shareholders in most capital markets around the world are institutional investors (e.g. Ryan & Schneider, 2002; Cox, Brammer & Millington, 2004; Aggarwal, Erel, Ferreira & Matos, 2011). Institutional investors comprise banks, insurance companies, pension funds, investment companies, mutual funds and hedge funds; or more generally, organisations which pool large sums of money and invest the funds in securities and other investable assets. Second, this investor group has developed a strong interest in aspects of corporate behaviour that relate to the environmental, social and ethical consequences of doing business and they increasingly incorporate these factors into their investment decisions. These developments have stimulated research into the drivers and consequences of institutional investors' investment preferences and the work presented in this thesis aims to contribute to this growing body of research.

While institutional investors represented a rather minor force in the global capital markets 60 years ago, their role in modern capital markets and their importance for the overall economy has drastically changed. Looking at one of the largest equity markets worldwide, aggregate institutional stock ownership in the U.S. rose from less than 10% in 1950 to more than 50% in 1994 (Friedman, 1996), while Jegadeesh & Tang (2011) estimate that institutional investors owned about 73% of publicly traded stocks in the U.S. in the early 2000s. Gonnard, Kim & Ynesta (2008) further document that the surge in institutional investment was not restricted to the U.S. but affected all 17 OECD countries: Total shares and equity holdings by institutional investors in the OECD countries grew at an annual rate of 9.1% from 1995 to 2005. The importance of institutional investors for the broader economy is also highlighted in the prominent report to the HM Treasury by Lord Myners published in May 2001 which is entitled "Institutional Investment in the United Kingdom" but is better known as the

"Myners' Report". The report postulates that "[i]nstitutional investors – in particular, pension and life funds – now manage the savings of millions of people [living in the U.K.]. They also 'own' and control most of British industry. They have come to play a central – if low-key – part in our national economic life" (Myners, 2001: 1).

While the Myners' report recognises the important role of these investors, it assigns institutional investors a 'low-key' role, implying that most of these investors are content with (passively) holding the stocks of the companies but otherwise stay out of the direct focus. However, there is increasing evidence that over recent years many institutional investors have abandoned their traditional passive shareholder role and have taken a more active stance by raising concerns about the financial and non-financial performance of their holding companies (e.g. Clark & Hebb, 2005; Aguilera, Rupp, Williams & Ganapathi, 2007; Lydenberg, 2007; Wen, 2009). They increasingly monitor their holding companies and seek to influence and change corporate policies through direct engagement on issues that they feel are not properly addressed by corporate management (e.g. Clark & Hebb, 2005, for a conceptual explanation of this trend; and Appel, Gormley & Keim, 2016, for an empirical investigation).[1] While the traditional topics that investors engage companies on relate to their corporate governance structures, several institutional investors have recently shown a strong interest in the environmental, social and ethical performance of their holding companies. For instance, investors have expressed interest in companies' environmental performance such as their handling of toxic waste and their greenhouse gas emissions, they demand information on whether their holding companies comply with labour standards and basic human rights and they pressure companies to implement general standards of corporate conduct and business ethics.

This development reflects a more general trend in the investment industry referred to as Socially Responsible Investment (SRI) which comprises the incorporation of environmental, social and

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[1] This shift to a more active ownership role of institutional investors can be regarded as a direct consequence of their larger ownership stakes in companies. Their large holdings in single companies often do not allow large institutions to exit companies when they are dissatisfied with aspects of corporate performance, without negatively moving share prices (Clark & Hebb, 2005).

ethical factors into investment processes. To illustrate, according to the U.S. Social Investment Forum (SIF), U.S. institutional asset owners incorporated environmental, social or corporate governance criteria in their investment analysis and portfolio selection for aggregate assets of USD 4.04 trillion in 2014, which represents a 77% increase since 2012. In addition, a further USD 1.6 trillion of U.S. institutional assets were dedicated to shareholder engagement (US SIF, 2014). Similarly, more and more global institutional investors commit to the Principles for Responsible Investment (PRI) which state that investors will incorporate environmental, social and governance considerations into their investment processes and promote SRI in the market. When the PRI were launched in April 2006 the organisation counted 100 signatories which together accounted for USD 6.5 trillion assets under management (AUM). In comparison, in April 2016 the PRI had 1500 signatories with aggregate AUM of USD 62 trillion. This increase in AUM responds to an average annual growth rate of more than 25% over the last 10 years.[2] Furthermore, institutional investors have also been the main drivers behind the growth in SRI in Europe, as the numbers by the European SIF (Eurosif) highlight: 96.6% of the European SRI assets are invested by institutional investors relative to retail investors (Eurosif, 2014). Particularly interesting about this investment movement is that it is not constrained to specialised financial institutions but that major financial firms and large institutional asset owners, especially pension funds, have been joining the SRI movement. For instance, Jean Frijns, Chief Investment Officer (CIO) of the large Dutch pension fund ABP Investments, states that SRI is "one of the most critical factors driving the future of fiduciary investment" (Financial Times, Jan. 26, 2003). In addition, almost 80% of U.K. pension scheme members require their schemes to report on how the scheme incorporates environmental, social and governance factors into their investment processes (Wen, 2009).

Given this surge in interest in SRI by many of the largest institutional investors worldwide, it is necessary to more closely define what is meant by SRI. In fact, aiming to arrive at a uniform and

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[2] Further information about the PRI and the evolution of its signatory base can be accessed via: https://www.unpri.org/about .

universally agreed-upon definition of SRI has been one of the major challenges of the SRI movement ever since it started gaining ground among financial investors (e.g. Eccles & Viviers, 2011; Berry & Junkus, 2013). For the purpose of this study, I apply the broad definition of SRI used in Renneboog, Ter Horst & Zhang (2008a,b) and Scholtens & Sievaenen (2013) who define SRI as a way by which investors try to account for environmental, social, governance and ethical issues in the investment process.

Fuelled by the strong interest for SRI by investment practitioners, an ever-growing body of academic work has been devoted to understanding the investment consequences of incorporating environemental, social and ethical factors into the investment process. Arguably, the question that has spurred most academic interest is the one of the financial performance implications of SRI and the more general link between a company's environmental and social performance on the one hand and its corporate financial performance on the other hand. In fact, there are more than 200 studies published on this subject (e.g. Margolis, Elfenbein & Walsh, 2009; Wang, Dou & Jia, 2016). However, there are surprisingly few studies that empirically analyse the motivations of institutional investors to engage in SRI. For instance, as Capelle-Blancard & Monjon (2012) and Hoepner & McMillan (2009) point out, most studies on SRI and particularly the most 'influential' ones are concerned with questions of the financial impact of SRI while little research exists on the antecedents of SRI preferences. Why do institutional investors engage in SRI and which forces are driving their interest in the environmental, social and ethical impact of their investments? Do different institutional investors show different preferences for SRI and how does the incorporation of environmental, social and ethical factors into the investment process support or hamper the institutions' investment objectives? These are important questions that need to be addressed in order to better understand the surge in SRI and its impact on financial markets.

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1.2 Intended Contributions

This thesis contributes to the growing body of research on SRI by investigating how large institutional investors incorporate environmental, social and ethical considerations into their investment practices. In particular, I focus on three questions that will be addressed to varying degrees throughout the three main empirical chapters of this thesis:

(1) How do institutional investors integrate environmental, social and ethical factors into their investment processes?

(2) What drives institutional investors' propensity for considering such 'non-financial' matters in their investment decisions?

(3) What impact does the integration of environmental, social and ethical factors have on their investment performance regarding their financial and non-financial investment objectives?

The SRI literature generally considers three strategies to SRI: (a) negative screening which involves excluding companies from the investment universe that are considered 'irresponsible'; (b) positive screening where investors mainly invest in companies that show strong environmental and social performance; and (c) shareholder activism where investors do not directly implement social and environmental considerations in the portfolio composition but instead try to use their ownership rights to influence corporate behaviour in a more socially responsible direction (Sparkes & Cowton, 2004). Which of these strategies institutional investors use depends on a variety of factors, including their investment objective, the institutional and regulatory background of the investor, the investors' prior experience in SRI and the motives for engaging in SRI. To account for this diversity in SRI approaches and the strategies' potentially different focus, each of the three empirical chapters of this thesis focuses on one particular SRI strategy, by answering relevant questions regarding the literature in each subcategory. Thus, together the three chapters form a comprehensive analysis of the three most important SRI strategies adopted by institutional investors.

Perhaps the greatest contribution of this thesis is the attempt to reorient the SRI research from analysing whether SRI out- or underperforms relative to conventional investment strategies towards

considering a wider range of 'non-financial' drivers that can explain why institutions engage in SRI. Given that most empirical studies on the financial performance impact of SRI predominantly find an insignificant performance impact of applying SRI strategies (e.g. Geczy, Stambaugh & Levin, 2005; Orlitzky & Benjamin, 2001; Orlitzky, Schmidt & Rynes, 2003; Margolis & Walsh, 2003; Margolis et al., 2009; Bauer, Koedijk & Otten, 2005; Wang et al., 2016), clearly there must be drivers other than the aim of achieving superior abnormal returns that explain the surge in SRI over the recent years. However, very few studies have analysed the motivations of institutional investors to engage in SRI, neither conceptually nor empirically.[3] This thesis focuses in particular on the role of the ultimate beneficiaries of institutional investors and their investment preferences in driving the demand for SRI. Given that many of the largest institutional investors are fiduciaries and invest a large pool of assets not on their own behalf but on behalf of others, such as employees in the case of pension funds or the general society as is the case for sovereign wealth funds (SWF), it is an interesting, yet mainly unexplored question, whether the concerns of these ultimate beneficiaries toward the environment and social issues are reflected in the funds' investment decisions.

Relatedly, another major contribution of this thesis is acknowledging that institutional investors are not one homogeneous group but that they differ with respect to their investment horizon and objectives, their incentive structures, their legal requirements and their relation to their ultimate owners and beneficiaries. These factors are expected to crucially impact the propensity of institutions to engage in SRI as well as the choice of their SRI strategies. In this thesis, I account for investor heterogeneity by focusing on particular subgroups of institutional investors that, due to their investment objectives and beneficiaries' structure, are expected to show a particularly strong interest in SRI – public pension funds and SWFs. In addition, in the third empirical chapter (Chapter 5) I disaggregate 'active' shareholders into different investor types to analyse whether some of them are more able to identify financially material environmental and social issues in their holding companies.

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[3] Most studies on SRI and particularly the most 'influential' ones are concerned with questions of the financial impact of SRI (Capelle-Blancard & Monjon, 2012; Hoepner & McMillan, 2009).

One of the main issues regarding empirical analyses of institutional investment behaviour as well as SRI relates to the availability of appropriate datasets that provide institutional investor holdings and appropriate measures of the holding companies' environmental and social performance. As the most comprehensive datasets regarding both institutional holdings and environmental and social performance ratings are available for U.S. markets and U.S. companies, the empirical literature has naturally focused on institutional SRI investment by U.S. investors in U.S. firms. Due to data availability issues the main focus of this thesis also lies on the drivers of SRI preferences among U.S. institutions and two of the main empirical chapters are centred on the U.S. market (Chapter 3 and Chapter 5). However, Chapter 4 provides an attempt to analyse aspects of the drivers and financial implications of SRI in a less studied market, namely for Scandinavian institutional investors. As highlighted in many qualitative contributions to the SRI literature as well as by SRI practitioners, the SRI market is characterised by great national diversity regarding SRI practices and strategies (e.g. Sandberg, Juravle, Hedestroem & Hamilton, 2009; also Eurosif, 2014, for a practitioner's view). For example, based on results of a survey across conventional portfolio managers located in the U.S. and Europe, van Duuren, Plantinga & Scholtens (2016) find that the domicile of the portfolio manager has a distinct impact on its responsible investing preferences. In contrast to their European counterparts, U.S.-based managers tend to generally be sceptical about the benefits of SRI in terms of financial performance, while European managers are found to be highly optimistic about the performance enhancing effect of SRI. These findings call for research that specifically distinguishes between the motives of European and U.S. institutions regarding their propensity for SRI. In this way, my thesis contributes to the SRI literature by extending the knowledge of SRI preferences of institutional investors to institutional SRI investment in Norway and Sweden (Bengtsson, 2008a,b; Jensen, 2016b).

The final conceptual contribution of this thesis relates to the financial impact of environmental and social factors on firms' business operations and whether investors account for this materiality in their SRI strategies. Both the conceptual and the empirical literature in SRI predominantly does not account for the possibility that the same environmental and social factors can have a different

financial impact on different firms depending on the business operations of a company. However, recently several scholars have introduced the idea of industry-specific financial materiality of environmental and social factors (e.g. Eccles, Krzus, Rogers & Serafeim, 2012; Lydenberg, Rogers & Wood, 2010; Lydenberg, 2012). Due to recent innovations in accounting standards that define financially material issues on an industry basis (see SASB, 2013, as well as the extensive discussion of the standards in Chapter 5), this study represents one of the first attempts to empirically classify and analyse the financial materiality of company's environmental and social performance.[4] To the best of my knowledge, this thesis is the first study of investors' awareness of financially material environmental and social issues and their link to environmental and social shareholder activism.

The work presented in this thesis is empirical in nature. It intends to describe and explore the preferences of institutional investors for environmental, social and ethical considerations in their investment decisions and to link them to the financial impact of different SRI investment strategies. It is important to note that although the work touches upon how ethics and political preferences might affect institutions' investment decisions, this thesis is not an aggregation of normative studies and it is not aimed at deriving any normative judgements regarding the desirability of the moral and political values underlying the investment decisions.

In each empirical chapter, careful consideration has been given to the methodological design of the analyses. In particular, I have put great focus on accounting for real-world investment considerations and restrictions by basing my analysis on actual holdings and investments, divestments and shareholder rights actions. The empirical design also incorporates and controls for other investment features of the institutions, such as their propensity for benchmarking their portfolios to an index. In

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[4] Two other studies also use the same standards to classify financially material environmental and social issues on an industry basis (Kahn, Serafeim & Yoon, 2016; Grewal, Serafeim & Yoon, 2016). I will discuss these studies in detail in Chapter 5, along with the question how the research presented in this thesis differs from them.

addition, the results presented in this thesis have undergone several robustness and sensitivity tests, the majority of which are presented in the thesis.

Overall, this study aims to make original contributions to the literature on SRI and institutional investment by providing novel empirical evidence on the drivers and performance impact of SRI strategies by different groups of institutional investors, while carefully controlling for real-world investment considerations.

1.3 Outline of the Thesis

The remainder of the thesis is structured as follows. Chapter 2 presents an overview of the related literature and thus provides the backdrop against which the contributions of this thesis are to be assessed. First, I provide an historical overview of the development of SRI before summarising the empirical findings on institutional investors' preferences for SRI and the implications for the holdings companies. Next, I discuss the different drivers and motives of institutional investors to engage in SRI. This is followed by a brief discussion of the general findings of the literature that analyses the financial performance impact of SRI. In this context, I introduce the concept of industry-specific financial materiality of environmental and social factors before summarising the academic debate about whether SRI is in line with the fiduciary duties of institutional investors. Chapter 2 concludes with a brief reflection of the stand of the literature.

Chapter 3 to 5 present the main body of this thesis. Although the three chapters complement each other as they all focus on one of the three main SRI strategies applied by institutional investors, each one is an independent study in its own right and provides novel findings for the respective literature. While I will briefly introduce the main research questions addressed in each of the three chapters, Table 1.1 provides a systematic overview by chapter, summarising its main focus, original contributions and research implications.

In Chapter 3, I analyse the impact of different political dimensions on the investment decisions of U.S. state pension funds. In particular, I analyse whether potential pressures by state politicians and/or the political values of the funds' ultimate beneficiaries impact the portfolio weight that the funds allocate to companies that have a high environmental and social performance rating. As such, this chapter focuses on the SRI strategy of positive screening. After a review of the related literature, I introduce the data used in the empirical analysis and explain how I measure funds' portfolio allocations, the performance of the holding companies on environmental, social and governance issues as well as the different political dimensions. The main data sources used in this chapter are the Thomson Ownership Holdings Database of institutional investor equity holdings and the company ratings for environmental, social and governance criteria by Kinder, Lydenberg, Domini, & Co. (KLD), now MSCI, which I combine with several additional data sources to create my sample of the public equity holdings of 31 U.S. state pension funds. I continue by explaining the research design, before discussing the empirical results. The benchmark model employed in this chapter is a fixed effect panel regression that relates the funds' portfolio weights to the holdings' corporate social responsibility (CSR) as well as several control variables. To determine which political dimensions impact the portfolio allocations of the pension funds, I interact the CSR scores with several political proxies that measure different political dimensions. After testing the robustness of the main results to alternative model specifications, I investigate the performance effect of the politically motivated SRI investments, using a calendar-time portfolio approach as well as a multivariate panel setting. The chapter closes with a summary of the main findings and a discussion of their main implications.

Chapter 4 focuses on the SRI strategy of negative screening. I empirically analyse the exclusion of companies from institutional investors' investment universe due to a company's business model – sector-based exclusion – or due to a company's violation of international norms – norm-based exclusion. This analysis is undertaken for the exclusion decisions of two of the largest institutional asset owners in the Scandinavian market – the Norwegian Government Pension Fund Global (GPFG) and Sweden's public pension funds, the AP-funds. After a brief discussion regarding the motivation for the study, I introduce the particular institutional features of the two asset owners. Based on the

prior literature on the performance effects of exclusionary screening, I derive the research questions and develop testable hypotheses. Following this, I conduct a time-series analysis of the performance implications of the exclusion decisions of the two funds, using a calendar-time portfolio approach. A series of different performance models is implemented and their results discussed. The robustness of the results is tested, before I summarise and discuss the implications of the findings.

In Chapter 5, I concentrate on shareholder activism on environmental and social topics. Using the sustainability accounting standards proposed by the Sustainability Accounting Standards Board (SASB), I classify the topic of each environmental and social shareholder proposal as financially material or immaterial for the targeted company. This allows me to analyse whether the targeting of companies is linked to the financial materiality of the targeted topic and whether some investors are more able to engage companies on matters of financial materiality. After introducing the literature on environmental and social shareholder activism and on the financial materiality of environmental and social factors, I describe the data and sample construction. In doing so, I especially focus on the classification of environmental and social topics by financial materiality based on the SASB standards, which are used to categorise the shareholder proposals into financially material and financially immaterial ones. Following this, I present the empirical strategy and the results: I first analyse what companies are targeted by material environmental and social shareholder proposals, I then focus on who targets companies on material shareholder proposals before investigating how other shareholders react to material shareholder proposals. The main empirical analysis is followed by a brief discussion of alternative explanations of the findings. Chapter 5 closes with a summary of findings and a discussion of their main implications.

While I summarise the relevant empirical findings and their major contributions at the end of each chapter, I provide a more holistic overview of the contributions of the thesis in Chapter 6, in which I bring the results and conclusions of each chapter together. The thesis concludes with a brief discussion of the limitations of the thesis as well as possible avenues for future research that builds on the findings presented in this thesis.

Table 1.1: Overview of the Thesis by Chapter

Table 1.1 provides an overview of the three main empirical chapters that constitute this thesis, including the title and the major themes, the institutional investor group and the SRI strategy that are analysed in each chapter, the geographical coverage of the studies as well as the main dataset. The table also lists the major contributions and implications of each of the three chapters.

	Chapter 3	Chapter 4	Chapter 5
Title:	Red versus Blue: Do Political Dimensions Influence the Investment Preferences of State Pension Funds?	On the Price of Morals in Markets: An Empirical Study of the Swedish AP-Funds and the Norwegian Government Pension Fund	The Materiality of Environmental and Social Shareholder Activism – Who cares?!
Theme(s):	Impact of Political Values of Funds' Ultimate Beneficiaries on Preferences for Environmental, Social and Governance Factors in Equity Holdings	Impact of Exclusionary Screening on Financial Performance and the Balancing of Financial and Ethical Objectives imposed by Funds' Ultimate Beneficiaries	Motivation for Environmental and Social Shareholder Activism and its Link to Financial Materiality of Environmental and Social Factors
Institutional Investor Group:	State pension funds	State pension funds; Sovereign wealth funds	All institutional investors (and individual investors)
SRI Strategy:	Positive screening	Negative screening	Shareholder activism
Geographical Coverage:	U.S.	Sweden, Norway	U.S.
Main Dataset:	Public equity holdings (in S&P500 companies)	Exclusion lists published by the funds	Shareholder proposals submitted to S&P500 companies
Original Contributions:	First empirical analysis explaining the investment preferences of state pension funds for environmental, social and governance considerations by state-specific political dimensions. Contrary to prior literature, investment preferences are driven by beneficiaries' preferences – as compared to pressures by local politicians – and are not detrimental to financial performance.	First analysis of the financial impact of exclusionary screening by two major Scandinavian asset owners, the Norwegian Government Pension Fund Global (GPFG) and the Swedish AP-funds. Differentiation between financial impact of industry-based exclusionary screening and norm-based exclusionary screening.	First study on investor awareness of financial materiality in the realm of environmental and social shareholder activism. Linking of financial materiality of environmental and social issues to target topics of shareholder activism and firms' prior CSR performance

Table 1.1 - continued

Research Implications for…			
…Institutional Investors:	Fiduciaries are able to incorporate their beneficiaries' preferences, i.e. their regard for environmental and social factors as indicated by their political leaning, as well as their financial objectives.	Unlike investors in mutual funds, the ultimate beneficiaries of public pension funds and SWFs cannot exit the fund if they are discontent with either the financial performance or the ethical performance of their investment. This study shows that it is possible for funds to balance both financial and empirical objectives of their beneficiaries.	Investors allocate considerable resources to targeting companies on financially immaterial issues, suggesting that their activism is either (partially) motivated by ulterior motives other than purely financial ones, or that they are unaware of the industry-specific financial materiality of environmental and social topics.
…Companies:	Changes in the political leaning of state's beneficiaries trigger shifts in portfolio allocations with potential implications for firm's cost of capital and the promotion of environmental and social policies across the portfolio firms.	Due to domino effects of exclusionary decisions by the sample funds, companies might enter into dialogues with funds in order to eliminate the reason for exclusion.	Reducing exposure to material environmental and social concerns can lower likelihood of being targeted by shareholder activism, whereas investment in environmental and social policies does not affect target likelihood.
…Academia:	Even at an institutional level, SRI may be strongly driven by investors' attitudes toward the social aims of firms, as compared to pure risk and return considerations.	Evaluation of financial impact of exclusionary screening should account for practical limitations of the implementation of such strategies, as well as the type of strategies dominant in the finance industry (industry-based versus norm-based exclusions).	Better understanding and communication of the industry-specific financial materiality of environmental and social issues.
… Policymakers/ Regulators:	Arguing for a new understanding of fiduciary duty, which acknowledges that fiduciaries are allowed to incorporate the (non-financial) preferences of their beneficiaries as long as these do not conflict with their financial objectives.	Regulators should clarify the prioritisation of ethical objectives relative to financial objectives in case of conflicts between the two.	Raising awareness and educating both companies and their shareholders about the financial materiality of environmental and social topics.

2 LITERATURE REVIEW

2.1 Historical Development of SRI

SRI, or ethical investment as it was then called, has its roots in the eighteenth and nineteenth century when religiously motivated investors such as the Quakers and Methodists tried to align investments with their religious beliefs (Sparkes & Cowton, 2004; Richardson, 2009; Hawley, 2016). These earliest forms of ethical investments involved avoiding 'sinful' companies such as those involved in the production of alcohol and tobacco, in gambling, and later in the Quaker case, in slave trade (Richardson, 2009; de Colle & York, 2009; Hawley, 2016). Thus, SRI started off as negative exclusionary screening where investors excluded 'irresponsible' companies from their investment universe based on ethical and mainly religious grounds. However, the strategy of exclusionary screening and divestment was soon applied to other, non-religiously motivated causes. Important developments in the SRI movement include the divestment boycott against South Africa's apartheid regime in the late 1970s (Richardson, 2009) and divestment campaigns during the Vietnam War in the late 1960s and 1970s (Hawley, 2016). In addition, a heightened sense of environmentalism as well as a gradually developing belief that corporations bore some responsibility towards the environment they operated in generated a new demand for investment tools that incorporated the moral and economic goals of investors (de Colle & York, 2009). On this backdrop, the first commercial 'ethical' investment products emerged (Hawley, 2016).[5]

As the popularity of SRI funds grew in the 1980s, the moral grounds of the investment strategies were gradually replaced by economic concerns regarding the social costs and negative externalities of 'socially irresponsible' corporate conduct (Sparkes & Cowton, 2004; Bengtsson, 2008a,b). Business-case SRI was born which scrutinises companies based on environmental, social and corporate governance (ESG) issues and assesses the impact of ESG factors on financial portfolio

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[5] The first ethical unit trust in the U.S. was launched in 1971 whereas the U.K. saw its first ethical investment trust to be opened in 1984.

performance (Hawley, 2016). With this shift in focus, new forms of SRI strategies gained ground. Positive screening and best-in-class investing was adopted by several asset owners and mutual funds, which focuses on investing in companies that perform particularly well on ESG issues. Additionally, investors started to engage with companies associated with 'irresponsible' business practices in order to change corporate behaviour, so called shareholder activism. In the 2000s major institutional investors, such as pension funds in the U.K., Canada and Australia, adopted SRI policies on a significant scale (Sparkes & Cowton, 2004; Richardson, 2009). This marked the beginning of the 'mainstreaming' of SRI. Further factors that fuelled the SRI growth in the 2000s include legislative pressures and the development of industry standards in SRI that led to a further formalisation of SRI (Sparkes & Cowton, 2004; Richardson, 2009; Hawley, 2016).[6] While prior to the financial crisis the main objective of SRI had been its financial benefits, the outbreak of the financial crisis in 2008 put the reputational consequences of SRI into focus (Hawley, 2016). Put simply, SRI was increasingly seen as a tool to help financial institutions maintain or regain their reputation as good corporate citizens and thus legitimise their very existence (Hawley, 2016; Blanc & Cozic, 2012).

Summing up, the evolution of SRI is characterised by three trends regarding its main focus, its mains actors and its dominant strategies: (1) SRI started as ethical investment, rooted in religious traditions, but is increasingly driven by the growing awareness for the social, environmental and ethical consequences of business practices and their financial impact (e.g. Sparkes & Cowton, 2004; Capelle-Blancard & Monjon, 2012); (2) the main actors in SRI were confined to religious and non-profit groups in the early stages of the movement but now comprise a broad set of investors including large private and public institutional investors; and (3) the strategies to incorporate SRI concerns into the investment process have evolved from negative (industry) screening to a variety of strategies

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[6] For example, in the U.K., in several other European countries as well as in Australia, occupational pension funds are obliged to disclose any SRI policies they adopt. In the U.S. and Canada, mutual funds are required to disclose their proxy voting policies and voting records (Richardson, 2009). In some jurisdictions, including France, New Zealand, Norway and Sweden, national pension plans must take ESG issues into account when making investment decisions.

including positive screening and shareholder activism and are increasingly moving towards an integrated SRI approach that combines the various strategies.

2.2 Institutional Investor Preference for SRI

The growing importance of institutional investors as shareholders and their shifting preferences regarding financial and non-financial firm characteristics has fuelled an emerging literature on how the variation in institutional preferences for securities shapes the financial markets and the business operations of public companies which cater to institutional investors' demands (e.g. Gompers & Metrick, 2001; Bennett, Sias & Starks, 2003; Cornett, Markus, Saunders & Tehranian, 2007). Regarding institutional investors' preferences for SRI, several studies have analysed the relation between institutional ownership and the environmental and social performance of the holding companies – often termed a company's corporate social responsibility (CSR). It appears that the early empirical literature arrives at a positive relationship between institutional ownership and CSR. For instance, based on a sample of U.S. companies, Graves & Waddock (1994) find that higher CSR is associated with a higher number of institutions holding the stock and that institutional investors do not reduce their ownership share in firms which improve their CSR. Additionally, Johnson & Greening (1999) document a positive relation between the CSR performance of a company and the proportion of institutional owners, and in particular the ownership by public pension funds – a result that has been confirmed by Di Guili & Kostovetsky (2014) based on a more recent sample. Finally, findings by Neubaum & Zahra (2006) suggest that long-term institutional ownership is positively related to a company's CSR performance and that institutional activism interacts with long-term holdings: institutional activism paired with a high long-term ownership share positively impacts the firm's CSR in the subsequent three years. Turning to the U.K., Cox et al. (2004) confirm the positive link between long-term institutional holdings and CSR. Looking at the strategies through which investors implement their SRI preferences, the authors find that institutions primarily select through negative screening, excluding firms which show the worst CSR performance.

Contrary to the above studies, a growing body of research finds no significant relation between institutional ownership and CSR (e.g. Coffee & Fryxell, 1991; Barnea & Rubin, 2010; Dam & Scholtens, 2012). Interestingly, Barnea & Rubin (2010) do not only report that no significant link between a firm's institutional ownership share and its CSR activities exists, but in contrast to Johnson & Greening (1999) and Di Guili & Kostovetsky (2014) the authors find a negative relation between public pension fund ownership and CRS performance. Finally, David, Bloom & Hillman (2007) find that shareholder activism does not improve but actually reduces a firm's CSR performance. Rather than pressuring firms to improve their CSR, the authors find that activism allocates resources away from CSR and towards political activities to resist the external pressures.

What can explain these contradictory findings? One possible answer to this question is that institutional preferences for CSR are not homogeneous but that different institutional investor types show differing preferences for firms' environmental and social performance, fuelled by investor-specific investment objectives and motivations. Based on this notion, Ryan & Schneider (2002) developed a conceptual model which links the characteristics, investment objectives and incentive systems of different institutional investor types to their propensity to engage in SRI and shareholder activism. In line with the implications of this conceptual model, Barber, Morse & Yasuda (2016) demonstrate a "sharp" heterogeneity in institutional investor demand for SRI in the form of impact investment.[7] They argue that these findings capture meaningful variations in institutions' motives and/or their investment restrictions. For instance, they find that institutions with a primary impact objective as well as investors subject to political and regulatory pressures, such as public pension funds, have a stronger demand for SRI impact funds. Interestingly, their results also suggest that investors whose ultimate beneficiaries are households – as is the case for (public) pension funds – show a greater propensity for SRI impact investing. This finding is broadly in line with a study by Dam & Scholtens (2012) which highlights that investors acting as "intermediaries" are most sensitive

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[7] Impact investing denotes the investment in private equity funds, which deploy capital with an expressed intent for the investments to provide a social and/or environmental return in additional to financial returns.

to firm's CSR policies. Finally, Sievaenen, Rita & Scholtens (2013) survey more than 250 pension funds across 15 European countries to determine whether institutional differences between countries can explain differences in funds' propensity to engage in SRI. According to the survey results, SRI preferences are mainly related to the legal origin of the country, the ownership of the pension funds in terms of private or public sponsorship, and the fund size.

2.3 Institutional Motives for SRI

As suggested by the findings of the above studies, institutional investors' demand for SRI interacts with their other motives and interests as shareholders and intermediaries for their ultimate beneficiaries (see Aguilera et al., 2007; Dam & Scholtens, 2012). While some investors commit to SRI due to principle-based motives such as to protect the environment for future generations or to safeguard basic human rights, others might be driven by the financial prospects of SRI, such as seeing SRI as an enhanced risk management tool or a measure of reputation management. However, there are surprisingly few studies that empirically analyse the motivations of institutional investors to engage in SRI and even fewer that aim to conceptualise the drivers of SRI preferences.[8] One exception is the study by Aguilera et al. (2007) – a conceptual study which considers the antecedents of CSR, i.e. factors that lead investors (and other actors) to push firms to engage in CSR. The authors postulate that investors have three main motives for pressuring firms to improve their environmental and social performance: (1) instrumental motives where an improved CSR performance of their holding companies serves the self-interests of investors; (2) relational drivers as investors push for CSR due to concerns about the relationships with their stakeholders; and (3) moral reasons for investors aim to comply with their (or their beneficiaries') ethical standards and moral principles.

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[8] For instance, as Capelle-Blancard & Monjon (2012) and Hoepner & McMillan (2009) point out most studies on SRI and particularly the most 'influential' ones are concerned with questions of the financial impact of SRI while little research exists on the antecedents of SRI preferences.

The main instrumental motive for SRI is a pure financial objective. In this scenario, investors push firms to improve their CSR in order to increase a firm's competitiveness and long-term profitability and thus eventually investors' own investment return (Aguilera et al., 2007). This driver crucially relies on the investors' belief that improved CSR increases financial performance – a notion that will be discussed in further detail in the subsequent section. Given the abundance of research (both academic and industry-based) that analyses the link between CSR and financial performance (see Capelle-Blancard & Monjon, 2012), the instrumental motive appears to be one of the major drivers for institutional investors to engage in SRI. In line with this reasoning, Petersen & Vredenburg (2009) report that institutional investors in the Canadian oil and gas industry mostly state financial objectives and the positive link between CSR and corporate financial performance as a motivating force to invest in companies with higher environmental and social performance. Relatedly, Clark & Hebb (2005) in their qualitative study argue that institutional investors, and in particular pension funds, seeking to protect the value of their investment are very attentive to the sensitivity of the share price regarding the reputation of the holding firm. In line with the instrumental motive for SRI preferences is the idea of large institutional investors as 'universal owners' suggested by Hawley & Williams (2000) and Jensen (2002). Critics of CSR often argue that CSR violations and expenses are externalities to the firm and its shareholders that should not affect the violating firm's market price and thus should not come at a cost for its shareholders, even if the firm's actions have negative consequences for other firms in the economy. Supporters of the 'universal ownership' concept, however, counter that this reasoning does not apply for large institutional investors which are essentially invested in the entire market. They point out that some large institutional investors are of such size that their investments are diversified across all investment opportunities so that they basically invest in the economy as a whole. For these universal owners, the externalities of some of their portfolio companies are not 'true' externalities due to the negative effects they cause to some of their other holding companies. Thus, they 'internalise' these externalities. Additionally, their large ownership stakes prevent them from divesting from the 'violating' company without negatively

moving the market price, so that they have a strong incentive to initiate change in the environmental and social policies of their holding companies.

The relational motives for SRI refer to investors' responsibility towards various stakeholder groups, towards the environment and the community, and in case of fiduciaries such as pension funds towards their ultimate beneficiaries (Aguilera et al., 2007). Especially regulatory changes, legal obligations, media pressure and pressure from actual and future beneficiaries have proven to be strong drivers of the SRI growth in many countries (Sparkes & Cowton, 2004). As different investor types are subject to a different set of legal requirements and more or less prone to outside pressures, these variations may explain their varying preferences for SRI (Ryan & Schneiders, 2002; Barber et al., 2016). Following this argument, especially institutions which invest funds on behalf of a large share of the society and institutions with long investment horizons, such as public pension funds, union funds and SRI funds, are particularly reliant on long-term stakeholder interests, which are reflected in CSR initiatives, and are thus expected to show a stronger interest in their holdings' CSR performance. As an anecdotal example of a responsible investment strategy driven by relational motives, Clark & Hebb (2005) name the case of the U.K. Universities Superannuation Scheme (USS) which started its sizable environmental investment policy in 2000 after considerable internal lobbying from a group of USS members. A further example comprises the ethical exclusion policies by the Norwegian GPFG and the Swedish AP-funds which were implemented due to regulatory requirements that responded to considerable societal pressure.[9]

The notion of SRI driven by ethical and morality-based motives postulates that institutional investors as members of society have to contribute to common values of society and that this responsibility extends to their investment decisions. In contrast to the relational explanation, the institutions are not reacting to outside societal pressure but apply their inherent ethical and moral standards and principles to the investment process. The best example of ethically driven SRI are probably the SRI

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[9] The case of the Norwegian GPFG and the Swedish AP-funds will be analysed in greater depth in Chapter 4 of this thesis.

practices of the early religious institutions which based their investment policies on their religious standards, while recent research suggests that fewer investors associate their SRI strategies with ethical values. Several authors even document that most institutional investors shy away from using the term 'ethical investing' to describe their strategies (e.g. Sparkes & Cowton, 2004; Sandberg et al., 2009; Capelle-Blancard & Monjon, 2012). However, for the case of private investors there is mounting evidence that one of the main drivers for SRI are the personal values of those investing. For instance, Williams (2007) finds that SRI may be driven more by investors' attitudes toward the social aim of firms rather than by financial returns. In line with these findings, Hong & Kostovetsky (2012) and Bonaparte, Kumar & Page (2012) show that investors attaching higher importance to social and environmental issues – as measured by their political leaning – tilt their stock portfolios towards companies with a stronger CSR performance.

Finally, it is important to highlight that the different motives for SRI are not mutually exclusive and an investor's SRI policy can be linked to more than one of the above drivers. In fact, financial and non-financial motives play a role for all investors but the weight of these two motives can differ by type of owner as well as over time (see Aguilera et al., 2007; Lydenberg, 2007; Ryan & Schneider, 2002; Dam & Scholtens, 2012; Barber et al., 2016). In fact, these time-dependent preferences for SRI are highlighted by the results of a Eurosif survey which finds that the importance of the financial materiality as well as fiduciary duty considerations as drivers for SRI has strongly increased over the recent years (Eurosif, 2014). These last two factors will be discussed in further detail in the following two sections.

2.4 Financial Materiality of SRI

While SRI focuses on integrating environmental, social and ethical considerations – often termed non-financial factors – into the investment process, it is nevertheless an investment strategy and as such has to ultimately generate risk-adjusted financial returns for the investing institutions and the ultimate beneficiaries. Thus, as pointed out by Cox et al. (2004), expectations about the underlying

relation between CSR and financial performance are of crucial importance in influencing the pattern of institutional investment. And indeed there is a broad literature that analyses the financial impact of environmental and social factors. Broadly speaking, this stream of the literature can be categorised along two lines: On the one hand, a large number of studies have focused on the firm-level by analysing the financial impact of CSR on a company's performance, either based on accounting or market-based performance measures. On the other hand, several studies adopt the investor perspective and investigate the (risk-adjusted) returns to SRI strategies. To summarise this literature, studies generally find a positive but small impact of CSR on firm performance, while there is little consistent support for a significant effect of SRI on investors' portfolio returns (e.g. Geczy et al., 2003; Orlitzky & Benjamin, 2001; Orlitzky et al., 2003; Margolis & Walsh, 2003; Bauer et al., 2005; Margolis et al., 2009; Wang et al. 2016).[10] However, some scholars argue that the financial return to SRI might depend on the strategy applied and the degree to which SRI is implemented across the investment process which impairs the comparability of results across studies focusing on different SRI strategies and bundling investors that integrate SRI to a different extent in their investment decisions (e.g. Barnett & Salomon, 2006).

While the empirical literature provides conflicting results regarding the financial impact of SRI, conceptually there are also diverging views regarding the link between a firm's financial performance and its environmental and social policies. Neoclassical economists argue that CSR investments are a cost to the firm and thus negatively affect a firm's competitiveness relative to its industry peers. Thus, firms engaging in CSR should show lower financial performance (e.g. Friedman, 1970; Aupperle, Carroll & Hatfield, 1985; McWilliams & Siegel, 1997; Jensen, 2002). In contrast, proponents of CSR underscore its potential to improve a firm's relative competitiveness as it should support a more efficient use of resources and the production of innovative products while reducing

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[10] For a comprehensive overview and analysis of the CSR-financial performance link see the meta-analyses by Margolis & Walsh, 2003 (109 studies, 1972-2002); Orlitzky & Benjamin, 2001; Orlitzky et al., 2003 (52 studies, 1970-2002), Margolis et al., 2009 (214 studies, 1972-2007) and Wang et al., 2016 (42 studies, 2003-2012).

the firm's exposure to adverse regulatory and community actions (Porter & Kramer, 2006, 2011). Consequently, this school of thought predicts a positive impact of CSR on firm performance.

More recently, scholars in the accounting and management literature have proposed an alternative view of looking at the financial impact of environmental, social and ethical factors – the concept of industry-specific financial materiality of environmental and social factors (Eccles et al., 2012; Lydenberg et al., 2010). In essence, these authors argue that among the large number of environmental, social and ethical factors that can be considered only a small number is relevant to the firm's business operations and thus has the potential to affect firm's financial performance. Furthermore, these 'financially material' environmental and social factors differ between companies operating in different industries (Lydenberg et al., 2010; Lydenberg, 2012). This notion of industry-specific financial materiality of CSR factors has been empirically tested in only two studies so far, both concluding that firms which improve their performance on material environmental and social issues outperform their peers on a risk-adjusted basis (Kahn, Serafeim & Yoon, 2016) and show higher future firm values (Grewal, Serafeim & Yoon, 2016). However, the studies document a lack of awareness, both across operating companies and their shareholders, as to which environmental and social factors are financially material to the firm's business operations, highlighting the need for future research on this topic.

2.5 SRI and Fiduciary Duty

The question of the performance impact of SRI is of particular interest in light of the heated debate whether SRI and the incorporation of 'non-financial' factors such as environmental, social and ethical issues are in line with the fiduciary duty of investors (e.g. Rounds, 2005; Freshfields Bruckhaus Deringer, 2005; Sethi, 2005; Richardson, 2007; Sandberg, 2011; Hoepner, Rezec & Siegl, 2011). As noted by Sandberg et al. (2009: 525), "[f]or institutional investors like pension funds, for instance, concerns about fiduciary responsibilities and the extent to which SRI is compatible with these have had a strong impact on the sector".

The concept of fiduciary duty implies that those who invest funds on behalf of someone else have certain responsibilities and duties towards these ultimate beneficiaries to make all investment decisions in good faith and in the best interests of the beneficiaries. Fiduciaries can comprise a number of actors but traditionally refer to the institutions of mutual funds, insurance companies and particularly pension funds and other public asset owners investing on behalf of the wider society. For the latter two, the issue of fiduciary duties is particularly important as in many cases the ultimate beneficiaries of these funds do not have the option to exit the fund in case they are dissatisfied with the investment policies and/or the financial performance of the fiduciaries (Clark, 2004; Sandberg, Siegl & Hamilton, 2014).[11] While the general desirability of the fiduciary duties is uncontested, there is less agreement on what defines the 'best interests' of the beneficiaries and how conflicting interests should be prioritised.

As pointed out by Lydenberg (2007), over time fiduciary duty has been interpreted within the confines of modern portfolio theory and has been linked to the maximisation of returns based on market prices. "Failure to maximise market-based returns is therefore often portrayed as a dereliction of fiduciary duties" (Lydenberg, 2007: 472). Interpreted in this way, the question whether SRI is in line with investors' fiduciary duties boils down to whether the SRI strategy applied by the investor enhances risk-adjusted portfolio returns or whether the investment is made at the detriment of portfolio performance. This interpretation explains while over the years the actors in the SRI market have shifted the focus away from the ethical underpinnings and towards the 'business-case' of SRI and progressively see SRI as a way to enhance returns and mitigate long-term risks. In contrast, the opponents of SRI argue that these investments are motivated by ulterior motives of the investors so that "social investing subverts a fiduciary's common-law duty of undivided loyalty" and serves as a "vehicle for political mischief at the expense of the interests of taxpayers" (Rounds, 2005: 76).

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[11] I offer a more extensive discussion of this point in Chapter 4.2.1.

While this debate is far from being settled, it ignores that the beneficiaries might have other interests besides financial ones and that the reason they pressure fiduciaries to adopt SRI policies is not because they see them as a way to boost financial performance but they regard environmental, social and ethical objectives as investment objectives in their own right. This notion leads to interesting questions regarding which interests should be prioritised by fiduciaries – the financial or the 'non-financial' objectives. This question has not been widely addressed in the academic literature, but is nevertheless of importance given that several studies show that one of the main motives for engaging in SRI relates to the underlying values and beliefs of investors (e.g. Williams, 2007; Hong & Kostovetsky, 2012; Di Guili & Kostovetsky, 2014).

2.6   Brief Reflection of the Relevant Literature

The review of the literature presented in the previous sections shows that even though the body of research on SRI and institutional investment is large there are still important voids regarding our understanding of institutional investors' engagement in SRI. In particular, I identify several broad areas that require further investigation, many of which will be addressed throughout the three main empirical chapters of this thesis.

First, the major part of the empirical literature treats institutional investors as a homogeneous group when analysing their propensity for SRI. However, given that investor groups differ regarding their investment objectives, beneficiary structure and other important characteristics which are assumed to be linked to investors' preferences for SRI, more research is needed that accounts for investor heterogeneity and analyses the SRI strategies applied by different investor groups.

Second, the main focus of the SRI literature lies on the performance consequences of SRI and whether it out- or underperforms conventional investment strategies, while little is known about the antecedents of SRI. Consequently, future research should concentrate on identifying the drivers of SRI preferences beyond financial motives and in particular the role of the ultimate beneficiaries and their SRI preference in driving institutional investment choices.

Third, future work should focus on the financial materiality of SRI and whether firm and shareholder resources are allocated towards CSR and SRI activities that have the potential to create financial value. In particular, more work is required that clearly links the CSR factors to their relevance for a firm's business operations as well as clearly differentiates between the different strategies and motivations of SRI investors and their link to financial objectives.

Finally, a large body of the research presented in the previous sections is derived from U.S. data on U.S. institutions. As other countries have different institutional systems, differ in their cultural values and societal norms as well as their understanding of a firm's responsibility towards society research on institutional SRI in other countries would considerably extend our understanding of this movement and its importance for global financial markets.

3 RED VERSUS BLUE: Do Political Dimensions Influence the Investment Preferences of State Pension Funds?

3.1 Introduction

With assets over USD 3.3 trillion at the end of 2013 and an average ownership share of 7-8% of the total U.S. equity market over the last decades,[12] U.S. state pension funds are a major market force in the U.S. and global financial markets (Tonello & Rabimov, 2010). Their market power is highly concentrated in the largest state pension plans, providing these funds with enormous influence through their holdings of equity positions in large publicly traded companies.[13] Additionally, the future pension payments of a considerable share of American workers rely on the investment decisions of these funds.[14] As a result, the investment choices of U.S. state pension plans are of high relevance for the financial markets as a whole and for the future wealth of the state's population. However, little is known about the determinants of these investment choices, e.g. as compared to mutual funds and hedge funds (Brown, Pollet & Weisbenner, 2015).

One of the most prominent trends in state pension funds' investment activities in the latest years is their shift towards SRI and their growing interest in incorporating environmental, social and governance (ESG) criteria into their investment decision (e.g. Johnson & Greening, 1999; Neubaum & Zahra, 2006; Di Guili & Kostovetsky, 2014; Marlowe, 2014). For example, nine state and local government plans are signatories of the PRI and thus committed to incorporate SRI into investment practices across asset classes.[15] Moreover, several U.S. state pension funds actively pursue

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[12] See http://www.census.gov/newsroom/press-releases/2015/cb15-22.html .

[13] According to the 2013 Public Fund Survey, USD 2.74 trillion are centred in the 100 largest funds, thus comprising approximately 85% of the entire state and local retirement system. See http://www.publicfundsurvey.org/publicfundsurvey/summaryoffindings.html .

[14] As of 2013 more than 28.8 million Americans participated in state and local pension plans (see http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk).Even taxpayers that are not employed in the public sector have a stake in how these pension plans are managed because the responsibility for funding these defined benefit plans lies with the sponsoring government.

[15] These pension funds comprise CalPERS, CalSTRS, Connecticut Retirement Plans and Trust Funds (CRPTF), Illinois State Board of Investments, Los Angeles County Employees Retirement Association (LACERA), Maryland State Retirement and Pension System, New York City Employees' Retirement System,

investment strategies that promote an SRI related agenda; the most prominent example being CalPERS. The largest among the state pension funds is known for its "long standing commitment to sustainable investment and a proud history of leadership and innovation in the field".[16] However, relatively little is known about the determinants of state pension funds' SRI. Most empirical research regards U.S. state pension funds as one homogeneous group with respect to their preferences towards ESG and corporate governance (e.g. Johnson & Greening, 1999; Woidtke, 2002; Cremers & Nair, 2005; Di Guili & Kostovetsky, 2014). This is surprising as anecdotal evidence suggests that only individual funds have acquired the reputation as activist and 'responsible' investors.

One natural link to SRI that has not been investigated by the previous literature on state pension funds is the political leaning of those investing. According to the 2007 National Consumer League survey, 95% of Democrats are of the opinion that the U.S. Congress should ensure that corporations help social issues, whereas only 65% of Republicans regard this as an important matter. A 2014 survey by Gallup on Americans' views on a variety of societal issues finds that 23% of Democrats worry about 'race relationships', compared to 12% of Republicans, 53% of Democrats regard 'hunger and homelessness' as a pressing issue compared to only 33% of Republicans, 'climate change' is a major worry for 36% of Democrats (10% of Republicans) and 45% of Democrats care strongly about the 'quality of the environment' (16% Republicans).[17] These differences in preferences make SRI an optimal background for studying the influence of political values on investing. Assuming that the attitudes towards ESG issues enter the decision-making process of

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New York State Common Retirement System, State Universities' Retirement System of Illinois. All of these pension funds are located in predominantly Democratic leaning states, as classified by their overall votes in the presidential election from 1996 to 2012. Several of these pension funds are also founding and drafting members of the PRI.

[16] See for example CalPERS' 2014 Report 'Towards Sustainable Investment & Operations' in which the fund describes its ESG initiatives, including an environmental investment initiative, a carbon asset risk initiative, its initiatives promoting diversity and inclusion policies as well as its sustainable investment research initiative (http://www.calpers.ca.gov/eip-docs/about/pubs/esg-report-2014.pdf). CalSTRS' sustainable investment practices comprise, among others, a green initiative task force, a carbon disclosure project as well as several initiatives promoting diversity (http://www.calstrs.com/sustainable-investment-practices).

[17] Among the major worries of Republican leaning respondents are federal spending and the budget deficit, the size and power of the federal government and the state of the overall economy.

investors, Democratic leaning investors should have a stronger preference for SRI than Republicans. And, indeed, there is a growing literature showing that political values are a major determinant of investors' preferences for SRI. For instance, Hong & Kostovetsky (2012) study individual mutual fund and hedge fund managers' portfolio choices and provide empirical evidence that Democratic leaning managers favour stocks with a higher ESG rating than Republicans. Bonaparte et al. (2012) confirm the preference for SRI for the case of Democratic leaning private investors. However, many individuals do not actively invest in the stock market but a major share of their wealth is bound in their pension claims and invested via their occupational pension schemes. The question whether political influences also impact the investments of the state pension plans that invest the assets of these beneficiaries has not been addressed in the previous literature.

In this chapter, my aim is to close this gap in the literature. In particular, I demonstrate that the political climate of the state, alongside other well-known stock characteristics, significantly impacts the funds' preferences for SRI. I differentiate between political beliefs of the funds' members and the political agenda of the state politicians. Looking at the detailed equity holdings of 31 U.S. state pension funds, I find that funds with Democratic leaning members tilt more strongly towards companies with high ESG performance than their Republican counterparts. Additionally, political pressures on state pension funds as proxied by the proportion of Democrats in the state government also impact a fund's tendency to engage in SRI. When combining these two effects, I find support that funds with a Democratic leaning membership base show a stronger ESG preference when the state government is predominantly affiliated to the Democratic Party. In contrast, funds from states with Republican leaning members do not seem to engage in SRI, even if the state government is predominantly composed of Democrats. I interpret these results as indicative that state pension funds incorporate their members' political values and attitudes towards ESG issues into their investment choices. In line with this interpretation, I find evidence that funds dynamically adjust their ESG investment approach around changes in their members' political leaning. Finally, I focus on the performance effect of the politically motivated SRI. While I find that state pension funds, on average, seem to underperform on their active investment choices this underperformance does not seem to be

connected to their SRI. In fact, I find that the state pension funds in my sample neither out- nor underperform on their politically-motivated SRI holdings, suggesting that their SRI preferences are unlikely financially-motivated but mainly attitude-driven. My main results remain robust to numerous alternative explanations and variations, including different ways of defining the political proxies, variations of measuring companies' ESG performance, as well as industry effects and effects of indexing.

My study makes several contributions. To the best of my knowledge, this study is the first to show that fund members' preferences have a significant impact on state pension funds' investment allocations. While there is some evidence that some Scandinavian public asset owners, such as the Norwegian SWF GPFG (which will be the focus of Chapter 4) follow a strong responsible investment agenda that represents the commonly shared ethical values of the society (e.g. Chambers, Dimson & Ilmanen, 2012), similar tendencies have not been documented for the case of U.S. state pension funds. Whereas the previous literature predominantly focuses on political corruption and pressures to explain some of the investment practices by pension funds (e.g. Brown et al., 2015; Wald & Zhang, 2015; Hochberg & Rauh, 2013; Mohan & Zhang, 2014; Bradley, Pantzalis & Yuan, 2015), I find that political pressures merely have a moderating effect in explaining funds' SRI. This paper also extends the growing literature on political values in finance. While there is substantial research on the impact of politics on financial markets, independent corporations and (individual) investors, to the best of my knowledge this study is the first to document that political values also impact SRI at an institutional level and not only on a single manager basis. Finally, my paper has important implications for the investment decision process in state pension funds and the debate about funds' fiduciary duty in the context of SRI. While I do not find support that politically-motivated SRI weakens financial performance and thus potentially violates funds' fiduciary duty, my results suggest that these funds generally underperform on their active investments, i.e. investments that deviate from market weights.

The rest of this chapter is organised as follows. The next chapter provides an overview of the underlying literature. Chapters 3.3 and 3.4 describe the data and methodology, respectively. In Chapter 3.5, I discuss the results of my main analyses. I consider several alternative explanations and robustness tests in Chapter 3.6 Chapter 3.7 provides an analysis of the performance effects of the politically motivated SRI and Chapter 3.8 concludes.

3.2   Related Literature

3.2.1   SRI in State Pension Funds

State and local pension plans are among the most active investors promoting change in the corporate governance as well as other areas of corporate policies of the companies they are invested in (e.g. Smith, 1996; Del Guercio & Hawkins, 1999; Gillan & Starks, 2000; Parrino, Sias & Starks, 2003; Barber, 2007). One of the earliest studies providing empirical evidence that U.S. state pension funds favour companies that perform well on ESG issues is by Johnson & Greening (1999). It shows that U.S. state pension funds hold a larger ownership share in companies with stronger ESG performance. In comparison, the authors do not find a similar relationship for a control group of investment management funds. A recent study by Di Guili & Kostovetsky (2014) confirms that the percentage of ownership by U.S. state pension funds is positively related to the ESG performance of the underlying company. However, both studies focus on the corporate perspective by looking at the percentage of outstanding shares held by state pension funds instead of directly employing funds' portfolio holdings. Holdings tend to be more indicative of funds' investment preferences, though, as argued in Fich, Harford & Tran (2015), because they directly reflect funds' portfolio allocation decisions.[18]

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[18] In fact, the portfolio weight that a fund holds in a specific company (i.e. the pension fund perspective) and the percentage of outstanding shares held by the fund with respect to the total number of the company's outstanding shares (i.e. the company perspective) might not even be strongly related. For instance, in my sample the correlation between both variables only amounts to 2.7%.

Despite the broad anecdotal and academic evidence documenting SRI activities by U.S. state pension funds, there is relatively less research on the heterogeneity in state pension funds' SRI. In most empirical studies, U.S. state pension funds are regarded as one homogeneous group with respect to their preferences towards ESG issues (e.g. Johnson & Greening, 1999; Woidtke, 2002; Cremers & Nair, 2005; Di Guili & Kostovetsky, 2014). Notable exceptions are the studies by Cox, Barmmer & Millington (2007), Sievaenen et al. (2013) and Sandberg et al. (2009), which analyse differences in SRI practices across pension funds. These studies find that the level of competition (Cox et al., 2007), the legal origin, the public ownership of the fund, and the fund size (Sievaenen et al., 2013) as well as cultural differences between regions and countries (Sandberg et al., 2009) can explain part of the heterogeneity of pension funds' SRI. However the aforementioned studies either focus on a different market and external management, such as Cox et al. (2007), or draw comparisons between different (European) countries (Sandberg et al., 2009; Sievaenen et al., 2013), and thus do not capture the differences between U.S state pension funds' SRI. More importantly, none of these studies connects the pension funds' SRI activities to political factors.

3.2.2 Influence of Politics in State Pension Funds

Some of the earliest research shedding light on the influence of politics in state pension funds is undertaken by Romano (1993, 1995). In her studies, the author provides anecdotal evidence of political pressures on funds to base their voting policies on political considerations, such as increasing in-state employment and engaging in so-called economically-targeted investments (ETI).[19] Romano shows that the fund's return on investment is negatively related to the degree of political influence in its organisational form.[20] A study by Woidtke (2002) finds a more general value

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[19] ETIs are investments primarily intended to boost the state's economy, often by jeopardising financial returns.
[20] These results are in line with findings by Nofsinger (1998) that show that ETIs have a negative performance effect on funds. However, more recent studies including Munnell & Sunden (2001) and Hess (2005) do not find support for a significant impact of ETIs on fund returns. Mohan & Zhang (2014) argue, though, that these

destroying effect of state pension fund investments. Her findings suggest that companies in which state pension funds hold a large ownership share tend to decrease in firm value, while there is no similar value-destroying effect for corporate pension fund investments. According to Woidtke, these results relate to the weaker governance structures in state pension funds inducing managers to follow their own personal agenda, including social and political motivations. Coronado, Engen & Knight (2003) analyse whether political inferences in public pension funds can explain their lower return compared to private funds.[21] Contrary to previous findings, they conclude that political influences do not strongly impact funds' performance.

Recently, several studies have revisited the issue of political pressure on state pension funds' investments (e.g. Wald & Zhang, 2015; Harper, 2008; Novy-Marx & Rauh, 2011; Andonov, Bauer & Cremers, 2014). These studies suggest that the level of a state's political corruption is related to state pension funds' asset allocation, performance, funding status, and expenses. Using an index of a state's political corruption, Wald & Zhang (2015) find that funds from more corrupt states tend to show lower performance, invest larger fractions in equities and alternative investments and have higher expenses. These results are in line with findings in Harper (2008) showing that the board composition, with regard to the number of political representatives on the board of trustees, affects the plan's funding status and asset allocation. Finally, studies by Novy-Marx & Rauh (2011) and Andonov et al. (2014) offer a potential explanation for the link between a pension fund's funding status, its asset allocation and the degree of political pressure on the funds. Both studies find that U.S. state pension funds use discount rates that understate their level of underfunding and that they engage in riskier

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results may not be representative of the overall public pension fund landscape as they are based on a small sample of funds and do not account for the recent shift in legislation allowing further funds to make ETIs.

[21] Their study focuses on three potential channels of political influence in state public pension plans: (1) requirements for investing a certain proportion of assets within the state, (2) restrictions on investing in certain countries or industries, and (3) the methods through which trustees are chosen to serve on the board of trustees.

investments in order to obscure their funding status and thus the potential burden to taxpayers.[22]

However, political pressures not only affect funds' investment decisions on the asset allocation level but also impact their security selection (Hochberg & Rauh, 2013; Brown et al., 2015; Bradley et al., 2015). Brown et al. (2015) look at local biases in pension funds' public equity allocations and find that the 20 state pension funds in their sample strongly overweight stocks from their home-state, so-called in-state stocks. Regarding the motivations for this local bias, the authors provide evidence that, among other factors, the overweighting is positively linked to the share of political campaign contributions received by a county. Hochberg & Rauh (2013) find a similar local overweighting for private equity investments of state pension funds. They document that this overweighting is especially strong for states with higher levels of self-dealing by politicians. Bradley et al. (2015) most directly relate funds' in-state investment bias to political connections. They show that state pension funds strongly overweight local firms that make political contributions to local (state) politicians or that have significant lobbying expenditures and they find that this political bias is detrimental to fund performance. Additionally, their results suggest that the political bias is positively related to the proportion of politically affiliated trustees on pension funds' boards and their congressional connections. Finally, Wang & Mao (2015) document that political dimensions enter the shareholder activism of state pension funds. They find that the number of politicians on public pension funds' boards is significantly positively related to the frequency with which portfolio firms are targeted as well as the frequency of social responsibility-related shareholder proposals.

While the previous literature solely focuses on political connections and political corruption when analysing the impact of politics in state pension funds, an emerging stream of the literature investigates whether political values and norms play a role in financial decision making. Previous

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[22] In the U.S., discount rates on liabilities for public pension funds are connected to the expected rate of return on their assets. Thus, funds have a strong incentive to engage in high-risk investments in order to obscure their funding status (e.g. Andonov et al., 2014).

research on political values in finance has focused on corporate policies (e.g. Hutton, Jiang & Kumar, 2014; Di Guili & Kostovetsky, 2014) and investment decisions by both individual and institutional investors (Kaustia & Torstila, 2011; Bonaparte et al., 2012, Hong & Kostovetsky, 2012). For instance, Hutton et al. (2014) analyse the influence of personal political preferences of corporate managers on corporate financial policies and find that Republican managers tend to adopt more conservative corporate policies. Kaustia & Torstila (2011) concentrate on the stock market participation of individual investors in Finland and show that the political orientation of Finish individual investors influences their likelihood to invest in the stock market, with left-wing voters being less likely to participate. Also focusing on individual investors, Bonaparte et al. (2012) find that investors increase the allocation to risky assets when the political climate is aligned with their own political affiliations, i.e. Democratic investors invest more in relatively riskier stocks when the Democratic Party is in power than when the Republicans are the dominant political force.

Two studies co-authored by Kostovetsky link the tendency to incorporate ESG criteria in financial decision making to the political leaning of corporate managers as well as mutual fund and hedge fund managers. In particular, Di Guili & Kostovetsky (2014) find that firms with Democratic leaning chief executive officers (CEO), founders and directors spend more on ESG activities and have a higher ESG rating than companies with no affiliations to the Democratic Party. In comparison, Hong & Kostovetsky (2012) analyse the portfolio holdings of individual Democratic leaning mutual fund and hedge fund managers, as proxied by their contribution to presidential candidate election campaigns. The authors find that Democratic leaning fund managers underweight industries that are not in line with the Democratic political agenda such as tobacco, guns & defence, and natural resources.[23] Additionally, Democratic managers are more likely to invest in environmentally friendly firms and firms that score well on other issues connected to the Democratic political agenda, such as diversity,

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[23] Bonaparte et al. (2012) make a similar observation for Democratic leaning retail investors using political affiliations identified based on the geographical location of the individuals, i.e. whether they are from counties with strong Democratic or Republican leaning.

community and employee relations. The authors argue that corporate managers and portfolio managers might derive utility from the ESG activities that are in line with their political values, as in both studies the ESG related spending or investments do not translate into direct financial benefits.

On the backdrop of these findings, my aim is to investigate how political influences impact state pension funds' tendency to incorporate ESG criteria into their investment decisions.

3.3 Data

3.3.1 Data Sources and Sample Construction

The backbone of this study are two databases: (a) the Thomson Ownership Holdings Database of institutional investor equity holdings, and (b) the company ratings for environmental, social and governance criteria by Kinder, Lydenberg, Domini, & Co., now MSCI (KLD). Additionally, I rely on the CRSP database for stock price data and the Compustat database for financial data to control for company-specific characteristics. I obtain data on state pension fund characteristics from the public plans database provided by the Centre for Retirement Research at Boston College (CRR) which I supplement with manually collected data from the Comprehensive Annual Financial Reports (CAFR) of the state pension funds in my sample. In order to construct the political proxies, I rely on a variety of data sources, which are described in the Appendix to Chapter 3 alongside all other variables.

State Pension Funds' Holdings Data

We obtain data on the public equity holdings of U.S. state pension funds from the Thomson Ownership Database. The Thomson Ownership Database mainly relies on the holdings reported to the Security Exchange Commission (SEC) but further supplements this information with holdings data gathered from international filings as well as shareholder reports. In the U.S., all institutional investment managers who exercise investment discretion over USD 100 million and whose holdings

are not externally managed must report their holdings with the SEC.[24] This restricts my sample to large state pension funds with internally managed holdings. Since I am interested in pension fund specific factors and their effect on funds' investment decisions it is crucial to only look at internally managed holdings in order to rule out that my results are affected by investment processes and incentive effects of external managers.[25]

In order to define the sample of state pension funds, I manually searched the Thomson Ownership database and identified 31 state pension funds which are located in 23 states.[26] Compared to previous studies that rely on U.S. state pension fund equity holdings, my sample is comparable in size and even larger than the sample of plans usually employed in the literature (e.g. Woidtke, 2002; Cremers & Nair, 2005; Dittmar & Mahrt-Smith, 2007; Marlowe, 2014: Brown et al., 2015; Bradley et al., 2015). Table 3.1 lists the names of the 31 pension funds in my sample and their respective state. It also provides further summary statistics at the pension-fund level. For each of the 31 state pension funds, I obtain observations on their public equity holdings for the quarters 1997Q1 to 2013Q4. I do not have holdings data for all 31 funds over the entire sample period as some funds only report their holdings for sub-periods of the sample. The average (median) number of quarters per fund is 43 (55). For 14 of the 31 funds, I am able to obtain holdings data over the entire sample period. The average number of funds per quarter is 19, with a minimum of 15 pension funds per quarter for 1997Q1 and a maximum of 26 pension funds per quarter for 2013Q4. In order to test whether my sample of state pension funds is representative of the average U.S. state pension fund, I compare my sample to all

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[24] The externally managed holdings are filed under the name of the external management company. The only exceptions for internally managed portfolios from filing holdings with the SEC are for small holdings (below 10,000 stocks and USD 200,000 invested) or in special circumstances in which the SEC grants a confidentiality waiver.

[25] This data structure is especially important as the external manager might be headquartered in a different state than the pension plan, his or her investment decisions might be affected by the fund's internal incentive structures or by his or her own political opinions, as shown in Hong & Kostovetsky (2012).

[26] There are at least two potential reasons why my sample covers a relatively small number of plans from the total U.S. public pension fund universe. First, some of the smaller public pension funds might not meet the threshold of reporting and are thus exempt from disclosing their holdings. Second, several funds might choose to outsource their portfolio management to external managers, as pointed out in Del Guercio & Tkac (2002) and Lakonishok, Shleifer & Vishny (1992).

funds included in the public plans database of the CRR. In order to preserve space, results of this analysis are presented in the Appendix to Chapter 3. To summarise the results of this analysis, I find that, besides differences in fund size, the 31 sample funds show features comparable to the 126 plans in the CRR database.

As I aim to explain the funds' portfolio allocation, the main variable of interest is the company's weight in the fund's portfolio, w_{ijt}. Following Grinblatt, Titman & Wermers (1995)[27], I calculate portfolio weights (w_{ijt}) in the following way:

$$w_{ijt} = \frac{val_{ijt}}{\sum_i^N val_{ijt}} \quad\quad (3.1),$$

where val_{ijt} is the value of company i held by pension fund j at the end of a quarter t and $\sum_i^N val_{ijt}$ is the total portfolio value held by pension fund j at the end of quarter t. In the majority of the analyses, I restrict the sample to S&P500 companies and set the portfolio value held in a specific S&P500 company (val_{ijt}) in relation to the fund's total holdings in S&P500 companies. This is due to data restrictions for the ESG measures, as I will explain in the next section. In robustness tests I confirm that the main results remain robust to an extended company coverage.

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[27] For a further study that employs a portfolio weight measure similar to mine, see Badrinath & Wahal (2002).

Table 3.1: Summary Statistics: U.S. State pension fund Sample

Table 3.1 reports the names of the 31 U.S. state and local pension plans in the sample, together with further summary statistics at the pension-fund level. *Abbreviation* represents the abbreviated name of the pension plan used in this study. *State* is the U.S. state that the pension plan is located in. *Q* is the number of quarters for which I have available holdings data. *Shares* represents the time-series average of the number of S&P500 companies held by the pension plan. *KLD Score* is the time-series average of quarterly cross-sectional means of the KLD Net Score of the holdings of a pension plan. The KLD Net Score is defined as the sum of net scores (i.e. strength score minus concern score) for the KLD subcategories corporate governance, community activities, diversity, employee relations, environmental records, human rights and product quality. A pension fund's KLD score is the average KLD score of its portfolio stock components, weighted by the portfolio weight held in each stock.

	Name of the Pension Fund	Abbreviation	State	Q	Shares	KLD Score
1	Alaska Retirement Management Board	AlaskaRMB	AK	31	25	0.04
2	Arizona Safety Personnel Retirement System	ArizonaSafePERS	AZ	24	75	0.74
3	Arizona State Retirement System	ArizonaStateRS	AZ	11	499	4.24
4	California Public Employees' Retirement System	CalPERS	CA	68	492	1.16
5	California State Teachers' Retirement System	CalSTRS	CA	68	486	1.17
6	Colorado Public Employees' Retirement Association	ColoradoPERA	CO	68	493	1.13
7	Florida State Board of Administration	FloridaSBA	FL	68	489	1.15
8	Illinois Municipal Retirement System	IllinoisMunRS	IL	8	488	0.01
9	Kentucky Retirement Systems	KentuckyRetS	KY	38	428	0.73
10	Kentucky Teachers' Retirement System	KentuckyTRS	KY	68	495	1.06
11	Louisiana State Employees' Retirement System	LouisianaSERS	LA	1	498	4.18
12	Michigan Municipal Employees' Retirement System	MichiganMunERS	MI	2	498	4.18
13	Michigan Treasury	MichiganTreas	MI	68	496	1.26
14	Montana Board of Investments	MontanaInvB	MT	24	73	0.62
15	New York City Employee Retirement System	NYCityERS	NY	8	36	-0.08
16	New Jersey Board of Investments	NJInvB	NJ	68	377	1.06
17	New York State Common Retirement System	NYStateComRS	NY	68	498	1.09
18	New York State Teachers' Retirement System	NYStateTRS	NY	68	490	1.06
19	New Mexico Educational Retirement Board	NewMexicoERB	NM	68	446	1.01
20	Ohio Public Employees Retirement System	OhioPERS	OH	68	494	1.11
21	Ohio State Teachers' Retirement System	OhioTRS	OH	68	461	1.06
22	Oregon Public Employees' Retirement System	OregonPERS	OR	17	499	3.05
23	Pennsylvania Public School Employees' Retirement System	PennsylvaniaPSERS	PA	55	498	0.99
24	South Dakota Board of Investments	SouthDakotaInvB	SD	24	253	0.46
25	Tennessee Consolidated Retirement System	TennesseeConsRS	TN	24	376	0.74
26	Texas Employees' Retirement System	TexasERS	TX	62	487	1.27
27	Texas Teachers' Retirement System	TexasTRS	TX	27	461	1.95
28	Utah Retirement Systems	UtahRS	UT	6	414	3.58
29	Virginia Retirement System	VirginiaRS	VA	68	443	1.07
30	Washington State Investment Board	WashingtonStateIB	WA	11	11	1.02
31	Wisconsin Investment Board	WisconsinIB	WI	68	386	1.15
	Total			**43**	**392**	**1.11**

Environmental, Social and Governance Ratings

We obtain ratings of a company's ESG performance from Kinder, Lydenberg, Domini, & Co., now MSCI, which are the most commonly used ESG ratings in the literature.[28] KLD assesses companies on seven ESG-specific categories on a point-by-point basis. These categories comprise: community activities, diversity, employees' relations, environmental record, product quality, human rights, and corporate governance. In order to arrive at a rating for each category, KLD scans various data sources, such as public databases, media reports, corporate advertising and surveys, which are then assessed by a team of analysts that assign a point for each strength and each concern (e.g. Kotchen & Moon, 2012; Hong & Liskovich, 2014). For instance, the community activities category comprises seven different strength items (i.e. charitable giving, innovative giving, non-U.S. charitable giving, support for housing, support for education, volunteer programs, and other strengths) and four concern items (i.e. investment controversies, negative economic impact, tax disputes, and other concerns). In case a company has a charitable giving program in place KLD assigns it one point for community strength, whereas the presence of a tax dispute would lead to one community concern point. Aggregating the points within a particular category, I calculate a score of strengths and a score of concerns for each of the seven categories. I then deduct a company's total concerns ($KLD\ Concerns_{it}$) from its total strength score ($KLD\ Strengths_{it}$) to arrive at a single KLD score for every company, the *KLD Net score*:

$$KLD\ Net\ Score_{it} = KLD\ Strengths_{it} - KLD\ Concerns_{it} \qquad (3.2).$$

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[28] Despite being widely used in empirical finance research, the KLD data source is not without its critics. In fact, MSCI itself now suggests to use a more recent version of their ESG measures to assess companies' ESG performance. The reason why I still rely on the standard KLD scores are twofold: Firstly, it has a long history of available ratings for a considerable share of the U.S. equity market, which is not available for comparable ESG measures. Secondly, KLD ratings have been employed in previous studies that investigate the impact of political factors on SRI and thus makes my results comparable to the existing literature. A detailed discussion on the advantages and disadvantages of using the KLD rating as a measure of firms' ESG performance can be found in Chatterji, Levine & Toffel (2009), Cheng, Hong & Shue (2013) and Hong, Kubik & Scheinkman (2012). Despite concerns of using KLD scores, several studies indicate that the equal-weighted KLD score does indeed capture the past environmental performance, predicts future environmental performance (Chatterji et al., 2009) and philanthropic donations (Cheng et al., 2013), and is correlated with the 'values' of investors and managers (Hong & Kostovesky, 2011; Bonaparte et al., 2012; DiGiuli & Kostovetsky, 2014).

Netting the strength and concern scores is a common approach in empirical finance studies to derive a single indicator for a company's ESG performance (e.g. Hong & Kostovetsky, 2012; Di Guili & Kostovetsky, 2014; Hong & Liskovich, 2014).

In the early part of the sample period, KLD only issued ratings for S&P500 companies and companies that were a member of the Domini 400 Social Index. In the early 2000s, KLD expanded its company coverage several times, such that it now covers the Russell 3000 universe (Kotchen & Moon, 2012). In order to avoid any time bias in my findings, I focus the analysis on the S&P500 holdings of the state pension funds, which is a standard approach in the literature (e.g. Hong & Kostovetsky, 2012). However, in later robustness tests I check whether the results are sensitive to the inclusion of the extended company coverage.

Figure 3.1: **Aggregated Portfolio Holdings of State pension funds**

Figure 3.1 illustrates the aggregated value of the portfolio holdings of all state pension fund in the sample for which there is holdings data available for the respective quarter. Values are reported in billion USD. Total Holdings represent the pension funds' aggregated portfolio value of their entire public equity holdings (solid line). S&P500 Holdings represents the aggregated portfolio value that the public pension plans hold in S&P500 companies (dashed line). All KLD Holdings is the aggregated portfolio value of all state pension funds' holdings which could be merged with KLD data (dotted line). In 2001, the lines for All KLD Holdings and S&P500 diverge as KLD steadily increased their company coverage to comprise all companies included in the Russell 3000 Index.
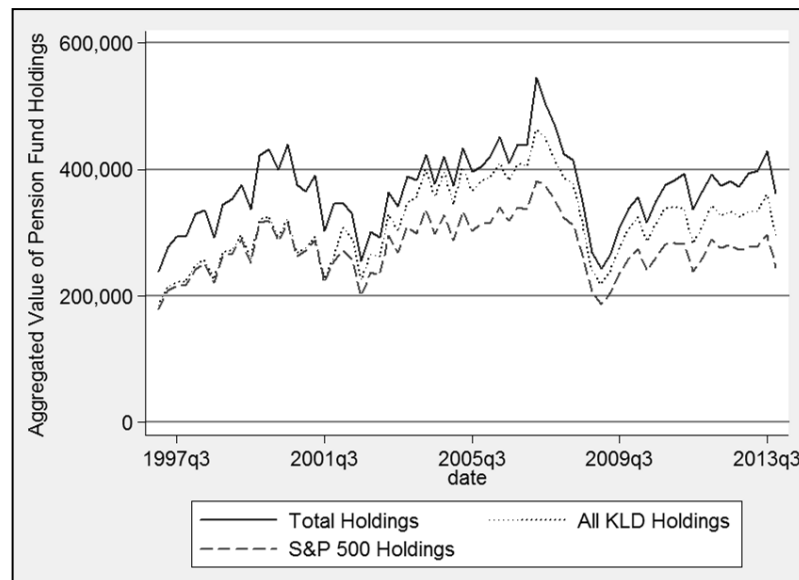
Figure 3.1 compares the total aggregated value of the funds' equity holdings in all companies (solid line) with their holdings in S&P500 companies only (dotted line) as well as their holdings in all companies with KLD ratings (dotted line). As can be seen, holdings in S&P500 companies constitute a major share of the total funds' holdings. They represent, on average, more than 75% of the funds' portfolio value. This is consistent with findings in Brown et al. (2015) documenting that state pension funds overweight S&P500 companies and large companies in general relative to market weights.

KLD updates its ratings at the end of each year and publishes the ratings in January. In order to avoid any look-ahead bias, I use the rating that applies to the previous year to evaluate a company's current ESG performance.

Table 3.2 provides summary statistics on the KLD scores for the S&P500 companies.

Table 3.2: KLD Scores of S&P500 Companies

Table 3.2 reports values of the average KLD Scores for the 950 companies that are constituents of the S&P500 index during the sample period. *Overall KLD Net* score is the sum of all net scores (i.e. strength score minus concern score) for the seven KLD subcategories corporate governance, community, diversity, employee relations, environmental record, human rights and product quality, which are reported in Columns 3 to 9. The sample comprises 1997Q1 to 2013Q4. The unit of observation is the *security×quarter level.*

	Overall KLD Net	*Corp. Gov. Net*	*Community Net*	*Diversity Net*	*Employee Rel. Net*	*Environment Net*	*Human Rights Net*	*Product Quality Net*
Mean	0.43	-0.50	0.30	0.99	0.16	-0.01	-0.10	-0.40
Standard Dev.	3.48	0.78	0.85	1.55	1.23	1.21	0.40	0.93
Median	0.00	-1.00	0.00	1.00	0.00	0.00	0.00	0.00
Kurtosis	4.54	3.62	5.37	3.65	5.52	5.86	11.66	4.31
Skewness	0.62	0.00	1.04	0.85	0.72	-0.14	-1.94	-0.91
Range	30.00	6.00	7.00	10.00	11.00	10.00	5.00	7.00
Minimum	-11.00	-4.00	-2.00	-3.00	-4.00	-5.00	-3.00	-4.00
Maximum	19.00	2.00	5.00	7.00	7.00	5.00	2.00	3.00
N	33,966	33,966	33,966	33,966	33,966	33,966	33,966	33,966

The mean *KLD Net score* across companies is 0.43. The mean values of the seven KLD subcategories also lie closely around zero but there is some variation between the different categories. Turning to the range of the average *KLD Net scores,* I can evaluate the degree of company-specific distance in

scores. With a minimum value of -11 and a maximum of 19, the *KLD Net score* seems to vary to some degree across companies, though the range for the KLD subcategories is far lower.

In the last column of Table 3.1, I report portfolio weighted KLD Net scores per fund, in which the weight is based on the dollar value of the firm's holding in the fund. To generate the scores I first calculate portfolio weighted KLD Net scores per quarter and average these across time. Based on the values in Table 3.1 there seems to be some variation in average portfolio-weighted *KLD Net scores* across pension funds, with a cross-sectional average weighted *KLD Net score* of 1.11. I note that pension funds with fewer quarters of data tend to have a higher average *KLD Net score*. This might indicate trends in the levels of KLD scores over time, a pattern that I will control for in later robustness tests.

Proxies for the Political Leaning and Political Pressures

Next I turn to the proxies for the political leaning of the funds' members as well as political pressures on funds. Barber (2007) argues that if pension funds are to incorporate ESG criteria into their investment decisions, they should align their choices with the moral values and political interests of their investors rather than their own. As state pension funds most likely do not have detailed information on the political affiliations of their members, the closest proxy for the political interests of their members is the political leaning of the state they are located in. I judge this as a viable proxy for the members' political values as members of state pension funds represent a considerable share of the state's population and state pension funds indirectly account responsible to all taxpayers of a state.[29] Note that I do not require that all members of a state pension fund located in states concentrated by Democrats (Republicans) be Democrat (Republican). Rather, I only assume that

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[29] As the responsibility for funding the defined benefit funds of the state and local pension plans ultimately lies with the sponsoring government, even taxpayers that are not employed in the public sector have a stake in how these pension funds are managed (e.g. Coronado et al., 2003; Brown et al., 2015).

investors in states concentrated by Democrats (Republicans) are more likely to subscribe to the Democratic (Republican) political ideologies.[30] To capture whether a state's population is Democratic leaning, I construct a dummy variable (*Democrat-Dummy*) that takes the value of one if the percentage of a state's votes received by the Democratic Party according to the latest presidential election results is larger than the percentage of the state's votes received by the Republican Party, and zero otherwise. I obtain the data on presidential election results per state from Dave Leip's Atlas of U.S. Presidential Elections for the elections from 1996 to 2012.[31] This source is widely used in empirical studies in finance to proxy for the political environment of a state (e.g. Pe'er & Gottschalg, 2011; Di Guili & Kostovetsky, 2014).

Figure 3.2: Presidential Election Results by Year

Figure 3.2 illustrates the results of the presidential elections for the time period 1996 to 2012, by year and by political party. Panel A shows the distribution of election results by party based on all U.S. states. Panel B only shows the distribution of election results based on the states that are part of the pension fund sample during the particular election period. *Dem* represents votes received by the Democratic Party. *Rep* stands for votes received by the Republican Party. *Others* captures votes to any other party.

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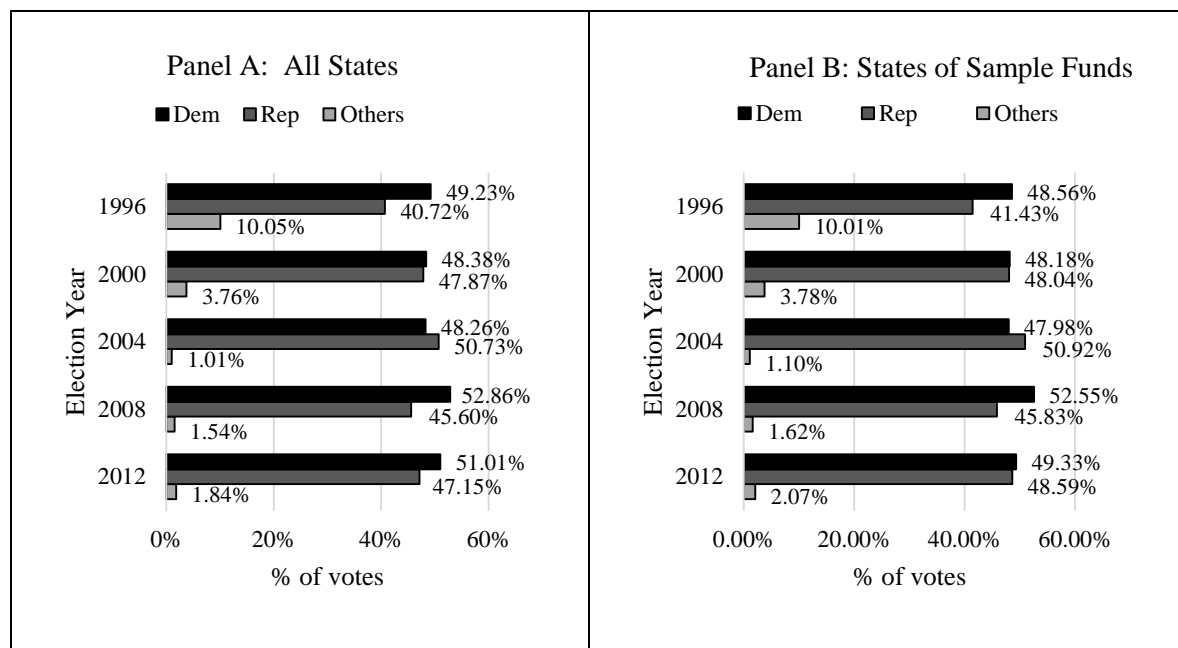
[30] Recent studies have used a similar location-based identification strategy for individual investors to infer their political leaning (Bonaparte et al., 2012) as well as other investor characteristics such as education-level, religiosity and race/ethnicity (e.g. Hilary & Hui, 2009; Kumar, 2009; Korniotis & Kumar, 2011).
[31] See www.uselectionatlas.org .

To check whether the states included in the sample show a comparable voting pattern to the average U.S. state, I compare the distribution of presidential votes for the 31 sample states to those of all U.S. states. The results of this comparison are presented in Figure 3.2. Panel A shows the election results by election year for all U.S. states. Panel B focuses on the states that are part of the pension fund sample during the particular election period. The proportions of votes received by the Democratic Party and the Republican Party only differ slightly between the two samples. Thus, I conclude that there are no major biases regarding the party affiliations for the pension funds in the sample.

Our proxy for political pressures by state politicians towards ESG investing is based on the composition of the state government. I follow Di Guili & Kostovetksy (2014) and define the proportion of a state's government affiliated to the Democratic Party *(% of Dem. State Gov.)* as:

$$
\% \, of \, Dem. State \, Gov. = \ 0.5 * Dem. Governor + \ 0.25 * Dem. Upper \, Chamber \\
+ \ 0.25 * Dem. Lower \, Chamber \, ,
$$

(3.3)

where *Dem. Governor* is a dummy variable equal to one if the state governor is a Democrat, and zero otherwise, and *Dem. Lower Chamber* and *Dem. Upper Chamber* are the proportions of the Lower and Upper Chamber of the state government, respectively, that are affiliated to the Democratic Party. I then construct a dummy variable (*Dem. State Gov.-Dummy*) that captures whether the majority of the state government are Democrats. *Dem. State Gov.-Dummy* equals one if the state government is predominantly affiliated to the Democratic Party, i.e. if *% of Democratic State Government* is greater than 50%, and zero otherwise. The data on the composition of the Lower and Upper Chamber are taken from the U.S. Census Bureau's National Data Book: Gubernational and State Legislative. Information on State Governors is obtained from the National Governors' Association.[32]

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[32] See http://www.nga.org/cms/home.html .

Control Variables

Since portfolio allocations can depend on a variety of company- and fund-specific factors, I employ a number of company-level as well as fund and state controls that have been shown to impact fund's investment decisions. The company controls comprise the natural logarithm of the stock's market capitalisation, the book-to-market ratio, the dividend yield, the debt ratio, the return on assets, a stock's continuously compounded previous-quarter return, and the stock market beta of a company. To account for pension fund specific effects I include the fund size, the proportion of their assets invested in equities, the pension fund's funded ratio, the proportion of shares outstanding held by a pension fund in a particular company, a state's level of political corruption, and the proportion of government employees who are union members. As a final control, I employ the return on the S&P500 index over the previous quarter. Details on the variable construction and data sources can be found in the Appendix to Chapter 3.

3.3.2   Summary Statistics

Table 3.3 provides summary statistics (Panel A) and a correlation matrix (Panel B) for the main variables described above. The average (median) portfolio weight held by a pension fund in one of the S&P500 companies is 0.23% (0.09%). The difference between the mean and median values relates to few pension funds allocating a large proportion of their portfolio to single companies.[33] Regarding the political leaning of the funds' members, the state population of the sample funds votes, on average, 50% for the Democratic Party, though the range of values from 25% to 63% indicates some strongly Democratic voting and some strongly Republican voting states in the sample. The mean value of 0.64 for the *Democrat-Dummy* implies that the members of the average pension fund are likely to be predominantly Democratic leaning.

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[33] In unreported results, I test that my main findings remain robust to excluding these funds with extreme portfolio allocations as well as funds with very few quarters of holdings data.

Table 3.3: Summary Statistics and Correlation Matrix: Main Variables

Panel A reports summary statistics for the main variable of analysis. Panel B shows a correlation matrix of the major independent variables used in the regression models. The unit of observation is the *fund×security×quarter level.*

Panel A: Summary Statistics	Mean	Std.-Dev.	Median	Min.	Max.	5th Perc.	95th Perc.	N
Portf. Weight in S&P500 (w_{ijt})	0.23	0.48	0.09	0.00	18.75	0.01	0.94	574,151
% of Votes for Democratic Party	0.50	0.07	0.51	0.25	0.63	0.39	0.61	574,151
Democrat-Dummy	0.64	0.48	1.00	0.00	1.00	0.00	1.00	574,151
% of Dem. State Gov.	0.42	0.36	0.50	0.00	1.00	0.00	1.00	574,151
Dem. State Gov.-Dummy	0.32	0.47	0.00	0.00	1.00	0.00	1.00	574,151
KLD Net Score	0.51	3.55	0.00	-11.00	19.00	-5.00	7.00	574,151
Log Market Capitalisation	16.17	1.16	16.09	11.47	20.26	14.37	18.28	574,136
Log Book-to-Market Value	-0.97	0.80	-0.91	-6.80	2.93	-2.31	0.18	565,422
Lagged Dividend Yield	0.02	0.04	0.01	0.00	1.95	0.00	0.06	574,151
Lagged Debt Ratio	0.25	0.17	0.24	0.00	1.56	0.00	0.56	574,151
Lagged Return on Assets	0.05	0.10	0.05	-4.58	0.57	-0.03	0.16	574,151
Lagged Beta Coefficient	1.09	0.72	0.99	-2.52	5.76	0.15	2.41	561,160
Lagged Log Security Return	0.01	0.19	0.03	-2.07	1.31	-0.32	0.28	573,825
Log Fund Size	18.14	1.82	17.88	14.89	24.44	16.04	24.11	521,699
% invested in Equities	56.81	8.83	58.35	23.00	72.78	39.90	67.70	521,699
Funded Ratio	88.39	16.02	87.32	42.73	144.62	61.50	114.40	560,476
% of Share Outstanding Held	0.18	0.39	0.11	0.00	42.36	0.01	0.50	514,292
Political Corruption Convictions	0.35	0.19	0.32	0.00	2.20	0.11	0.72	574,151
% Union Members	40.00	19.58	46.00	8.40	72.40	14.10	70.20	574,151
S&P500 Return	0.02	0.11	0.03	-0.35	0.25	-0.18	0.15	574,151

Panel B: Correlations	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) KLD Net Score	1													
(2) Market Cap.	0.19	1												
(3) BtM Value	-0.11	-0.22	1											
(4) Div. Yield	-0.01	-0.01	0.15	1										
(5) Debt Ratio	-0.09	-0.07	0.02	0.16	1									
(6) RoA	0.08	0.17	-0.32	-0.03	-0.15	1								
(7) Beta	0.00	-0.14	0.07	-0.14	-0.13	-0.20	1							
(8) Security Ret.	0.01	0.12	0.06	0.02	-0.01	0.03	-0.07	1						
(9) Fund Size	0.01	-0.01	0.01	0.00	-0.01	0.01	0.00	0.00	1					
(10) % Equities	-0.13	-0.05	-0.07	-0.03	0.00	-0.01	-0.03	0.00	0.09	1				
(11) Funded Ratio	-0.12	-0.11	-0.09	-0.01	0.04	-0.02	-0.08	-0.04	-0.04	0.32	1			
(12) % of OS Held	-0.03	-0.08	0.05	0.00	0.01	0.00	-0.02	0.00	0.08	0.12	0.19	1		
(13) Pol. Corr.	-0.02	0.01	-0.01	0.00	0.01	-0.01	0.00	-0.01	-0.37	0.10	-0.07	-0.05	1	
(14) % Union	-0.02	-0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.10	-0.01	0.23	0.25	-0.25	1
(15) S&P500	0.05	0.06	0.05	0.00	-0.01	0.00	0.01	0.12	0.00	-0.06	-0.08	0.00	-0.01	-0.01

Table 3.4: Summary Statistics: Main Variables by Political Proxies

Table 3.4 reports time-series averages and standard deviations (shown in brackets) of the main variables of analysis. Results are shown for the entire sample (*All Funds*), and for subgroups sorted by the political leaning of funds' members (*Dem. Members* and *Rep. Members*) and by the composition of state government (*Dem. State Gov.* and *Non-Dem. State Gov.*). The unit of observation is the *fund×security×quarter level. Dem. Members* includes all state pension funds headquartered in a state in which the percentage of votes received by the Democratic Party is larger than the percentage of votes received by the Republican Party, based on the latest presidential election results (i.e. for which the Democrat-Dummy equals 1). *Rep. Members* comprises all state pension funds headquartered in a state in which the percentage of votes received by the Democratic Party is not larger than the percentage of votes received by the Republican Party (i.e. for which the democrat-Dummy equals 0). State pension funds in the *Dem. State Gov.* subgroup are headquartered in a state for which the state government is predominantly affiliated to the Democratic-Party (i.e. for which the Dem. State Gov.-Dummy equals 1). *Non-Dem. State Gov.* comprises pension funds for which the majority of the state government is not affiliated to the Democratic-Party, i.e. either Republican, affiliated to another party or nonpartisan (i.e. for which the Dem. State Gov.-Dummy equals 0).

	All Funds	Dem. Members	Rep. Members	Dem. State Gov.	Non-Dem. State Gov.
Portfolio Weight in S&P500 (w_{ijt})	0.23 (0.481)	0.22 (0.445)	0.24 (0.538)	0.22 (0.443)	0.23 (0.497)
% of Votes for Democratic Party	0.50 (0.068)	0.54 (0.046)	0.44 (0.041)	0.53 (0.069)	0.49 (0.064)
Democrat-Dummy	0.64 (0.480)	1.00 (0.000)	0.00 (0.000)	0.80 (0.401)	0.57 (0.496)
% of Dem. State Gov.	0.42 (0.362)	0.51 (0.351)	0.26 (0.321)	0.87 (0.125)	0.21 (0.213)
Dem. State Gov.-Dummy	0.32 (0.465)	0.40 (0.489)	0.18 (0.382)	1.00 (0.000)	0.00 (0.000)
KLD Net Score	0.51 (3.551)	0.63 (3.636)	0.32 (3.386)	0.54 (3.759)	0.50 (3.450)
Log Market Capitalisation	16.17 (1.161)	16.17 (1.161)	16.18 (1.161)	16.20 (1.130)	16.16 (1.174)
Log Book-to-Market Value	-0.97 (0.801)	-0.95 (0.801)	-1.00 (0.800)	-0.94 (0.805)	-0.98 (0.799)
Lagged Dividend Yield	0.02 (0.036)	0.02 (0.038)	0.02 (0.033)	0.02 (0.041)	0.02 (0.033)
Lagged Debt Ratio	0.25 (0.173)	0.25 (0.172)	0.25 (0.173)	0.25 (0.175)	0.25 (0.172)
Lagged Return on Assets	0.05 (0.101)	0.05 (0.096)	0.05 (0.109)	0.05 (0.096)	0.05 (0.103)
Lagged Beta Coefficient	1.09 (0.720)	1.10 (0.694)	1.09 (0.763)	1.13 (0.693)	1.08 (0.731)
Lagged Log Security Return	0.01 (0.195)	0.01 (0.197)	0.01 (0.190)	0.01 (0.202)	0.01 (0.191)
Log Fund Size	18.14 (1.815)	18.23 (1.425)	17.99 (2.338)	18.18 (2.103)	18.12 (1.661)
% invested in Equities	56.81 (8.829)	55.13 (9.287)	59.86 (6.957)	54.79 (8.548)	57.78 (8.798)
Funded Ratio	88.39 (16.017)	89.13 (16.230)	87.14 (15.570)	84.30 (18.023)	90.38 (14.537)
% of Share Outstanding Held	0.18 (0.386)	0.22 (0.454)	0.11 (0.195)	0.17 (0.303)	0.19 (0.419)
Political Corruption Convictions	0.35 (0.195)	0.31 (0.167)	0.41 (0.221)	0.35 (0.226)	0.35 (0.178)
% Union Members	40.00 (19.579)	49.48 (16.731)	23.17 (11.150)	43.35 (19.926)	38.45 (19.219)
S&P500 Return	0.02 (0.106)	0.02 (0.111)	0.01 (0.096)	0.02 (0.116)	0.02 (0.101)

Additionally, I find that the pension funds in the sample tend to be from states with a Non-Democratic state government, as indicated by the mean values of the variables *% of Dem. State Gov.* (0.42) and *Dem. State Gov.-Dummy* (0.32) which clearly lie below 50%. This provides first evidence that the political leaning of the state population and the dominant party in the state government are not necessarily in line. Looking at the correlations between these political proxies I find further support for this conjecture (Table A.3.7, Appendix to Chapter 3). The correlation between the percentage of votes to the Democratic Candidate by the state population in presidential elections and the proportion of Democrats in the state government is only 36%. Turning to the correlations between the control variables, I find that the largest (absolute) correlations are no higher than 32% (Panel B of Table 3.3). Thus, I conclude that concerns of multicollinearity are not a major issue in the data.

Next I test whether there are systematic differences between pension funds with Democratic and Republican leaning members as well as between funds from states with a predominantly Democratic and Non-Democratic state government. I re-calculate the mean values of the major variables and their standard deviations for these subgroups. Results are presented in Table 3.4. I find that there are no apparent differences between the subgroups regarding the average portfolio weights in a company. The same holds with respect to their preferences regarding certain company characteristics (except for KLD scores which I will focus on in the next section). This is to be expected as I restrict the analysis to S&P500 companies and do not condition on portfolio weights. Turning to the pension fund and state characteristics, funds with a Democratic state government tend to be slightly larger than their Non-Democratic counterparts, whereas funds with Republican members and from states with a Non-Democratic state government tend to have a higher portfolio allocation to equities.

Interestingly, funding levels for funds from states with a Democratic and Non-Democratic state government seem to differ as the former show a weaker funding level than the latter. Furthermore, I find that funds from states with a Democratic leaning population appear to have a lower number of corruption convictions per capita than those with a Republican leaning population. In contrast, there is no apparent difference in the state's degree of political corruption based on the composition of the

state government. Finally, there appears to be a difference between funds with Democratic and Republican members regarding union membership. In states with a Democratic leaning population the union coverage among public employees is sizably higher than in those with a Republican population. This divide is less pronounced for funds from states with Democratic and Non-Democratic state governments. This provides support that the proxy for members' political leaning captures the attitudes and beliefs of the population, whereas the composition of the state government captures the characteristics of the political system.

3.3.3   Residual Portfolio-Weighted KLD Scores

To allow a first assessment of funds' ESG preferences, I next compare the portfolio-weighted KLD scores for subgroups of the pension funds, sorted by their members' political leaning and the composition of the state government. In particular, in each quarter I sort pension funds into groups with Democratic and Republican leaning members, as well as groups with a Democratic and Non-Democratic state government. I then calculate the average portfolio-weighted KLD scores for each of these subgroups. However, some company characteristics are related to the ESG performance of the company, most notably the size of a company and its book-to-market ratio. This might bias the results. For example, if a pension fund followed a size or value related investment style and these style characteristics were systematically related to KLD scores then it might appear that I am capturing ESG preferences while I truly measure style preferences. Following Hong & Kostovetsky (2012), I adjust the portfolio-weighted KLD scores for these style effects by running (quarterly) cross-sectional regressions of the portfolio-weighted KLD score of fund j's holdings ($p.f.weighted\ mean\ KLD_{jt}$) on the average portfolio-weighted log market capitalisation ($Mean\ Log\ Market\ Cap._{jt}$) and the average portfolio-weighted log book-to-market value ($Mean\ BM_{\ jt}$) of fund j's portfolio at the end of quarter t, i.e.:

$$p.f.weighted\ mean\ KLD_{jt} = \beta_0 + \beta_1 Mean\ Log\ Market\ Cap._{jt} + \beta_2 Mean\ BM_{\ jt} + \epsilon_{jt} \quad (3.4)$$

We then assign each observation the residual from regression (3.4), i.e. ϵ_{jt}, which I call residual portfolio-weighted KLD score.

Table 3.5 shows the average residual portfolio-weighted KLD scores by political subgroups.

Table 3.5: Residual Portfolio-Weighted Mean KLD Scores

Table 3.5 reports time-series averages of quarterly cross-sectional means for the KLD Net score and the seven KLD subcategory scores, for the entire sample (*All Funds*) of state pension funds and for subgroup of pension funds sorted by the political leaning of their members (*Dem. Members* and *Rep. Members*) and by the composition of the state government (*Dem. State Gov.* and *Non- Dem. State Gov.*). The table reports residual portfolio-weighted KLD scores. Residual KLD scores are generated by regression a fund's unadjusted portfolio-weighted KLD score per quarter, weighted by the portfolio weight held in each stock, on the mean log market capitalisation and the mean log book-to-market ratio of the fund's holdings during the same quarter, i.e. $p.f.\,weighted\ mean\ KLD_{jt} = \beta_0 + \beta_1 Mean\ Log\ Market\ Cap._{jt} + \beta_2 Mean\ BM_{jt} + \epsilon_{jt}$. The residual KLD score represents the residual from this regression (ϵ_{jt}). *Dem. – Rep. Members* is the difference between the average KLD scores of the *Dem. Members* and *Rep. Members* subgroups and *Dem. – Non-Dem.* is the difference between the average KLD scores of the *Dem. State Gov.* and *Non- Dem. State Gov.* subgroups; *t*-statistics are reported in brackets against a two-sided alternative. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	Dem. Members	Rep. Members	Dem. - Rep. Members	Dem. State Gov.	Non-Dem. State Gov.	Dem. – Non-Dem.
Residual KLD Net	0.102	-0.168	**0.271*** (3.644)	-0.136	0.057	**-0.194** (-2.449)
Residual Corp. Gov. Net	0.032	-0.053	**0.085*** (4.788)	-0.013	0.005	**-0.019** (-0.974)
Residual Com. Net	0.004	-0.007	**0.011** (1.065)	-0.051	0.022	**-0.073*** (-6.549)
Residual Div. Net	0.011	-0.017	**0.028** (1.280)	0.016	-0.007	**0.022** (0.955)
Residual Emp. Net	-0.004	0.007	**-0.012** (-0.431)	-0.040	0.017	**-0.057*** (1.972)
Residual Env. Net	0.043	-0.071	**0.114*** (3.366)	-0.023	0.010	**-0.033** (-0.913)
Residual Hum. Net	0.005	-0.008	**0.129** (1.179)	-0.007	0.003	**-0.010** (-1.108)
Residual Pro. Net	0.012	-0.019	**0.031*** (2.295)	-0.017	0.007	**-0.025*** (-1.744)

I find a clear distinction between funds with Democratic and Republican leaning members regarding their ESG preferences. If a pension fund has predominantly Democratic leaning members its portfolio tends to exhibit a positive residual KLD score, while the residual KLD score for funds with Republican leaning members is negative for all but the employee relations category. I also report test statistics of a *t*-test on the mean residual scores for the two subgroups. The mostly positive and

statistically significant differences between the KLD scores for the Democratic and Republican leaning samples provide preliminary evidence that funds with Democratic leaning members engage more strongly in SRI than their Republican counterparts. Only for the employees' relations category do I find a negative but statistically insignificant relation. In comparison, portfolios of pension funds from states with a Democratic state government tend to exhibit lower residual KLD scores than portfolios from funds whose state is governed by a Non-Democratic government in seven out of eight specifications.[34] This result is the opposite of what I expected, which was a positive difference if Democratic state politicians exercised pressure on the state pension funds to increase their SRI. Thus, based on this preliminary analysis, it appears that the leaning of the funds' members determines their SRI approach.

3.4 Methodology

To ensure that the differences in SRI in the univariate analysis do not simply reflect differences in the institutional attributes of funds with Republican and Democratic leaning members or different preferences for company characteristics not captured by the style effects, I next examine the impact of the political factors on pension funds' SRI preferences in a multivariate panel setting. I estimate a series of fixed effect panel regressions with the portfolio weight (w_{ijt}) as the dependent variable.[35] The main independent variables in the regression are the company's KLD score (KLD_{it-1}) and the KLD score interacted with one of the political proxies ($KLD_{it-1} \times political\ proxy_{jt}$). I scale the KLD score to an overall minimum of zero to facilitate the interpretation of the coefficient on the

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[34] The difference is positive (but statistically insignificant) for the diversity subcategory.

[35] In order to select between the fixed effects and random effects estimator, I conduct the Hausman (1978) test. Its null hypothesis states that the error terms are not correlated with the independent variables, implying that the random effects estimator is the more efficient alternative (Greene, 2012). I find that for my model set-up, the null hypothesis is strongly rejected, suggesting that the fixed effects estimator is favoured over the random effects model. Thus, I estimate the above equation using a fixed effects estimator with fixed effects at the *fund×security* level and standard errors clustered at the *fund×security* level.

interaction term. I also include the set of control variables. Employing fixed effects at the *fund×security* level, the regression model can be expressed as follows:

$$w_{ijt} = \beta_0 + \beta_1 KLD_{it-1} + \beta_2 KLD_{it-1} \times political\ proxy_{jt} + \beta_3'company\ controls_{it}$$
$$+ \beta_4'fund\ controls_{jt} + \beta_5 market\ control_t + v_{ij} + u_{ijt} \quad , \tag{3.6}$$

where KLD_{it-1} is the KLD Net score scaled to a minimum of zero[36]; $political\ proxy_{jt}$ is either (a) the *Democrat-Dummy* or (b) the *Dem. State Gov.-Dummy*; $company\ controls_{it}$ and $fund\ controls_{jt}$ are column vectors of the seven company-specific and six fund-specific control variables described in the Appendix to Chapter 3; $market\ control_t$ is the quarterly S&P500 return; β_0 is the constant term; β_1, β_2, and β_5 are coefficient estimates on the respective variables; β_3' and β_4' are row vectors of the coefficient estimates attached to the variables contained in the $company\ controls_{it}$ and $fund\ controls_{jt}$ column vectors, respectively; v_{ij} are *fund×security* fixed effects and u_{ijt} is an idiosyncratic disturbance term.

The unit of measurement in model (3.6) is the *fund×security×quarter* level. As I employ a fixed effects panel model I only focus on the within-variation. That means I study the variation in portfolio weights per *fund×security* combination over time but not across funds and securities. Effects that are particular to the *fund×security* combination are captured in the fixed effects terms (v_{ij}). Since pension funds are expected to hold similar portfolio weights in a particular S&P500 company over consecutive quarters, I am doubtful that the error terms are independent across observations. To reflect this clustered sampling, I cluster standard errors at the *fund×security* level.

Overall, I have slightly more than 550,000 observations with more than 20,000 *fund×security* effects. However, as some pension fund characteristics are not available over the entire sample period, including them considerably reduces the sample size to around 480,000 observations comprising

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[36] I scale the KLD scores to have an overall minimum of zero across all observations in order to use it in the interaction terms as negative values might complicate the interpretation of the coefficient on the interaction term.

about 18,000 *fund×security* effects. I run the baseline regressions on the reduced dataset with all controls; however, in unreported results I ensure that the results remain robust to testing them on a larger dataset.

3.5   Discussion of Results

3.5.1   Political Leaning, Political Pressures and their Combined Effect

Table 3.6 reports results from the fixed effects regressions (equation (3.6)). For all three model specifications presented in Table 3.6, I obtain negative and statistically significant regression coefficients on the KLD Net variable. This indicates that the unconditional relationship between a pension fund's portfolio weight and a company's KLD score is negative. That is, the higher the company's ESG rating the less weight does this company generally have in a fund's portfolio. This finding might seem counterintuitive at first, since pervious research shows that state pension funds tilt towards ESG companies (e.g. Di Guili & Kostovetsky, 2014). One possible explanation may relate to funds' tendency to follow index weights (see Parrino et al., 2003). In unreported results, I find that there is a negative relation between a company's weight in the S&P500 index and its KLD rating.[37] If state pension funds followed S&P500 index weights, I would find a negative coefficient on the standalone KLD Net score (as I do). However, in this case the identified negative relation might not reflect funds' preferences towards ESG issues but rather their tendency to follow the S&P500 index. I control for this tendency in robustness tests.

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[37] In unreported regressions of the company's weight in the S&P 500 index on its KLD score along with the company controls, I find a negative relationship between index weight and KLD score. This effect is mainly driven by the negative ESG exposure of the Oil & Gas industry and Utilities sector, as I will elaborate on in Chapter 3.6.1.

Table 3.6: Regression of Portfolio Weights on Political Leaning and Political Pressures

Table 3.6 reports estimated coefficients from Fixed Effect Panel regressions of the portfolio weight (w_{ijt}) on the company's KLD score as well as an interaction of the company's KLD score and proxies for (1) the political leaning of fund's members ($Democrat-Dummy_{jt}$) and (2) the pressures by state politicians ($Dem.State\ Gov.-Dummy_{jt}$). Specification (1) estimates the following regression equation: $w_{ijt} = \beta_{0,ijt} + \beta_1 KLD_{it-1} + \beta_2 KLD_{it-1} \times Democrat-Dummy_{jt} + \beta_3'company\ controls_{it} + \beta_4'fund\ controls_{jt} + \beta_5 market\ control_t + v_{ij} + u_{ijt}$. In specification (2) I replace the $Democrat-Dummy_{jt}$ with the $Dem.State\ Gov.-Dummy_{jt}$. Specifications (3) estimates the following regression equation: $w_{ijt} = \beta_{0,ijt} + \beta_1 KLD_{it-1} + \beta_2 KLD_{it-1} \times Republican\&NonDemstategov_{jt} + \beta_3 KLD_{it-1} \times Republican\&Demstategov_{jt} + \beta_4 KLD_{it-1} \times Democrat\&Demstategov_{jt} + \beta_5'company\ controls_{it} + \beta_6'fund\ controls_{jt} + \beta_7 market\ control_t + v_{ij} + u_{ijt}$. The *KLD Net* score is scaled to a minimum of 0. The *KLD Net* score in the interaction terms in specification (3) is scaled to a minimum of 0 and a maximum of 1. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	(1) Pol. Leaning	(2) Pol. Pressure	(3) Pol. Leaning & Pol. Pressure
KLD Net	-0.00673***	-0.00530***	-0.00411***
	(0.000585)	(0.000526)	(0.000542)
Democrat-Dummy × KLD Net	0.00213***		
	(0.000334)		
Dem. State Gov.-Dummy× KLD Net		0.000825***	
		(0.000169)	
Republican&NonDemstategov × KLD Net			-0.0548***
			(0.0117)
Republican&Demstategov × KLD Net			-0.0494***
			(0.0115)
Democrat&Demstategov × KLD Net			0.0228***
			(0.00540)
Market Capitalisation	0.169***	0.169***	0.170***
	(0.00583)	(0.00583)	(0.00583)
Lagged Book-to-Market Value	-0.00856***	-0.00873***	-0.00866***
	(0.00245)	(0.00244)	(0.00244)
Lagged Dividend Yield	0.0586***	0.0586***	0.0574***
	(0.0155)	(0.0155)	(0.0155)
Lagged Debt Ratio	-0.0493***	-0.0494***	-0.0501***
	(0.0122)	(0.0122)	(0.0122)
Lagged Return on Assets	-0.0100	-0.00921	-0.00988
	(0.00735)	(0.00731)	(0.00733)
Lagged Beta	-0.00990***	-0.00978***	-0.00994***
	(0.00211)	(0.00211)	(0.00211)
Lagged Return	-0.0304***	-0.0304***	-0.0304***
	(0.00268)	(0.00268)	(0.00268)
Fund Size	-0.106***	-0.114***	-0.112***
	(0.00916)	(0.00930)	(0.00935)
% invested in Equities	-0.00182***	-0.00225***	-0.00186***
	(0.000218)	(0.000208)	(0.000217)
Actuarial Funded Ratio	0.000829***	0.000799***	0.000822***
	(0.000112)	(0.000111)	(0.000112)
% of Shares Outstanding Held by Fund	0.0985**	0.0986**	0.0985**
	(0.0404)	(0.0403)	(0.0403)
Political Corruption Convictions	0.0238***	0.0215**	0.0210**
	(0.00882)	(0.00897)	(0.00895)
% Union Members	0.00207***	0.00155***	0.00188***
	(0.000386)	(0.000397)	(0.000397)
S&P500 Return	-0.105***	-0.105***	-0.105***
	(0.00445)	(0.00445)	(0.00449)
Constant	-0.588***	-0.392**	-0.477***
	(0.176)	(0.177)	(0.180)
Pension Fund- Security Fixed Effects (FE)	YES	YES	YES
R-squared	0.145	0.145	0.146
Observations	481,909	481,909	481,909
Number of Panel Clusters	18,622	18,622	18,622

In this study I am less interested in the unconditional relationship between portfolio weights and KLD scores, but I ask whether this relationship changes based on the fund's political background. To assess this question, the main variable of interest is the interaction term between the KLD score and the political proxies, i.e. the *Democrat-Dummy* or the *Dem. State Gov.-Dummy*. In specification (1), I employ the *Democrat-Dummy* to indicate whether the members of the pension fund are predominantly Democratic leaning. I find a positive and highly significant regression coefficient of 0.00213 on the interaction term of the *Democrat-Dummy* and the *KLD Net score*. Thus, while for the average fund the (unconditional) relationship between portfolio weights and ESG performance is negative, this relation becomes positive when conditioning on the (Democratic) political leaning of fund members. This finding provides evidence that funds with Democratic leaning members engage more in SRI than their Republican counterparts.

In specification (2), I test whether conditioning on political pressures by state politicians impacts the fund's tendency to invest in companies with a higher ESG performance. To do so, I substitute the *Democrat-Dummy* with the *Dem. State Gov.-Dummy*. I find that there is a positive relation between the portfolio weight and the company's KLD score for funds from states where the majority of the state government is affiliated to the Democratic Party. Thus, in contrast to the preliminary analysis, the results of the fixed effect panel regression provide evidence that funds tilt more strongly towards ESG companies if the Democratic Party is the dominant force in the state government. However, when comparing the magnitude of the coefficient on the interaction terms with the *Dem. State Gov.-Dummy* and the one with the *Democrat-Dummy*, the effect of political pressures by Democratic state politicians seems to be considerably lower in economic magnitude.

This leads to the question which of these two effects is the major determinant of state pension funds' ESG preferences and which might merely have a moderating effect. In specification (3) of Table 3.6, I attempt to answer this question by conditioning on both the political leaning of funds' members and political pressures from state politicians. I construct four new dummy variables: *Democrat&Demstategov-Dummy* equals 1 if the fund members are Democratic leaning and the

majority of the state government are Democrats (i.e. *Democrat=1 & Dem. State Gov.=1*), and 0 otherwise; *Democrat&NonDemstategov-Dummy* takes the value of 1 if the fund members are Democratic leaning and the majority of the state government is not affiliated to the Democratic Party (i.e. *Democrat=1 & Dem. State Gov.=0*), and 0 otherwise; *Republican&Demstategov-Dummy* equals 1 if the fund members are Republican leaning and the majority of the state government are Democrats (i.e. *Democrat=0 & Dem. State Gov.=1*), and 0 otherwise; and *Republican&NonDemstategov-Dummy* takes the value of 1 if the fund members are Republican and the majority of the state government is not affiliated to the Democratic Party (i.e. *Democrat=0 & Dem. State Gov.=0*), and 0 otherwise. Then, I interact these new dummies with the *KLD Net score*. In this specification I scale the KLD score to have a minimum of zero and a maximum of one, again to facilitate interpretation of results. The omitted group are funds with Democratic members and a Non-Democratic state government (*Democrat&NonDemstategov-Dummy)*. Thus, the coefficients on the interaction terms have to be interpreted as deviations from this category. Turning to the results presented in specification (3), the coefficient on the interaction term for the *Democrat&Demstategov-Dummy* is significantly positive, implying that funds with Democratic leaning members show an even stronger ESG preference if the state government is dominated by the Democratic Party. In comparison, I find a negative coefficient on the interaction terms for the *Republican&NonDemstategov-Dummy* and the *Republican&Demstategov-Dummy.* This suggests that funds with Republican members tilt away from companies with high ESG performance, independent of whether these funds might be subject to higher pressures by Democratic state politicians. One way of interpreting these findings is that the political leaning of fund members is the dominant force behind funds' preferences for SRI. In comparison, political pressures from Democratic state politicians seem to merely have a moderating effect on funds' likelihood to engage in SRI-based positive screening.

Regarding the estimated coefficients on the control variables I find intuitive results. In terms of company characteristics, pension funds tend to invest more in larger companies as well as companies with lower book-to-market ratios, higher dividends, lower debt ratios and lower market risk exposure. Surprisingly, they also seem to increase their allocation to companies that had a lower

return in the previous quarter. Thus, the state pension funds in the sample do not seem to be momentum investors. Additionally, controlling for pension fund characteristics seems to be important as indicated by the statistically significant coefficients on all fund and state controls. While the results on most of these variables are difficult to interpret in this regression setting, the positive coefficient on the percentage of shares outstanding suggests that pension funds tilt their portfolio towards companies over which they can exercise greater control. This finding is in line with the reasoning in Fich et al. (2015).

3.5.2 KLD Subcategories

Next, the aim is to identify the drivers of the relationship between the political proxies and the funds' positive ESG screening, by looking at the KLD subcategories. Instead of using the aggregated KLD Net score as a measure of firms' ESG activities, I run separate regressions for each of the seven KLD subcategories, i.e. corporate governance, community activities, diversity, employees' relations, environmental records, human rights and product quality. The results are presented in Table 3.7.

Panel A focuses on the political leaning of the members by interacting the KLD subcategory scores with the *Democrat-Dummy*, whereas Panel B uses the *Dem. State Gov.-Dummy* instead. All specifications in Panel A and B show positive and highly significant coefficients on the interaction terms. This finding underlines that the identified relationships are a general trend towards SRI that incorporates all dimensions of ESG criteria and as such is not driven by a single KLD subcategory. It is noteworthy that the results hold for the human rights and corporate governance KLD categories which are often excluded in empirical studies (e.g. Hong & Kostovetsky, 2012; Hong et al., 2012; Krueger, 2015). The identified relations also seem to be of similar economic dimension with human rights issues and community issues having the highest effect on portfolio choices, as measured by the absolute size of the estimated coefficients. This finding is partly in line with results presented in Krueger (2015) who analyses changes in shareholder value around (positive and negative) ESG events.

Table 3.7: KLD Subcategories

Table 3.7 reports estimated coefficients from Fixed Effect Panel regressions of the portfolio weight held by a pension fund in a specific company (w_{ijt}) on the subcategories of the KLD score as well as an interaction of the subcategory score and proxies for (a) the political leaning of the funds' members, $Democrat - Dummy_{jt}$ (Panel A) and (b) the composition of the state government, $Dem. State\ Gov. - Dummy_{jt}$ (Panel B). The seven KLD subcategories comprise corporate governance, community, diversity, employee relations, environmental record, human rights and product quality. The KLD Subcategory Net scores are scaled to have an overall minimum of zero in order to facilitate the interpretation of the interaction term. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively. In order not to drastically reduce the number of observations I have excluded the pension fund controls *% invested in Equities* and *Actuarial Funded Ratio* from this set of regressions. However, the main results are unchanged when including all pension fund controls.

Panel A: Political Leaning	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Corp. Gov. Net	-0.0132*** (0.00170)						
Democrat × Corp. Gov. Net	0.00713*** (0.000998)						
Community Net		-0.0170*** (0.00255)					
Democrat ×Com. Net		0.00784*** (0.00176)					
Diversity Net			-0.00180 (0.00145)				
Democrat × Div. Net			0.00544*** (0.00100)				
Employee Rel. Net				-0.00668*** (0.00107)			
Democrat × Emp. Net.				0.00491*** (0.000921)			
Environment Net					-0.0165*** (0.00136)		
Democrat × Env. Net					0.00524*** (0.000773)		
Human Rights Net						-0.0389*** (0.00452)	
Democrat × Hum. Net						0.00866*** (0.00129)	
Product Quality Net							-0.0187*** (0.00298)
Democrat × Prod. Net							0.00715*** (0.000996)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES	YES
Observations	481,909	481,909	481,909	481,909	481,909	481,909	481,909
R-squared	0.143	0.143	0.143	0.142	0.145	0.145	0.144
Number of Panel Clusters	18,622	18,622	18,622	18,622	18,622	18,622	18,622

Table 3.7 – continued

Panel B: Political Pressures	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Corp. Gov. Net	-0.00898***						
	(0.00156)						
Dem. State Gov. × Corp. Gov. Net	0.00312***						
	(0.000502)						
Community Net		-0.0126***					
		(0.00225)					
Dem. State Gov. ×Com. Net		0.00349***					
		(0.000906)					
Diversity Net			0.00104				
			(0.00136)				
Dem. State Gov. × Div. Net			0.00189***				
			(0.000537)				
Employee Rel. Net				-0.00402***			
				(0.000897)			
Dem. State Gov. × Emp. Net.				0.00238***			
				(0.000479)			
Environment Net					-0.0128***		
					(0.00123)		
Dem. State Gov. × Env. Net					0.00198***		
					(0.000384)		
Human Rights Net						-0.0337***	
						(0.00445)	
Dem. State Gov. × Hum. Net						0.00400***	
						(0.000616)	
Product Quality Net							-0.0146***
							(0.00293)
Dem. State Gov. × Prod. Net							0.00338***
							(0.000457)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES	YES
Observations	481,909	481,909	481,909	481,909	481,909	481,909	481,909
R-squared	0.142	0.143	0.142	0.142	0.144	0.144	0.144
Number of Panel Clusters	18,622	18,622	18,622	18,622	18,622	18,622	18,622

He finds that shareholders seem to react most strongly to events related to community and environmental issues. The relative uniformity of the estimates across subcategories also makes it less likely that the findings are driven by other unobservable differences in portfolio allocations between funds with Democratic and Republican leaning members as well as those with a Democratic and a Non-Democratic state government. For example, if the documented ESG preferences were the result of state-specific policies, e.g. due to environmental catastrophes such as oil spills that affect specific

states and might induce them to be more mindful of such factors, then I would expect to find strong results for single KLD subcategories but not such a uniform pattern.[38]

3.5.3 Change in Political Leaning

The results presented in Chapter 3.5.1. suggest that the main determinant of state pension funds' ESG preferences is the political leaning of their members. In this section, I am interested in the dynamics of these preferences. In particular, I want to analyse whether a change in members' political leaning triggers an adjustment of the funds' portfolio towards or away from ESG companies and whether the direction of the portfolio adjustment depends on the type of the political change, i.e. from Republican to Democratic, or vice versa. With this analysis, I also aim to address potential endogeneity concerns of the relation between funds' portfolio allocations and politically-motivated ESG preferences. Arguably, the change in the political leaning of funds' members can be regarded as an exogenous shock as it is unlikely that fund members' political beliefs are affected by the SRI positive screening of their pension funds. To test the effect of changes in members' political leaning on funds' ESG positive screening, I first identify pension funds that experience a change in the political leaning of the state population during the four elections that took place over the sample. I find that six state pension funds experienced a change from Republican to Democratic leaning, while for eight funds the political leaning changed from Democratic to Republican. For 68 cases, there was no change in members' political leaning over the presidential election cycle. Of these 68 cases, 42 remained predominantly Democratic and 26 stayed Republican. For each election cycle and pension fund, I calculate the average residual portfolio-weighted *KLD Net score* for the four years prior to the election and the four years after the election.[39] I then take the difference between the average pre-

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[38] I more directly test for state-specific effects in the context of industry preferences in later robustness tests.

[39] If I do not have holding data for the entire period I use the maximum number of quarters available for a particular election cycle. In unreported results, I repeat the analysis based on unadjusted portfolio-weighted KLD scores. I generally find support for our findings derived from the residual scores, though the results are slightly weaker highlighting the importance of adjusting for size and value effects.

and post-election scores and perform a *t*-test on these differences. I do this for each of the subgroups sorted by the type of political change.

The results of this analysis are presented in Panel A of Table 3.8. Column 1 and 2 show the pre- and post-election KLD Net scores, respectively, while Column 3 reports the difference between average post- and pre-election scores along with the corresponding *t*-statistics. When the members' political leaning changes from Republican to Democratic, the then-Democratic leaning funds seem to tilt their portfolios towards ESG companies, as the positive and highly significant difference in average pre- and post-election KLD scores of 0.506 suggests. However, they do not seem to be able to entirely turn around the negative ESG focus of the portfolio as the average residual KLD score in the four years following the political change is still a negative -0.433. This might indicate that implementing ESG orientated positive screening takes time to become effective. In comparison, a change from Democratic to Republican brings about an average negative change in funds' residual KLD scores of -0.942, changing from a positive pre-election score to a negative post-election figure. This suggests that the then-Republican funds seek a timely exit from potential SRI policies implemented under the previously Democratic leaning agenda. However, once the SRI policies are turned around Republican funds do not seem to consider ESG issues any longer as can be seen by the statistically insignificant difference of pre- and post-election KLD scores when the political climate of the state remains Republican. In contrast, the positive trend in ESG-related positive screening continues for those funds that stay Democratic and even tends to intensify as the political climate stabilises. The remaining columns of Panel A show the differences in post- and pre-election scores for the seven KLD subcategories. In order to preserve space I only present the differences in scores.

Overall, the results for the subcategories generally support the findings based on the KLD Net score. For the change from Republican to Democratic leaning, I find the expected positive change for four out of seven subcategories.

Table 3.8: Change in Political Leaning

Table 3.8 reports changes in the average residual portfolio weighted KLD scores around changes in the political leaning of the state. Panel A presents results on KLD Net Scores, while Panel B and C focus on changes in Strength and Concern scores, respectively. In order to arrive at the figures, for each election cycle, i.e. the four years between presidential elections, I calculate the average residual portfolio weighted KLD Net, Strength and Concern score for each pension fund. If a pension fund does not have holdings data over the entire election cycle, I calculate the average based on the maximum number of quarter available. I then take the difference between the average scores before and after an election for pension funds that (a) had a change in political leaning from Republican to Democratic [6 pension funds]; (b) had a change in political leaning from Democratic to Republican [8 pension funds]; (c) did not experience a change in political leaning, i.e. remained Democratic or Republican leaning [68]; (d) remained Democratic [42]; and (e) remained Republican [26]. The numbers in brackets in column one indicate the number of occurrences in the sample. For the KLD Net score (Columns (2) – (4)), I report the pre-election average residual portfolio-weighted KLD scores per subgroup (*Pre*), the post-election average residual portfolio-weighted KLD scores per subgroup (*Post*) and the difference between post- and pre-election values along with *t*-statistics in brackets (*Diff.*). For the seven KLD subcategories, I only report differences between post- and pre-election values to preserve space.

Panel A: Residual KLD Net Scores

| | KLD Net | | | C. Gov. | Com. | Div. | Emp. | Env. | Hum. | Pro. |
	Pre	Post	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.
Rep. to Dem.	-0.94	-0.43	**0.51*****	0.20***	-0.22***	-0.03	-0.01	0.54***	0.01***	0.01
(6)			(15.77)	(13.74)	(-24.20)	(-1.92)	(-1.30)	(105.02)	(5.85)	(0.78)
Dem. to Rep.	0.37	-0.57	**-0.94*****	-0.23***	-0.12**	0.06	-0.04	-0.39***	-0.08***	-0.14***
(8)			(-6.54)	(-7.67)	(-3.18)	(1.67)	(-0.88)	(-8.17)	(-7.40)	(-6.25)
No Change - All	-0.32	0.31	**0.63*****	0.13***	0.06***	-0.16***	0.20***	0.18**	0.08***	0.14***
(68)			(3.10)	(3.01)	(2.27)	(-3.17)	(3.09)	(2.62)	(3.35)	(3.50)
No Change - Dem.	-0.42	0.48	**0.89*****	0.19***	0.08***	-0.21***	0.25***	0.28***	0.11***	0.19***
(42)			(3.20)	(3.18)	(2.07)	(-3.47)	(3.05)	(3.10)	(3.43)	(3.60)
No Change - Rep.	-0.17	0.04	**0.21**	0.04	0.03	-0.09	0.13	0.01	0.03	0.06
(26)			(0.78)	(0.68)	(0.94)	(-0.96)	(1.16)	(0.13)	(0.89)	(1.02)

Panel B: Residual KLD Strengths Scores

| | KLD Str. | | | C. Gov. | Com. | Div. | Emp. | Env. | Hum. | Pro. |
	Pre	Post	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.
Rep. to Dem.	-0.47	0.49	**0.96*****	0.28***	-0.15***	-0.04*	0.07	0.70***	0.04***	0.04***
(6)			(22.45)	(29.53)	(-20.54)	(-2.41)	(2.00)	(57.31)	(28.31)	(9.64)
Dem. to Rep.	0.20	-0.55	**-0.75*****	-0.13***	-0.06***	0.13***	-0.01***	-0.50***	-0.06***	-0.04***
(8)			(-6.00)	(-5.57)	(-1.93)	(3.88)	(-4.87)	(-8.36)	(-9.56)	(-2.18)
No Change - All	-0.01	-0.01	**0.01**	-0.03	-0.03**	-0.18***	0.15***	0.05	0.03***	0.03**
(68)			(0.08)	(-1.60)	(-2.03)	(-3.12)	(3.39)	(0.84)	(2.82)	(2.45)
No Change - Dem.	0.04	0.10	**0.06**	-0.04	-0.05***	-0.24***	0.18***	0.12	0.05***	0.04***
(42)			(0.55)	(-1.23)	(-2.72)	(-3.44)	(3.27)	(1.51)	(3.00)	(2.96)
No Change - Rep.	-0.10	-0.18	**-0.08**	-0.03	-0.01	-0.10	0.10	-0.06	0.01	0.01
(26)			(-0.55)	(-1.01)	(-0.21)	(-0.91)	(1.38)	(-0.75)	(0.52)	(0.26)

Panel C: Residual KLD Concern Scores

| | KLD Con. | | | C. Gov. | Com. | Div. | Emp. | Env. | Hum. | Pro. |
	Pre	Post	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.	Diff.
Rep. to Dem.	0.47	0.92	**0.45*****	0.08***	0.06***	-0.003	0.11***	0.15***	0.02***	0.03**
(6)			(16.11)	(9.13)	(17.73)	(-0.66)	(15.07)	(19.58)	(7.85)	(2.75)
Dem. to Rep.	-0.17	0.02	**0.19****	0.10**	0.07***	0.07***	-0.06	-0.11***	0.03**	0.12**
(8)			(3.25)	(3.33)	(5.55)	(5.284)	(-1.81)	(-4.11)	(3.26)	(3.42)
No Change - All	0.30	-0.36	**-0.66*****	-0.18***	-0.10***	-0.02**	-0.05*	-0.14***	-0.05***	-0.12***
(68)			(-3.60)	(-3.35)	(-3.56)	(-2.50)	(-1.94)	(-4.36)	(-3.73)	(-3.88)
No Change - Dem.	0.46	-0.37	**-0.83*****	-0.22***	-0.13	-0.03**	-0.07*	-0.17***	-0.06***	-0.15***
(42)			(-3.46)	(-3.23)	(-3.53)	(-2.59)	(-1.99)	(-3.94)	(-3.54)	(-3.71)
No Change - Rep.	0.03	-0.35	**-0.38**	-0.096	-0.06	-0.02	-0.03	-0.09*	-0.03	-0.07
(26)			(-1.37)	(-1.24)	(-1.25)	(-0.92)	(0.28)	(-1.99)	(-1.39)	(-1.52)

A change from Democratic to Republican leads to a decrease in the KLD scores in six out of seven cases. Remaining Republican does not significantly impact the ESG tilt of the portfolio, independent of the KLD subcategory, whereas staying Democratic results in an increase in fund holdings' average ESG score for all ESG subcategories, except for the diversity score.

In Panel B and C of Table 3.8 I repeat the same analysis but instead of looking at KLD Net scores I use the strength and concern scores to calculate differences between pre- and post-election values. This disaggregation of KLD Net scores helps us to understand what kind of ESG screening approach pension funds follow. For example, do Democratic pension funds target a stronger investment in companies that have high KLD strengths representing companies that actively promote ESG policies? Or do they aim to reduce their exposure to companies that commit or are more likely to commit violations in ESG areas as proxied by the KLD concern scores? For the KLD strength scores the data shows very similar patterns to the ones observed for the net scores. A change from a Republican to a Democratic climate is followed by a positive increase in fund holdings' strength scores for six out of eight KLD specifications. Funds that changed from Democratic to Republican show a decline in their holdings' ESG performance for seven out of eight categories. However, the picture becomes less clear when fund members remain Democratic. There is a positive change for all but the corporate governance, community and diversity categories. Turning to the results for KLD concern scores, Panel C presents a very different picture regarding the dynamics of ESG preferences around political changes. I find that when a change in the state's political climate occurs, pension funds, on average, tilt more strongly towards companies with higher KLD concern scores, independent of the direction of the political change. In comparison, when the political leaning does not change, the average concern score of funds' portfolios decreases, though this decrease is insignificant for Republican funds. While a well-founded explanation of these findings requires additional analyses, the results nevertheless suggest some mechanisms that might be at place. Looking at the change from a Democratic to a Republican climate, companies with ESG concerns in the previously Democratic leaning funds tended to be underweighted (as indicated by the negative average pre-election KLD concern scores), e.g. due to negative screening and exclusion of 'socially

irresponsible' companies. However, with the strengthening of Republican influences these exclusions are made undone, resulting in an increase in the portfolio-weighted KLD concern scores. The increase in KLD concerns that follows a change from Republican to Democratic leaning is less intuitive. However, one route to explain these findings is that then-Democratic funds start to embrace an activist approach by targeting companies with concern scores, whereas after the phase of the initial activism they progressively tilt away from companies with ESG concerns. In order to confirm these potential explanations further analyses are needed which goes beyond the scope of this study.[40] The main conclusion of the strength and concern analysis is, though, that pension funds seem to evaluate ESG strengths, i.e. ESG-related policies that are actively put in place by companies, and ESG concerns, which represent ESG-related violations, differently. Democratic funds tend to reward companies that do well on ESG policies by systematically increasing their portfolio allocations towards these companies. In contrast, they do not seem to systematically penalise companies for ESG violations. Republican funds are more likely to unwind positive ESG sceening after a political change, while from then onwards ESG considerations do not enter their decision-making processes.

3.5.4 Introduction of the PRI

In this chapter, I investigate whether the funds' tendency towards positive ESG screening has changed over time. I am especially interested in whether increased public interest for ESG themes and potential pressures to take a stand on SRI impacts funds' ESG preferences. I use the introduction of the PRI as such a structural break as it marks a change in the attitude and approach towards SRI (Woods & Urwin, 2010). The PRI were launched at the New York Stock Exchange in April 2006

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[40] Chapter 5 focuses on shareholder activism by U.S. investors in general, among which are the activist activities by U.S. state pension fund. While the analysis in Chapter 5 indicate that activists target firms with concerns, thus providing anecdotal evidence for the above preposition, the analysis is not aimed to answer whether state pension funds with Democratic leaning members attempt to improve targets' ESG performance through shareholder activism.

after consultations with a group of institutional investors that started in early 2005.[41] Since then the number of signatories and the amount of funds represented by these investors have constantly increased, starting from 32 signatories representing USD 2 trillion in April 2006 to nearly 1,300 signatories comprising assets worth over USD 45 trillion by the end of 2014.[42] By signing up to the PRI, institutional investors commit to incorporate ESG issues into their investment analysis and decision-making processes as well as to further promote the implementation of the PRI.[43] I argue that the introduction of the PRI has not only raised public awareness of ESG issues but also increased pressures on state pension funds – by both politicians and the general public – to take a stand on SRI.

Based on these considerations I expect that from 2005 onwards the identified relation between a funds' ESG tilt and the political leaning of the state has strengthened as funds from Democratic leaning states were responding to the call for incorporating ESG criteria into their investments whereas Republican leaning funds are immune to such pressures. To test this conjecture, I divide the sample into two sub-periods. The first sub-period runs from 1997Q1 to 2004Q4, thus spanning the time prior to the development and launch of the PRI. The second sub-period comprises quarters 2005Q1-2013Q4.

Results are presented in Table 3.9. As expected, I find a stronger relation between members' Democratic leaning and a fund's positive ESG screening after the launch of the PRI, in terms of both the statistical significance and the economic magnitude of the effect (specifications 1 and 4).[44]

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[41] See http://www.unpri.org/about-pri/about-pri/history/. Interestingly, some of the state and local pension plans in our sample are among the founding and drafting members of the PRI.
[42] See PRI 2014 Annual Report http://2xjmlj8428u1a2k5o34l1m71.wpengine.netdna-cdn.com/wp-content/uploads/PRIAnnualReport2014.pdf .
[43] See http://www.unpri.org/about-pri/the-six-principles/ . The PRI initiative involves six general principles, of which the principle to incorporate ESG issues into investment analysis and decision-making processes, is the first and most central principle. The other principles evolve around supporting active ownership and disclosure on ESG issues as well as promoting the implementation of the PRI.
[44] I repeat this analysis for different adjustments of the portfolio weights as described in chapters 3.6.1 and 3.6.2. I find that the findings hold independent of the portfolio weight proxy that is being applied.

Table 3.9: Introduction of the PRI

Table 3.9 reports estimated coefficients from Subsample Fixed Effect Panel regressions of the portfolio weight held by a pension fund in a specific company (w_{ijt}) on the company's KLD score as well as an interaction of the company's KLD score and proxies for (1) the political leaning of the funds' members ($Democrat - Dummy_{jt}$); (2) the composition of the state government ($Dem. State Gov. - Dummy_{jt}$); and (3) dummy variables conditioned on both the members' political leaning and the composition of the state government. In Panel A, the sample runs from 1997Q1 to 2004Q4. In Panel B, the sample period comprises 2005Q1 to 2013Q4. The *KLD Net* score is scaled to have an overall minimum of zero in order to facilitate the interpretation of the interaction term. In specifications (3) and (6), the *KLD Net score* is scaled to have a minimum of zero and a maximum of one. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Panel A: 1997Q1 – 2004Q4	(1) w_{ijt}	(2) w_{ijt}	(3) w_{ijt}
KLD Net	-0.00161	-0.00172	-0.00131
	(0.00148)	(0.00150)	(0.00149)
Democrat-Dummy × KLD Net	0.00000638		
	(0.000468)		
Dem. State Gov.-Dummy× KLD Net		0.000580**	
		(0.000242)	
Republican&NonDemstategov × KLD Net			0.00800
			(0.0188)
Republican&Demstategov × KLD Net			0.0157
			(0.0135)
Democrat&Demstategov × KLD Net			0.0209**
			(0.00849)
Pen. Fund X Security FE	YES	YES	YES
Company Controls	YES	YES	YES
Pension Fund Controls	YES	YES	YES
Market Control	YES	YES	YES
Observations	196,586	196,586	196,586
R-squared	0.127	0.127	0.127
Number of Panel Clusters	11,986	11,986	11,986

Panel B: 2005Q1 – 2013Q4	(4) w_{ijt}	(5) w_{ijt}	(6) w_{ijt}
KLD Net	-0.00507***	-0.00412***	-0.00265***
	(0.000536)	(0.000441)	(0.000431)
Democrat-Dummy × KLD Net	0.00164***		
	(0.000381)		
Dem. State Gov.-Dummy× KLD Net		0.000987***	
		(0.000187)	
Republican&NonDemstategov × KLD Net			-0.0423***
			(0.0129)
Republican&Demstategov × KLD Net			-0.0274*
			(0.0149)
Democrat&Demstategov × KLD Net			0.0310***
			(0.00601)
Pen. Fund X Security FE	YES	YES	YES
Company Controls	YES	YES	YES
Pension Fund Controls	NO	NO	NO
Market Control	YES	YES	YES
Observations	285,323	285,323	285,323
R-squared	0.142	0.142	0.142
Number of Panel Clusters	15,012	15,012	15,012

Regarding the impact of political pressures on funds' ESG preferences (specifications 2 and 5), I also find an increase in the statistical and economic significance, although the differential effects are considerably smaller than for members' political leaning. Finally, the combined effect of members' political leaning and pressures by politicians only becomes present in the second half of the sample (specification 6), whereas these effects cannot be observed prior to the launch of the PRI (specification 3). This supports my interpretation of these findings as indication that the establishment of the PRI has increased pressures on pension funds to position themselves regarding SRI and that some of these pressures might be exercised by state politicians. However, I am cautious in relating this development solely to the PRI.

3.6 Alternative Explanations and Robustness Tests

3.6.1 Industry Adjustments

In this and the following sections I test alternative explanations for the finding of a positive relation between the political leaning of members and funds' ESG tilt. First, I analyse whether the identified relations are an artefact of the tendency of U.S. state pension funds to overweight in-state industries. Previous research has shown that these funds tend to overweight stocks from industries that are dominant in their home state (e.g. Brown et al., 2015). Additionally it is a well-known fact that a company's ESG performance is highly dependent on the sector and industry that it operates in. For example, companies in the IT sector tend to have consistently higher ESG ratings than oil and gas companies which tend to perform poorly on ESG issues.[45] If the pension funds in the sample overweight their in-state industries and the dominant industries in states with a Democratic leaning population happen to have a high average KLD score while the dominant industries in Republican

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[45] These patterns are supported in the data (Table A.3.2, row 2). Companies operating in the 'Oil, Gas and Coal Extraction and Products' sector have a negative mean KLD Net score of -2.454, similar to companies in the Utilities sector (-0.468), whereas companies operating in the Business Equipment sector or the Consumer Non-Durables sector tend to have strong KLD Net scores of 1.793 and 0.751, respectively.

leaning states show poor ESG performance, this would result in the same findings as presented earlier. However, in this case I would not pick up funds' preferences for ESG but their general industry preferences.

In order to check that the findings are not a result of industry over- or underweighting or to benchmarking I apply several additional tests. First, I analyse how closely the funds in our sample follow the market and industry allocations by calculating the average weight that the pension funds hold in each of the 10 Fama-French sectors and compare it to the average weight of that sector in the S&P500 index. The results are presented in Table A.3.2 in the Appendix to Chapter 3. I find that funds do not strictly follow the market weights but (to a varying degree) tilt towards certain sectors.

To control for these industry tilts, I adjust the portfolio weights in the following way:

$$w_{ijt}^{ind.} = \frac{val_{ijt}}{\sum_i^N val_{ijt}^{ind.}}$$ (3.7),

where $w_{ijt}^{ind.}$ is the industry-adjusted portfolio weight, val_{ijt} is the value of company i held by pension fund j at the end of a quarter t and $\sum_i^N val_{ijt}^{ind.}$ is the value of holdings in the Fama-French sector that company i operates in held by pension fund j at the end of quarter t.[46] Thus, $w_{ijt}^{ind.}$ puts the focus on the kind of companies a fund invests in within a particular industry and mitigates the potentially biasing effect if a fund is overinvested in a particular industry.

Panel A in Table A.3.3 in the Appendix to Chapter 3 reports results of the baseline regression when I substitute the simple portfolio weights with the industry-adjusted weights. Our main results are not affected by funds' industry preferences. I still find a significantly positive coefficient on the interaction term with the *Democrat-Dummy* (specification 1) and the *Dem. State Gov.-Dummy* (specification 2). Even the interactions with the dummies based on both members' political leaning and the composition of the state government exhibit the expected signs (specification 3). As an

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[46] In unreported results, I also apply the Fama-French 48 industries and the GICS sector and industry classifications. The main results are qualitatively unchanged.

alternative way to test for industry effects, I run separate regressions for each of the 10 Fama-French sectors. I also re-estimate the baseline regression including industry fixed effects. The results of these analyses are presented in Table A.3.4 and A.3.5 in the Appendix to Chapter 3, respectively. Again the findings remain robust to these industry controls.

Finally, I exclude all in-state portfolio holdings from a fund's portfolio, i.e. all companies that are headquartered in the same state as the state pension fund, and re-run the baseline regression. The results are presented in Table A.3.6 in the Appendix to Chapter 3. Again, excluding in-state holdings does not significantly alter my main findings.

3.6.2   Deviations from Benchmark Weights

Parrino at al. (2003) report that a substantial proportion of a state pension fund portfolio is indexed, i.e. the weight that a company has in a fund's portfolio follows the weight of that company in the index. Additionally, there is broad evidence that fund managers' investment performance is evaluated against a benchmark, incentivising managers not to deviate too strongly from benchmark weights (e.g. speech by Jim Leech, President and CEO of Ontario Teachers' Pension Plan at the 2013 Asset and Risk Allocation Conference in New York City, 15-16 April; or Del Guercio & Tkac, 2002). Recent research suggests that deviations from benchmarks and norms are especially informative with respect to superior information and investor preferences (e.g. Kumar & Page, 2014).[47] Considering that U.S. state pension funds are major market participants and fiduciaries to millions of American citizens their investment choices are closely monitored and this monitoring might constraints them in their tendency to deviate from market benchmarks (see also Hong & Kacperczyk, 2009). Therefore, deviations from benchmark weights might be more informative of funds' investment

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[47] Kumar & Page (2014) show that when norm-restricted investors deviate from their norms then these investments represent superior information or particular preferences of the managers and tend to result in superior performance.

preferences than simple portfolio weights as the latter could be heavily affected by indexing. I construct two alternative portfolio weight proxies that measure funds' deviation from the S&P500 benchmark. First I calculate the absolute deviation from the S&P500 by deducting a company's weight in the S&P500 index from its portfolio weight in the fund's portfolio:

$$abs.dev.w_{ijt} = w_{ijt} - w_{it}^{S\&P500} \qquad (3.8),$$

where w_{ijt} is the portfolio weight of company i in fund j's portfolio relative to fund j's total holdings in S&P500 companies at the end of quarter t and $w_{it}^{S\&P500}$ is the weight of company i in the S&P500 index at the end of quarter t. Thus, if a pension fund's portfolio weight in a company relative to its total holdings in the S&P500 exactly resembles the S&P500 weight $abs.dev.w_{ijt}$ takes the value of zero. An overweighting (underweighting) of a company with respect to the S&P500 results in a positive (negative) value for $abs.dev.w_{ijt}$. Additionally, I construct a variable that measures the relative deviations from the S&P500 weights, as:

$$rel.dev.w_{ijt} = \frac{w_{ijt}}{w_{it}^{S\&P500}} \qquad (3.9).$$

For $rel.dev.w_{ijt}$, a value of one indicates that the fund exactly follows the S&P500, whereas a value larger (smaller) than one points to overweighting (underweighting).

Panel B in Table A.3.3 in the Appendix to Chapter 3 reports results when I replace the simple portfolio weights, w_{ijt}, with the two deviation proxies as dependent variables. In line with the previous results, I find a positive relation between funds' ESG preferences and the Democratic leaning of their members as well as the power of the Democratic Party in the state government (specifications 4-7). However when turning to specifications (8) and (9) where I test the combined effect of the political proxies, I only find partial support for my initial findings. When focusing on the absolute deviation proxy I still find the expected relations, though the interaction term with the *Democrat&Demstategov-Dummy* becomes insignificant. However, the specification with the relative deviations from the S&P500 only partially supports the previous findings. In specification (9) the funds with Republican members and a Democratic state government show the strongest ESG tilt,

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whereas the ESG preferences of funds with Democratic members and a Democratic state government are weaker than expected. Thus, I need to be cautious when making inferences for the combined effects of the political proxies.

3.6.3 Alternative Political Proxies

In this section, I use alternative political proxies to rule out that the results are an artefact of the employed proxies. The results of these tests are presented in Table A.3.8 in the Appendix to Chapter 3. The Appendix also describes the construction of the variables and Table A.3.7 provides summary statistics and a correlation matrix of the different proxies to assess their relation to one another. I employ the following alternative proxies: (a) the percentage of votes received by the Democratic candidate in the latest presidential elections, i.e. *% of Democratic votes*, (specification 1); (b) the proportion of the state government affiliated to the Democratic Party, i.e. *% of Dem. State Gov.* (specification 2); (c) the political affiliation of the State Treasurer, i.e. *Dem. State Treasurer-Dummy* (specification 3); (d) the political affiliation of the State Governor, i.e. *Dem. Governor-Dummy* (specification 4); dummies that condition on both, fund members' political leaning and the State Governor's political affiliation (specification 5); (e) the composition of the state's delegation to the U.S. Congress, i.e. *Dem. State Delegation-Dummy* (specification 6); and dummies conditioning on both fund members' political leaning and the composition of the state congress' delegation (specification 7). The results support the previous finding that the affiliation towards the Democratic Party and its political agenda are important determinants of funds' ESG preferences. Additionally, I find that the proxies capture distinct aspects of states' political climate as evidenced by the low correlations between variables.

3.6.4 Extended Dataset

Our previous analyses are based on comparisons relative to funds' holdings in companies that are constituents of the S&P500 index. The main rationale for this approach is to prevent any time bias due to the several extensions of KLD's company coverage in the early 2000s. In this section, I test whether the results remain robust to including these additional companies.[48] Results are presented in Table A.3.9 in the Appendix to Chapter 3. In specifications (1)-(3), I employ the company's weight with respect to the fund's entire holdings in companies with a KLD rating for quarter t (w_{ijt}^{extd}). Specification (4)-(6) use the industry-adjusted version of these portfolio weights ($ind.adj.w_{ijt}^{extd}$). I find that the main results regarding the impact of members' political leaning for funds' ESG preferences are qualitatively unchanged (specifications 1-4), showing that the findings extend beyond the S&P500 universe. Interestingly, the effect of political pressures by state politicians becomes insignificant or even negative in the extended dataset (specifications 2-5), confirming that these pressures are merely a moderating factor.

3.6.5 Variations of the KLD Scores

As a final robustness test, I check whether the results remain robust to different ways of calculating the KLD scores. First, it can be argued that not all KLD subcategories are strongly related to the Democratic political agenda. As pointed out in Hong & Kostovetsky (2012) and Di Guili & Kostovetsky (2014), issues of corporate governance and product quality cannot be clearly connected to either party platform but should be of concern to both parties alike. Additionally, the human rights category has very few items that are consistently rated over the entire sample period. To ensure that the findings are not driven by these three subcategories, I re-estimate the baseline regressions using a KLD Net score that excludes these categories. The results are presented in Table A.3.10 in the

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[48] Figure 3.1 in Chapter 3.3.1 allows an evaluation of the effect of these additions on the overall holdings covered by our tests.

Appendix to Chapter 3, specifications (1)-(3). They are qualitatively unchanged and in their statistical and economic magnitude almost identical to the baseline results.

Moreover, the way that KLD scores are calculated has seen several changes over the sample period; the most drastic change in 2009 relating to the acquisition of KLD by RiskMetrics, now a subsidiary of MSCI. In this context, KLD has significantly altered the computation of the KLD scores. One result of these adjustments is that the KLD scores tend to be inflated since 2009. To rule out that the findings are the result of this methodological change, I exclude all observations from 2009 onwards and re-run the model based on the subsample 1997Q1-2008Q4 (Table A.3.10, specifications 4-6). I still find strong support for the positive relation between members' Democratic leaning and funds' ESG tilt. However, in specification (5) the effect of political pressures by Democratic state politicians reverses.

Kotchen & Moon (2012) point out that some of the items in the KLD subcategories have been added or removed over the years. Thus, the aggregated scores might lack comparability over time. I follow Kotchen & Moon (2012) and Hong & Liskovich (2014) and normalise the KLD scores with respect to each KLD subcategory and each year such that each subcategory score has a mean of 0 and a standard deviation of 1 for each year. Then, I aggregate the normalised scores per year and generate an overall normalised KLD Net score, which I standardise to an overall minimum of zero. Specifications (7)-(9) show that the results are not significantly affected when using this alternate measures of ESG performance.

3.7   Performance Effect of Politically-Motivated ESG Investing

3.7.1   Calendar Time Portfolio Approach

An interesting question is whether the state pension funds engage in positive ESG screening as a way to improve their portfolio performance. Thus, in this and the following chapter I analyse whether the ESG tilt of their portfolio generates outperformance relative to the S&P500 benchmark. I first employ

a calendar time portfolio approach to test this conjecture and then I test the performance effect of the politically motivated ESG tilt in a multivariate panel framework.

For the calendar time portfolio approach, I first compute the monthly portfolio returns for each state pension fund in the sample. As I only have a very limited number of quarterly holdings for some of the funds, I restrict the sample in this sub-section to funds with at least 25 quarters of holdings data. After this restriction the sample is reduced to 18 state pension funds.[49] To construct monthly returns of funds' S&P500 holdings, I weight each holding's return by its weights in the portfolio at the end of the previous quarter. I re-balance the portfolios at the end of the consecutive quarter based on the new portfolio weights. This approach ignores any return effects from intra-quarter trading. Besides calculating a fund's return on its entire S&P500 holdings, I next create portfolios sorted by deviations from benchmark weights as well as the holding's ESG performance. I calculate the absolute deviation from the S&P500 by deducting the weight of a company in the S&P500 index from the portfolio weight of that company in a fund's portfolio, as shown in Chapter 3.6.2, equation (3.8). Then, I rank the holdings of a fund according to the deviations from S&P500 weights. I create a portfolio of a fund's most overweighted holdings (i.e. the holdings that rank in the 4th quartile of holdings ranked by deviations from the S&P500) and a portfolio of its most underweighted holdings (i.e. the first quartile of holdings ranked by S&P500 deviations). I repeat this exercise but this time conditioning on the holdings' ESG performance: I create a portfolio that contains the holdings with the highest ESG scores (i.e. the 4th quartile of holdings ranked by *KLD Net score*) and one for holdings with the lowest ESG scores (i.e. the first quartile of stocks ranked by *KLD Net score*).[50] Finally, I perform a double sorting by creating portfolios that comprise (a) the most overweighted holdings with the highest ESG performance (i.e. 4th and 4th quartile, respectively), (b) the most underweighted holdings

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[49] These funds include: CalPERS, CalSTRS, ColoradoPERA, FloridaSBA, KentuckyRetS, KentuckyTRS, MichiganTreas, NJInvB, NYStateComRS, NYStateTRS, NewMexicoERB, OhioPERS, OhioTRS, PennPSERS, TexasERS, TexasTRS, VirginiaRS and WisconsinIB.

[50] In unreported results, I confirm the robustness of the findings to sorting portfolios based on the first and third tercile of deviations from the S&P500 weights and ESG performance.

with the lowest ESG performance (1st and 1st quartiles), (c) the most overweighted holdings with the lowest ESG performance (4th and 1st quartiles), and (d) the most underweighted holdings with the highest ESG performance (1st and 4th quartiles). Then, I accumulate funds' portfolio returns across all 18 funds.

In the next step, I run monthly time series regressions applying a calendar time portfolio approach with quarterly rebalancing. The advantage of this approach is that it avoids issues of cross-sectional correlations of abnormal returns (Fama, 1998). In Panel A of Table 3.10, I report alphas estimates of the portfolios described above, estimated based on a Fama-French three-factor model plus Carhart's (1997) momentum factor.

$$r_{p,t} = \alpha_p + \beta_{S\&P} r_{S\&P,t} + \beta_{SMB} SMB_t + \beta_{HML} HML_t + \beta_{MOM} MOM_t + \epsilon_t \qquad (3.10)$$

where $r_{p,t}$ is the monthly value-weighted excess portfolio return, $r_{S\&P,t}$ is the excess S&P500 return, SMB_t, HML_t, and MOM_t are the size, value and momentum factors, respectively, and ϵ_t is an idiosyncratic disturbance term.

In contrast to the traditional four factor model, I do not employ the overall market return as the market factor but use the S&P500 return instead as it more closely fits my setting.[51] Specification (1) reports results for the portfolio including all 18 pension funds. Funds neither significantly out- nor underperform on their whole S&P500 holdings (row (A)) or any of the portfolios sorted by ESG performance or deviations from benchmark weights (rows (B) to (I)). To rule out any differential effects in portfolio performance with respect to deviations and ESG performance, I also construct long-short portfolios which are reported in the last four rows of Panel A. Even the long-short portfolios do not generate a significantly positive or negative alpha.

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[51] In order to make the return calculations of the market factor and the portfolio returns exactly comparable, I do not use the readily downloadable S&P500 return but calculate the returns by weighting each S&P500 stock in my sample by its market value.

Table 3.10: Performance Analysis – Portfolio Building Approach

Table 3.10 reports results from the monthly time-series regressions applying a calendar time portfolio approach with quarterly rebalancing (based on the new quarterly holdings weights). The dependent variable is the monthly value-weighted portfolio return for portfolios sorted by deviations from benchmark weights and ESG performance (see portfolio details in first three columns, (A)-(I)) and sorted by political proxies ((2)-(5)), where the weight is based on the dollar value of the firm's holding in a fund. Panel A reports alpha coefficients and their corresponding *t*-values based on a Fama-French three factor model plus Carhart's (1997) momentum factor, expressed in equation (3.10). Panel B reports alpha coefficients and corresponding *t*-values based on a three-level factor model that adds an (orthogonalised) global market factor, (orthogonalised) global size, value and momentum factors, and (orthogonalised) industry factors to the standard four factor model, expressed in equation (3.11). All additional factors are orthogonalised against the S&P500 market factor. Only alpha estimates are displayed; factor loadings on the additional factors are omitted. The regressions are estimated over the sample period 1997Q1 to 2013Q4. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	Dev. S&P500	KLD	(1) All Funds Alpha	*t*-value	(2) Dem. Members Alpha	*t*-value	(3) Rep. Members Alpha	*t*-value	(2) - (3) Alpha	*t*-value	(4) Dem. State Gov. Alpha	*t*-value	(5) Non-Dem. State Gov. Alpha	*t*-value	(4) - (5) Alpha	*t*-value
Panel A: Fama-French Four Factor Model																
(A) All	-	-	0.0000817	0.54	0.0000910	0.62	0.000181	0.78	-0.000172	-0.90	0.000484**	2.37	0.0000360	0.20	0.000448**	2.56
(B)	Over	-	-0.000128	-0.29	-0.000518	-1.19	-0.00000238	0.00	-0.000515	-0.54	0.000764	1.20	0.0000453	0.06	0.000719	0.67
(C)	Under	-	-0.000126	-0.29	-0.000272	-0.58	0.000597	0.44	-0.000869	-0.53	-0.000568	-0.98	0.000740	0.57	-0.00131	-0.82
(D)	-	High	0.000151	0.19	0.0000418	0.05	-0.000444	-0.47	0.000486	0.35	0.000602	0.76	-0.000174	-0.30	0.000776	0.71
(E)	-	Low	0.000712	0.56	0.000691	0.54	0.000655	1.08	0.0000356	0.02	0.000891	0.70	0.000161	0.31	0.000729	0.47
(F)	Over	High	-0.000862	-0.98	-0.0014	-1.55	-0.000872	-0.71	-0.000617	-0.55	0.000808	0.73	-0.00127	-1.31	0.00208**	2.27
(G)	Under	Low	0.000975	0.72	0.000639	0.47	0.000796	0.52	-0.000156	-0.18	0.00184	1.23	0.000965	0.68	0.000875	0.86
(H)	Over	Low	0.000476	0.34	0.000444	0.32	0.0000422	0.02	0.000402	0.35	0.000356	0.23	0.000575	0.39	-0.000219	-0.24
(I)	Under	High	-0.000112	-0.10	0.0000197	0.02	0.000215	0.16	-0.000196	-0.23	-0.00107	-0.86	0.000397	0.33	-0.00146*	-1.92
(B) - (C)			-0.00000178	0.00	-0.000246	-0.30	-0.000599	-0.31			0.00133	1.24	-0.000695	-0.36		
(D) - (E)			-0.000561	-0.29	-0.000649	-0.33	-0.00110	-0.79			-0.000288	-0.15	-0.000335	-0.33		
(F) - (G)			-0.00134	-0.70	-0.00193	-0.97	-0.000914	-0.42			0.000452	0.22	-0.00185	-0.93		
(H) - (I)			0.00109	0.50	0.000620	0.28	0.000581	0.24			0.00291	1.28	0.000568	0.25		

Table 3.10 - continued

			(1) All Funds		(2) Dem. Members		(3) Rep. Members		(2) - (3)		(4) Dem. State Gov.		(5) Non-Dem. State Gov.		(4) - (5)	
Panel B: 3-Level Fama-French Four Factor Model																
	Dev. S&P500	KLD	Alpha	*t*-value	Alpha	*t*-value	Alpha	*t*-value	Alpha	*t*-value	Alpha	*t*-value	Alpha	*t*-value	Alpha	*t*-value
(A) All	-	-	-0.000552***	-3.15	-0.000537***	-3.36	-0.000682**	-2.49	0.000145	0.64	-0.000277	-1.12	-0.000578**	-2.56	0.000301	1.43
(B)	Over	-	-0.00180***	-3.27	-0.00168***	-3.26	0.000586	0.76	-0.00227**	-2.51	-0.000555	-0.79	0.00102	1.43	-0.00158	-1.53
(C)	Under	-	0.00126**	2.55	0.00108**	2.05	-0.00118	-0.98	0.00226	1.63	0.000552	0.86	-0.00115	-0.95	0.00332***	3.25
(D)	-	High	0.00120*	1.68	0.00123*	1.66	-0.00346***	-3.01	0.00469***	3.50	0.00118	1.58	-0.00215***	-2.95	0.00171	1.27
(E)	-	Low	-0.000923	-0.80	-0.00106	-0.90	0.00192***	2.73	-0.00298**	-2.04	-0.000398	-0.35	0.00165***	2.93	-0.00205	-1.51
(F)	Over	High	-0.00149	-1.57	-0.00167	-1.62	-0.00261*	-1.86	0.000934	0.73	-0.000634	-0.51	-0.00210*	-1.83	0.00146	1.26
(G)	Under	Low	0.000183	0.12	-0.000245	-0.16	0.000751	0.38	-0.000996	-0.82	0.000933	0.49	0.000236	0.14	0.000696	0.54
(H)	Over	Low	-0.00138	-1.16	-0.00117	-0.89	-0.00318*	-1.89	0.00200	1.35	0.0000535	0.03	-0.00170	-1.30	0.00176	1.50
(I)	Under	High	0.00271***	2.63	0.00286***	2.70	0.00209	1.58	0.000769	0.72	0.00166	1.43	0.00292**	2.58	-0.00126	-1.33
(B) - (C)			-0.00306***	-3.19	-0.00276***	-2.95	0.00177	1.11			-0.00111	-0.96	0.00218	1.35		
(D) - (E)			0.00212	1.33	0.00228	1.40	-0.00538***	-3.20			0.00158	1.02	-0.00380***	-3.19		
(F) - (H)			-0.000113	-0.07	-0.000499	-0.29	0.000571	0.29			-0.000688	-0.34	-0.000391	-0.23		
(G) - (I)			-0.00253	-1.20	-0.00311	-1.54	-0.00134	-0.52			-0.000729	-0.33	-0.00268	-1.22		

The risk factors of the four factor model do not account for different industry loadings. As Brown et al. (2015) demonstrate and shown in the robustness tests in section 3.6.1, state pension funds have the tendency to overweight in-state industries. To account for potential industry effects as well as international risk factors, I extend the four-factor model to a three-level Fama-French model. This model is similar in spirit to the factor models presented in Gregory & Whittaker (2007), Hoepner, Rammal & Rezec (2011) and Karolyi & Wu (2012). In particular, I introduce a global market factor, global size, value and momentum factors as well as ten industry factors representing the ten Fama-French sectors for the U.S. market to the standard four-factor model expressed in equation (3.10). However, as the global and industry factors are expected to be highly correlated with the standard four risk factors in equation (3.10) this poses concerns of multicollinearity. To capture only the additional explanatory effect of each added factor, I use the orthogonalisation approach by Elton, Gruber, Das & Hlavka (1993) which offers an accurate statistical correction for the influence of the already included factors on the additional factors.[52] The model can be expressed as follows:

$$
\begin{aligned}
r_{p,t} = \alpha_p &+ \beta_{S\&P} r_{S\&P,t} + \beta_{SMB,US} SMB_{US,t} + \beta_{HML,US} HML_{US,t} + \beta_{MOM,US} MOM_{US,t} + \beta_{m,glob} r_{m,glob,t}^{orth} \\
&+ \beta_{SMB,glob} SMB_{glob,t}^{orth} + \beta_{HML,glob} HML_{glob,t}^{orth} + \beta_{MOM,glob} MOM_{glob,t}^{orth} \\
&+ \sum_{i=1}^{10} \beta_{k,ind,US} r_{k,ind,US,t}^{orth} + \epsilon_t
\end{aligned}
\tag{3.11}
$$

where $r_{p,t}$ is the excess portfolio return, $r_{S\&P,t}$ is the excess S&P500 return, $SMB_{US,t}$, $HML_{US,t}$, and $MOM_{US,t}$ are the size, value and momentum factors for the U.S. market, respectively, $r_{m,glob,t}^{orth}$ is the orthogonalised return of the MSCI World index, $SMB_{glob,t}^{orth}$, $HML_{glob,t}^{orth}$ and $MOM_{glob,t}^{orth}$ are the orthogonalised global size, value and momentum factors, respectively, and $r_{k,ind,US,t}^{orth}$ is one of the orthogonalised Fama-French 10 sector portfolios for the U.S. market. All added global and industry factors are orthogonalised against $r_{S\&P,t}$.

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[52] This approach has been used by Hoepner et al. (2011) for Islamic mutual funds. The authors note that "[t]his approach cleans a factor X from the impact of other factors Y by regressing it on them and replacing factor X by the sum of the intercept and the residuals of the regressions" (Hoepner et al., 2011: 841-842).

The alphas obtained from estimating equation (3.11) are presented in Panel B of Table 3.10.

The results suggest that it is important to control for the two additional levels of risk as shown by the now significant alphas for some of the portfolios. Interestingly, I find that the funds underperform on their holdings of S&P500 companies and that this underperformance is caused by an underperformance on their most overweighted holdings and an outperformance of the most underweighted holdings, suggesting that the funds in the sample exhibit weak stock picking skills.

However, this underperformance does not seem to be related to their ESG tilt. If at all, the funds slightly outperform on their holdings with a high ESG performance. However, it is important to note that I am still looking at the aggregate of all 18 funds. Thus, next I analyse the performance effects when I condition on the political environment of the funds. I construct portfolios that only include funds with Democratic members (specification 2), with Republican members (specification 3), with a Democratic state government (specification 4) and with a Non-Democratic state government (specification 5). Additionally, I generate long-short portfolios to capture the differential effects for funds with Democratic versus Republican members and Democratic state government versus Non-Democratic state government. Looking at Panel A, I find that almost none of the alphas generated from the standard four-factor model are statistically significant for these portfolios, with the exception of the long-short portfolio for the Dem. State Gov. versus Non-Dem State Gov. portfolio. The latter seems to significantly outperform on the overweighted holdings with high ESG performance and significantly underperform on the underweighted holdings with low KLD Net scores. Turning to the results of model (3.11) reported in Panel B, I find that there are no major differences in the performance patterns between all 18 funds and the subgroup of funds sorted by political proxies. The most noteworthy findings from this analysis include the significant performance difference in the holdings with high and low ESG performance for funds with Democratic members and those with Republican members. However, once I condition on deviations from the S&P500 and the ESG performance this significant performance difference disappears,

suggesting that potential advantages from picking well performing ESG stocks do not translate into actual outperformance.

Overall, the results from the portfolio-based performance analysis indicate that state pension funds show weak stock picking ability. They tend to overweight underperforming stocks and underweight outperforming stocks. However, their underperformance is not consistently related to the politically-motivated ESG tilt.

3.7.2 Multivariate Panel Analysis of Pension Fund Equity Performance

Following Bradley et al. (2015), I also estimate fund performance in a multivariate panel setting. This enables me to more directly control for pension fund or state specific effects that might affect fund performance. I estimate the following fixed effect panel regression:

$$r_{jt} = \beta_0 + \beta_1 KLD_{jt}^{pfw} + \beta_2 KLD_{jt}^{pfw} \times political\ proxy_{jt} + \beta_3' fund\ controls_{jt} + v_j + \epsilon_t \quad (3.12)$$

where r_{jt} is the quarterly portfolio-weighted return of fund j over quarter t, KLD_{jt}^{pfw} is the average portfolio-weighted KLD Net score of fund j during quarter t, $political\ proxy_{jt}$ is one of the political dummies described in Chapter 3.3.1, and $fund\ controls_{jt}$ is a column vector including the fund and state specific effects (except for *% shares outstanding*). For all model specifications, standard errors are clustered at the pension fund level to correct for serial correlation in residuals. I include pension fund fixed effects (v_j) to absorb time invariant characteristics within a pension fund.

In alternative specifications, I use quarter fixed effects instead to exploit variation across funds and also include both fund and quarter fixed effects. The results of running model (3.12) are presented in Table 3.11. Panel A presents results when conditioning on the political leaning of funds' members using the *Democrat-Dummy* (specifications 1-3) and on the composition of the state government (specifications 4-6). Across all six specifications, I find a positive and significant relation between funds' portfolio-weighted KLD score and their quarterly portfolio return, implying that funds with a stronger ESG tilt of their holdings generate higher returns. However, I do not find that this relation

depends on the political environment of the fund as indicated by the insignificant coefficient estimates for the interaction terms of the KLD score and both political proxies. Additionally, the results do not suggest consistent performance differences between funds with Democratic or Republican members or funds with a Democratic or Non-Democratic state government, as can be seen by the (mainly) insignificant coefficients on the standalone *Democrat-Dummy* and *Dem. State Gov.-Dummy*.

Table 3.11: Multivariate Performance Analysis

Table 3.11 reports estimated coefficients from the panel regressions of the quarterly portfolio-weighted fund return on the fund's portfolio-weighted quarterly KLD score, an interaction of the fund's KLD score and one of the political proxies, as well as pension fund and state specific control variables, expressed in equation (3.12). The KLD Net score is scaled to have an overall minimum of 0. Specifications (1), (4), (7), (9), (11) and (13) contain fund fixed effects. Specifications (2) and (5) contain quarter fixed effects. Specifications (3), (6), (8), (10), (12) and (14) include both fund and quarter fixed effects. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Panel A	(1)	(2)	(3)	(4)	(5)	(6)
Portf.-weighted KLD Net Score	0.00886**	0.00764**	0.00894*	0.00592**	0.00694**	0.00761
	(0.00331)	(0.00371)	(0.00481)	(0.00208)	(0.00345)	(0.00456)
Democrat-Dummy	-0.000215	0.000924	0.00186			
	(0.00504)	(0.000886)	(0.00138)			
Democrat-Dummy × Portf.-weighted KLD Net	-0.00424	-0.000634	-0.000900			
	(0.00328)	(0.000444)	(0.000593)			
Dem. State Gov.-Dummy				-0.00216	0.00144*	-0.0003283
				(0.00755)	(0.000837)	(0.000585)
Dem. State Gov.-Dummy × Portf.-weighted KLD Net				-0.00165	-0.000239	-0.0000882
				(0.00340)	(0.000286)	(0.000281)
% invested in Equities	-0.000471	0.0000702	0.0000154	-0.000338	0.0000751	0.0000408
	(0.000355)	(0.0000584)	(0.0000486)	(0.000379)	(0.0000564)	(0.000047)
Political Corruption Convictions	-0.00737	0.00288	0.00179	-0.00334	0.00262	0.00254
	(0.0172)	(0.00205)	(0.00389)	(0.0176)	(0.00201)	(0.00411)
Actuarial Funded Ratio	-0.00106***	0.0000208	0.000198*	-0.00108***	0.0000259	0.000199
	(0.000347)	(0.0000342)	(0.000111)	(0.000349)	(0.000036)	(0.000124)
Fund Size	-0.106***	0.000183	-0.0105**	-0.103***	0.000178	-0.0103**
	(0.0175)	(0.000152)	(0.00369)	(0.0178)	(0.000157)	(0.00427)
% Union Members	-0.000444	-0.0000325*	0.000146	-0.000143	-0.0000297*	0.000157
	(0.000828)	(0.0000189)	(0.000109)	(0.000932)	(0.0000174)	(0.000131)
Constant	3.074***	1.139***	1.306***	3.000***	1.139***	1.302***
	(0.349)	(0.00689)	(0.0639)	(0.353)	(0.00709)	(0.0710)
Fund FE	YES	NO	YES	YES	NO	YES
Quarter FE	NO	YES	YES	NO	YES	YES
Observations	991	991	991	991	991	991
R-squared	0.046	0.991	0.991	0.046	0.991	0.991

Table 3.11 - continued

Panel B	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Portf.-weighted KLD Net Score	0.0062*** (0.00189)	0.00796 (0.00463)	0.00534** (0.00203)	0.00762 (0.00451)	0.0054*** (0.00141)	0.00802* (0.00444)	0.005*** (0.00152)	0.00767 (0.00444)
Democrat&Demstategov	0.00366 (0.00724)	-0.000233 (0.000872)						
Democrat&Demstategov × Portf.-weighted KLD Net	-0.00272 (0.00333)	-0.000453 (0.000324)						
Democrat&NonDemstategov			-0.00248 (0.00787)	0.00154* (0.000847)				
Democrat&NonDemstategov × Portf.-weighted KLD Net			0.000205 (0.00353)	-0.000237 (0.000276)				
Republican&Demstategov					-0.0226 (0.0151)	0.000388 (0.00213)		
Republican&Demstategov × Portf.-weighted KLD Net					0.00133 (0.00314)	0.00124* (0.000623)		
Republican&NonDemstategov							0.00837 (0.00769)	-0.0020** (0.000928)
Republican&NonDemstategov × Portf.-weighted KLD Net							0.00819 (0.00617)	0.000204 (0.000635)
% invested in Equities	-0.000321 (0.000365)	0.0000435 (0.000049)	-0.000386 (0.000331)	0.0000323 (0.000044)	-0.000252 (0.000345)	0.000003 (0.000063)	-0.000515 (0.000390)	0.0000207 (0.000048)
Political Corruption Convictions	-0.00548 (0.0167)	0.00253 (0.00406)	-0.00581 (0.0175)	0.00240 (0.00414)	-0.00165 (0.0195)	0.00168 (0.00407)	-0.00193 (0.0191)	0.00177 (0.00366)
Actuarial Funded Ratio	-0.001*** (0.000340)	0.000198 (0.000130)	-0.001*** (0.000342)	0.000224* (0.000121)	-0.001*** (0.000367)	0.000191 (0.000118)	-0.001*** (0.000380)	0.000205* (0.000111)
Fund Size	-0.105*** (0.0176)	-0.00968 (0.00483)	-0.107*** (0.0174)	-0.013*** (0.00404)	-0.103*** (0.0187)	-0.00868* (0.00418)	-0.105*** (0.0174)	-0.011*** (0.00364)
% Union Members	-0.000189 (0.000885)	0.000172 (0.000136)	-0.000346 (0.000905)	0.000177 (0.000140)	-0.000222 (0.000841)	0.000110 (0.000112)	-0.000423 (0.000838)	0.000164 (0.000113)
Constant	3.044*** (0.351)	1.290*** (0.0806)	3.089*** (0.346)	1.338*** (0.0669)	3.006*** (0.371)	1.278*** (0.0719)	3.066*** (0.349)	1.312*** (0.0621)
Fund FE	YES	YES	YES	YES	YES	YES	YES	YES
Quarter FE	NO	YES	NO	YES	NO	YES	NO	YES
Observations	991	991	991	991	991	991	991	991
R-squared	0.046	0.991	0.046	0.991	0.048	0.991	0.048	0.991

In Panel B, I repeat the above analysis but substitute the political proxies for the dummies that conditional on both, the political leaning of funds' members and the composition of the state government. Again, the results do not suggest significant performance differences related to the political environment. The only remarkable result is that the positive relation between the standalone portfolio weighted KLD score and the fund performance becomes insignificant in the model specifications that include both fund and quarter fixed effects.

Overall, the results of the multivariate analysis are in line with those of the calendar time portfolio approach presented in the previous section, namely that the politically-motivated ESG tilt does not result in financial under- or outperformance. The findings are also in line with previous research by Hong & Kostovetsky (2012) and Di Guili & Kostovetsky (2014) which suggests an attitude-driven

rather than a financially-motivated preference for ESG. Hong & Kostovetsky (2012) find that the overall performance of Democratic and Republican mutual fund managers does not differ, despite their different loadings on ESG stocks. The results in Di Guili & Kostovetsky (2014) indicate that corporate ESG policies are costly. Thus the authors argue that Democratic leaning managers and founders of the companies that engage in ESG activities must obtain 'indirect utility' from these investments, e.g. by aligning their actions with their political beliefs.

3.8 Summary

In this chapter, I provide empirical evidence that political factors impact the investment decisions of state pension funds by studying the equity holdings of 31 U.S. state pension plans. I analyse whether political factors help to explain the heterogeneity of these funds' positive ESG screening, as measured by the ESG performance of their equity holdings. I find strong support that funds with Democratic leaning members tilt their portfolios more strongly towards companies that perform well on ESG issues as compared to their Republican counterparts. Additionally, I find that political pressures by state politicians have a moderating effect on funds' ESG tilt: Funds with a Democratic leaning membership base show a stronger ESG preference when the state government is predominantly affiliated to the Democratic Party. In contrast, funds from states with Republican leaning members do not seem to engage in positive ESG screening, even if the state government is predominantly composed of Democrats. Furthermore, pension funds seem to alter their portfolio allocations around changes in members' political leaning to align their ESG tilt with members' attitudes towards ESG issues. Finally, I find that the sample funds neither under- nor outperform on their politically-motivated ESG holdings. This provides initial evidence that their SRI preferences are not purely motivated by risk and return considerations, but might also be driven by their members' political values.

My findings have important implications for the literature on SRI of institutional investors, the management of state pension funds and the promotion of SRI in financial markets. My findings

suggest that even on an institutional level SRI – here in the form of positive ESG screening – may be strongly driven by investors' attitudes towards the social aims of firms, as compared to pure risk and return considerations of ESG issues. Moreover, the results relate to the fiduciary duty debate around state pension funds' SRI. I provide some support that these practices are not detrimental to beneficiaries' financial wealth but instead might provide beneficiaries with indirect utility as their pensions are invested in accordance with their own political values and beliefs. Finally the finding that the investment decisions of such a large group of investors with enormous market power are affected by the political attitudes of their members could have larger effects on financial markets as a whole. Considering that the largest of these funds have AUM between USD 200-300 billion, changes in funds' ESG preferences due to changes in states' political climate may trigger great channelling of money in or out of companies with high or low ESG performance. This might substantially impact firms' cost of capital and the promotion of SRI in financial markets.

APPENDIX TO CHAPTER 3

Variable Description and Data Sources

Variable	Description	Data Source
DEPENDENT VARIABLES – Portfolio weights		
portfolio weight (w_{ijt})	Portfolio weight of a S&P500 company in a fund's portfolio relative to the fund's total holdings in S&P500 companies; calculated as: $w_{ijt} = \frac{val_{ijt}}{\sum_i^N val_{ijt}}$, i.e. value of a S&P500 company in the portfolio of a fund at the end of a quarter (val_{ijt}) divided by the value of the fund's total holdings in S&P500 companies at the end of the quarter $(\sum_i^N val_{ijt})$	Thomson Ownership Holdings Database, CRSP
industry-adjusted portfolio weight $(ind.-adj.w_{ijt})$	Industry-adjusted portfolio weight; calculated as: $ind.-adj.w_{ijt} = \frac{val_{ijt}}{\sum_i^N val_{ijt}^{ind.}}$, i.e. the value of a S&P500 company in the portfolio of a fund at the end of a quarter (val_{ijt}) divided by the value of the fund's total holdings in the industry that the company operates in at the end of the quarter $(\sum_i^N val_{ijt}^{ind.})$; industries are defined according to the 10 Fama-French sectors	Thomson Ownership Holdings Database, CRSP, Kenneth French Data Library
absolute deviation from the S&P500 weight $(abs.dev.w_{ijt})$	Absolute deviation from the S&P500 weight; calculated as: $abs.dev.w_{ijt} = w_{ijt} - w_{it}^{S\&P500}$, i.e. the portfolio weight of a company in a fund's portfolio (w_{ijt}) minus the weight of the company in the S&P500 index at the end of the quarter $(w_{it}^{S\&P500})$. A value of zero indicates that the pension fund holds the company in exactly the same weight as it is represented in the S&P500; a negative (positive) value indicates an under- (over-) weighting of the stock with respective to the S&P500.	Thomson Ownership Holdings Database, CRSP
relative deviation from the S&P500 weight $(rel.dev.w_{ijt})$	Relative Deviation from the S&P500 weight; calculated as: $rel.dev.w_{ijt} = \frac{w_{ijt}}{w_{it}^{S\&P500}}$, i.e. the portfolio weight of a company in a fund's portfolio (w_{ijt}) divided by the weight of the company in the S&P500 index $(w_{it}^{S\&P500})$ at the end of the quarter. A value of one indicates that the pension fund holds the company in exactly the same weight as it is represented in the S&P500; a value lower (greater) than one indicates an under- (over-)weighting of the stock with respective to the S&P500.	Thomson Ownership Holdings Database, CRSP
portfolio weight based on the extended dataset (w_{ijt}^{extd})	Portfolio weight of a company in a fund relative to the fund's total holdings in companies with available KLD ratings; calculated as: $w_{ijt}^{extd} = \frac{val_{ijt}}{\sum_i^N val_{ijt}^{extd}}$, i.e. value of company i in the portfolio of fund j (val_{ijt}) divided by the value of the fund's total holdings in companies with available KLD data at the end of quarter t $(\sum_i^N val_{ijt}^{extd})$	Thomson Ownership Holdings Database, CRSP
industry-adjusted portfolio weight based on the extended dataset $(ind.adj.w_{ijt}^{extd})$	Industry-adjusted portfolio weights; calculated as: $ind.-adj.w_{ijt}^{extd} = \frac{val_{ijt}}{\sum_i^N val_{ijt}^{ind.,extd}}$, i.e. value of company i in the portfolio of fund j at the end of a quarter t (val_{ijt}) divided by the value of the fund's total holdings in the industry that the company operates in for the extended dataset at the end of the quarter $(\sum_i^N val_{ijt}^{ind.,extd})$; industries are defined according to the 10 Fama-French sectors	Thomson Ownership Holdings Database, CRSP, Kenneth French Data Library

	MAIN INDEPENDENT VARIABLES	

Environmental, Social, Governance Performance – KLD Scores

KLD Net Score	Overall KLD Net Score; i.e. the sum of all net scores for the 7 KLD subcategories described below: $$KLD\ Net = Corp.Gov.Net + Com.Net + Div.Net + Emp.Net + Env.Net + Hum.Net + Pro.Net$$ We scale the KLD Net score to have an overall minimum of zero (unless otherwise indicated) in order to facilitate the interpretation of the coefficient estimates on the interaction terms of the KLD scores and the political proxies. The same applies for all KLD Subcategory scores.	KLD via WRDS
Corporate Governance Net Score (*Corp. Gov. Net*)	Corporate Governance Net Score; i.e. the sum of all Corporate Governance Strength items minus the sum of all Corporate Governance Concern items: $$Corp.Gov.Net = Corp.Gov.Strengths - Corp.Gov.Concerns$$	KLD via WRDS
Community Net Score (*Com. Net*)	Community Net Score; i.e. the sum of all Community Strength items minus the sum of all Community Concern items: $Com.Net = Com.Strengths - Com.Concerns$	
Diversity Net Score (*Div. Net*)	Diversity Net Score; i.e. the sum of all Diversity Strength items minus the sum of all Diversity Concern items: $Div.Net = Div.Strengths - Div.Concerns$	
Employee Relations Net Score (*Emp. Net*)	Employee Relations Net Score; i.e. the sum of all Employee Relations Strength items minus the sum of all Employee Relations Concern items: $$Emp.Net = Emp.Strengths - Emp.Concerns$$	
Environmental Records Net Score (*Env. Net*)	Environmental Records Net Score; i.e. the sum of all Environmental Records Strength items minus the sum of all Environmental Records Concern items: $$Env.Net = Env.Strengths - Env.\ Concerns$$	
Human Rights Net Score (*Hum. Net*)	Human Rights Net Score; i.e. the sum of all Human Rights Strength items minus the sum of all Human Rights Concern items: $Hum.Net = Hum.Strengths - Hum.Concerns$	
Product Quality Net Score (*Pro. Net*)	Product Quality Net Score; i.e. the sum of all Product Quality Strength items minus the sum of all Product Quality Concern items: $Pro.Net = Pro.Strengths - Pro.Concerns$	

Proxies for the Political Leaning of Funds' Members

% of Dem. (Rep.) votes	Percentage of Votes to the Democratic (Republican) Candidate according to the Latest Presidential Elections, per State; updated after every presidential election, i.e. every four years.	Dave Leip's Atlas of U.S. Presidential Elections (uselectionatlas.org)
Democrat-Dummy	Dummy variable equal to one if the percentage of a state's votes received by the Democratic Candidate at the latest Presidential Election is larger than the percentage of votes received by the Republican Party Candidate, i.e. $democrat = 1$,$if\ \%\ of\ Dem.votes > \%\ of\ Rep.votes$, and takes a value of zero otherwise.	

Proxies for Political Pressures by State Politicians

% of Dem. State Gov.	Proportion of a State's Government that is affiliated to the Democratic Party; i.e. *% of Dem. State Gov.= 0.5 ∗ Dem. Governor + 0.25 ∗ Dem. Upper Chamber + 0.25 ∗ Dem. Lower Chamber* ,where *Dem. Governor* is a dummy variable equal to one if the state governor is a Democrat and zero otherwise and *Dem. Lower Chamber* and *Dem. Upper Chamber* are the proportions of the Lower and Upper Chamber of the state government, respectively, that are members of the Democratic Party.	U.S. Census Bureau's National Data Book: Gubernatorial and State Legislatures; National Governor's Association (nga.org)

Dem. State Gov.-Dummy	Dummy variable equal to one if the majority of a State's Government is affiliated to the Democrat Party, i.e. *Democratic State Government - Dummy* takes the value of one if *% of Democratic State Government* is greater than 50%, and zero otherwise.	U.S. Census Bureau's National Data Book: Gubernational and State Legislatures; National Governor's Association (nga.org)

Proxies Conditioned on the Political Leaning of Funds' Members and Political Pressures by State Politicians

Democrat&Demstategov	Dummy equal to one if the fund has Democratic-leaning members and is from a state with a predominantly Democratic state government, i.e. $Democrat\&Demstategov = 1$, if $Democrat = 1$ & $Dem.State Gov. = 1$, and takes a value of zero otherwise.	See above
Democrat&NonDemstategov	Dummy equal to one if the fund has Democratic-leaning members and is from a state with a predominantly Non-Democratic state government, i.e. $Democrat\&NonDemstategov = 1$, if $Democrat = 1$ & $Dem.State Gov. = 0$, and takes a value of zero otherwise.	
Republican&Demstategov	Dummy equal to one if the fund has Republican-leaning members and is from a state with a predominantly Democratic state government, i.e. $Republican\&Demstategov = 1$, if $Democrat = 0$ & $Dem.State Gov. = 1$, and takes a value of zero otherwise.	See above
Republican&NonDemstategov	Dummy equal to one if the fund has Democratic-leaning members and is from a state with a predominantly Democratic state government, i.e. $Republican\&NonDemstategov = 1$, if $Democrat = 1$ & $Dem.State Gov. = 1$, and takes a value of zero otherwise.	

FURTHER CONTROL VARIABLES

Company-specific Controls

Log Market Capitalisation	Natural Logarithm of the Stock's Market Capitalisation; i.e. the product of the price per share and the number of shares outstanding, expressed in thousands of dollars.	CRSP
Log Book-to-Market Value	Natural Logarithm of the Book-to-Market Ratio; i.e. the book value of the equity over the market value of equity, measured at the end of the previous quarter and expressed in percentage points. The market value of equity is updated every quarter, while the book equity is based on the last fiscal year ending.	CRSP, Compustat
Dividend Yield	Dividend Yield; i.e. the ratio of dividends per share over the price per share, measured at the end of the previous quarter and expressed in percentage points.	CRSP, Compustat
Debt Ratio	Debt Ratio; i.e. a company's total debt (sum of long-term debt and current debt) over total assets, expressed in percentage points. I use lagged debt ratios, updated based on the last fiscal year ending.	Compustat
Return on Assets	Return on Assets; i.e. ratio of income before extraordinary items divided by total assets. I use lagged return on assets, updated based on the last fiscal year ending.	Compustat
Log Security Return	Natural Logarithm of the Stock's Quarterly Return	CRSP
Lagged Beta Coefficient	Stock Market Beta; i.e. the beta coefficient based on rolling regressions of a stock's monthly excess return on the market risk premium (i.e. the S&P500 return in excess of the risk-free rate) and an intercept, over a 36 months window.	CRSP

Pension Fund and State Controls

Log Fund Size	Natural Logarithm of a Fund's Actuarial Assets under GASB Standards	CRR Public Plans Database
% invested in Equities	Percentage of a Pension Fund's Assets Invested in Public Equities, updated at the end of every year and expressed in percentage points.	CRR Public Plans Database
Funded Ratio	Pension Fund's Funded Ratio under GASB Standards, i.e. the ratio of the Actuarial Assets under GASB Standards over the Actuarial Liabilities under GASB Standards, measured in percentage points and updated at the end of every year. If the *Funded ratio* is smaller than 100% the pension fund is said to be underfunded.	CRR Public Plans Database, individual Fund's CAFRs
% of Share Outstanding Held	Percentage of Shares Outstanding Held by the Pension Fund, i.e. the ratio of the number of shares held by the pension fund over a company's total number of shares outstanding, in percentage points.	Thomson Ownership Holdings Database, CRSP
Political Corruption Convictions	Ratio of a State's Federal Public Corruption Convictions per Capita, i.e. the number of federal public corruption convictions per state over the state's population, updated at the end of every year. The crimes investigated by the Department of Justice comprise conflicts of interests, fraud, campaign-finance violations and obstruction of justice. Following Glaeser & Saks (2006), I replace observations for which convictions are not reported by the average of the observed number of convictions in a surrounding 5-year period, which is three years before and two years past the missing observation year.	U.S. Department of Justice's Report to Congress on the Activities and Operations of the Public Integrity Section, U.S. Census Bureau
% Union Members	Percentage of a State's Public Employees that are Union Members. Details on the coverage and construction on the database can be found in Hirsch & MacPherson (2003).	Union Membership and Coverage Database by B. Hirsch (www.unionstats.com)

Market Control

S&P500 Return	Natural Logarithm of the S&P500 Return Index over the Previous Quarter, i.e. I take the natural logarithm of the monthly return on the S&P Composite Index after adding a value of one and accumulate these monthly log returns over the previous quarter. The variable is expressed in percentage points.	CRSP

Comparison of the CRR Pension Plans with the 31 Sample Plans

Table A.3.1 (on the next page) provides a comparison of the 126 state and local pension plans in the CRR dataset and the 31 plans included in the sample from 2001 to 2011. The state pension funds in the sample are considerably larger than the average state pension fund, both with respect to their assets under management as well as the number of members. This finding is intuitive as larger funds are more likely to have the resources in order to internally manage their assets as well as to generate economies of scale from internal asset management. Despite the size differences, the funds in the sample share comparable features with the 126 largest U.S. public funds in terms of their funding status, equity allocation, and investment performance: They have a similar average funding level as indicated by their average funded ratio of 84.49 %, compared to 84.28 % for the 126 CRR plans. They allocate on average 56.06% of their assets to equities, compared to 55.23% for the CRR plans and they only slightly underperform the average CRR plan, with a 1-year portfolio return of 5.42 % for the 31 funds in the sample as compared to 5.66 % for the average CRR plan. Additionally, when I look at the geographical coverage of the sample I find that the sample covers states from all parts of the U.S. so that I conclude that there are no major biases with respect to the geographical distribution of the sample.

Table A.3.1: Comparison of the Sample Funds with the Pension Plans in the CRR Database

Table A.3.1 reports summary statistics for U.S. state and local pension plans, obtained from the Public Plans Database by the Centre for Retirement Research (CRR) at Boston College. Panel A reports values for the 126 public plans in the CRR database. Panel B presents values for the 31 public plans in the sample. *Market Value of Assets* is the value of the plans' assets based on market prices in million USD. *Number of Plan Members* comprises the total number of members of a plan, including active members and beneficiaries. *Actuarial Assets* is the value of actuarial assets under GASB standards, reported in million USD. It will often differ from the market value of assets in a given year because actuarial assets are calculated using techniques that smooth out fluctuations in the level of assets that arise from investment gains and losses. *Actuarial Liabilities* are the actuarial accrued liabilities under GASB standards, reported in million USD. It is equal to the present value of future benefits, discounted using the plan's assumed long term investment return. *Funded Ratio* is equal to the ratio of actuarial assets over actuarial liabilities and represents the funded ratio under GASB standards, reported in percentage points. *Percentage Invested in Equities* is the percentage of total assets that a plan invests in public equities, reported in percentage points. *1-year Investment Return* is the rate of return on the total portfolio over a 1-year investment horizon, reported in percentage points. The data sample comprises the period from 2001 to 2011. For the further analyses, I have complemented the data for the entire period 1997 to 2013 based on plan's individual Comprehensive Annual Financial Reports (CAFR), where available.

	Mean	Std.-Dev.	Median	Min.	Max.	5th Perc.	95th Perc.	N
Panel A: 126 State and Local Pension Plans in CRR Database								
Market Value Assets (in million)	18,300	28,200	8,882	180	251,000	1,098	72,900	1,358
Number of Plan Members	178,058	230,290	101,487	3,246	1,631,769	7,493	553,765	1,304
Actuarial Assets (in million)	19,100	29,100	9,390	235	257,000	1,167	74,400	1,314
Actuarial Liabilities (in million)	22,400	32,200	12,300	254	308,000	1,359	81,100	1,314
Funded Ratio (in %)	84.28	16.77	85.40	19.10	147.70	54.20	107.34	1,313
Percentage Invested in Equities	55.23	10.91	57.00	7.11	82.00	36.01	69.67	1,353
1-year Investment Return (in %)	5.66	12.44	9.50	-29.63	36.24	-19.10	21.60	1,362
Panel B: 31 State and Local Pension Plans in the Thomson Ownership Database								
Market Value Assets (in million)	47,500	46,100	37,000	3,285	251,000	4,619	144,000	337
Number of Plan Members	410,416	356,887	363,283	27,037	1,631,769	29,911	1,168,849	322
Actuarial Assets (in million)	48,900	48,600	39,200	2,693	257,000	4,521	154,000	330
Actuarial Liabilities (in million)	55,300	53,700	42,200	3,675	308,000	4,819	164,000	329
Funded Ratio (in %)	84.49	22.49	87.15	35.60	142.56	57.40	112.10	328
Percentage Invested in Equities	56.06	9.77	57.35	26.60	74.08	37.40	69.03	336
1-year Investment Return (in %)	5.42	12.75	9.09	-27.15	28.83	-20.43	22.43	340

Table A.3.2: Industry Weights and Deviations from the Benchmark Weights by Fund

Row two presents the average KLD score of the S&P500 companies sorted by the 10 Fama-French sectors. The additional rows report the average weight that a sector has in the S&P500 index in percentage points (*Average Weight in S&P500*), as classified by the 10 Fama-French sectors, and compare it to the average weight that the sector has in the portfolio of each of the 31 U.S. state pension funds in percentage points (*Average Weight held by*). The last row states the average percentage points that the sector's weight in the pension fund portfolios deviates from the average weight in the S&P500 index (*Deviation of Portfolio Weights from S&P500 Weight*). The 10 Fama-French Sectors are classified as follows:

1. Consumer Non-Durables (Food, Tobacco, Textiles, Apparel, Leather, Toys)
2. Consumer Durables (Cars, TV's, Furniture, Household Appliances)
3. Manufacturing (Machinery, Trucks, Planes, Chemicals, Off Furn, Paper, Commercial Printing)
4. Oil, Gas, and Coal Extraction and Products
5. Business Equipment (Computers, Software, and Electronic Equipment)
6. Telephone and Television Transmission
7. Wholesale, Retail, and Some Services (Laundries, Repair Shops)
8. Healthcare, Medical Equipment, and Drugs
9. Utilities
10. Others (Mines, Construction, Building Material, Transportation, Hotels, Bus Service, Entertainment, Finance)

Fama-French Sector	1	2	3	4	5	6	7	8	9	10
Average KLD Score	0.751	0.518	0.441	-2.454	1.793	-0.121	0.195	0.687	-0.468	0.506
Average Weight in S&P500	*6.17*	*3.89*	*11.66*	*8.63*	*18.38*	*5.23*	*8.54*	*11.23*	*3.41*	*23.73*
Average Weight held by:										
AlaskaRMB	6.14	0.24	9.76	4.92	6.00	5.22	5.82	6.40	1.03	88.36
ArizonaSafePERS	5.91	1.73	10.47	8.56	20.53	4.87	13.39	16.34	1.93	24.00
CalPERS	5.59	3.85	11.50	8.81	18.08	5.53	8.59	11.68	3.45	24.02
CalSTRS	5.44	3.81	11.98	8.70	18.23	5.83	8.24	11.68	3.51	23.75
ColoradoPERA	6.54	3.84	11.40	8.91	18.20	5.40	8.33	11.28	3.24	23.61
FloridaSBA	6.09	3.91	11.57	8.53	18.09	5.81	8.09	11.62	3.37	23.89
IllinoisMunRS	5.77	3.56	10.94	7.33	14.47	5.63	8.17	10.91	3.58	29.68
KentuckyRetS	6.42	4.44	11.03	6.99	16.16	5.08	8.69	10.95	2.97	28.08
KentuckyTRS	5.38	3.31	12.43	8.53	17.86	4.95	8.89	11.17	3.48	24.78
LouisianaSERS	6.07	1.18	11.25	9.24	17.95	5.93	7.91	10.99	3.49	25.99
MichiganMunERS	6.21	1.12	12.11	9.29	17.72	5.22	8.19	11.23	3.54	25.44
MichiganTreas	6.23	4.71	12.53	8.24	18.34	3.44	8.38	12.77	2.55	24.23
MontanaInvB	2.26	5.16	8.42	6.40	21.23	6.37	10.48	15.26	1.95	25.25
NYCityERS	5.82	1.13	21.75	7.51	12.69	4.00	7.85	9.15	3.13	27.95
NJInvB	6.48	3.90	11.13	9.12	18.49	4.98	7.89	12.63	3.86	22.84
NYStateComRS	6.25	3.65	11.83	8.72	17.86	5.52	8.09	11.31	3.34	24.39
NYStateTRS	6.18	3.78	11.89	9.25	16.70	5.96	7.76	10.66	3.95	24.86
NewMexicoERB	5.70	3.68	11.02	8.46	17.29	5.29	7.66	10.82	3.24	28.01
OhioPERS	6.47	3.65	11.51	8.62	17.72	6.01	7.94	11.39	3.38	24.43
OhioTRS	6.12	3.69	11.97	8.65	18.40	5.52	7.94	11.88	3.31	23.63
OregonPERS	6.45	0.97	12.61	11.13	17.65	4.89	8.65	10.94	4.02	22.85
PennsylvaniaPSERS	5.54	3.00	11.58	10.83	17.08	4.80	7.89	11.30	3.69	25.03
SouthDakotaInvB	5.11	6.13	11.47	6.24	12.67	6.14	6.77	13.21	3.35	29.37
TennesseeConsRS	6.04	5.42	10.18	6.86	20.75	6.67	8.48	12.85	2.76	20.82
TexasERS	6.62	3.56	11.32	8.94	19.26	5.09	7.93	12.34	2.65	23.11
TexasTRS	6.18	1.08	12.25	10.72	18.53	4.34	7.22	11.37	3.52	24.92
UtahRS	6.29	1.04	12.62	10.58	17.86	5.07	8.14	11.17	3.85	24.77
VirginiaRS	6.97	3.78	12.53	8.05	17.06	5.66	8.40	11.62	4.07	23.58
WashingtonStateIB	9.03	0.00	28.08	46.33	0.00	0.00	0.00	0.00	0.00	8.05
WisconsinIB	5.73	3.39	14.45	9.15	18.51	3.90	7.85	15.43	2.36	21.69
Deviation of Portfolio Weights from S&P500 Weight	*-0.14*	*-0.80*	*0.79*	*1.16*	*-1.67*	*-0.13*	*-0.55*	*0.11*	*-0.32*	*2.65*

Table A.3.3: Portfolio Weight Adjustments

Table A.3.3 reports estimated coefficients from Fixed Effect Panel regressions of the portfolio weight held by a pension fund in a specific company on the company's KLD score as well as an interaction of the company's KLD score and proxies for (a) the political leaning of the funds' members ($Democrat - Dummy_{jt}$); (b) the composition of the state government ($Dem. State Gov. - Dummy_{jt}$); and (c) dummy variables conditioned on both the members' political leaning and the composition of the state government. In Panel A, the portfolio weights are adjusted for industry weights ($ind. - adj. w_{ijt}$). In panel B, the portfolio weights represent deviations of the fund's weight held in a company from the weight that the company has in the S&P500 index. Specifications (4), (6) and (8) use the absolute deviation from the S&P500 portfolio weight as dependent variable ($abs. dev. w_{ijt}$). Specifications (5), (7) and (9) employ the relative deviations from the S&P500 weights ($rel. dev. w_{ijt}$). Detailed description on variable definitions and constructions can be found in Appendix A. The KLD Net score is scaled to have an overall minimum of 0. The KLD Net score in the interaction terms in specifications (3), (8) and (9) is scaled to have a minimum of 0 and a maximum of 1. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Panel A: Industry Adjustments	(1) $w_{ijt}^{ind.}$	(2) $w_{ijt}^{ind.}$	(3) $w_{ijt}^{ind.}$
KLD Net	-0.0333***	-0.0324***	-0.0226***
	(0.00599)	(0.00596)	(0.00631)
Democrat-Dummy × KLD Net	0.0170***		
	(0.00465)		
Dem. State Gov.-Dummy× KLD Net		0.00672***	
		(0.00244)	
Republican&NonDemstategov × KLD Net			-0.423**
			(0.167)
Republican&Demstategov × KLD Net			-0.406**
			(0.182)
Democrat&Demstategov × KLD Net			0.194**
			(0.0780)
Pension Fund X Security FE	YES	YES	YES
Company Controls	YES	YES	YES
Pension Fund Controls	YES	YES	YES
Market Control	YES	YES	YES
Observations	481,909	481,909	481,909
R-squared	0.063	0.063	0.063
Number of Panel Clusters	18,622	18,622	18,622

Panel B: Deviations from S&P500	(4) Abs. dev.	(5) Rel. dev.	(6) Abs. dev.	(7) Rel. dev.	(8) Abs. dev.	(9) Rel. dev.
KLD Net	-0.000292	0.00579***	0.000858**	0.00797***	0.00128***	0.00695***
	(0.000374)	(0.00212)	(0.000356)	(0.00192)	(0.000361)	(0.00180)
Democrat-Dummy × KLD Net	0.00156***	0.00293**				
	(0.000205)	(0.00127)				
Dem. State Gov.-Dummy× KLD Net			0.000314***	0.000527		
			(0.000108)	(0.000676)		
Republican&NonDemstategov × KLD Net					-0.0518***	-0.198***
					(0.00745)	(0.0430)
Republican&Demstategov × KLD Net					-0.0304***	0.106*
					(0.00772)	(0.0549)
Democrat&Demstategov × KLD Net					0.00199	-0.0577**
					(0.00352)	(0.0227)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES
Observations	481,909	481,909	481,909	481,909	481,909	481,909
R-squared	0.028	0.250	0.027	0.250	0.029	0.250
Panel Clusters	18,622	18,622	18,622	18,622	18,622	18,622

Table A.3.4: Separate Regressions for each of the 10 Fama-French Sectors

Table A.3.4 reports estimated coefficients from Fixed Effect Panel regressions for subsets of the data sorted by Fama-French Sectors. I regress the portfolio weight held by a pension fund in a specific company (w_{ijt}) on the companies KLD score as well as an interaction of the company's KLD score and proxies for (1) the political leaning of funds' members, $Democrat - Dummy_{jt}$ (Panel A), and (2) the composition of the state government, $Dem. State Gov. - Dummy_{jt}$ (Panel B). The regressions have been estimated for each of the 10 Fama-French sectors separately and each of the 10 columns represents the regression results of these industry-specific subsamples. Detailed description on variable definitions and constructions can be found in Appendix A. The KLD Net score is scaled to have an overall minimum of 0 in order to facilitate the interpretation of the interaction term. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Fama French Sector	(1) Consumer Non-Durables	(2) Consumer Durables	(3) Manu-facturing	(4) Oil, Gas, and Coal	(5) Business Equipment	(6) Tele. and TV Transmission	(7) Wholesale, Retail, and Some Services	(8) Healthcare, Med. Equip., and Drugs	(9) Utilities	(10) Others
Panel A: State's Political Leaning										
KLD Net	0.00402**	-0.00760**	-0.00422***	-0.0115***	-0.0152***	-0.0116***	-0.000875	0.00154	-0.00113**	-0.00513***
	(0.00162)	(0.00382)	(0.000793)	(0.00294)	(0.00196)	(0.00311)	(0.00110)	(0.00198)	(0.000471)	(0.00104)
Democrat-Dummy × KLD Net	0.00108	0.00395**	0.00154***	0.00239	0.00285***	0.0103***	0.00161**	0.00341***	0.000807**	0.00147**
	(0.000728)	(0.00162)	(0.000393)	(0.00216)	(0.00104)	(0.00257)	(0.000688)	(0.00109)	(0.000360)	(0.000649)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	33,534	10,595	74,381	27,187	75,738	13,526	50,884	36,300	35,452	124,312
R-squared	0.138	0.186	0.174	0.219	0.245	0.263	0.202	0.200	0.328	0.187
Panel B: Political Pressures										
KLD Net	0.00495***	-0.00474	-0.00318***	-0.0103***	-0.0135***	-0.00491*	0.000335	0.00408**	-0.000444	-0.00426***
	(0.00146)	(0.00351)	(0.000700)	(0.00283)	(0.00174)	(0.00269)	(0.00102)	(0.00182)	(0.000426)	(0.000955)
Dem. State Gov.-Dummy× KLD Net	-0.0000981	-0.000261	0.000533**	0.00216**	0.00144***	0.00460***	0.000429	0.000667	-7.75e-05	0.000943***
	(0.000361)	(0.000876)	(0.000271)	(0.00102)	(0.000466)	(0.00148)	(0.000305)	(0.000572)	(0.000220)	(0.000341)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	33,534	10,595	74,381	27,187	75,738	13,526	50,884	36,300	35,452	124,312
R-squared	0.138	0.182	0.173	0.219	0.245	0.257	0.201	0.198	0.327	0.187

Table A.3.5: Baseline Regression with Industry Fixed Effects

Table A.3.5 reports estimated coefficients from Fixed Effect Panel regressions of the portfolio weight held by a pension fund in a specific company (w_{ijt}) on the company's KLD score as well as an interaction of the company's KLD score and proxies for (1) the political leaning of funds' members ($Democrat - Dummy_{jt}$); (2) the composition of the state government, ($Dem. State Gov. -Dummy_{jt}$); and for (3) dummies are conditioned on both members' political leaning and the composition of the state government. Additionally, each of the four specifications contains industry fixed effects. Detailed description on variable definitions and constructions can be found in Appendix A. The KLD Net score is scaled to have an overall minimum of 0 in order to facilitate the interpretation of the interaction term. The KLD Net score in the interaction terms in specifications (3) and (4) is scaled to have a minimum of 0 and a maximum of 1. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund*×*security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) Pol. Leaning	(2) Pol. Pressure	(3) Pol. Leaning & Pol. Pressure
KLD Net	-0.00667*** (0.000575)	-0.00524*** (0.000516)	-0.00404*** (0.000532)
Democrat-Dummy × KLD Net	0.00214*** (0.000332)		
Dem. State Gov.-Dummy× KLD Net		0.000827*** (0.000168)	
Republican&NonDemstategov × KLD Net			-0.0553*** (0.0116)
Republican&Demstategov × KLD Net			-0.0493*** (0.0114)
Democrat&Demstategov × KLD Net			0.0228*** (0.00535)
Industry FE	**YES**	**YES**	**YES**
Pen. Fund X Security FE	YES	YES	YES
Company Controls	YES	YES	YES
Pension Fund Controls	YES	YES	YES
Market Control	YES	YES	YES
Observations	481,909	481,909	481,909
R-squared	0.150	0.149	0.150
Number of Panel Clusters	18,622	18,622	18,622

Table A.3.6: Baseline Regression Excluding In-State Investments

Table A.3.6 reports estimated coefficients from Fixed Effect Panel regressions of the portfolio weight held by a pension fund in a specific company (w_{ijt}) on the company's KLD score as well as an interaction of the company's KLD score and proxies for (1) the political leaning of fund's members ($Democrat - Dummy_{jt}$) and (2) the pressures by state politicians ($Dem.\,State\,Gov.-Dummy_{jt}$). The *KLD Net* score is scaled to have an overall minimum of 0 in order to facilitate the interpretation of the interaction term. The *KLD Net* score in the interaction terms in specification (3) is scaled to have a minimum of 0 and a maximum of 1. The sample runs from 1997Q1 to 2013Q4. The sample excludes companies that are headquartered in the same state as the state pension fund. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	(1) Pol. Leaning	(2) Pol. Pressure	(3) Pol. Leaning & Pol. Pressure
KLD Net	-0.00670***	-0.00530***	-0.00396***
	(0.000600)	(0.000540)	(0.000562)
Democrat-Dummy × KLD Net	0.00214***		
	(0.000340)		
Dem. State Gov.-Dummy× KLD Net		0.000948***	
		(0.000174)	
Republican&NonDemstategov × KLD Net			-0.0528***
			(0.0120)
Republican&Demstategov × KLD Net			-0.0467***
			(0.0117)
Democrat&Demstategov × KLD Net			0.0273***
			(0.00558)
Market Capitalisation	0.167***	0.167***	0.167***
	(0.00590)	(0.00589)	(0.00590)
Lagged Book-to-Market Value	-0.00888***	-0.00906***	-0.00900***
	(0.00253)	(0.00253)	(0.00253)
Lagged Dividend Yield	0.0580***	0.0581***	0.0567***
	(0.0159)	(0.0159)	(0.0159)
Lagged Debt Ratio	-0.0509***	-0.0509***	-0.0517***
	(0.0127)	(0.0127)	(0.0127)
Lagged Return on Assets	-0.0109	-0.00996	-0.0106
	(0.00771)	(0.00766)	(0.00768)
Lagged Beta	-0.00952***	-0.00940***	-0.00954***
	(0.00219)	(0.00219)	(0.00219)
Lagged Return	-0.0304***	-0.0304***	-0.0304***
	(0.00275)	(0.00275)	(0.00274)
Fund Size	-0.109***	-0.119***	-0.116***
	(0.00934)	(0.00949)	(0.00956)
% invested in Equities	-0.00172***	-0.00217***	-0.00178***
	(0.000222)	(0.000212)	(0.000221)
Actuarial Funded Ratio	0.000839***	0.000816***	0.000832***
	(0.000115)	(0.000114)	(0.000115)
% of Shares Outstanding Held by Fund	0.0952**	0.0952**	0.0952**
	(0.0395)	(0.0394)	(0.0395)
Political Corruption Convictions	0.0234***	0.0204**	0.0202**
	(0.00905)	(0.00921)	(0.00920)
% Union Members	0.00176***	0.00121***	0.00154***
	(0.000371)	(0.000384)	(0.000385)
S&P500 Return	-0.104***	-0.105***	-0.105***
	(0.00460)	(0.00460)	(0.00464)
Constant	-0.486***	-0.267	-0.352**
	(0.175)	(0.175)	(0.179)
Pension Fund- Security FE	YES	YES	YES
R-squared	0.140	0.140	0.141
Observations	457,692	457,692	457,692
Number of Panel Clusters	17,784	17,784	17,784

Alternative Political Proxies

In Section 3.6.3, I test the robustness of the results to alternative political proxies. In the following I explain the construction and data sources of these new proxies.

Political Leaning of the State Treasurer

Following Wald & Zhang (2015), I collect data on the political affiliation of the state treasurers or the person with similar responsibilities and construct the dummy variable *Dem. State Treasurer–Dummy* that equals one if the state treasurer is a member of the Democratic Party, and zero otherwise. Thus, the alternative category (*Dem. State Treasurer–Dummy = 0*) comprises Republican state treasurers, non-partisan state treasurers and state treasurers of unknown political affiliation. In order to collect information on the political affiliation of the state treasurer, I use various data sources such as the National Association of State Treasuries. Wald & Zhang (2015) point out that the state treasurer in most states is directly involved in the fund's governance, often in his or her position as a trustee to the fund. Arguably, the state treasurer could use this influence to impact the investment decisions of the fund. As such, the political affiliation of the state treasurer can also be regarded as a proxy for the presence of political pressures on funds rather than a pure measure of the state's political leaning.

Political Leaning of the State Governor

In the main measure of composition of the state governor, I include the political leaning of the state governor as one input. However, it might be argued that the state governor as an individual has the largest power in state government institutions and might be able to exercise the greatest pressures on e.g. state pension funds. Thus, I construct a dummy variable that captures the political leaning of the state governor. *Dem. Governor-Dummy* equals one if the state governor is affiliated to the Democratic Party, and zero otherwise. Similar to the *Dem. State Treasure-Dummy*, the alternative category (*Dem. Governor–Dummy = 0*) comprises Republican state governors, non-partisan governors and governors of unknown political affiliation. I also construct dummy variables that condition on both, the political leaning of funds' members and the party affiliation of the state

governor: *Democrat&Dem.Governor- Dummy* equals 1 if the funds' members are Democratic leaning and the state governor is affiliated to the Democratic Party (i.e. *Democrat=1 & Dem.Governor=1*), and 0 otherwise; *Democrat&NonDem.Governor- Dummy* takes the value of 1 if the funds' members are Democratic leaning and the state governor is not affiliated to the Democratic Party (i.e. *Democrat=1 & Dem.Governor=0*), and 0 otherwise; *Republican&Dem.Governor-Dummy* equals 1 if the funds' members are Republican leaning and the state governor is affiliated to the Democratic Party (i.e. *Democrat=0 & Dem.Governor=1*), and 0 otherwise; and *Republican&NonDem.Governor-Dummy* takes the value of 1 if the funds' members are Republican and the state governor is not affiliated to the Democratic Party (i.e. *Democrat=0 & Dem.Governor=0*), and 0 otherwise.

Composition of the State Delegation to the U.S. Congress

Following Di Guili & Kostovetsky (2014), I calculate the proportion of a State's Delegation to the U.S. Congress that is affiliated to the Democratic Party (*% of Dem. State Delegation*) as:

% of Dem. State Delegation = 0.5 ∗ % of Dem. State Senators + 0.5 ∗ % of Dem. Representatives,

where *% of Dem. State Senators* is the proportion of a state's senators that are members of the Democratic Party and *% of Dem. Representatives* is the proportion of members of the State's House of Representatives that are Democrats. I obtain the data on the composition of the U.S. Congress from Charles Stewart III and Jonathan Woon's Congressional Committee Assignment database. In addition, I construct a dummy variable based on the composition of the U.S. Congress (*Dem. State Delegation–Dummy*) that takes the value of one if the congressional delegation is predominantly Democratic, i.e. $\% \ of \ Democratic \ State \ Delegation > 0.5$, and zero otherwise. Again, I construct dummy variables that condition on both, the political leaning of funds' members and the composition of the state delegation to the U.S. Congress: *Democrat&Dem.Congress- Dummy* equals 1 if the funds' members are Democratic leaning and the majority of the state delegation to the U.S. Congress is affiliated to the Democratic Party (i.e. *Democrat=1 & Dem.State Delegation=1*), and 0 otherwise; *Democrat& Dem.Congress - Dummy* takes the value of 1 if the funds' members are Democratic leaning and majority of the state delegation to the U.S. Congress is not affiliated to the

Democratic Party (i.e. *Democrat=1 & Dem.State Delegation =0*), and 0 otherwise; *Republican&Dem.Congress-Dummy* equals 1 if the funds' members are Republican leaning and the majority of the state delegation to the U.S. Congress is affiliated to the Democratic Party (i.e. *Democrat=0 & Dem.State Delegation =1*), and 0 otherwise; and *Republican&NonDem.Congress-Dummy* takes the value of 1 if the funds' members are Republican and the majority of the state delegation to the U.S. Congress is not affiliated to the Democratic Party (i.e. *Democrat=0 & Dem.State Delegation =0*), and 0 otherwise.

Table A.3.7: Summary Statistics and Correlation Mtrix: Alternative Political Proxies

Panel A reports summary statistics for the alternative political proxies, as employed in the regression specifications presented in Table A.3.8. Panel B shows a correlation matrix of all political proxies.

Panel A: Summary Statistics	Mean	Std.-Dev.	Median	Min.	Max.	Skewness	Kurtosis	N
% of Democratic votes	0.50	0.07	0.51	0.25	0.63	-0.20	2.94	574,151
Democrat-Dummy	0.64	0.48	1.00	0.00	1.00	-0.58	1.34	574,151
% of Democratic State Government	0.42	0.36	0.50	0.00	1.00	0.26	1.71	574,151
Democratic State Government-Dummy	0.32	0.47	0.00	0.00	1.00	0.79	1.62	574,151
Dem. Governor-Dummy	0.40	0.49	0.00	0.00	1.00	0.43	1.18	574,151
% of Dem. State Deleg. to Congress	0.51	0.28	0.50	0.00	1.00	-0.08	1.51	574,151
Democratic State Deleg. - Dummy	0.50	0.50	0.00	0.00	1.00	0.02	1.00	574,151
Democratic State Treasurer-Dummy	0.55	0.50	1.00	0.00	1.00	-0.20	1.04	574,151

Panel B: Correlation Matrix	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) % of Democratic votes	1.00							
(2) Democrat-Dummy	0.76	1.00						
(3) % of Dem. State Government	0.36	0.34	1.00					
(4) Dem. State Government-Dummy	0.25	0.23	0.85	1.00				
(5) Dem. Governor-Dummy	0.19	0.19	0.85	0.84	1.00			
(6) % of Dem. State Deleg. Congress	0.80	0.71	0.40	0.28	0.17	1.00		
(7) Dem. State Delegation - Dummy	0.71	0.62	0.39	0.29	0.18	0.90	1.00	
(8) Dem. State Treasurer-Dummy	0.37	0.30	0.52	0.37	0.36	0.27	0.23	1.00

Table A.3.8: Alternative Political Proxies

Table A.3.8 reports estimated coefficients from Fixed Effect Panel regressions of the portfolio weight held by a pension fund in a specific company (w_{ijt}) on the company's KLD score as well as an interaction of the company's KLD score and alternative political proxies. Table A.3.7 shows summary statics and a correlation matrix for the alternative political proxies. The KLD Net score is scaled to have an overall minimum of 0 in order to facilitate the interpretation of the interaction term. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) w_{ijt}	(2) w_{ijt}	(3) w_{ijt}	(4) w_{ijt}	(5) w_{ijt}	(6) w_{ijt}	(7) w_{ijt}
KLD Net	-0.0157*** (0.00197)	-0.00558*** (0.000523)	-0.00537*** (0.000522)	-0.00538*** (0.000526)	-0.00400*** (0.000542)	-0.00546*** (0.000519)	-0.00484*** (0.000519)
% of Democratic votes × KLD Net	0.0208*** (0.00382)						
% of Dem. State Gov. × KLD Net		0.00170*** (0.000260)					
Dem. State Treasurer-Dummy × KLD Net			0.00109*** (0.000201)				
Dem. Governor × KLD Net				0.00103*** (0.000166)			
Republican&Non-Dem. Governor × KLD Net					-0.0530*** (0.0118)		
Republican&Dem.Governor × KLD Net					-0.0351*** (0.0118)		
Democrat&Dem. Governor × KLD Net					0.0296*** (0.00563)		
Dem. State Delegation U.S. Congress × KLD Net						0.00102*** (0.000289)	
Republican&Non-Dem. Congress × KLD Net							-0.0617*** (0.00999)
Republican&Dem.Congress × KLD Net							-0.0345** (0.0144)
Democrat&Dem. Congress × KLD Net							0.0149 (0.00987)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES	YES
Observations	481,909	481,909	481,909	481,909	481,909	481,909	481,909
R-squared	0.145	0.145	0.145	0.145	0.146	0.145	0.146
Number of Panel Clusters	18,622	18,622	18,622	18,622	18,622	18,622	18,622

Table A.3.9: Regressions on the Extended Dataset

Table A.3.9 reports estimated coefficients from Fixed Effect Panel on the extended data set that comprises all companies for which I have KLD scores available. I regress the portfolio weight held by a pension fund in a specific company on the company's KLD score as well as an interaction of the company's KLD score and proxies for the political leaning of funds' members ($Democrat - Dummy_{jt}$) in specifications (1)/(4); the composition of the state government ($Dem. State Gov. - Dummy_{jt}$) in specifications (2)/(5); and dummy variables conditioned on both members' political leaning and the composition of the state government in specifications (3)/(6). In specifications (1)–(3), the dependent variable is the simple portfolio weight held by a pension fund in a specific company with respect to its entire holdings. Specifications (4)–(6) employ the industry adjusted portfolio weights as dependent variable. The construction of these variables follow the same logic as described for the (industry-adjusted) portfolio weights with respect to the S&P500 holdings only that in this case I use the entire holdings for which I have KLD data available. The KLD Net score is scaled to have an overall minimum of 0 in order to facilitate the interpretation of the interaction term. The KLD Net score in the interaction term with the dummy variables in specifications (3) and (6) is scaled to have a minimum of 0 and a maximum of 1. In this regression the pension fund controls are excluded and the company controls only comprise the log market capitalisation, the log book-to-market ratio, the dividend yield, the debt ratio, and the percentage of shares outstanding. The market control is included. The sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) w_{ijt}^{extd}	(2) w_{ijt}^{extd}	(3) w_{ijt}^{extd}	(4) ind.-adj. w_{ijt}^{extd}	(5) ind.-adj. w_{ijt}^{extd}	(6) ind.-adj. w_{ijt}^{extd}
KLD Net	-0.00426***	-0.00339***	-0.00398***	-0.0284***	-0.0224***	-0.0265***
	(0.000389)	(0.000377)	(0.000382)	(0.00464)	(0.00478)	(0.00451)
Democrat-Dummy × KLD Net	0.000998*** (0.000136)			0.00724*** (0.00184)		
Dem. State Gov.-Dummy × KLD Net		-0.0000832 (0.0000859)			0.000265 (0.00121)	
Republican&NonDemstategov × KLD Net			-0.0241*** (0.00427)			-0.167*** (0.0589)
Republican&Demstategov × KLD Net			-0.0703*** (0.00836)			-0.473*** (0.136)
Democrat&Demstategov × KLD Net			-0.00187 (0.00272)			0.0136 (0.0389)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES
Pension Fund Controls	NO	NO	NO	NO	NO	NO
Market Control	YES	YES	YES	YES	YES	YES
Observations	1,239,496	1,239,496	1,239,496	1,239,496	1,239,496	1,239,496
R-squared	0.082	0.082	0.083	0.039	0.039	0.040
Number of Panel Clusters	65,324	65,324	65,324	65,324	65,324	65,324

Table A.3.10: Different KLD Score Adjustments

Table A.3.10 reports estimated coefficients from Fixed Effect Panel regressions using alternative definition of the KLD proxies. I regress the portfolio weight held by a pension fund in a specific company on different versions of the company's KLD score as well as an interaction of the company's KLD score and proxies for the political leaning of funds' members ($Democrat - Dummy_{it}$) in specifications (1)/(4)/(7);) the composition of the state government, $Dem.State Gov. - Dummy_{it}$ in specifications (2)/(5)/(8); and dummies conditioning on both, members' political leaning and the composition of the state government (3)/(6)/(9). In specifications (1)–(3), I use the KLD Net score without the subcategories corporate governance, human rights and product quality as the proxy for a company's ESG performance. Specifications (4)–(6) employ the Net KLD score based on all 7 subcategories but only use a subsample period from 1997Q1 to 2008Q4, i.e. before KLD changed its methodology to calculate the KLD scores. In specifications (7) – (9), I use a Z-score of the KLD rating. For this I calculate a Z-Score for each year separately so that each year the KLD Net score has a minimum of 0 and a standard deviation of 1. The different KLD scores are scaled to have an overall minimum of 0 in order to facilitate the interpretation of the interaction term. The KLD scores in the interaction terms in specifications (3)/(6)/(9) are scaled to have a minimum of 0 and a maximum of 1. All specifications exclude the controls *% invested in Equities* and *Actuarial Funded Ratio*. Except for specifications (4)-(6), the sample runs from 1997Q1 to 2013Q4. Standard errors are clustered at the panel variable level, i.e. *fund×security* level. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) KLD excl Corp. Gov., Hum & Pro.	(2) KLD excl Corp. Gov., Hum & Pro.	(3) KLD excl Corp. Gov., Hum & Pro.	(4) 1997Q1 – 2008Q4	(5) 1997Q1 – 2008Q4	(6) 1997Q1 – 2008Q4	(7) Z-Score of KLD	(8) Z-Score of KLD	(9) Z-Score of KLD
KLD Net	-0.00643***	-0.00492***	-0.00552***	-0.00396***	-0.00310***	-0.00494***	-0.00528***	-0.00438***	-0.00647***
	(0.000725)	(0.000655)	(0.000856)	(0.00102)	(0.00102)	(0.00109)	(0.000706)	(0.000684)	(0.000801)
Democrat-Dummy × KLD Net	0.00235***			0.00105***			0.00162***		
	(0.000441)			(0.000315)			(0.000254)		
Dem. State Gov.-Dummy × KLD Net		0.000900***			-0.000540**			0.000742***	
		(0.000227)			(0.000213)			(0.000127)	
Republican&NonDemstategov × KLD Net			-0.0497***			-0.0329***			-0.0388***
			(0.0134)			(0.0111)			(0.00878)
Republican&Demstategov × KLD Net			-0.0520***			-0.0507***			-0.0352***
			(0.0132)			(0.0116)			(0.00801)
Democrat&Demstategov × KLD Net			0.0231***			-0.0173**			0.0209***
			(0.00629)			(0.00750)			(0.00404)
Pen. Fund X Security FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Company Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Pension Fund Controls	YES	YES	YES	YES	YES	YES	YES	YES	YES
Market Control	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	481,909	481,909	481,909	325,281	325,281	325,281	481,909	481,909	481,909
R-squared	0.144	0.143	0.144	0.143	0.143	0.143	0.144	0.143	0.144
Number of Panel Clusters	18,622	18,622	18,622	14,915	14,915	14,915	18,622	18,622	18,622

4 ON THE PRICE OF MORALS IN MARKETS: An Empirical Study of the Swedish AP-funds and the Norwegian Government Pension Fund

4.1 Introduction

Over the last decades, the general public has increasingly become aware of the social, environmental and ethical impact of the investment and financing decisions of large financial institutions. Through movements like Occupy Wall Street, the public is gradually calling into question the ability of these players to serve the economy and society as well as to act in the best interests of their ultimate beneficiaries (Blanc & Cozic, 2012). This development coincides with the emergence of the idea that investors are indirectly responsible for the corporate misconduct of the companies they hold. Especially public pension funds and other large public asset owners, such as SWFs, have been openly accused of complicity when financing companies that are involved in unethical behaviour, including violations of human rights and labour rights, gross corruption and environmental pollution. This investor group is especially susceptible to public scrutiny as it invests large sums of state-owned assets for the benefit of the general public, the funds' ultimate beneficiaries (Richardson, 2011). On a global scale, this scrutiny has strongly increased since the outbreak of the financial crisis in 2008 – although it is not a new development in the Nordic countries. Investments made by Norway's GPFG and the Swedish AP-funds regularly make the headlines in the media.[53] The GPFG is the SWF of Norway, established to invest the revenues from Norway's oil and gas exploration with the objective to ensure the long-term wealth of current and future generations of Norwegians (Richardson, 2011; Jensen, 2016b). With assets worth almost USD 900 billion, it is one of the largest

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[53] For example, the Swedish AP-funds have been heavily criticised for their holdings in Total AS, after the company was incriminated of corruptive practices and collaboration with the dictatorship in Burma (Bengtsson, 2008b). Similarly, the Norwegian GPFG has come under attack for owing shares in the mining company POSCO after allegations against the firm emerged regarding its involvement in human rights violations in India (Meller & Husson-Trarore, 2013).

SWFs in the world.[54] Though slightly smaller in size, the Swedish AP-funds, which constitute the national pension system of Sweden, also rank among the largest global asset owners (Severinson & Stewart, 2012).

One reaction of these investors to the increased scrutiny is divesting from companies associated with unethical behaviour. For example, following several instances where the Norwegian GPFG attracted attention for holding companies involved in the production of controversial weapons and tobacco, the Norwegian Government devised ethical guidelines to ban these investments, together with investments in companies that contribute to serious human rights violations, severe environmental damage, gross corruption and other particularly serious violations of fundamental ethical norms.[55] The Swedish AP-funds have similar guidelines that require them to consider the ethical and environmental implications of their investments (Sandberg et al., 2014; Du Rietz, 2016).

The growing popularity of exclusionary screening by large institutional investors appears to be in contrast to the general consent in the academic literature on SRI which positions that exclusionary screening is an outdated approach. This literature argues that SRI has moved on to more sophisticated strategies, such as active ownership and engagement as well as positive screening and best-in-class investing (e.g. Sparkes & Cowton, 2004). In addition, a large part of the literature concludes that exclusionary screening and especially screening on industries that offer products and services considered as sinful and/or unethical financially hurts investors as these 'sin' stocks tend to offer superior financial performance (e.g. Fabozzi, Ma & Oliphant, 2008; Adler & Kritzman, 2008; Hong & Kacperczyk, 2009). By excluding these firms from their investment universe, asset owners might forgo profitable investment opportunities "and thereby sacrifice vast sums of wealth through time"

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[54] The most recent market value of GPFG's assets can be obtained via: http://www.nbim.no/ .

[55] In early 2016, two new criteria have been included in GPFG's guidelines. One criterion targets conduct resulting in unacceptable greenhouse gas emissions at the aggregate company level. The other criterion, a sector-based screen, focuses on mining companies and energy producers with 30% or more of revenues from thermal coal (Norwegian Ministry of Finance, 2016). As these exclusion policies were introduced after the end of my sample period, I do not include them in the empirical analysis. The latest version of the guidelines for the exclusion of companies from GPFG's portfolio is available via: http://etikkradet.no/en/guidelines/ .

(Adler & Kritzman, 2008: 55). This finding poses a potential conflict between the ethical and financial objectives of these funds, given that their financial objective is traditionally interpreted as the duty to maximise beneficiaries' long-term wealth.

This study attempts to address the question whether a conflict truly exists between the ethical and financial expectations faced by these asset owners. In other words, can the funds incorporate the ethical views of their beneficiaries without sacrificing financial returns? To answer this question I focus on one particular SRI approach that is aimed at reducing investor's exposure to unethical business practices: exclusionary screening. In particular, I analyse the performance implications of the exclusion decisions by the Norwegian GPFG and the Swedish AP-funds. These funds exclude companies either due to the unethical nature of the sector that the company operates in (sector-based exclusions) or due to the company's involvement in violations of ethical standards and norms (norm-based exclusions). Our results suggest that the excluded companies neither significantly under- nor outperform relative to the funds' performance benchmarks. These findings hold for the entire portfolio of excluded companies and when separating the performance effect by reason for exclusion. I interpret these findings as evidence that by using specific forms of sector-based and norm-based screens asset owners can meet both, their beneficiaries' ethical and financial objectives.

This study makes several important contributions to the academic literature on exclusionary screening. To the best of my knowledge, this is the first study to systematically analyse the performance effect of exclusionary screening by two of the leading institutional investor groups, i.e. public pension funds and SWFs. So far, the literature has either constructed theoretical portfolios by applying exclusionary criteria to a predefined investment universe (e.g. Adler & Kritzman, 2008; Fabozzi et al., 2008; Hong & Kacperczyk, 2009; Durand, Koh & Tan, 2013b; Salaber, 2013; Trinks & Scholtens, 2015) or it has analysed the performance of SRI mutual funds that apply exclusionary screening (e.g. Barnett & Salomon, 2006; Renneboog et al., 2008b; Lobe & Walkshäusl, 2011; Humphrey & Lee, 2011; Capelle-Blancard & Monjon, 2014; Humphrey & Tan, 2014). While the

finding of an insignificant performance effect is generally in line with findings derived from the SRI mutual fund literature, I contribute to this literature in several ways.

Firstly, as pointed out by Sparkes & Cowton (2004: 50), "the rapid growth in pension funds [and SWFs] that have adopted socially responsible criteria means that such research can no longer be regarded as representative." Secondly, public asset owners have a considerably different relation to their beneficiaries than mutual funds (Richardson, 2011). Not only do they invest on behalf of a far larger stakeholder group with non-uniform interests and ethical standards (Bengtsson, 2008a,b; Richardson, 2011), the ultimate beneficiaries of these funds also do not have the option to 'exit' the fund, in case they do not agree with the fund's investment objectives and/or are not willing to bear potential costs of applying ethical standards (Clark, 2004; Sandberg et al., 2014). As a consequence, the public scrutiny and societal pressures on these public asset owners are higher than for the average mutual fund (Blanc & Cozic, 2012; Hawley, 2016). Finally, the exclusions of GPFG and the Swedish AP-funds have a strong signalling effect on other global asset owners with many investors following their exclusion decisions (Bengtsson, 2008a; Scholtens & Sievaenen, 2013; Jensen, 2016b; Du Rietz, 2016). Such domino effects of exclusion decisions are hardly observed for SRI mutual funds, rendering the exclusions of the institutional investors studied in the sample of greater importance to the overall financial markets as well as to the corporations that are being excluded.

This study also contributes to the emerging literature on norm-based screening. This practice of divesting from companies based on the company's association to violations of international norms is said to have originated in Scandinavia but it increasingly gains momentum among other large asset owners (Blanc & Cozic, 2012; Du Rietz, 2016). Currently three studies explicitly address norm-based screening. Capelle-Blancard & Monjon (2014) study French SRI mutual funds and contrast the performance differences between funds applying sector-related screens and norm-based screens. The studies by Blanc & Cozic (2012) and Meller & Husson-Trarore (2013) compare the application of norm-based screening across European asset owners, however, without addressing the

performance effects of such exclusions. Thus, I am the first to study the performance impact of norm-based screening by large public asset owners.

Besides these conceptual contributions, I also address some of the methodological concerns of previous studies on exclusionary screening. Previous research on exclusionary screening has either been criticised for neglecting real-world investment restrictions (see the criticism by Adamsson & Hoepner, 2015, and Hoepner & Zeume, 2014) or the inability to disentangle the performance effect of the exclusionary screening from other fund-specific factors such as manager skill (see Humphrey & Tan, 2014). In comparison, by looking at the exclusion lists of GPFG and the AP-funds I am able to exactly identify the excluded companies, together with the reason and time of exclusion, and hence to abstract from confounding fund-specific factors such as manager skill. At the same time, I automatically account for real-world investment restrictions by focussing on the funds' actual divestments, as compared to theoretical sin-stock portfolios.

The remainder of this chapter is structured as follows. Chapter 4.2 provides an overview of the literature on the special role of the GPFG and the AP-funds in promoting ethical standards as well as on the performance effects of exclusionary screening. In Chapter 4.3, I formulate the research questions and develop testable hypotheses. Chapter 4.4 introduces the data and methodology, while Chapter 4.5 presents the results of the empirical analysis. I test the robustness of the findings in Chapter 4.6. Chapter 4.7 concludes and discusses the implications of the findings.

4.2   Related Literature

4.2.1   The GPFG and the AP-funds: Balancing Ethical and Financial Objectives

As compared to other major financial markets such as the U.S. or the U.K., relatively little research exists on the Scandinavian SRI market and its major players. Notable exceptions include the studies by Bengtsson (2008a,b) and Scholtens & Sievaenen (2013) which analyse the historical development

of SRI and its drivers in the Scandinavian market. More closely related to my study, Sandberg et al. (2014) compare the legal environment regarding SRI in Sweden with the fiduciary duty concept in Anglo-American countries and particularly focus on the conflicting expectations faced by the Swedish AP-funds regarding their beneficiaries' financial and ethical interests, while Richardson (2011) discusses the tension between financial and ethical demands for the GPFG. In addition, Jensen (2016a,b) and Du Rietz (2016) provide overviews on the current state of the SRI development in Scandinavia as a whole, and in Norway and in Sweden in particular. Besides, several studies review the investment framework and policy guidelines of the GPFG (e.g. Clark & Monk, 2010; Myklebust, 2010; Chambers et al., 2012; Dimson, Kreutzer, Lake, Sjo & Starks, 2013) and the AP-funds (Severinson & Stewart, 2012), touching upon topics of SRI and the funds' particular duties as public asset owners. Yet, no study explicitly analyses the performance implications of the SRI approaches adopted by the GPFG and the AP-funds, especially regarding their most prominent feature, their exclusion policies.[56] The following section reviews the above studies while focusing on the funds' special relation to their beneficiaries which distinguishes public asset owners from other market participants such as SRI mutual funds. I also show that the demands from beneficiaries have been the primary driver to adapt exclusionary screening.

As highlighted in Richardson (2011: 22f.), "SWFs [such as the GPFG and other large public asset owners like the AP-funds] resemble institutional chameleons in the conflicting expectations they face. They operate like private investment vehicles for maximising shareholder value, while encumbered with public responsibilities to fulfil the ethical policies of their state." In terms of their financial objectives, both funds are expected to maximise long-term financial returns. The GPFG is required by the Norwegian Government to achieve a high return for the benefit of future generations.

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[56] The only exception is an internal study by one of the Swedish national pension funds themselves. As stated in Sandberg et al. (2014, footnote on page 66), AP7 conducted an internal inquiry into the performance implications of its exclusionary screening practices. The results of this analysis suggest that the screened fund carried a marginally higher risk than a hypothetical unscreened portfolio, but did not show any significant difference in returns.

This objective is widely interpreted as the duty to maximise financial returns, within acceptable risk limits (Bengtsson, 2008a,b; Richardson, 2011; Chambers et al., 2012; Dimson et al., 2013). In fact, GPFG has achieved an absolute return of 5.27% per annum, i.e. a return of 0.51% per annum in excess of its benchmark index, on its equity investments since its inception in 1998, which indicates that GPFG has been reasonably successful in achieving its financial objective.[57] Similarly, in case of the Swedish AP-funds, the National Pension Insurance Funds Act requires them to "manage fund assets in such a manner so as to achieve the greatest possible return" (cited according to Sandberg et al., 2014).[58] As such, the financial objectives of these funds are not different to those faced by most private market actors. However, due to their status as public asset owners, these funds are also obliged to fulfil the ethical standards expected from them by the general public. In case of the Swedish AP-funds, a legal requirement was introduced in 2001 that obliges the funds to consider ethical and environmental aspects in their investment policies and led the funds to establish a new investment policy that involves the exclusion of companies that are not in line with universally-agreed ethical and environmental standards (Bengtsson, 2008b; Sandberg et al., 2014).[59] GPFG's turn towards ethics started in 2002 with its first ethically-motivated divestment and resulted in GPFG's implementation of a range of detailed ethical guidelines (Bengtsson, 2008b; Jensen, 2016b). The current version of the ethical guidelines restricts the fund from investing in companies that contribute to serious human rights violations, severe environmental damage, gross corruption and

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[57] Information on the (relative) equity performance of GPFG is available via the following homepage: https://www.nbim.no/en/transparency/reports/2015/performance-and-risk-2015/ .

[58] The first four AP-funds do not provide return figures on their equity performance relative to the benchmark. The absolute equity return for AP1 over 2011-2015 is 6.9% per annum, for AP2 11.1% per annum, for AP3 13% per annum and for AP4 10.7% per annum, respectively. Compared to the 5-year return on the MSCI All Country World index, which amounts to 7.3% per annum, all but the AP1 fund outperformed this benchmark. AP7's equity portfolio earned an absolute return of 17.3% per annum over the years 2010 to 2014, which represents an average return of -0.2% in excess of its benchmark. Information on the AP-funds' equity performance is taken from the funds' annual reports which are available via the following homepages: for AP1 http://www.ap1.se/en/Financial-information-and-press/Reports/ , for AP2 http://www.ap2.se/en/Financial-information/financial-reports/ , for AP3 http://www.ap3.se/sites/english/financial_reports/Pages/default.aspx , for AP4 http://www.ap4.se/en/financial-reports-and-press/reports/ , for AP7 https://www.ap7.se/globalassets/kiidar/kiid-ap7-aktiefond-2015-06-23.pdf .

[59] While AP7 focuses only on exclusionary screening, AP1, AP2, AP3 and AP4 combine exclusionary screening with engagement and only exclude a company after engagement has proven unsuccessful.

other particularly serious violations of fundamental ethical norms as well as in companies related to the production of tobacco and controversial weapons.

While the direct reason for the funds' move towards ethical exclusionary screening relates to legal changes, the policy makers themselves were responding to pressures from the public that did not want to see state assets invested in unethical business practices and thus risking to act as accomplices to gross, systematic breaches of ethical norms (Bengtsson, 2008b). In fact, both the Swedish AP-funds and Norway's GPFG named the avoidance of complicity and the appeal to public trust as main drivers for establishing their ethical investment policies of exclusionary screening (see Sandberg et al., 2014, for the AP-funds, and Richardson, 2011, for the GPFG).

In contrast to mutual fund investors, the beneficiaries of the GPFG and the AP-funds do not have the option to exit the funds, in case that they do not agree with the funds' investment objectives and/or are not willing to incur potential costs of applying ethical standards (Clark, 2004; Sandberg et al., 2014).[60] They are rather 'locked in' the funds and hence inevitably bear any potential costs of ethically motivated exclusionary screening. As the ultimate beneficiaries of these funds comprise both the state's current population as well as future generations (Bengtsson, 2008a,b), reaching a consensus on one ethical perspective shared by all beneficiaries is rendered difficult, if not impossible.[61] To overcome this challenge and to assure a broad basis of support for their SRI decisions, both the Norwegian GPFG and the Swedish AP-funds decided to rely on national law and international standards to set out a minimum of ethical norms that they expect all of their holding companies to abide to. The latter standards comprise the United Nations (UN) Global Compact, the OECD Guidelines for Corporate Governance and for Multinational Enterprises, labour standards set

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[60] This point is also explicitly highlighted by the Graver Committee, an expert committee appointed by the Norwegian Government to define ethical guidelines for GPFG, as "a defining characteristic of the Fund…that a substantial proportion of those on whose behalf the Fund is managed cannot choose its manager". The English version of the Report from the Graver Committee is available online: https://www.regjeringen.no/en/dokumenter/Report-on-ethical-guidelines/id420232/ .

[61] In the Report from the Graver Committee it explicitly says that "there is no consensus on one particular uniform ethical perspective". See also Richardson (2011) for a further discussion of this issue.

out by the International Labour Organization, as well as conventions that ban particular controversial weapons (Richardson, 2011; Sandberg et al., 2014; Norwegian Ministry of Finance, 2015).[62] Using this principle of finding the lowest common ethical factor, funds sought to account for their ethical obligation as public asset owners while at the same time minimising the financial impact to the beneficiaries of applying these ethical standards (Sandberg et al., 2014).

4.2.2   Performance Effects of Exclusionary Screening

Besides the literature on Scandinavian public asset owners, my study also contributes to the vast literature on the performance impact of exclusionary screening. Arguably, the most prominent study in this stream of the literature is by Hong & Kacperczyk (2009). In their study, the authors find that investing in 156 U.S. companies that operate in sectors related to alcohol, gambling and tobacco – the so-called triumvirate of sin – over the period 1965 to 2006 leads to a positive abnormal return relative to industry-comparable stocks. Many studies have since attempted to confirm or disprove the original results by Hong & Kacperczyk (2009) and have extended the original set of screens to reflect a broader range of societal norms. For instance, studies by Adler & Kritzman (2008), Durand, Koh & Limkriangkrai (2013a), Durand et al. (2013b) and Trinks & Scholtens (2015) find support for an outperformance of sin stocks in the U.S. markets, Salaber (2013) for a European stock universe, Visaltanachoti, Zou & Zheng (2009) for China and Hong Kong, and Fabozzi et al. (2008) for a set of 21 global equity markets, respectively. However, there is also a considerable body of research that finds no or only an insignificant outperformance of sin stocks. For instance, Kempf & Osthoff (2007)

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[62] See for example the statement by the Ethical Council of AP1, AP2, AP3 and AP4: "The Swedish Government's core values…find expression in those international conventions that Sweden has signed, which include conventions on the environment, human rights, labour law, corruption and inhumane weapons, as well as through the support given to initiatives such as the United Nations Global Compact and OECD guidelines for multinational companies, in addition to Sweden's own stance on international public law issues. In tandem with the Swedish Government's value system, international conventions constitute essential instruments for the Ethical Council in its efforts to ensure the AP Funds satisfactorily take into account environmental issues and ethical dimensions in their work.", available online: http://etikradet.se/etikradets-arbete/vardegrund/?lang=en . Similar references for the GPFG can be found in the Graver Report on Ethical Guidelines and in the Report to the Storting (Norwegian Ministry of Finance, 2016).

and Statman & Glushkov (2009) find a positive but insignificant abnormal return, when applying six common sin screens to a U.S. stock universe over a 14-years and 16-years period, respectively. Similarly, Lobe & Walkshäusl (2011) and Adamsson & Hoepner (2015), looking at a global and U.S. set of sin companies, conclude that the performance of these stocks does not significantly differ from benchmark returns. In addition, several studies find that the extent to which investors shun sin stocks significantly varies across markets and that markets with more restrictive social norms show a stronger 'sin' effect (e.g. Salaber, 2013, Fauver & McDonald, 2014; Liu, Lu & Veenstra, 2014; Adamsson & Hoepner; 2015).[63]

One aspect that the above studies have in common is that they test the performance implications of exclusionary screening by applying screening criteria (e.g. based on industry classifications) to a predefined investment universe. Thus, they construct theoretical, and in a sense 'fictive', portfolios of excluded companies. 'Fictive' as it is not clear whether any real-world investor actually applies these exact screens. While this approach allows dissecting the 'sin' impact on performance, it has been criticised for neglecting real-world investment restrictions. In particular, Adamsson & Hoepner (2015) and Hoepner & Zeume (2014) argue that the significant outperformance of 'sin' stocks found in large parts of the literature may disappear, once restricting the investment universe to stocks that are liquid and large enough to qualify as suitable investments for institutional investors.

A stream of the literature overcoming this criticism comprises studies that analyse the performance of SRI mutual funds which apply exclusionary screens (Barnett & Salomon, 2006; Renneboog et al., 2008b; Lee, Humphrey, Benson & Ahn, 2010; Renneboog, Ter Horst & Zhang, 2011; Humphrey &

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[63] Durand et al. (2013b) find that the institutional investors have lower holdings in sin stocks in markets that are culturally closer to the U.S. (i.e. Australia, New Zealand) than they do in markets with a larger cultural distance to the U.S. (i.e. Japan, South Korea). Salaber (2013) concludes that sin stocks earn higher returns in markets with a higher share of Protestant population, as compared to Catholic orientations, while Liu et al. (2014) find a lower institutional ownership of sin stocks the higher the share of Protestants. According to Fauver & McDonald (2014), sin stocks have a lower equity valuation in markets that consider these stocks more controversial, and vice versa. Adamsson & Hoepner (2015) map countries according to different cultural dimensions and find returns for sin stocks to differ across markets, although most of these differences are statistically insignificant.

Lee, 2011; Capelle-Blancard & Monjon, 2014; Humphrey & Tan, 2014). In contrast to the 'sin' studies, the mutual funds literature does not analyse the performance of the excluded companies but it instead looks at the returns of the funds applying the exclusionary screens. While a large part of the literature concludes that screening mutual funds do not generally perform differently from their conventional peers (e.g. Lee et al., 2010; Humphrey & Lee, 2011; Humphrey & Tan, 2014), several studies show that the relation between screening and performance might be more complex and depend on several fund-specific factors. For instance, Barnett & Salomon (2006), Renneboog et al. (2008b), Lee et al. (2010) and Capelle-Blancard & Monjon (2014) find that the screening-performance relation depends both on the type of screens and the fund's screening intensity, as measured by the number of screens applied. In addition, Humphrey & Lee (2011) find that exclusionary screening can impact the risk characteristics of the funds. However, these studies come with their own methodological restrictions. As Humphrey & Tan (2014) point out, SRI mutual funds are very heterogeneous and might apply other SRI approaches or forms of active management. Thus, studying returns at the fund level does not allow to distinguish the performance contribution of the ethical screens from other fund-specific effects such as managerial skill.

While the review of the considerable body of literature on exclusionary screening might suggest that the performance impact of exclusionary screening is already well understood, I argue that the literature has predominantly focused on certain aspects of this problem while leaving others still mainly unexplored. To illustrate, when categorising the above studies based on the type of exclusionary screens, I find that most studies cover sector-based exclusions (e.g. Adler & Kritzman, 2008; Fabozzi et al.,2008; Hong & Kacperczyk, 2009; Trinks & Scholtens, 2015; Salaber, 2013; Humphrey & Tan, 2014; Adamsson & Hoepner, 2015), while currently only three studies explicitly address norm-based screening (Blanc & Cozic, 2012; Meller & Husson-Trarore, 2013; Capelle-Blancard & Monjon's, 2014). As a result, there is a clear need for further research on the performance impact of norm-based screening. Additionally, none of the studies focuses on the performance implications of exclusionary screening by investors other than mutual funds, although the previous

section has established that public asset owners are especially susceptible to public pressures to balance their ethical and financial objectives.

4.3 Research Questions and Hypotheses Development

The literature review highlights the ambiguous findings of the prior literature regarding the performance effects of exclusionary screening as well as the lack of research on exclusionary screening by public asset owners in general and on norm-based screening in particular. Given the special role of these funds within their state's society, shedding light on these unexplored topics is not only of relevance to the funds themselves but also to other global market participants, policy makers and the Norwegian and Swedish people. In this study I aim to fill these gaps by asking:

RQ1: *What are the performance implications of exclusionary screening by the GPFG and the AP-funds?*

Turning to the previous studies, I may generally expect three potential performance effects of applying these screens.

H1a: *The exclusion portfolios outperform the market.*

The hypothesis of a significant outperformance of excluded 'unethical' companies is mainly promoted by the early parts of the literature, especially the 'sin stock' studies (Adler & Kritzman, 2008; Fabozzi et al., 2008; Hong & Kacperczyk, 2009). Relying on Merton's (1987) incomplete information model and related arguments of segmented capital markets (Derwall, Koedijk & Ter Horst, 2011), these studies argue that norm-constrained investors such as pension funds and university endowment funds shun controversial stocks. This leads to limited risk sharing among those investors that hold the controversial companies and as a consequence, investors require higher returns for holding the stock. In addition, Fabozzi et al. (2008) argue that it is costly for the firm to implement and uphold social and environmental standards and hence compliance with these norms should decrease firm's profits. Especially if the cost of complying with the norms is higher than the costs of

breaking the standards (e.g. litigation risks from being caught, reputational costs), non-compliant companies are expected to show higher future profits and cash flows. The asset pricing implications of these effects are formalised in Heinkel, Kraus & Zechner (2001) who develop a theoretical model of the impact of exclusionary ethical investing on corporate behaviour in a risk-averse equilibrium setting. The authors conclude that the shunned firms should earn a positive abnormal return relative to the market, while 'acceptable' firms are expected to underperform. However, it is important to note that this argument is based on the idea of a temporary undervaluation of the shunned stocks which is eventually corrected and thereby generates a positive abnormal return for investors holding the stocks.

H1b: The exclusion portfolios underperform the market.

In contrast, the proponents of an underperformance effect of exclusionary screening argue that the unethical companies are overvalued. They postulate that the market does not fully incorporate the risks that are associated with unethical corporate practices and breaches of international norms. For instance, Barnett & Salomon (2006) and Petersen & Vredenburg (2009) point out that these firms are exposed to risks of negative government and/or social actions such as litigation risk, penalties and increased opposition from communities and local authorities regarding future investment projects. In addition, unethical companies could face reputational costs that might lead to a loss in customer and client loyalty and thus lower revenues or to higher employee turnover and lower competitiveness in corporate hiring (Barnett & Salomon, 2006). Finally, the involvement in scandals could also signal bad managerial talent, exposing investors to greater management risk (Renneboog et al., 2008b). However, the GPFG and AP-funds only exclude a company after the breach has occurred and/or after the involvement in the unethical business practice has become public knowledge. Thus, for these risks to affect the funds' portfolio performance two potential channels are possible. On the one hand, the potential risks associated with the unethical business practices are not being properly priced in the market at the time of divestment. Thus, even if the funds only divest from the company after the incident has occurred they might still avoid some of the stock price

decline as the market slowly learns about the true costs of the unethical practices. On the other hand, investors could regard past breaches of norms as a predictor of future incidents. Again assuming that the market does not account for this increased risk exposure, divestment could shield the funds from the negative financial consequences of future incidents. Considering that GPFG and the AP-funds aim to only exclude companies that have a high risk of future breaches and that show no willingness to change their corporate practices (Richardson, 2011; Sandberg et al., 2014), the latter channel may explain a potential underperformance of their excluded companies.

H1c: The exclusion portfolios do not show significant performance differences compared to the market.

Finally, one might expect no significant performance effect of exclusionary screening (see e.g. the assessment of Kurtz, 2005, based on a review of the long-term performance of social indices and SRI mutual funds). For one thing, the two previous hypotheses rely on the assumption of (partial) market inefficiency. However, if the market was efficient, it would instantaneously and correctly adjust the market price of stocks after an incident to reflect all material risks. Thus, divesting from the company after the incident has occurred should not lead to any abnormal performance difference relative to the market. Additionally, one may expect an insignificant performance impact of exclusions if the funds consciously balance the financial and ethical expectations of their beneficiaries by only excluding companies if the exclusion does not harm fund performance. However, this line of argument relies on several critical assumptions. First, the funds would need to select exclusion targets from a set of unethical companies. This assumption is quite realistic as time and resource constraints provide a natural limit to the number of companies that the fund can investigate and engage with (Clark & Monk, 2010). Additionally, the argument assumes an implicit prioritisation of the financial objectives over the ethical objectives, which, as will be discussed in the conclusion to this chapter, cannot be regarded as given. And finally, the argument implies that the funds are able to correctly evaluate the future performance effect of their exclusion decisions.

So far, I have regarded the excluded companies as one homogeneous group. However, prior research indicates that performance effects may differ depending on the nature of the exclusionary screen

(Barnett & Salomon, 2006; Renneboog et al., 2008b; Capelle-Blancard & Monjon, 2014; Trinks & Scholtens, 2015). Looking at the case of the GPFG and the AP-funds, I can differentiate between sector-based exclusions and norm-based exclusions. Based on these differences, I pose a subordinate research question:

RQ2:   Do the performance implications of exclusionary screening differ across different types of screens, especially regarding sector-based versus norm-based screens?

Norm-based exclusions are naturally not restricted to a certain business sector but theoretically apply to all companies in the portfolio. Additionally, the latter practices can be changed by the company without changing the nature of the operations whereas a company had to sell (part of) its operations to remove the basis for a sector-based exclusion. These differences have the effect that companies excluded due to norm-based screens are exposed to the previously discussed sources of risks to varying degrees. For instance, it can be argued that investors applying sector-based exclusions are more strongly exposed to the limited-risk-sharing-problem due to market segmentation and less exposed to companies' hidden risks. As limited risk sharing is associated with an outperformance of excluded companies due to limited diversification opportunities across investors, I expect sector-based exclusions to generate superior performance.

H2a: Exclusion portfolios based on sector-based screens outperform the market.

To illustrate, for market participants it is easier to identify what operations a company runs as to assess the way that the business is operated. This makes market segmentation based on sectors more feasible than based on business practices. In addition, while for most norm-based exclusions a comparable substitute from the same industry is available, adequate substitution is often not possible when excluding an entire business sector. Finally, while the business sector is a more permanent feature of a company, the way that the company runs its business, i.e. in a responsible or irresponsible manner, can be altered more easily. Hence, in conclusion, the risk from market segmentation and limited risk sharing is more likely to materialise for sector-based exclusions while it is more easily diversifiable and thus less likely to be compensated in case of norm-based exclusions.

On the other hand, companies that are excluded due to norm-based screens are more likely to bear hidden risks that are not correctly priced by the market than those excluded due to sector-based screens. These hidden or mispriced risks associated with unethical behaviour imply that norm-based exclusions are more likely to generate inferior financial performance.

H2b: Exclusion portfolios based on norm-based screens underperform the market.

For one thing, breaches of norms and unethical business practices are less visible to the market, especially since the company has a high incentive to obscure the true extent of the incident. This is evidenced by the literature that assesses the impact of announcements of negative human and labour rights and environmental incidents on firm value (e.g. Kappel, Schmidt & Ziegler, 2009, for human rights issues; Klassen & McLaughlin, 1996, Dasgupta & Laplante, 2001, Gupta & Goldar, 2005, Konar & Cohen, 2001, Flammer, 2013, for environmental violations; Hirsh & Cha, 2015, for labour rights issues; and Amer, 2015, for issues related to non-conformity with the UN Global Compact). These studies predominantly find a loss in firm value around the announcement date indicating that the market has previously mispriced the risk of the company. Depending on the timeliness of the divestment and the speed of market adjustment, a divestment from these companies could protect the GPFG and the AP-funds at least partially against the downward price adjustment caused by the incident or, alternatively, safeguard the funds against the negative return consequences of potential future breaches of norms. In comparison, such misevaluations of the risk involved with operating in a particular sector are less likely, given the often long history of operations of these sectors and the fact that the sector is not an unexpected element of a company. To conclude, market segmentation risks resulting in a temporary undervaluation are more likely for sector-based exclusions while companies excluded due to norm-based screens are more prone to overvaluation, due to hidden risks.

4.4 Data and Methodology

The following sections introduce the data and methodology used to test the performance implications of the exclusion decisions of the GPFG and the AP-funds.

4.4.1 Data and Portfolio Construction

Our main data source are the exclusion lists published by the GPFG and the AP-funds. The exclusion decisions of these funds are the outcome of a systematic review of companies accused of serious norm violations and other business practices that are in conflict with the ethical standards set out by the funds. These reviews resemble a 'quasi-legal' process that assesses the seriousness and extent of the violation as well as the willingness of the company to change its practices. It also allows the companies to respond to the allegations made against them before any exclusion takes place (Richardson, 2011). Regarding the scope of the exclusions and in particular the asset classes involved, the AP-funds and the GPFG are generally required to divest from any form of investment in the unethical company, including listed equities, fixed income and other forms of investment such as real-estate.[64] In line with the previous literature, this study particularly focuses on the effect of divestment from listed equities.[65] In the case of the GPFG, a separate body, the Council for Ethics, reviews the allegations made against companies and issues recommendations regarding the exclusion, or otherwise, of a company. Up until the end of 2014 the Ministry of Finance made the final decision on a case-by-case basis, while from 2015 onwards the Norges Bank as the central bank of Norway has been assigned the task of decision making on the observation and exclusion of companies (Norwegian Ministry of Finance, 2016). The Swedish AP-funds consist of the five separate funds AP1, AP2, AP3, AP4 and AP6 – which represent the income-based pension – and the

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[64] While the funds do not clearly state the scope of their exclusion decisions there is considerable evidence that leads me to believe that the entire portfolio is concerned. For the case of GPFG, in the ethical guidelines that stipulate the fund's exclusion criteria it says that "the guidelines cover investments in the Fund's equity and fixed-income portfolios, as well as instruments in the Fund's real-estate portfolio issued by companies listed on a regulated market." Additionally, GPFG specifies in its latest RI report for the PRI that its SRI policies, including its screening/exclusion policy, cover all assets under management (AUM). The AP-funds state in their RI Reports that their SRI policies including screening/exclusion policy comprise their entire AUM (for the case of AP1, AP2, AP7) or the majority of their AUM (for AP3 and AP4). The RI reports for the funds can be obtained online: https://www.unpri.org/signatory-directory/ Furthermore, the ethical council that recommends exclusions for AP1 to AP4 states on its homepage that "the recommendation for exclusion also applies to listed subsidiaries" http://etikradet.se/etikradets-arbete/reaktiva-dialoger-vid-krankning/rekommenderade-uteslutningar/?lang=en.

[65] To the best of our knowledge, no empirical study has analysed the performance implications of exclusionary screening for asset classes other than public equity. While representing an interesting avenue for future research, an extension of the analysis of the performance implications of GPFG's and the AP-funds' exclusions beyond public equity is empirically beyond the scope of this study.

fund AP7 – which serves as the government default fund for the premium reserve system.[66] AP1, AP2, AP3 and AP4 follow a similar exclusion process as GPFG in terms of the exclusion process and prior engagement with the company. At the beginning of 2007, the four funds established a joint Ethical Council to coordinate the analysis of the environmental and ethical compliance of their holdings. The purpose of this collaboration is to combine the four funds' resources and shareholder rights for greater leverage in influencing companies and to increase the efficiency of the engagements. Although the Ethical Council only issues recommendations and the four funds have the final say regarding the exclusion decisions, AP1, AP2, AP3 and AP4 have all been following the Council's recommendations. Due to their identical exclusions and exclusion policy, I regard AP1, AP2, AP3 and AP4 as one joint fund for the sake of this study, though I acknowledge that they might deviate from each other in terms of investment strategy in other respects.[67] Unlike GFPG and AP1-4, AP7 does not individually disclose each exclusion decision, but it provides a list of its current exclusions in its annual reports (Du Rietz, 2016; Bengtsson, 2008b). Additionally, while it states the reason for exclusion, AP7 does not provide the exact exclusion date. Another difference between AP7's and the other funds' exclusion approach is that it does not rely on prior engagement with the accused company but proceeds straight to exclusion. AP6 does not publish any exclusion list and is thus not considered in this study.

For this study, I collect the entire history of the divestments, including the company name, the reason for exclusion and, if available, the exact date of exclusion, for GPFG, AP7 and the joint exclusions of AP1, AP2, AP3 and AP4. Such detailed information on funds' exclusion decisions is hardly available for other (private) market participants and thus allows me to gain unique insights into the trends in exclusionary screening over time. For instance, studies analysing exclusionary screening

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[66] The premium reserve system relates to the part of the public pension money that savers can invest themselves.
[67] The only deviation in the four funds' exclusion portfolios relates to a case prior to the establishment of the joint Ethical Council. In particular, AP2 excluded Wal-Mart at an earlier time than AP1, AP3 and AP4. When constructing the portfolio of excluded companies, I use the time of AP2's exclusion as the exclusion date.

by SRI mutual funds do not have information on the excluded companies or the precise reason for exclusion.

For GPFG and the joint exclusions of AP1, AP2, AP3 and AP4, I start from the most recent exclusion list, published on the funds' websites, and reconstruct the lists back in time based on the funds' announcements of past exclusions and re-inclusions. In the few cases, where no precise exclusion date is provided, I use the announcement date of the exclusion instead. For AP7, I rely on the list of excluded companies published in its past annual reports. The sample starts at the end of 2001 when AP7 published its first exclusion list in its annual report. GPFG undertook its first divestment in 2002; while for the case of AP1 to AP4, I document the first exclusion in 2006. I account for all subsequent exclusions and re-inclusions until the end of 2015.

In a next step, I construct portfolios that contain the companies that are being excluded by the funds at any point in time. To do so, I match the exclusion lists published by the funds with the stock price data of the excluded stocks. I obtain monthly stock price data for the excluded companies from Datastream. In line with related studies by Fabozzi et al. (2008), Lobe & Walkhäusl (2011), Salaber (2013) and Trinks & Scholtens (2015), I use Datastream's Total Return Index which reflects a stock's theoretical growth in value assuming all dividends are re-invested. For GPFG and AP1-4, I add a company to the portfolio of excluded companies, based on the stated date of exclusion from the fund's portfolio. I remove a company from the portfolio of excluded companies, once the re-inclusion is announced. Lacking the exact date of AP7's exclusions, I assume that the exclusion list at the end of the year forms the basis for AP7's exclusion portfolio of the following year. I update AP7's portfolio on a year-by-year basis, using the latest annual report. I require a company to appear on AP7's exclusion list in two consecutive years as I must assume that a company which appears on one year's exclusion list but is absent from next year's list could have been re-included by AP7 at any point in time throughout the consecutive year.

For each of the three fund groups, I construct monthly continuously compounded returns for both equal- and value-weighted portfolios. The equal-weighted portfolios assign equal weight to each

company so that the return of the portfolio represents the simple average of the individual stock returns. The equal-weighted return is calculated as the natural logarithm of the average return of all companies excluded at the end of a particular month, which can be expressed in the following way:

$$r_{ew,t} = \ln\left[\frac{1}{k}\sum_{i=1}^{k}\frac{P_{i,t}}{P_{i,t-1}}\right], \tag{4.1}$$

where $r_{ew,t}$ is the equal-weighted, continuously compounded portfolio return over month t, $P_{i,t}$ is the stock price of company i at the end of month t, $P_{i,t-1}$ is that company's stock price at the end of the previous month t-1, and the total number of companies in the portfolio equals k.

In comparison, value-weighted returns account for the weight of a company in the equity market by attaching a higher (lower) weight to companies that represent a larger (smaller) share of the overall equity market. They are computed in a similar fashion to equal-weighted returns but instead of giving each company the same weight in the portfolio, a company's return is weighted by its market capitalisation at the end of the previous month:

$$r_{vw,t} = \ln\left[\sum_{i=1}^{k}\left(\frac{P_{i,t}}{P_{i,t-1}} * \frac{MCap_{i,t-1}}{\sum_{i=1}^{k}MCap_{i,t-1}}\right)\right], \tag{4.2}$$

where $r_{vw,t}$ is the value-weighted, continuously compounded portfolio return over month t and $MCap_{i,t-1}$ is the market capitalisation of company i at the end of month t-1.

Using value-weighted portfolio returns is not only in line with the related literature (e.g. Statman & Glushkov, 2009; Lobe and Walkshäusl, 2011; Salaber, 2013; Adamsson & Hoepner, 2015; Trinks & Scholtens, 2015), it also better reflects the investment realities at the funds I study. For one thing, these investors are mainly passive investors and thus the weights of the companies in their portfolios closely follow the market weights (e.g. Chambers et al., 2012). Additionally, their performance is usually benchmarked against (value-weighted) market indices, as I will discuss in more detail in the following chapter. Although less practically relevant, equal-weighted portfolio returns have been employed as the sole return measure in the early literature (e.g. Fabozzi et al., 2008; Hong & Kacperczyk, 2009) and using them allows me to compare my results to these early findings.

4.4.2 Methodology

To test the performance implications of applying exclusionary screens, I employ two standard asset pricing models. Firstly, I estimate a Capital Asset Pricing Model (CAPM) with the market risk premium corresponding to the excess return of the fund's performance benchmark. Secondly, I test the performance effects in the framework of a Four-Factor model, where I add a size, value and momentum factor to the market factor (Fama & French, 1993; Carhart, 1997). Using these models is not only standard in the literature and in line with related studies (e.g. Statman and Glushkov 2009; Humphrey & Lee, 2011; Humphrey & Tan, 2014; Trinks & Scholtens, 2015; Adamsson & Hoepner, 2015), it also corresponds to the way that these funds are managed. For instance, Chambers et al. (2012) point out that GPFG almost exclusively relies on publicly traded securities, while being constrained to very low deviations from the benchmark portfolio (see also Hoepner et al., 2013, discussing this issue for pension funds in general). Thus, models like the CAPM and the extended factor model, that measure performance relative to a benchmark, best capture this management style.

As the funds invest in a global, well-diversified portfolio, the market benchmark used in the models needs to be a global, diversified index. The MSCI All Country World index reflects these features and consequently it is widely used in academic research (e.g. Trinks & Scholtens, 2015). Additionally, AP7 explicitly employs the index as its benchmark for global equities.[68]

The CAPM model can be expressed in the following way:

$$r_{p,t} - r_{f,t-1} = \propto_p + \beta_p(r_{m,t} - r_{f,t-1}) + u_{p,t}\,, \tag{4.3}$$

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[68] For further information on AP7's evaluation of equity investments see the fund's homepage: http://www.ap7.se/en/About-AP7/About-us/Our-approach/Equity-investments/ . AP1-4 do not state any official benchmark index. Their performance seems to be mainly measured in relation to each other and based on the level of their annual operating costs (Severinson & Stewart, 2012). GPFG uses an individually customised equity index which can be downloaded from GPFG's homepage. However, the MSCI All Country World index and the returns of GPFG's strategic index have a correlation of 99.49% and replacing the MSCI index with GPFG's strategic index does not significantly change my results. The results of the latter analysis are available from the author upon request.

where $r_{p,t}$ is the continuously compounded return on either the equal-weighted or value-weighted exclusion portfolio p over month t, $r_{f,t-1}$ is the continuously compounded 3-month U.S. Treasury bill rate at the end of month t-1 which serves as a proxy for the risk-free rate applicable for month t, [69] $r_{m,t}$ is the continuously compounded return on the MSCI All Country World index which represents the market benchmark portfolio, $\propto_p$ is Jensen's alpha measuring the abnormal return of portfolio p relative to the market, β_p is the market beta of portfolio p capturing the systematic risk exposure of the portfolio and $u_{p,t}$ is the independent disturbance term.

The CAPM model assumes that the only priced risk is a security's exposure to the systematic market risk. However, since its development numerous studies have found that other factors besides the market risk are priced in the cross-section of returns. Among the well-documented factors are the premium for small stocks and value stocks, i.e. stocks with high book-to-market ratios, (e.g. Fama & French, 1993) and the outperformance of past winning stocks over past losing stocks, called the momentum effect (Carhart, 1997). Previous literature has found that companies that act in a socially responsible manner show a different exposure to these size, value and momentum factors than socially irresponsible firms (e.g. Bauer et al., 2005; Galema, Plantinga & Scholtens, 2008; Statman and Glushkov, 2009). Thus, to make sure that any performance difference between the excluded companies and the benchmark is not purely driven by different loadings on these risk factors, I add these three factors to the market model, which can now be expressed in the following way:

$$r_{i,t} - r_{f,t-1} = \propto_i + \beta_i(r_{m,t} - r_{f,t-1}) + \gamma_i SMB_t + \delta_i HML_t + \varphi_i WML_t + u_{i,t}, \qquad (4.4)$$

where SMB_t (small minus big) is the global size factor calculated as the difference in return of the stocks in the lower half of a market capitalization ranked global stock universe and the stocks in the upper half of the same universe, HML_t (high minus low) is the global value factor calculated as the

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[69] I transform the 3-month U.S. Treasury bill rate into a continuously compounded risk-free rate using the following formula: $R_{f,t,1m} = ln(1 + SR_{f,t,3m} * \frac{3}{12})^{\frac{1}{3}}$, where $R_{f,t,1m}$ is the continuously compounded 1-month rate and $SR_{f,t,3m}$ is the stated 3-month Treasury rate.

return difference of the top 30% of global stocks ranked by book-to-market ratio and the bottom 30% of these stocks ranked by book-to-market ratio, and the WML_t (winner minus loser) is the global momentum factor calculated as the return difference between the top 30% and the bottom 30% of stocks ranked by previous 12 months returns.[70]

4.5 Results

4.5.1 Summary Statistics

Panel A of Table 4.1 provides an overview of the cross-sectional characteristics of the exclusion lists of the GPFG, AP1-4 and AP7, based on the composition of their exclusion lists at the end of a year. Several interesting differences across the funds can be observed. Firstly, the three fund groups seem to differ with respect to the extent to which they apply exclusionary screens. While AP1 to AP4 only exclude a total of 20 companies over the sample period with an average of just over 14 exclusions per year, the GPFG's exclusion lists comprise an average of about 49 companies per year representing 74 different firms. Although AP7's annual exclusion list, on average, only consists of less than 43 companies, the fund has excluded a total of 152 different companies over the entire sample period. Comparing the number of exclusions to the total number of companies that these funds invest in, the extent of exclusionary screening appears small. To illustrate, the GPFG currently holds around 9,000 companies while AP7's equity investment universe spans around 2,500 different companies.[71] Thus, the excluded companies only resemble around 0.7% (i.e. 63/9,000) of the total number of holdings for GPFG and 1.8% (i.e. 46/2,500) for AP7, respectively.

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[70] The data for the global size, value and momentum factors are obtained from Kenneth French's online data library: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html .

[71] Details about GPFG's assets and holdings are available via its homepage: http://www.nbim.no/en/the-fund/. AP7 states that its equity investments follow the MSCI All Country World Index which currently covers around 2,500 companies: https://www.ap7.se/en/About-AP7/About-us/Our-approach/Equity-investments/ .

Table 4.1: Summary Statistics of the Exclusion Lists

Panel A provides summary statistics on the cross-sectional characteristics of the exclusion lists of the three fund groups - GPFG, AP1-AP4, and AP7. The first two columns provide the number of different companies that are excluded from and re-included to the funds over the sample period 2001 to 2015. Note that I do not count companies double. The third column provides summary statistics on the number of excluded companies per fund. The fourth column states the average time (in years) that a company has been on a fund's exclusion list. Panel B reports the number of companies that are excluded from the funds at year end. The first row lists the number of exclusions by all funds. The following sets of rows report the number of exclusions (a) by each fund, (b) by the reason for exclusion, (c) by the location of the excluded company (company's headquarter), and (d) by the company's main industry. Note that companies can be excluded due to more than one reason. All figures are based on end-of-year exclusion lists.

Panel A: Cross-Sectional Characteristics	Total Exclusions	Total Re-inclusions	Number of Excluded Companies (per year)			Average Time of Exclusion (in years)		
			Mean	Min	Max	Mean	Min	Max
GPFG	74	8	49.03	1	63	7.93	1	14
AP 1-4	20	-	13.59	1	20	7.05	1	9
AP 7	152	99	42.53	19	54	5.71	1	15

Panel B: Exclusion Lists at Year End	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Exclusions by All Funds	26	40	35	20	40	45	56	97	109	115	115	118	121	125	129
thereof excluded by:															
GPFG	-	1	1	1	13	19	26	30	48	49	53	54	57	59	63
AP 1-4	-	-	-	-	-	2	3	13	13	14	14	14	17	19	20
AP 7	26	39	34	19	27	24	27	54	48	52	48	50	47	47	46
thereof excluded due to:															
environmental issues	8	10	7	9	8	4	12	20	17	17	15	15	19	20	24
human rights issues	14	17	17	7	15	15	17	21	18	26	25	29	25	30	30
labour rights issues	9	18	15	6	8	8	7	8	8	7	8	7	7	6	7
controversial weapons	1	2	3	2	13	20	23	52	52	53	53	53	52	51	50
tobacco	-	-	-	-	-	-	-	-	17	17	19	19	21	21	21
thereof located in the following regions:															
North America	14	13	8	7	22	25	24	43	47	49	46	47	53	56	56
Europe	5	9	7	4	9	12	10	20	23	24	26	26	23	22	22
Asia	5	15	16	7	8	4	16	26	31	35	34	34	33	35	39
Australia	1	2	2	1	1	2	2	6	6	4	4	4	5	5	5
Africa	-	-	-	-	-	-	2	1	-	-	-	-	-	-	-
South America	1	1	2	1	-	2	2	2	3	4	6	8	8	8	8
thereof operating in the following industries:															
Aerospace & Defence	-	2	3	2	12	20	21	40	40	40	39	39	37	37	37
Chemicals related	2	3	2	2	3	1	-	2	2	4	4	4	7	9	9
Construction & Materials	-	-	-	-	-	-	-	1	1	3	5	7	9	10	11
General Retailers	3	3	2	1	1	5	5	6	6	6	6	6	6	6	6
Industrial Metals & Mining	2	4	2	1	1	4	8	13	13	11	11	13	14	15	16
Oil & Gas related	8	7	5	5	10	8	6	7	3	5	4	5	4	4	4
Tobacco	-	-	-	-	-	-	-	-	17	17	17	17	18	18	18
Other Industries	11	21	21	9	13	7	16	28	27	29	29	27	26	26	28

Similarly, the share of excluded companies to the total number of holdings is about 0.8% (i.e. 20/2,500) for AP2, 0.7% (i.e. 20/3,000) for AP3, and 1.2% (i.e. 20/1,700) for AP4.[72] The only exception is AP1. From 2014 onwards AP1 has been shifting its equity strategy from holding a broad universe of global and domestic stocks to a strategy of concentrated ownership and has reduced its equity holdings from about 3,000 to 600 companies.[73] However, the 20 companies excluded in 2015 still only represent a small fraction of the total number of holdings of just over 6%.

These figures are also in line with the number of excluded companies typically found in the mutual fund industry. For instance, Humphrey & Tan (2014) simulate exclusion portfolios of a typical mutual fund and their portfolios comprise an average of 60 exclusions. Additionally, Blanc & Cozic (2012), reviewing the norm-based exclusions of 32 European asset owners and asset managers, find that these investors exclude an average of 26 companies based on violations of international norms and association to controversial weapons.

Secondly, the funds in the sample do not only seem to differ in their tendency to exclude companies but also in their likelihood to re-include companies. Re-inclusions are cases where the fund revokes its exclusion decision and the company re-enters the fund's investment portfolio. These re-inclusions are usually a result of the periodic reviews undertaken by the funds to check whether the reason for exclusion still exists. For GPFG, I document a total of eight re-inclusions, while I find no re-inclusion announcements for AP1-4. AP7 seems to frequently re-include companies with a total of 99 cases of re-inclusions between 2001 and 2015.[74] Generally, AP7's exclusion list shows far higher variation across years, while GPFG's and AP1-4's exclusion lists appear more constant over time. This pattern is confirmed when comparing the average duration of a company on the funds' exclusion lists which

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[72] The most recent equity portfolios of AP2, AP3 and AP4 can be obtained on the following websites: AP2 http://www.ap2.se/en/Portfolio/portfolio/ ; AP3 http://www.ap3.se/sites/english/portfolio/totalportfolio/Pages/Securitiesholdingsnew.aspx ; AP4 http://www.ap4.se/en/financial-reports-and-press/reports/ .

[73] See AP1's 2014 Ownership report on page 10, which is available online: http://www.ap1.se/en/Financial-information-and-press/Topical/ .

[74] I interpret every case when a company appears on last year's exclusion list but is absent on the exclusion list in the consecutive year as a re-inclusion of that company, unless the company disappeared from the investment universe e.g. due to a merger, bankruptcy or privatization.

is eight years for GPFG and seven years for AP1-4, respectively, while it is less than six years for the case of AP7. However, when comparing these figures across funds one has to consider that AP1-4 have started their exclusionary screening considerably later than the other two funds which biases the average duration of companies on AP1-4's exclusion list downwards.

Panel B of Table 4.1 provides a comparison of the exclusion lists over time and thus enables us to identify some interesting patterns in the exclusionary approaches adopted by the funds. For one thing, I document a gradually increasing trend in the number of exclusions, both when aggregating across funds and for each fund individually. Additionally, I find further support that AP7's approach towards exclusionary screening differs from that of the other funds. AP7's exclusion list already comprises a comparably high number of 26 companies right from the beginning of its exclusionary screening in year 2001. In comparison, GPFG and AP1-4 start off with singular exclusions of one and two companies, respectively. AP7 also almost gradually increases the number of excluded companies over time, whereas the exclusion lists of GPFG and AP1-4 experience wave-like rises in the number of excluded companies. Although the reasons for these differences are unknown, they might relate to AP7 having a less formalised exclusion process than the other two funds, such as no separate ethical council, no public justification of the reason for exclusion and no prior engagement with the companies, allowing it greater flexibility in the exclusion decisions.

Panel B of Table 4.1 also offers a break-down of the exclusions by reason for exclusion.[75] Overall, the companies in the sample are either excluded due to environmental, human rights or labour rights issues or because they are associated to the production of controversial weapons or tobacco. Interestingly, the funds do not exclude companies due to other reasons frequently studied in the academic literature such as alcohol, gambling and adult entertainment (see e.g. the early studies by Adler & Kritzman, 2008; Fabozzi et al., 2008; Hong & Kacperczyk, 2009) as well as fossil fuel

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[75] Some companies are excluded due to more than one reason, for example based on violations of environmental norms and due to human rights issues. Thus, the individual columns of Table 4.1 may not always sum up to the overall number of excluded companies.

companies which have recently become a popular target of divestment campaigns. Thus, my study contributes to the literature by shedding light on less well researched areas of exclusionary screening. Looking at the trends over time, I find that human rights issues and labour rights issues have been the most frequently applied screens in the early part of the sample, while controversial weapons and tobacco gained importance in the later years. In fact, screening for controversial weapons has been the most frequently applied screen since 2008. Tobacco companies entered the exclusion list in 2009 when GPFG added tobacco to its exclusion criteria. In contrast, the Swedish funds do not exclude tobacco stocks, arguing that the manufacture, sale and use of tobacco is not illegal in Sweden so that tobacco divestment does not have a legal basis.[76]

Finally, Panel B of Table 4.1 allows insights into the geographical and sectoral distribution of exclusions. Most of the excluded companies appear to be located in North America, followed by Asia and Europe. Only few excluded companies are located in South America, Australia and Africa. However, while this finding does not imply that the corporate misconduct must have been committed e.g. in North America – it can relate to unethical behaviour in other parts of the world committed by companies headquartered in North America – it suggests that unethical business practices and violations of international norms are not restricted to the corporate sector of emerging and developing markets. In fact, they are most frequently committed by companies from regions which rank highly on rankings regarding the quality of governance and the legal system.[77]

Regarding the industries that the excluded companies operate in, the majority of exclusions comprise aerospace and defence companies, reflecting the popularity of the controversial weapons screen. The same holds for tobacco companies which constitute a considerable share of the exclusion portfolio due to GPFG's tobacco divestment. Additionally, companies operating in the sectors of construction

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[76] A position statement of why the funds AP1, AP2, AP3 and AP4 do not divest from tobacco companies is provided on the homepage of their Ethical Council: http://etikradet.se/etikradets-arbete/positioner/tobak/?lang=en .

[77] See for example the latest 'Rule of Law' ranking by the World Justice Project, available online: http://worldjusticeproject.org/rule-law-around-world .

& materials as well as industrial metals & mining appear frequently on the exclusion lists. This finding is in line with the results obtained by Blanc & Cozic (2012) based on a comparison of 32 European investors and, according to the authors, relates to the higher exposure of these sectors to environmental, social and governance risks. Besides, I do not find a strong dominance of other sectors. Interestingly, and in line with Blanc & Cozic (2012), with the exception of Wal-Mart, the lists do not feature companies from the mass retailing industry, such as popular warehouse chains, e-retailers and the food processing industry, which have been involved in several corporate scandals in recent years.

Table 4.2: Descriptive Statistics on Portfolio Returns

Table 4.2 reports descriptive statistics for the equal-weighted and value-weighted continuously compounded returns of the portfolios of excluded companies for the AP7, the AP1-4 and the GPFG funds. Panel A focuses on the portfolios consisting of all companies excluded by a fund during a particular time. Panel B reports average continuously compounded portfolio returns sorted by the reason for exclusion. For the value-weighting, companies are weighted by their market capitalisation of the previous month in order to prevent any look-ahead bias.

Panel A: All Excluded Companies	AP7		AP1-4		GPFG	
	equal weighted	value weighted	equal weighted	value weighted	equal weighted	value weighted
Mean	0.009	0.006	0.007	0.005	0.008	0.006
Std. Dev.	0.055	0.040	0.062	0.040	0.056	0.045
Min	-0.219	-0.116	-0.285	-0.131	-0.274	-0.173
Max	0.195	0.101	0.225	0.099	0.182	0.108
Count	166	166	109	109	162	162

Panel B: Mean Returns by Exclusionary Screen	AP7		AP1-4		GPFG	
	equal weighted	value weighted	equal weighted	value weighted	equal weighted	value weighted
Human Rights Issues	0.004	0.002	0.002	0.000	0.011	0.006
Labour Rights Issues	0.009	0.003	0.005	0.004	-	-
Environmental Issues	0.007	0.005	-0.040	-0.041	0.000	-0.006
Controversial Weapons	0.004	0.002	0.006	0.004	0.008	0.008
Tobacco	-	-	-	-	0.012	0.013

Table 4.2 provides descriptive statistics on the returns of the exclusion portfolios across funds and thus allows a preliminary assessment of the performance implications of the exclusions. Panel A focuses on the entire set of excluded companies, while Panel B compares returns on the excluded companies sorted by the different types of exclusionary screens. Overall, the average returns on the exclusion portfolios are relatively low and mostly positive. The highest average monthly return

amounts to 1.3% and is documented for GPFG's value-weighted tobacco exclusions. Only three portfolios yield negative average returns, namely AP1-4's equal- and value-weighted environmental exclusions with monthly returns of -4% and -4.1%, respectively, and GPFG's value-weighted environmental exclusions with a return of -0.6%. In addition, I find that in the majority of cases the equal-weighted portfolios have slightly higher returns than their value-weighted equivalents. This finding is in line with the widely documented size effect in stock returns and reflects the empirical observation that smaller stocks tend to exhibit higher than average returns (e.g. Fama & French, 1993). As the equal-weighted portfolios give greater weight to the smaller stocks than value-weighted portfolios, the higher returns are likely to reflect the different loadings on the size factor. This finding highlights the importance of using value-weighted portfolio returns as well as the need to explicitly control for the size effect in the later regression analyses.

When comparing the portfolio returns across the types of exclusionary screens (Table 4.2, Panel B), I find greater differences in average portfolio returns than on the aggregate level. This finding provides initial evidence that the performance implications of ethical screening might differ based on the type of the screen, which is in line with the existing literature (e.g. Renneboog et al., 2008b; Capelle-Blancard & Monjon, 2014; Trinks & Scholtens, 2015).

4.5.2   Main Portfolio Performance Results

While the descriptive statistics allow a first assessment of the performance of the different exclusion portfolios, they do not account for different exposures to risk. This section presents the results of measuring the risk-adjusted performance of the exclusion portfolios using the CAPM and the Four-Factor models. I am particularly interested in the alpha estimates from these regressions as a positive (negative) and significant alpha estimate indicates that the exclusion portfolio outperforms (underperforms) relative to the market. Thus, excluding these companies from the funds' investment universe financially hurts (benefits) the fund. In comparison, if I find no significant performance difference I conclude that these funds can meet their ethical standards without sacrificing returns.

Panel A of Table 4.3 presents the estimation results based on the CAPM which accounts for the systematic market risk of a portfolio. Overall, I only find very weak evidence of any significant performance effect of applying exclusionary screens. Out of the six exclusion portfolios, three portfolios exhibit a positive and significant alpha, of which two are only significant at the 10% level. These include AP7's equal-weighted and value-weighted exclusion portfolios and GPFG's equal-weighted exclusions. On an annualised basis, the abnormal returns on AP7's exclusions amount to 5.4% for the equal-weighted portfolio and 3.4% for the value-weighted portfolio. GPFG's equal-weighted exclusion portfolio generates an annual return of 4.4%. However, due to the low statistical significance, especially of the practically more relevant value-weighted portfolios, it is highly doubtful whether investing in the excluded companies would have yielded a measurable abnormal return. Finally, the exclusion portfolios of AP1-4 neither out- nor underperform in the CAPM-framework, independent of the weighting scheme.

The results of the Four-Factor model are presented in Panel B of Table 4.3. Having added the additional global risk factors, I find that only two portfolios significantly outperform the benchmark model. AP7's equal-weighted portfolio generates a positive and significant abnormal return of 4.3% per annum, while AP1-4's equal-weighted exclusion portfolio outperforms the benchmark by 6.2% per annum. However, in both cases the results are only weakly statistically significant and the significance is lost when applying value-weighting to the returns. This finding is in line with results presented in Statman & Glushkov (2009) and Adamsson & Hoepner (2015) who find that the outperformance of shunned stocks is only statistically significant for equal-weighted portfolios, while the effect becomes statistically insignificant and economically smaller for value-weighted portfolios.

Table 4.3: Main Performance Results

Table 4.3 presents the results of the performance analysis of the portfolios comprising all exclusions (independent of the reason for exclusion). Performance is measured according to two market models. Panel A presents the estimates from a CAPM where the MSCI All Country World index serves as the market factor. Panel B reports results from a global Four-Factor model where I add the global size factor (SMB), value factor (HML) and momentum factor (WML) to the market factor (MSCI). The dependent variables are the continuously compounded excess returns on the equal- or value-weighted exclusion portfolios of one of the three funds. Robust t-ratios are reported in parentheses. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Panel A: CAPM Model	AP 7		AP 1 to 4		GPFG	
	equal weighted	value weighted	equal weighted	value weighted	equal weighted	value weighted
	(1)	(2)	(3)	(4)	(5)	(6)
Alpha	0.00450***	0.00286*	0.00373	0.00346	0.00425*	0.00364
	(2.632)	(1.833)	(1.192)	(1.127)	(1.654)	(1.618)
MSCI	1.067***	0.755***	1.044***	0.495***	0.962***	0.737***
	(27.642)	(17.640)	(11.652)	(7.592)	(12.445)	(14.479)
Observations	166	166	109	109	162	162
R-squared	0.835	0.766	0.731	0.393	0.667	0.595
Adj. R-squared	0.834	0.765	0.728	0.387	0.665	0.593

Panel B: Four-Factor Model	AP 7		AP 1 to 4		GPFG	
	equal weighted	value weighted	equal weighted	value weighted	equal weighted	value weighted
	(7)	(8)	(9)	(10)	(11)	(12)
Alpha	0.00361**	0.00204	0.00519*	0.00345	0.00373	0.00292
	(2.040)	(1.299)	(1.707)	(1.194)	(1.277)	(1.168)
MSCI	1.040***	0.791***	0.950***	0.489***	0.956***	0.780***
	(26.396)	(18.656)	(11.700)	(6.367)	(14.269)	(15.631)
SMB	0.393***	-0.216**	0.436**	-0.766***	0.419***	-0.0906
	(3.119)	(-2.160)	(2.396)	(-3.755)	(2.686)	(-0.652)
HML	0.232*	0.172*	0.341	0.270	-0.0106	0.0428
	(1.917)	(1.882)	(1.386)	(1.350)	(-0.056)	(0.301)
WML	-0.0416	0.144**	-0.208*	0.0458	-0.0239	0.142
	(-0.568)	(2.130)	(-1.793)	(0.677)	(-0.180)	(1.439)
Observations	166	166	109	109	162	162
R-squared	0.855	0.788	0.771	0.491	0.682	0.608
Adj. R-squared	0.851	0.783	0.763	0.471	0.674	0.598

To conclude, the majority of the results suggests that the funds are neither significantly hurt nor do they financially benefit from excluding the stocks from their portfolios. This finding supports hypothesis *H1c* of an insignificant performance effect of applying exclusionary screening. While I find no support for *H1b* of a performance enhancing effect of exclusionary screening, I find very limited evidence that the excluded companies outperform the benchmark which is in line with *H1a*. Overall, my results confirm findings of the literature on SRI mutual funds, though using a different methodological approach by focusing on the returns of the excluded companies instead of the returns of the screening fund (e.g. Lobe & Walkshäusl, 2011; Humphrey & Lee, 2011; Humphrey & Tan, 2014). In comparison, my findings are in contrast to the studies by Adler & Kritzman (2008), Fabozzi

et al. (2008), Hong & Kacperczyk (2009), Durand et al. (2013b), Salaber (2013), and Trinks & Scholtens (2015) which, based on an analysis of theoretical portfolios of unethical companies, conclude that these companies generate superior financial performance and that, as a consequence, exclusionary screening has a negative performance impact.

However, my analysis considerably differs from the above studies in several ways. Firstly, while the exclusionary screens studied in the previous literature mainly comprise the traditional sin screens with several additions of other sector-based screens, the exclusions by the GPFG and the AP-funds mainly reflect norm-based screening (with the exception of tobacco for GPFG). As holding companies that violate international norms may expose investors to different risks than holding companies that operate in 'sin' sectors, I should not expect that the results of the previous literature can simply be extended to all forms of exclusionary screens. I will explore this aspect in more detail in the following chapter. Secondly, my analysis differs from the above studies because I rely on actual inclusions of real-world investors and analyse the performance effect at the stock-level. This way I prevent that the results are driven by confounding factors such as manager skill. And finally, I put greater emphasis on value-weighted returns as these are practically more relevant – an aspect that is neglected by several studies including Fabozzi et al. (2008) and Hong & Kacperczyk (2009).

Turning to the coefficient estimates on the four risk factors, it appears that the size of the estimates on the market factor are only slightly affected by the inclusion of the additional risk factors and all maintain their high statistical significance. The estimates on the size factor are intuitive. They are positive and significant for all equal-weighted portfolios – due to the overexposure to small-capitalisation stocks induced by the weighting scheme – and they turn negative when value-weighting the returns. The latter indicates that the excluded companies tend to be larger than the average company in the MSCI universe, after accounting for the companies' market capitalisation. This is in line with anecdotal evidence that the GPFG and the AP-funds rather focus on large and more publicly visible companies when it comes to their divestment decisions (e.g. Clark & Monk, 2010). Apart from AP7, none of the funds' exclusion portfolios has a significant exposure to value

or growth stocks as shown by the insignificant coefficient estimates on the HML factor. The momentum factors show weak significance in explaining the portfolios' return variation, with only two cases of statistically significant factor exposure (i.e. AP7's value-weighted and AP1-4's equal-weighted portfolios). Thus, contrary to prior literature (e.g. Bauer et al., 2005; Galema et al., 2008; Statman and Glushkov, 2009), I do not find that unethical companies load significantly differently on the standard risk factors, with the exception of the size factor.

4.5.3 Performance Results by Screen

Previous research suggests that the performance impact of exclusions is conditional on the reason for exclusion (e.g. Barnett & Salomon, 2006; Capelle-Blancard & Monjon, 2014; Trinks & Scholtens, 2015) and the results in Table 4.2 draw a similar picture. Thus, in this section, I re-run the performance analyses based on portfolios sorted by different exclusionary screens. The results are presented in Table 4.4. To save space, I report only the alpha estimates, adjusted R^2 values and the number of observations for each specification.

Overall, I do not find a systematic pattern of abnormal returns based on a specific type of exclusionary screen. From the 24 CAPM specifications presented in Panel A, only six exclusion portfolios generate significant abnormal returns, of which four positively outperform the benchmark and two significantly underperform. For the statistically more accurate Four-Factor model presented in Panel B (see Adamsson & Hoepner, 2015), two portfolios generate a positive abnormal return. However, these cases of abnormal performance seem to be rather related to the particular fund or weighting scheme and are only of weak statistical significance. This finding indicates that the performance effect is not systematically linked to the unethical behaviour of the portfolio companies but rather a result of the portfolio construction process. The only possible exception is the outperformance of tobacco stocks, which remains significant in three out of four cases. However, I am cautious in drawing too strong conclusions from this finding.

Table 4.4: Performance Results by Type of Screen

Table 4.4 presents the results of the performance analysis of the exclusion portfolios sorted by the reason for exclusion. Panel A reports the estimates from a CAPM with the MSCI All Country World index as the market factor. Panel B shows results from a global Four-Factor model where I add the global size factor (SMB), value factor (HML) and momentum factor (WML) to the market factor (MSCI). The dependent variables are the continuously compounded excess returns on the equal- or value-weighted exclusion portfolios of one of the three funds. The table only reports the alpha estimates representing the abnormal return of a portfolio with respect to the benchmark model, the adjusted R^2 values of the model as well as the number of observations per model. The coefficient estimates on the risk factors are omitted to preserve space, but are available upon request. Robust t-ratios are reported in parentheses. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively. Alpha estimates that are significant at the 1% level are highlighted in bold.

	AP 7					AP 1 to 4					GPFG				
Panel A: CAPM Model	equal weighted		value weighted			equal weighted		value weighted			equal weighted		value weighted		
	Alpha	*Adj. R²*	*Alpha*	*Adj. R²*	*Obs.*	*Alpha*	*Adj. R²*	*Alpha*	*Adj. R²*	*Obs.*	*Alpha*	*Adj. R²*	*Alpha*	*Adj. R²*	*Obs.*
Human Rights Issues	0.00002 (0.009)	0.735	-0.00092 (-0.405)	0.583	166	-0.00145 (-0.287)	0.487	-0.00297 (-0.572)	0.473	85	0.00721 (1.544)	0.453	0.00444 (1.070)	0.165	124
Labour Rights Issues	**0.00598** (**2.265**)	0.596	0.00093 (0.384)	0.392	166	0.00339 (0.788)	0.340	0.00341 (0.853)	0.156	109	-	-	-	-	-
Environmental Issues	0.00286 (0.932)	0.590	0.00174 (0.626)	0.548	166	**-0.0500*** (**-1.976**)	0.249	**-0.0506*** (**-1.992**)	0.250	25	-0.00373 (-0.533)	0.579	-0.00972 (-1.298)	0.537	113
Controversial Weapons	-0.00177 (-0.288)	0.447	-0.00355 (-0.578)	0.466	166	0.00485 (1.336)	0.770	0.00287 (0.761)	0.645	94	0.00436 (1.603)	0.600	**0.00517*** (**1.846**)	0.537	162
Tobacco	-	-	-	-	-	-	-	-	-	-	**0.00718** (**2.309**)	0.591	**0.00833** (**2.169**)	0.461	70

	AP 7					AP 1 to 4					GPFG				
Panel B: Four-Factor Model	equal weighted		value weighted			equal weighted		value weighted			equal weighted		value weighted		
	Alpha	*Adj. R²*	*Alpha*	*Adj. R²*	*Obs.*	*Alpha*	*Adj. R²*	*Alpha*	*Adj. R²*	*Obs.*	*Alpha*	*Adj. R²*	*Alpha*	*Adj. R²*	*Obs.*
Human Rights Issues	-0.00069 (-0.291)	0.756	-0.00215 (-0.939)	0.618	166	-0.00119 (-0.248)	0.498	-0.00236 (-0.477)	0.483	85	0.00787 (1.633)	0.456	0.00342 (0.836)	0.216	124
Labour Rights Issues	**0.00562** (**2.044**)	0.597	0.00160 (0.632)	0.424	166	0.00360 (0.849)	0.368	0.00288 (0.783)	0.292	109	-	-	-	-	-
Environmental Issues	-0.00069 (-0.290)	0.756	-0.00215 (-0.939)	0.618	166	-0.00119 (-0.248)	0.498	-0.00236 (-0.477)	0.483	25	0.00787 (1.633)	0.456	0.00342 (0.836)	0.216	113
Controversial Weapons	0.00202 (0.385)	0.490	-0.00039 (-0.072)	0.491	166	0.00525 (1.535)	0.791	0.00318 (0.839)	0.636	94	0.00327 (1.038)	0.613	0.00427 (1.351)	0.538	162
Tobacco	-	-	-	-	-	-	-	-	-	-	**0.00746*** (**1.948**)	0.608	0.00679 (1.598)	0.553	70

While it might appear as a confirmation of the previous literature (e.g. Hong & Kacperczyk, 2009; Trinks & Scholtens, 2015), which finds tobacco stocks to outperform the market, tobacco stocks do not outperform in the most relevant of these four specifications – value-weighted portfolio returns in a Four-Factor model. Hence, Adamsson and Hoepner's (2015) thesis that the previous literature only found a small stocks effect among sin stocks instead of a true tobacco-related effect remains valid, since equal-weighted portfolios overemphasise small stocks and resemble real-world investors much less than value-weighted portfolios. In any case, since the tobacco screen is the only purely sector-based screen analysed in this study, the pattern of results observed in Table 4.4 is in line with the hypothesis *H2a*. In comparison, the finding of an insignificant performance effect for the norm-based screening does not support the hypothesis *H2b* which predicts companies excluded due to violations of international norms to underperform relative to the market. However, I acknowledge that a thorough analysis of the performance differences between norm-based and sector-based screening would require a more comprehensive set of sector-based screens.

Our findings confirm those of Capelle-Blancard & Monjon (2014) who compare the performance of 116 French SRI mutual funds that perform either sectoral or norm-based screens. While arriving at the same conclusion, my analysis differs from that of Capelle-Blancard & Monjon (2014) in several ways. Firstly, I focus on a completely different investor class that is subject to different tensions between the ethical and financial demands of their beneficiaries. Secondly, Capelle-Blancard & Monjon (2014) can only observe performance at the fund level. Given the high heterogeneity across SRI mutual funds they cannot clearly disentangle the performance impact of the exclusionary screening from that of other fund-related factors such as managerial skill (e.g. Humphrey & Tan, 2014). And finally, since they do not know what companies are excluded by the different funds they cannot validate whether the funds truly perform the exclusionary screens that they state.

4.6   Robustness Tests

4.6.1   Long-Short Portfolios

In this section, I test the robustness of the results. First, I re-visit the question of the effect of different screens on performance. In particular, I look at the differential impact of screens for norm-based and sector-based exclusions. It can be argued that while most of the screens do not significantly impact returns when analysed individually, they might show a significant performance difference when comparing them in relation to one another. To filter out these relative performance effects, I construct long-short portfolios within the categories of norm-based screening and sector-based screening. Long-short portfolios invest a certain amount of money in one set of companies (long portfolio), while at the same time short selling a different set of companies (short portfolio) matching the investment in the long portfolio. A special feature of long-short portfolios is that, ideally, they do not have exposure to the overall market risk as potential value increases (decreases) experienced by the companies in the long portfolio are automatically cancelled out by respective decreases (increases) in value in the short portfolio. Instead, long-short portfolios accentuate differences in performance that relate to the sorting criteria. Due to these special features, long-short portfolios have been frequently employed in the literature on exclusionary screening (e.g. Kempf & Osthoff, 2007; Statman & Glushkov, 2009; Hong & Kacperczyk, 2009) and SRI more generally (e.g. Derwall et al., 2005). To illustrate the underlying logic of long-short portfolios, let us consider a portfolio that invests in the human rights exclusions and that is short in the labour rights exclusions. If it was financially harmful to exclude companies based on human rights issues relative to labour rights issues, I should find a positive abnormal return on this long-short portfolio.

I construct long-short portfolios for all screen combinations within the norm-based screening category and the sector-based screening category in the same way. While the only pure sector-based screen in the sample is the tobacco screen, I also classify the controversial weapons screen as sector-based for the sake of this analysis. However, strictly speaking it should be considered a norm-based screen as funds do not systematically exclude the military and arms industry but only companies that

are associated with the production and sale of weaponry that violates international conventions, such as cluster bombs and anti-personnel mines.

The results are presented in Table A.4.1 in the Appendix to Chapter 4. Overall, I do not find a consistent differential performance effect within the two screening categories. All abnormal returns on specific long-short portfolios lose their statistical significance when changing the market model or the weighting scheme. This further supports the main finding that exclusionary screening does not significantly impact fund performance.

4.6.2   Industry-Specific Risk Factors

In the market models, I employ risk factors that are constructed on a global economy level. Thus, I implicitly average the effects of these risk-factors over industries and regions. Adamsson & Hoepner (2015), however, show that risk characteristics, such as size, value and momentum, vary across sectors and that conditioning on industry-specific risk factors affects the performance implications of exclusionary screening (see also Li, Vassalou & Xing, 2006; Hanhardt & Ansotegui, 2008). While this is unlikely to affect the findings regarding the norm-based screens – exclusions due to violations of norms are not industry-dependent – I cannot rule out that the sector-based screening results are driven by industry-specific risk factors. In fact, the tobacco analysis suggests that the way I control for the size of the companies affects the conclusion regarding the performance implications of this screen. To address this issue, I introduce industry-specific risk factors to the Four-Factor model and re-run the analysis for the controversial weapons and tobacco screens. For the industry market factor, I use the corresponding MSCI All Country World industry indices (i.e. aerospace & defence for controversial weapons and tobacco for the tobacco screen). To construct the industry-based size, value and momentum factors, I use the Style Research database and construct the factors in

accordance with the global size, value and momentum factors, described in Chapter 4.4.2.[78] As the global risk factors are likely highly correlated with the industry-specific risk factors, I only add the differential industry effects of the risk factors to the model, using the orthogonalisation approach suggested by Elton et al., (1993) and applied in Adamsson & Hoepner (2015).[79]

Table A.4.2. in the Appendix to Chapter 4 presents the results when adding industry-style factors to the Four-Factor model. I find that the main results do not significantly change although the *t*-statistics on the value-weighted portfolio shrink significantly and are now much closer to zero than to common significance levels. Still, only the equal-weighted portfolio of excluded tobacco companies generates a positive abnormal return of about 3.9% per annum, confirming the patterns observed in the main analysis. Again, due to the low practical relevance of equal-weighted portfolios for the funds in the sample, I am cautious in drawing too strong performance implications based on this estimate. In contrast, these results are consistent with the finding by Adamsson and Hoepner (2015) that tobacco portfolios do not outperform in a real-world setting on a risk-and-factor-adjusted basis and hence their exclusion is not financially detrimental.

4.6.3 Subsample Analysis

As another robustness test, I check whether the findings are the result of individual company effects due to the low number of excluded companies in the early part of the sample. To rule out this possibility, I restrict the sample to the years 2008 to 2015. From 2008 onwards, each fund excluded

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[78] Style Research only allows me to construct style factors at a broad sector level, i.e. for the tobacco industry I am only able to construct customised factors at the sector level of consumer staples and for the controversial weapons I am only able to generate the style factors for the industrial goods sector. In contrast, the MSCI industry indices are available for the specific industries, i.e. tobacco and aerospace and defence. To rule out that my results are affected by these different industry classifications, I replace the more specific MSCI industries with the MSCI sector returns matching the style sectors. The results remain qualitatively unchanged, except for AP1-AP4's equal-weighted portfolio of controversial weapons, which now generates a significantly positive abnormal return.

[79] Each industry-level style factor is regressed on the corresponding economy-level factor. The clean, orthogonalised factor is represented by the residual plus the intercept of that regression.

at least 13 companies, while most had a considerably larger number of exclusions (Table 4.1), assuring a reasonably diversified portfolio. The results of this subsample analysis are presented in Table A.4.3 in the Appendix to Chapter 4. The majority of the estimates remain qualitatively unchanged. Individual estimates become marginally significant or lose their significance over the sub-period. However, the cases of significant abnormal performance still tend to be fund-specific and/or dependent on the weighting of returns. Thus, the subsample analysis indicates that the main results are unlikely to be driven by the dominance of single excluded companies in the early part of the sample.

4.6.4 Risk Comparison

While the main analysis focuses on the impact of exclusionary screening on funds' (risk-adjusted) returns, as a final robustness test, I address the question of whether the exclusion of unethical companies affects funds' risk characteristics. This analysis is partially motivated by the view that exclusionary screening is less a return-enhancing but rather a risk-management tool. In line with this argument, Boutin-Dufresne & Savaria (2004) show that socially responsible portfolios have lower total risk as these portfolios are not exposed to the risks associated with companies' unethical business practices such as legal actions, strikes, boycotts and reputational damages, which the authors refer to as the unethical component of total risk. Additionally, Lee et al. (2010) and Humphrey & Lee (2011) analyse the risk implications of exclusionary screening for samples of U.S. and Australian SRI mutual funds, respectively. However, the two studies arrive at different conclusions as to whether exclusionary screening increases or decreases portfolio risk, suggesting that the risk implications of exclusionary screening might depend on the way that exclusionary screens are applied in practice.

Inspired by Blake, Rossi, Timmermann, Tonks & Wermers (2013) and Hoepner et al. (2013), I test the risk implications of exclusionary screening by comparing the riskiness of the exclusion portfolios to the riskiness of the funds' benchmark index. Since the concept and definition of financial risk is

not undisputed and many different risk measures have been suggested over the years, I employ a variety of risk measures that capture different aspects of financial risks. First, following Lee et al. (2010) and Humphrey & Lee (2011), I examine the total risk of the portfolios as measured by the standard deviation of returns. The standard deviation of returns is a conventional risk measure in the finance literature to capture any deviations from an expected return, both negative and positive. I calculate the standard deviations of returns in the following way:

$$sd_p = \sqrt{\frac{1}{T-1}\sum_{t=1}^{T}(r_{xp,t} - \bar{r}_{xp})^2} \,, \tag{4.5}$$

where sd_p is the standard deviation of daily excess returns of portfolio p over the recent month, $r_{xp,t}$ is the daily return in excess of the risk-free rate of portfolio p on day t, $\bar{r}_{xp}$ is the average daily excess return of portfolio p over the recent month, and T is equal to the number of trading days of the recent months.

Following Hoepner et al. (2013), I also employ several downside risk measures. These measures only account for the risk of negative deviations of returns from investors' expectation. In this sense, these measures better capture the risks associated with unethical business practices, such as unexpected and large negative shocks to returns, e.g. due to costs of lawsuits, strikes and boycotts. They also more strongly reflect investors' real attitudes towards risk as investors tend to fear losses but welcome larger than expected gains.

One measure that accounts for this asymmetry is the semi standard deviation, which can be regarded as a special case of the conventional standard deviation discussed above. The semi standard deviation only accounts for the negative deviations from expected returns and is computed as follows:

$$ssd_p = \sqrt{\frac{1}{T-1}\sum_{t=1}^{T} max\big[(\bar{r}_{xp} - r_{xp,t}), 0\big]^2} \,, \tag{4.6}$$

where ssd_p is the semi standard deviation of daily excess returns of portfolio p over the recent month. The maximum function assures that only returns below $\bar{r}_{xp}$ are considered.

In addition, I rely on several versions of the lower partial moment (LPM) which is a commonly applied downside risk measure in more severe market conditions (Hoepner et al., 2013). The LPM[3] is calculated as:

$$LPM_p^3(\varphi) = \frac{1}{T-1}\sum_{t=1}^{T} max\left[(\varphi - r_{xp,t}), 0\right]^3 , \qquad (4.7)$$

where LPM_p is the lower partial moment of daily excess returns of portfolio p over the recent month and φ is the investor's minimally acceptable return. The LPM_p^3 assumes highly risk-averse investors as it punishes large negative returns more strongly than small negative returns (i.e. it cubes instead of squares downside deviations).

Lower Partial Moments are generally highly customisable and thus allow me to capture a variety of investor expectations and levels of risk aversion, whereby the magnitude of risk aversion increases with higher exponents (Eling & Schuhmacher, 2007; Kaplan & Knowles, 2004). Following Kaplan & Knowles (2004) and Hoepner et al. (2013), I choose an exponent of three (i.e. LPM[3]), though the results are qualitatively unchanged when using a less conservative exponent of two instead. I use two alternatives for the minimally acceptable return φ to capture different investor expectations. Firstly, I employ the average monthly excess return of the portfolio p (i.e. $\varphi = \bar{r}_{xp}$). Secondly, I require returns to be non-negative (i.e. $\varphi = 0$). The latter case indirectly accounts for the possibility that the asset owners in my study might not be return maximising but invest against their share of a notional long-term liability. While I do not have access to the liability data of the AP-funds or the GPFG and hence cannot study this ambition in more detail, it seems reasonable to assume that asset owners investing against their share of notional long-term liabilities do not want to see the assets diminished in absolute terms.

Finally, I am interested in the highest possible loss that the portfolios might incur over a given investment period. This is captured by the minimum daily excess return of a portfolio over the recent month. This minimum return provides a good indication of whether excluding unethical companies protects the funds from incurring very large losses. The minimum return is calculated as:

$$min.return_{xp} = min_{xp,T} \, , \qquad\qquad\qquad (4.8)$$

where $min_{xp,T}$ represents the minimum daily excess return on portfolio p over the recent month with

T number of days.

Table 4.5 presents the estimates of the various risk measures for the MSCI index and the exclusion

portfolios. I only report results on the value-weighted exclusion portfolios as they are more

practically relevant for the funds' performance measurement and more suitable when compared to

the (value-weighted) MSCI index.

Table 4.5: Risk Measures for the MSCI Index and the Exclusion Portfolios

Panel A reports mean values and standard deviations (in brackets) of the monthly risk measures for the MSCI index and the value-weighted exclusion portfolios of the three fund groups. Panel B reports mean differences in the monthly risk measures for the MSCI index and these exclusion portfolios. The numbers in brackets represent *t*-values for a paired *t*-test of the mean values of the MSCI vis-à-vis the funds' exclusion portfolios. The calculation of the risk measures is described in Section 6.4. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Panel A	**MSCI**	**GFPG**	**AP7**	**AP1-4**
Standard Deviation	0.0088	0.0105	0.0093	0.0096
	(0.0055)	(0.0056)	(0.0055)	(0.0053)
Semi Standard Deviation	0.0062	0.0073	0.0065	0.0067
	(0.0039)	(0.0042)	(0.0040)	(0.0039)
LPM^3 [$\bar{r}_p$ as min. acc. return]	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0001)	(0.0000)	(0.0000)
LPM^3 [0 as min. acc. return]	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0001)	(0.0000)	(0.0000)
Minimum Return	-0.0175	-0.0213	-0.0183	-0.0195
	(0.0124)	(0.0135)	(0.0108)	(0.0124)

Panel B	**Difference between MSCI and…**		
	GPFG	**AP7**	**AP1-4**
Standard Deviation	-0.0017***	-0.0005***	-0.0002
	(-5.9022)	(-3.7693)	(-0.6570)
Semi Standard Deviation	-0.0011***	-0.0002	0.00003
	(-4.4803)	(-1.5690)	(0.1254)
LPM^3 [$\bar{r}_p$ as min. acc. return]	-0.000001*	0.0000	0.0000
	(-1.6752)	(-0.6526)	(0.0444)
LPM^3 [0 as min. acc. return]	0.000000	0.00000	0.000001
	(-1.1054)	(0.2371)	(1.6091)
Minimum Return	0.0038***	0.0008	-0.0001
	(3.3318)	(1.0965)	(-0.1262)

Panel A reports the monthly averages of the risk characteristics (together with their standard deviations in brackets) while Panel B shows the results of a paired t-test on the mean values for the MSCI index vis-à-vis the exclusion portfolios. The paired t-test is a standard statistical test that allows a comparison of mean values derived from different samples. It indicates whether the difference between the mean values is statistically significant or could also simply be a result of large measurement error. Thus it is particularly applicable in this case where the sample lengths of the exclusion portfolios differ across funds. As expected, the MSCI index exhibits the lowest risk based on all risk measures since it represents a more diversified portfolio compared to the exclusion portfolios, with a total of 2,491 constituents as of the end of 2015. However, the daily returns of AP7's exclusion portfolio show comparable risk features, with only a slightly higher standard deviation and a slightly lower minimum return. In comparison, GPFG's exclusion portfolio appears the riskiest of all as it has the greatest average standard deviation, the lowest minimum daily returns, and features the highest values for the LPM^3 measures.

Next, I assess whether the riskiness of the funds' exclusion portfolios is statistically different from that of the MSCI benchmark index and hence, whether excluding these companies likely increases or decreases the funds' risk. To do so, I turn to the results of the paired t-test on the means of the risk measures, presented in Panel B of Table 4.5. Only GPFG's exclusion portfolio seems to systematically differ from the MSCI. In particular, as indicated by the majority of risk measures, GPFG's exclusion portfolio tends to be riskier than the MSCI index. This implies that excluding these companies might protect GPFG from incurring losses. In comparison, the exclusions of the AP-funds are unlikely to result in significant risk implications for their overall portfolios.

4.7 Summary

Divesting from companies that are associated with unethical business practices, such as the violation of human and labour rights or environmental pollution, represents one way to protect investors against complicity in these activities. In particular, two of the world's largest public asset owners,

Norway's GPFG and Sweden's AP-funds, have adopted such exclusionary screening to ensure that their investments live up to the ethical standards expected from them by the general public. However, the funds also need to meet the financial objectives set out by the national legislation which requires them to maximise financial returns. As previous research suggests that exclusionary screening harms financial performance, the conflicting expectations of meeting ethical standards while maximising financial wealth present the funds with a dilemma: Does the exclusion of unethical companies inevitably mean sacrificing financial returns or can investors achieve both, their financial and ethical objectives? This is the question that I address in this study. In particular, I empirically analyse the performance effect of excluding companies from the investment universe of the GPFG and the AP-funds. I find that these exclusions neither financially harm the funds nor do they increase fund performance. This finding holds, both across funds and across different screening types. The only exception is the equal-weighted exclusionary screen of tobacco, which tends to outperform the fund's benchmark. While this finding provides initial evidence that the performance effect differs between norm-based and sector-based exclusionary screens I am very cautious when interpreting this finding, since the respective value-weighted portfolio does not outperform and hence this finding is more likely to result from small stocks effects than any tobacco characteristics (see also Adamsson & Hoepner, 2015). Overall, I conclude that the exclusionary screening practiced by the GPFG and the AP-funds enables the funds to incorporate their beneficiaries' interest without compromising returns and might provide a promising route for other (non-SRI) investors to avoid criticism regarding their legitimacy and social usefulness that has emerged after the financial crisis.

However, my findings are subject to several limitations. Firstly, I am cautious in extending my findings of an insignificant performance effect of exclusionary screening on any form of exclusionary screens adopted by investors. Instead, I acknowledge that the relation between performance and exclusionary screens depends on the type and extent of the screens (Barnett & Salomon, 2006; Renneboog et al., 2008b; Capelle-Blancard & Monjon, 2014; Trinks & Scholtens, 2015). For instance, investors from other societal backgrounds might be bound by different ethical obligations, whose impact on performance has not been analysed in this study (e.g. Salaber, 2013; Fauver &

McDonald, 2014; Liu et al., 2014; Adamsson & Hoepner; 2015). In addition, I find great differences across the exclusion lists of comparable investors even in the Scandinavian SRI market which is known for its uniform approach towards exclusionary screening and a relatively homogeneous set of ethical standards (Bengtsson, 2008a; Jensen, 2016a).[80] Thus, while exclusionary screening offers a promising way to align ethical and financial objectives, the performance implications might strongly depend on the fund's particular screening approach as well as the ethical norms it represents.

Secondly, my study, in line with the majority of the academic literature, has only evaluated the financial implications of exclusionary screening, hence implicitly assuming that the applied screens satisfy the ethical demands of investors. However, given that these funds represent the interests of the entire population, including future generations, this assumption cannot be easily satisfied. To overcome this problem the funds base their ethical standards on a set of minimally agreed principles, which are defined by the national laws as well as the state's commitment to international conventions. However, since the funds only react in hindsight (and often with a significant time lag) to accusations of breaches of these standards it represents an interesting route for future research to investigate whether exclusionary screening actually reduces funds' exposure to unethical business practices and thus achieves the objective of avoiding complicity in severe violations of ethical standards.

Thirdly, my findings do not provide any normative guidance as to what objectives should be given priority to, the ethical objectives or the financial objectives. This question is particularly relevant for the funds in the sample and distinguishes my study from the numerous studies on SRI mutual funds, as contrary to mutual fund investors, the beneficiaries of the GPFG and the AP-funds cannot exit the

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[80] In unreported results, I compare the most recent exclusion lists of 12 Scandinavian asset owners and asset managers to the exclusion lists of the GPFG and the AP-funds and find great heterogeneity across the lists. For instance, of the 191 different excluded companies, only 1.6% were excluded by all funds and 36% only appeared on the list of a single fund. The exclusion list of GPFG covers 34% of all excluded companies, while AP7 covers 24% and AP1-4 only 11%, respectively. These findings are in line with those of Blanc & Cozic (2012) who compare the exclusion lists of several European investors. Limits in data availability and quality do not allow us to perform a more formal analysis of the performance implications of the exclusions adopted by the Scandinavian investors. Results of this preliminary comparison are available from the author upon request.

funds if they disagree with the funds' investment approach. While the legal guidelines of the Swedish AP-funds can be understood as prioritising financial objectives over ethical ones (e.g. Du Rietz, 2016), Sandberg et al. (2014) criticise these regulations as too abstract and vague. In comparison, the guidelines given to the GPFG do not provide any instructions on how to resolve conflicts between ethical and financial objectives (Richardson, 2011). Thus, a clarification of the funds' objectives and a clear prioritisation regarding ethical and financial demands by the legislator would not only relieve the funds from this conflict. This clarification might have the additional benefit of improving fund governance by reducing the scope to which other interests, especially political interests, might influence the funds' exclusion decisions. The latter has been a constant point of criticism that these funds have to face and that undermines their legitimacy with the general public (e.g. Clark & Monk, 2010; Richardson, 2011).[81]

Moreover, while exclusionary screening can represent a powerful tool for legislators and policy makers to safeguard themselves against accusations of complicity in unethical behaviour, exclusionary screening, by itself, does not represent an appropriate tool for addressing societal and social change. For instance, considering the issue of climate change which both, the GPFG and the AP-funds, acknowledge as one of their major challenges in the future, Richardson (2011) points out that climate change is caused by the aggregate of small-scale environmental damages while exclusions only target "severe environmental damage". In other words, the threshold that leads to action is too high to meaningfully tackle climate change. Thus, in order to target social challenges such as climate change, diversity and equality, exclusionary screening has to be combined with other approaches such as shareholder activism and dialogue that encourage companies to change their business practices.

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[81] A striking illustration of how political interests affect exclusion decisions is the AP-funds' different treatment of SAS, Scandinavian Airlines System, in which the Swedish state is a large shareholder. While AP7 excluded the company as early as 2004 after SAS has been accused of breaching international competition law, SAS is still part of the other AP-funds' portfolios (Bengtsson, 2008a).

Finally, an interesting question, though not the focus of my study, relates to the implications of the exclusionary screening for the excluded companies. Proponents of the exclusionary screening approach often claim that coordinated exclusions by investors might depress the stock price of the company and put pressure on the company to change its business practices. However, prior studies that analyse such coordinated divestments of large investor groups, e.g. the divestment of U.S. public asset owners from companies in South Africa during the Apartheid regime (Teoh, Welch & Wazzan, 1999; Grossman & Sharpe, 1986; Ennis & Parkhill, 1986; Wagner, Emking & Dixon, 1984) or the Sudan Divestment Act in 2007 (GAO, 2010), found little impact of these actions on the divested companies. This is in line with theoretical findings by Heinkel et al. (2001) who conclude that divestments only have the potential to change corporate behaviour when they are adopted by a critical number of investors representing a significant share of a company's shareholdings. Nevertheless, there is some anecdotal evidence that exclusions can occasionally initiate the desired change. For instance, after GPFG had excluded Rio Tinto, the company sought re-inclusion and GPFG entered a dialogue with Rio Tinto about how it could redeem itself (Richardson, 2011). A more uniform approach of norm-based divestments among global asset owners might increase their influence on corporations and the reputational costs to the shunned company, and lead to more companies like Rio Tinto entering in a dialogue with the asset owners. First attempts of creating a universal list of 'unethical' companies to guide exclusion decisions have been discussed by Belgian policy makers and provide a promising route for future regulations and research on the impact of exclusions on the companies themselves (Blanc & Cozic, 2012).

APPENDIX TO CHAPTER 4

Table A.4.1: Long-Short Portfolios

Table A.4.1 presents the results of the performance analysis where the dependent variable is the excess returns on a long-short portfolio that is long in one of the exclusion portfolios and short in another exclusion portfolio. For instance, the first row provides performance results for a portfolio that is long the companies excluded due to human rights issues (HR) and short companies excluded due to labour rights issues (LR). The returns of the long-short portfolios are calculated as the equal-weighted and value-weighted returns. HR stands for Human Rights, LR for Labour Rights, Env. for Environment, Weap. for Controversial Weapons, and Tob. for Tobacco, respectively. Panel A presents the estimates from a CAPM, while Panel B reports results from a global Four-Factor model. The table only reports the alpha estimates, the adjusted R^2 values and the number of observations per model. The coefficient estimates on the risk factors are omitted to preserve space, but are available upon request. Robust t-ratios are reported in parentheses. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively. Alpha estimates significant at the 1% level are highlighted in bold.

	AP 7					AP 1 to 4					GPFG				
Panel A: CAPM Model	equal weighted		value weighted			equal weighted		value weighted			equal weighted		value weighted		
	Alpha	*Adj. R^2*	*Alpha*	*Adj. R^2*	*Obs.*	*Alpha*	*Adj. R^2*	*Alpha*	*Adj. R^2*	*Obs.*	*Alpha*	*Adj. R^2*	*Alpha*	*Adj. R^2*	*Obs.*
Norm-based Screens															
HR Minus LR	**-0.00596*** **(-1.703)**	0.0454	-0.00185 (-0.625)	0.0477	166	-0.00372 (-0.486)	0.00173	-0.00465 (-0.622)	0.0992	85	-	-	-	-	-
Env. Minus HR	0.00284 (0.928)	0.00957	0.00266 (1.162)	0.0283	166	**-0.0570**** **(-2.209)**	0.123	**-0.0498*** **(-1.915)**	0.127	25	-0.0106 (-1.237)	0.159	-0.0127 (-1.386)	0.319	113
Env. Minus LR	-0.00312 (-0.759)	0.00464	0.000811 (0.210)	0.0723	166	**-0.0479*** **(-1.864)**	0.113	-0.0462 (-1.656)	0.115	25	-	-	-	-	-
Sector-based Screens															
Weap. Minus Tob.	-	-	-	-	-	-	-	-	-	-	-0.00222 (-0.470)	0.0599	-0.000187 (-0.035)	0.0141	70
Panel B: Four-Factor Model	equal weighted		value weighted			equal weighted		value weighted			equal weighted		value weighted		
	Alpha	*Adj. R^2*	*Alpha*	*Adj. R^2*	*Obs.*	*Alpha*	*Adj. R^2*	*Alpha*	*Adj. R^2*	*Obs.*	*Alpha*	*Adj. R^2*	*Alpha*	*Adj. R^2*	*Obs.*
Norm-based Screens															
HR Minus LR	**-0.00631*** **(-1.743)**	0.0926	-0.00375 (-1.214)	0.091	166	-0.00400 (-0.580)	0.0762	-0.00408 (-0.614)	0.200	85	-	-	-	-	-
Env. Minus HR	0.00224 (0.713)	0.0214	0.00235 (1.000)	0.0215	166	-0.0192 (-1.021)	0.614	-0.0140 (-0.670)	0.549	25	-0.0109 (-1.457)	0.304	-0.0119 (-1.448)	0.416	113
Env. Minus LR	-0.00408 (-0.923)	0.00294	-0.00140 (-0.341)	0.0914	166	-0.0136 (-0.657)	0.574	-0.00745 (-0.356)	0.643	25	-	-	-	-	-
Sector-based Screens															
Weap. Minus Tob.	-	-	-	-	-	-	-	-	-	-	-0.00260 (-0.448)	0.0833	-0.000422 (-0.067)	0.0400	70

Table A.4.2: Factor Model with Industry-based Factor Adjustment for Sector-based Exclusion Portfolios

Table A.4.2 reports performance results for the exclusion portfolios of controversial weapons and tobacco, where the performance is measured according to an extended Four-Factor model that in addition to the global market, size, value and risk factors includes orthogonalised industry-style factors, i.e. factors reflecting the excess industry market return, the industry-specific size factor, the industry-specific value factor and the industry-specific momentum factor relating to the aerospace and defence / industrials industry and the tobacco / consumer staples industry. Results are presented by fund and weighting scheme. Robust *t*-ratios are reported in parentheses. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. Alpha estimates significant at the 1% level are highlighted in bold.

	Controversial Weapons						Tobacco	
	AP 7		AP 1-4		GPFG		GPFG	
	equal-weight	value-weight	equal-weight	value-weight	equal-weight	value-weight	equal-weight	value-weight
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Alpha	-0.000691	-0.00321	0.00276	-0.00163	0.00248	0.00280	**0.00322***	0.000287
	(-0.119)	(-0.547)	(0.871)	(-0.639)	(0.816)	(0.989)	**(1.677)**	(0.403)
MSCI$_{\text{All Industries}}$	1.619***	1.771***	1.366***	1.316***	1.108***	1.132***	1.616***	1.957***
	(6.528)	(7.288)	(15.246)	(18.457)	(15.389)	(16.946)	(15.843)	(42.177)
SMB$_{\text{All Industries}}$	-0.0428	-0.178	0.900*	-0.205	0.746*	0.271	0.870***	0.365***
	(-0.058)	(-0.239)	(1.761)	(-0.598)	(1.789)	(0.749)	(3.042)	(2.786)
HML$_{\text{All Industries}}$	0.359	0.137	-0.380	-0.404	-1.031**	-0.742*	-0.852**	-0.200
	(0.478)	(0.177)	(-0.900)	(-1.018)	(-2.376)	(-1.893)	(-2.024)	(-1.342)
WML$_{\text{All Industries}}$	-0.605**	-0.444*	-0.183	-0.0588	0.00899	0.0863	-0.198	-0.0281
	(-2.327)	(-1.682)	(-1.158)	(-0.598)	(0.082)	(1.023)	(-1.547)	(-0.600)
Ortho. MSCI$_{\text{Aerospace}}$	-0.946**	-1.050**	-0.775***	-1.316***	-0.692***	-0.971***		
	(-2.226)	(-2.459)	(-3.894)	(-10.046)	(-4.644)	(-6.651)		
Ortho. SMB$_{\text{Industrials}}$	0.579	0.688	-0.196	0.420	-0.324	-0.236		
	(1.078)	(1.240)	(-0.384)	(1.221)	(-0.740)	(-0.650)		
Ortho. HML$_{\text{Industrials}}$	-1.445	-1.298	0.440	0.312	1.395***	0.955**		
	(-1.557)	(-1.363)	(0.849)	(0.778)	(2.937)	(2.231)		
Ortho. WML$_{\text{Industrials}}$	0.177	0.166	0.0512	0.139	-0.00696	0.0263		
	(0.588)	(0.550)	(0.318)	(1.037)	(-0.048)	(0.209)		
Ortho. MSCI$_{\text{Tobacco}}$							-1.305***	-1.902***
							(-8.106)	(-28.559)
Ortho. SMB$_{\text{Consumer Staples}}$							-0.433	-0.189
							(-1.392)	(-1.512)
Ortho. HML$_{\text{Consumer Staples}}$							1.020**	0.316
							(2.277)	(1.557)
Ortho. WML$_{\text{Consumer Staples}}$							-0.0547	-0.0656
							(-0.383)	(-0.948)
Observations	166	166	94	94	162	162	70	70
R-squared	0.547	0.556	0.850	0.863	0.712	0.712	0.893	0.980
Adj. R-squared	0.524	0.533	0.836	0.851	0.697	0.697	0.880	0.978

Table A.4.3: Subsample Analysis – 2008-2015

Table A.4.3 presents the results of the performance analysis for the subsample spanning January 2008 to September 2015. Panel A presents the estimates from a CAPM, while Panel B reports results from a global Four-Factor model. The dependent variables are the continuously compounded excess returns on the funds' exclusion portfolios for all exclusions as well as for exclusions sorted by the reason for exclusion. Results are presented by fund and weighting scheme. The table only reports alpha estimates, adjusted R^2 values and the number of observations per model. The coefficient estimates on the risk factors are omitted to preserve space, but are available upon request. Robust t-ratios are reported in parentheses. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively. Alpha estimates significant at the 1% level are highlighted in bold.

Panel A: CAPM Model	AP 7 equal weighted Alpha	Adj. R^2	AP 7 value weighted Alpha	Adj. R^2	Obs.	AP 1 to 4 equal weighted Alpha	Adj. R^2	AP 1 to 4 value weighted Alpha	Adj. R^2	Obs.	GPFG equal weighted Alpha	Adj. R^2	GPFG value weighted Alpha	Adj. R^2	Obs.
All Exclusions	0.00269 (1.319)	0.901	**0.00341*** **(1.874)**	0.849	93	**0.00588*** **(1.815)**	0.774	0.00468 (1.458)	0.448	93	0.00326 (1.405)	0.881	0.00244 (1.341)	0.875	93
Human Rights Issues	-0.00106 (-0.331)	0.805	-0.00229 (-0.700)	0.610	93	-0.00145 (-0.287)	0.487	-0.00297 (-0.572)	0.473	85	0.00763 (1.490)	0.519	0.00367 (0.880)	0.212	93
Labour Rights Issues	**0.00681**** **(2.115)**	0.695	0.00464 (1.497)	0.484	93	0.00490 (1.032)	0.357	0.00441 (1.005)	0.175	93	-	-	-	-	-
Environmental Issues	-0.00364 (-0.847)	0.648	-0.00307 (-0.806)	0.587	93	**-0.0500*** **(-1.976)**	0.249	**-0.0506*** **(-1.992)**	0.250	25	-0.00784 (-1.078)	0.618	**-0.0153*** **(-1.891)**	0.565	93
Controversial Weapons	0.00256 (0.901)	0.838	-0.000404 (-0.124)	0.818	93	0.00479 (1.305)	0.770	0.00283 (0.741)	0.645	93	0.00430 (1.438)	0.793	**0.00544*** **(1.674)**	0.724	93
Tobacco	-	-	-	-	-	-	-	-	-	-	**0.00718**** **(2.309)**	0.591	**0.00833**** **(2.169)**	0.461	70

Panel B: Four-Factor Model	AP 7 equal weighted Alpha	Adj. R^2	AP 7 value weighted Alpha	Adj. R^2	Obs.	AP 1 to 4 equal weighted Alpha	Adj. R^2	AP 1 to 4 value weighted Alpha	Adj. R^2	Obs.	GPFG equal weighted Alpha	Adj. R^2	GPFG value weighted Alpha	Adj. R^2	Obs.
All Exclusions	0.00291 (1.500)	0.912	**0.00341*** **(1.927)**	0.867	93	**0.00658**** **(2.172)**	0.808	**0.00528*** **(1.790)**	0.557	93	**0.00335*** **(1.701)**	0.907	0.00239 (1.406)	0.896	93
Human Rights Issues	-0.000461 (-0.151)	0.825	-0.00211 (-0.664)	0.636	93	-0.00119 (-0.248)	0.498	-0.00236 (-0.477)	0.483	85	**0.00875*** **(1.729)**	0.546	0.00420 (1.132)	0.374	93
Labour Rights Issues	**0.00646*** **(1.964)**	0.699	**0.00467*** **(1.680)**	0.592	93	0.00567 (1.238)	0.403	0.00490 (1.260)	0.353	93	-	-	-	-	-
Environmental Issues	-0.00375 (-0.866)	0.650	-0.00333 (-0.883)	0.590	93	-0.0135 (-0.794)	0.695	-0.0137 (-0.806)	0.697	25	-0.00904 (-1.376)	0.682	**-0.0167**** **(-2.177)**	0.594	93
Controversial Weapons	0.00291 (1.051)	0.847	-0.000534 (-0.159)	0.813	93	0.00510 (1.491)	0.792	0.00314 (0.822)	0.636	93	0.00473 (1.648)	0.806	**0.00588*** **(1.820)**	0.724	93
Tobacco	-	-	-	-	-	-	-	-	-	-	**0.00746*** **(1.948)**	0.608	0.00679 (1.598)	0.553	70

5 THE MATERIALITY OF ENVIRONMENTAL AND SOCIAL SHAREHOLDER ACTIVISM: Who cares?!

5.1 Introduction

"I remember going to a meeting of one of our large stocks-it was AVON... Three of the holders were state and local pension funds, all they talked about was, how many minorities are you going to have? How many women are going to be on the board? ... Purely political questions. A few of us finally said, `Let's get some questions here that are relevant'."

Charles Brunie, Chairman of Oppenheimer Capital, cited in Fortune (1993: 63)

The question of the relevance or materiality of social and environmental factors for the success of a business has been a topic of intense debate over the last three decades. Many investors, including Charles Brunie, the then-chairman of the large mutual fund Oppenheimer Capital, consider these issues as 'irrelevant' to business success. In fact, they accuse investors that actively address environmental and social topics as driven by special interests rather than financial motives. However, many things have changed since 1993, when the above statement was made. Corporate scandals such as the Enron and WorldCom cases,[82] environmental disasters such as the BP oil spill,[83] as well as the repercussions of the 2008 financial crisis have put increased focus on the environmental, social and ethical aspects of business. This increased focus is particularly apparent in the rising number of shareholder proposals that request companies to change their policies on environmental or social matters. To illustrate, from 1997 to 2011 shareholder proposals that address environmental, social or ethical issues grew by more than 73%. In addition, a recent survey by PWC (2014) finds that more than 60% of the largest U.S. investors consider a company's corporate social responsibility and good

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[82] For details on the Enron scandal, see e.g. Healy & Palepu (2003). For details on the WorldCom scandal, see e.g. https://www.theguardian.com/business/2002/aug/09/corporatefraud.worldcom2 (accessed on 20th September 2016).

[83] For a description and assessment of the impact, perception and policy implications of the oil spill see e.g. Norse & Amos (2010).

corporate citizenship when voting their proxies while around 55% of investors state that climate change and resource scarcity are important determinants of their proxy voting decisions.[84]

Despite the strong interest in shareholder activism on environmental and social issues, little is known about the financial impact and the underlying motives of such activity – much in contrast to the wealth of studies on corporate governance-related shareholder activism (see e.g. the reviews by Karpoff, 2001; Gillan & Starks, 2007; and Denes, Karpoff & McWilliams, 2016; as well as the assessment by Pontiff & Spicer, 2006).

There are several reasons to believe that the relation between improvements on social and environmental policies and their effect on firm performance is less than straight-forward. Firstly, the importance and relevance of environmental and social issues can vary from firm to firm and is often highly dependent on the industry that the company operates in (e.g. Lydenberg et al., 2010). For instance, new regulations regarding greenhouse gas emissions and other climate risk initiatives are likely to be more value-relevant for the manufacturing sector, while issues of customer privacy and data security are of particular importance to IT and service companies. As another example, several retailers have been facing labour rights issues, whereas other industries, such as mining, often operate in politically sensitive regions so that matters of political corruption and business ethics are high on their agenda. Secondly, the motives for engaging in shareholder activism can vary, ranging from a quest for shareholder value maximisation to ulterior motives such as advancing a fund manager's personal political agenda, gaining publicity for particular issues, or improving sponsors' bargaining power in negotiations with corporate management. As a consequence, more research is needed on the financial materiality of environmental and social shareholder activism and its underlying drivers to evaluate whether sponsors of environmental and social proposals are effective monitors whose

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[84] The survey conducted by PWC comprises 40 institutional investors representing more than 50% of total U.S. institutional assets.

activism benefits shareholders and the overall society or whether they use the shareholder proposal process to extract personal benefits at the expense of the average shareholder.

To shed light on the relative desirability and the likely financial impact of environmental and social proposals, I exploit recent innovations in sustainability reporting by the SASB. For each industry of the U.S. corporate system, the SASB has identified a set of environmental and social issues that it considers to be of financial impact for companies operating in that particular industry. In my study, I map these industry-specific materiality standards to the environmental and social shareholder proposals received by S&P500 companies to identify financially material and immaterial proposals. Based on a sample of 3,036 environmental and social shareholder proposals submitted to 623 unique companies over a period from 1997 to 2011, I find that 1,712 of these proposals, representing 56.39% of the overall sample, target an environmental or social topic that is classified as financially immaterial according to the SASB standards. While these findings are not supportive of the overall effectiveness of environmental and social shareholder activism, my results suggest that certain sponsors, namely 'dedicated' investors such as public pension funds, university and foundation endowments, religious institutions and certain asset managers, are slightly more likely to submit proposals that are financially material than immaterial. However, none of the sponsor groups appears to consistently target financially material issues. In line with the lack of consideration of financial materiality across sponsors, material proposals do not receive greater support by shareholders as a whole as measured by the percentage of votes in favour of a proposal. However, shareholders tend to vote less favourably for a proposal if the company already has many immaterial environmental and social policies in place. Companies are more likely to be targeted, both by material and immaterial proposals, if they have a record of past violations and concerns on material environmental and social topics. Interestingly, additional investments in environmental and social policies do not seem to mitigate this effect, providing evidence of a limited ability of 'green washing' to avoid targeting. The company's ownership composition is another factor determining target likelihood. Especially companies with higher ownership by dedicated investors, such as public pension funds, are significantly more likely to be targeted by environmental and social proposals in general, and

material ones in particular. Finally, I test how the market reacts to learning that a company is being targeted by an environmental or social issue. Based on a variety of different specifications I do not find a significant difference regarding the reactions to material and immaterial proposals.

My study makes several contributions to the literature. To the best of my knowledge this is the first study that systematically analyses potential determinants of environmental and social shareholder activism and I am the first to show whether investors take the materiality of environmental and social topics into account when voting their proxies. In this way, I contribute to the growing literature on the industry-specific financial materiality of environmental and social issues by investigating it from an investor's perspective. Based on the patterns of past proposals, I find little evidence that sponsors systematically target topics that are financially material for the company's industry, either because they are unaware of the link between the two or because they derive other, non-financial benefits from their activism. Either way, my results provide little support for the notion that investors' activism on environmental and social issues is driven by pure motives of shareholder value maximisation.

The remainder of the study is structured as follows. In the following chapter, I provide an overview of the previous literature on environmental and social shareholder activism and on prior research on the financial materiality of environmental and social issues. Chapter 5.3 describes the data and sample construction, while Chapter 5.4 presents the empirical strategy and the results of my analysis. In Chapter 5.5, I discuss alternative explanations for my findings. Chapter 5.6 concludes.

5.2   Related Literature

5.2.1   Motives and Impact of Environmental and Social Shareholder Activism

The earliest study on environmental and social shareholder proposals is by Vogel (1983) who analyses the drivers of the increase in these proposals for a sample of U.S. firms over the period 1970 to 1982. Vogel finds that most of these proposals were submitted by religious institutions, unions

and other special interest groups, leading the author to conclude that shareholder activism is primarily motivated by political and ideological sentiment. Since Vogel's research, several descriptive studies have documented shifting trends in shareholder proposal sponsorship (e.g. Monks, Miller & Cook, 2004; Pontiff & Spicer, 2006; Tkac, 2006; Del Guercio & Tran, 2012; Michelon & Rodrigue, 2015). However, the overall conclusion regarding the ineffectiveness of shareholder activism is still mainly unchallenged in the early literature. For instance, numerous studies on the market reaction to corporate governance proposals find only an insignificant short-term market reaction to the news that a company has been targeted (e.g. Karpoff, Malatesta & Walkling, 1996; Smith, 1996; Wahal, 1996; Del Guercio & Hawkins, 1999; Gillan & Starks, 2007; Thomas & Cotter, 2007), while some studies even document a small but negative average abnormal stock return when the market learns about a shareholder proposal (e.g. Gillan & Starks, 2000; Prevost & Rao, 2000). Additionally, prior studies conclude that shareholder proposals do not impact the long-term operating performance of the targeted company (Karpoff et al., 1996; Wahal, 1996) nor do they improve its long-run stock performance (Del Guercio & Hawkins, 1999; Prevost & Rao, 2000). Regarding the impact to initiate the desired corporate change, Clark, Salo & Hebb (2008) document that environmental proposals only have a modest impact on improving companies' performance on environmental issues, whereas David et al., (2007) document a decrease in the corporate social performance after a company has been targeted by an environmental or social proposal. To explain this puzzling finding, the authors of the latter study argue that upon targeting the targeted companies increase their spending on resources to defend the proposal, to the detriment of the resources they spend on CSR.

So what is driving sponsors' increased tendencies to target companies on environmental, social and ethical issues, if not a quest for maximising shareholder wealth? Several authors conclude that the sponsors of these proposals must gain other (private) benefits from their activism. For instance, Matsusaka, Ozbas & Yi (2016) find that union pension funds strategically submit shareholder proposals to increase their bargaining power in collective contract negotiations (see also Prevost, Rao & Williams, 2012, for a similar argument). In addition, Wang & Mao (2015) document that the frequency of environmental and social proposals submitted by public pension funds is positively

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related to the number of board members running for election to public office and they find evidence suggesting that the funds' trustees use these proposals to enhance their political capital.

On the other hand, some recent studies show that shareholder activism can be value enhancing and they provide evidence for strong improvements in the target's financial performance as well as its corporate policies after being targeted (e.g. Renneboog & Szilagyi, 2011; Buchanan, Netter, Poulsen & Yang, 2012; Del Guercio & Woidtke, 2016; Cunat, Gine & Guadalupe, 2012); though the majority of this evidence is derived from corporate governance activism. One of the exceptions on environmental and social proposals is the study by Flammer (2015). In her study, Flammer finds that environmental and social proposals winning by a small margin result in a positive and significant short-term abnormal stock return of 0.92%, as compared to proposals that fail by a small margin. She furthers finds that when accounting for the implementation likelihood, winning a proposal by a small margin translates into an increase in shareholder value by 1.77%. Additionally, a closely passed shareholder vote is followed by an increase in long-term operating performance due to improved labour productivity and sales growth and it also results in improved corporate social performance of the targeted company. Furthermore, Cao, Liang & Zhang (2016) show that these positive effects are not constrained to the targeted companies but that they extend to their non-targeted peers. Dimson, Karakas & Li (2015) investigate environmental and social shareholder engagements using an extensive proprietary database of private engagements. The authors provide evidence that companies experience improved accounting performance, show better governance structures and increased institutional ownership after successful engagements.

In line with the increasing financial and policy success of shareholder activism, several recent studies document that shareholder proposals on environmental and social issues have been gaining growing support by the overall shareholder base when put to a vote at the shareholder meeting (e.g. Monks et al., 2004; Thomas & Cotter, 2007; Flammer, 2015). However, voting support seems to depend both on the identity of the proposal sponsor as well as the composition of a company's shareholder base. Both sponsorship and higher ownership by institutional investors, as opposed to individual

shareowners, religious organisations and other special interest groups, increase the percentage of votes cast in favour of the proposal (Gillan & Starks, 2000, 2007; Monks et al., 2004; Thomas & Cotter, 2007; Renneboog & Sziagyi, 2011; Del Guercio & Tran, 2012).

Additionally, several studies suggest that shareholders tend to evaluate the 'materiality' and legitimacy of a proposal prior to casting their vote and they seem to be able to filter out proposals that lack sophistication or that are driven by other social equity objectives of the proposal sponsor (see e.g. the survey of recent results on corporate governance activism by Ferri, 2012). However, this stream of research is so far restricted to corporate governance activism (e.g. Ertimur, Ferri & Stubben, 2010; Ertimur, Ferri & Muslu, 2011).[85] Taken together, the findings of these recent studies suggest that shareholder activism has become more and more successful over the recent years and that it has been increasingly motivated by sponsors' objective to maximise shareholder value.

5.2.2 Corporate Social Responsibility and Financial Materiality

There are two competing views in the literature regarding the impact of CSR on a company's financial performance. On the one hand, neoclassical economists argue that CSR investments are a cost to the firm and thus decrease a firm's competitiveness relative to its industry peers. As a consequence, firms engaging in CSR are expected to show lower firm value (e.g. Friedman, 1970; Aupperle et al., 1985; McWilliams & Siegel, 1997; Jensen, 2002). On the other hand, proponents of CSR point out that improved CSR performance raises the competitiveness of companies as it relates to a more efficient use of resources and more innovative products and reduces a firm's exposure to

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[85] For instance, in their study on activism targeting CEO pay, Ertimur et al. (2011) show that although activists target firms across a variety of CEO pay levels, voting support is only high for proposals at firms that pay their CEO an excessive remuneration. In a related study, Ertimur et al. (2010) document that shareholders also take into account the quality of governance structures when voting on shareholder proposals and tend to provide greater support to proposals against a more entrenched corporate management.

detrimental regulatory and legal actions (e.g. Porter & Kramer, 2006, 2011). Consequently, this school of thought predicts a positive impact of CSR on firm performance.

More recently, several scholars in the accounting and management literature have introduced the concept of industry-specific financial materiality of CSR issues that can be regarded as a compromise between the two schools of thought. In particular, they argue that among the broad range of environmental, social and ethical factors, only a small number impact business's ability to create and sustain value (Eccles et al., 2012; Kahn et al., 2016) and that the materiality of key sustainability issues varies from industry to industry (Lydenberg et al., 2010; Lydenberg, 2012). And there is indeed some empirical evidence that supports the different financial impact of environmental and social factors across industries. For instance, Ghoul, Guedhami, Kwok & Mishra (2011) find that companies with stronger environmental and social performance pay a lower cost of equity but that this link is driven by specific environmental and social categories (employee relations, environmental management, product quality) and most relevant for controversial businesses. In addition, Chava (2014), Goss & Roberts (2011) and Schneider (2011) document that firms with greater environmental concerns and direct pollution suffer more strongly from higher costs of debt financing than their less polluting peers. Studying the impact of negative environmental events and corporate pollution, several authors show that the negative effect on market value triggered by these events is particularly strong for high-polluting industries such as the steel, metals and mining industry (e.g. Cormier & Magnan, 1997; Konar & Cohen, 2001).

On the other hand, improvements on specific environmental issues can be associated with stronger operating performance for certain industries (e.g. Russo & Fouts, 1997; Hart & Ahuja, 1996; Klassen & McLaughlin, 1996). For instance, King & Lenox (2002) find that waste prevention is positively associated with future firm value, whereas other measures of pollution reduction have no effect on a firm's Tobin's Q. Fisher-Vanden & Thorburn (2011) and Jacobs, Singhal & Subramanian (2010) even document that firms agreeing to voluntarily reduce their greenhouse gas emissions exhibit a negative stock market return upon the announcement of committing to the initiative, indicating that

some environmental policies might destroy firm value.[86] In an attempt to explain their findings, Fisher-Vanden & Thorburn (2011) speculate that these firms gave in to pressures by shareholders to participate in voluntary environmental programmes despite the detrimental financial impact of the actions. However, the authors do not provide any empirical evidence to substantiate their claim.

Two recent studies have attempted to more formally test the implications of the industry-specific materiality of environmental and social issues, relying on the standards defined by SASB for their classification of material and immaterial issues (Kahn et al., 2016; Grewal, Serafeim & Yoon, 2016). Kahn et al. (2016) map the material issues identified by the SASB to the rating of a company's environmental and social performance. Using a portfolio approach, the authors provide evidence that firms with good performance on material environmental and social issues significantly outperform firms with poor performance on financially material issues. In addition, they find an even stronger outperformance among a subgroup of firms with relatively high performance on material and low performance on immaterial issues. Investigating the source of this performance differential, Kahn et al. (2016) document that firms with higher materiality scores experience greater profit margins due to better returns on sales and stronger sales growth as compared to their industry peers. Overall, the authors interpret their findings as evidence that SASB's industry-specific accounting standards provide valuable guidance in separating material from less material environmental and social issues.

In a contemporaneous study, Grewal et al. (2016) analyse the impact of shareholder proposals filed on material issues on the target company's subsequent environmental and social performance as well as on the firm's long-term firm value. The findings presented by Grewal et al. (2016) suggest that after a company has been targeted, it increases its performance on both material and immaterial environmental and social issues. However, only shareholder proposals filed on material issues lead to an improvement in firm value in the three years following the activism, whereas proposals on

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[86] However, the expected market reaction is not clear in this case, as the news of joining the voluntary initiative could serve as a signal to investors that there have been shortcomings in the management of greenhouse gas emissions in the past so that the downward price adjustment can be seen as a price correction to reflect this news.

immaterial issues are associated with a subsequent decline in Tobin's Q. Investigating the motives for these value-destroying investments, the authors suggest that these actions are linked to agency conflicts within the firm, low awareness of the materiality of specific issues and firms' efforts to divert attention from their low performance on material issues.

Overall, the above literature makes a strong case for the importance of accounting for the industry-specific financial materiality of environmental and social issues in empirical studies. However, the assessment of the current state of research in this area still leaves many questions unanswered. Which companies are more likely to be targeted by material proposals and what companies are more likely to become the target of immaterial shareholder activism? Do the company's shareholders account for the conditional financial materiality of specific environmental and social topics? And how does the target likelihood depend on the prior environmental and social performance of the companies? These are the questions that my study aims to address.

5.3 Data and Sample Construction

5.3.1 Shareholder Proposal Data

I obtain data on all environmental and social shareholder proposals from RiskMetrics (now ISS), which is a widely used source for shareholder activism data in the empirical finance literature (e.g. Ertimur et al., 2010; Ertimur et al., 2011; Cunat et al., 2012; Bauer, Moers & Viehs, 2015; Flammer, 2015; Wang & Mao, 2015; Appel et al., 2016). Shareholders of U.S. corporations are entitled to propose resolutions about changes to corporate policies that are published in a company's proxy statement and are put to a vote of all shareholders at the company's next general meeting – provided that the proposal meets the standards set forth by the SEC (e.g. Monks et al., 2004).[87] RiskMetrics

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[87] The SEC guidelines outlining the proxy process are set out in Rule 14a-8 of the General Rules and Regulations published under the Securities and Exchange Act of 1934. Companies are obliged to file the proxy statement with the SEC using form Def 14a which indicates the definitive proxy statement according to Rule 14a.

tracks the shareholder meetings of all S&P1500 constituents and an additional set of 400 to 500 widely held companies, and records all filed shareholder proposals (Bauer et al., 2015; Flammer, 2015; Cao et al., 2016). I obtain details on these proposals submitted for shareholder meetings for the time period 1997 to the end of 2011. This early end of the sample period has two advantages. On the one hand, the sample ends considerably before the start of the consultations regarding the SASB's materiality standards. On the other hand, it also ends before KLD changed its methodology for calculating its environmental and social performance scores, which I will use to evaluate a company's performance on environmental and social issues. In this way, I ensure that the KLD scores employed in this study are comparable across years.

RiskMetrics offers information on the name of the company that has been targeted by a proposal, the date of the shareholder meeting, the proposal sponsor and the type of the proposal (corporate governance-related or SRI-related), whether the proposal was put to a vote, omitted or withdrawn by the sponsor, and the percentage of votes in support of the proposal.[88] In addition, RiskMetrics provides a short description of the proposal request. Based on this description, I manually group proposals into more specific subcategories (following Flammer, 2015). In line with related studies (e.g. Flammer, 2015; Cao et al., 2016; Grewal et al., 2016), I focus on proposals on environmental and social issues and omit proposals that are clearly linked to corporate governance issues. The only governance issues considered in this study are related to political lobbying and political connections. I exclude shareholder proposals that have been omitted by the SEC when they violate any of the SEC standards on proxy resolutions.[89] Additionally, I do not include proposals relating to sustainability reporting as the latter cannot be clearly connected to a particular environmental or social issue which hampers their categorisation into financially material or immaterial.

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[88] For three observations, the meeting date was missing. In these instances, I extract the date of the annual general meeting from the company's proxy statement (SEC Form DEF 14A) using SEC's EDGAR database.
[89] Companies can appeal with the SEC for the exclusion of a shareholder proposal due to several reasons: the 'relevance' rule, the 'ordinary business' rule, the 'personal grievance' rule, and failure to meet 'resubmission thresholds'. For further information see: https://www.sec.gov/rules/final/34-40018.htm and https://www.sec.gov/interps/legal/cfslb14a.htm .

5.3.2   Classification of Financial Materiality

In order to classify an environmental or social shareholder proposal as material for the targeted company, I rely on the SASB's industry standards. The SASB is an independent 501(c)3 non-profit organisation that has issued industry standards for 79 different industries designed for the disclosure of material sustainability information in mandatory SEC filings, such as Form 10-K and 20-F. The SASB's mission is to streamline the disclosure of sustainability issues to help companies and investors make informed investment decisions (SASB, 2013). To identify material sustainability issues for different industries, the SASB follows the definition of materiality adopted by U.S. securities' law and case law. According to the U.S. Supreme Court, information is material if there is "a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of the information made available" (SASB, 2013). According to the SASB's conceptual framework, the "reasonable investor" is understood as a person who invests primarily for economic reasons, while allowing for a variety of investment horizons – from short-term to long-term – and investment strategies – from income generation to asset valuation (SASB, 2013). In this sense, the 'materiality' perspective adopted by the SASB reflects the shareholder perspective and is thus particularly suitable to serve as a benchmark in this study.

According to its conceptual framework, the SASB follows an evidence-based, multi-stakeholder approach to determine the material environmental and social issues on an industry level. In a first phase of data gathering and analysis, the SASB searches tens of thousands of industry-related documents to identify sustainability issues that are potentially of interest to investors. It then matches these keywords with a search of sell-side research in order to evaluate which issues are likely to have a financial impact for the industry. Thus, in order to qualify as material, an environmental or social issue needs to meet two qualifications, first it needs to be of interest to investors and second there has to be evidence of its financial and economic impact on companies operating in the industry. After identifying a minimum set of material issues, the SASB convenes industry working groups, composed in equal parts of representatives of corporations, investors and other stakeholders, to

finalise the list of material issues. In a final phase, the provisional industry standards are being reviewed by the American National Standards Institute, an external ratification body.

In order to assess the financial materiality of a shareholder proposal, I first determined the primary industry of each of the companies in my sample using the SASB's Sustainable Industry Classification System™ (SICS). The SASB's SICS builds on traditional industry classification systems but alongside firm characteristics, such as revenue generation, it groups companies together based on their resource intensity, sustainability impact and innovation potential as well as other common sustainability characteristics (SASB, 2013). The SASB's SICS comprise 79 different industries that are distributed across 11 sectors: Health Care, Financials, Technology & Communications, Non-renewable Resources, Transportation, Services, Resource Transformation, Consumption I, Consumption II, Renewable Resources & Alternative Energy, and Infrastructure. In order to identify both the primary industry and sector for each firm in my sample, I used the SICS Look-up Tool.[90]

For companies that were not covered in the SICS Look-up Tool, I referred to their industry classification according to the Standard Industry Classification (SIC) and the North American Industry Classification Code (NAICS) to match the company's primary industry onto the SABS industry and sector classification. I then manually classified each of the environmental and social shareholder proposals as financially material or financially immaterial based on the relevant SASB industry standard.

Table 5.1 provides an overview of the characteristics of the proposals that are part of the sample. Overall, there have been 3,036 shareholder proposals filed on environmental or social issues over the entire sample period. Of all 3,036 proposals, 62.71% have been voted on, implying that around 37% of the submitted proposals were withdrawn by the proposal sponsor before being put to a vote at the shareholder meeting.

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[90] The online tool is accessible via http://www.sasb.org/lookup-tool/. For cases of integrated firms with revenue streams from different industries, the SASB allocates the company to only one primary industry, based on and grouped with companies that share a similar resource intensity and sustainability risks and opportunities.

Table 5.1: Overview of Environmental and Social Proposals

Table 5.1 provides an overview of the sample of environmental and social shareholder proposals submitted during the years 1997 until 2011. The sample comprises proposals that were either withdrawn or voted on, i.e. I exclude all omitted proposals and proposals that were pending as reported by RiskMetrics. I also exclude all proposals regarding sustainability reporting as they cannot be matched to a specific materiality issue. Column 1 reports the numbers of all submitted proposals, column 2 reports the number of proposals that were put to a vote and column 3 states the proportion of voted proposals to all proposals. Columns 4 and 5 report the number and proportion of approved proposals, i.e. proposals receiving a majority of votes). Column 7 states the number of proposals which are classified as material for the specific industry according to the SASB standards, while Column 8 reports the proportion of material proposals to overall proposals. Columns 9 and 11 details the number of material proposals that were voted on and that were approved, respectively, whereas column 10 (12) reports the proportion of material and voted (material and approved) proposals to the total number of voted (approved) proposals. Columns 6 and 13 state the average voting outcome of all proposals that were put to a vote and of all material proposals that were put to a vote, respectively. Panel A provides a disaggregation of the statistics by year, Panel B by proposal sponsor, Panel C by proposal type and Panel D by sector, respectively.

	(1) All Prop.	(2) Voted Prop.	(3) % of All	(4) Approv. Prop.	(5) % of All	(6) Avg. Vote All	(7) Matrial Isssue	(8) % of All	(9) Material & Voted	(10) % of Material	(11) Material & Approv.	(12) % of Material	(13) Avg. Vote Material
Total	**3036**	**1904**	**62.71%**	**19**	**0.63%**	**12.29**	**1324**	**43.61%**	**859**	**64.88%**	**7**	**0.53%**	**12.23**
Panel A: By Year													
1997	138	67	48.55%	0	0.00%	7.22	37	26.81%	22	59.46%	0	0.00%	6.41
1998	116	75	64.66%	0	0.00%	7.57	40	34.48%	25	62.50%	0	0.00%	8.12
1999	124	85	68.55%	1	0.81%	8.22	54	43.55%	36	66.67%	0	0.00%	7.28
2000	121	78	64.46%	0	0.00%	7.01	56	46.28%	34	60.71%	0	0.00%	7.09
2001	155	100	64.52%	0	0.00%	7.54	71	45.81%	54	76.06%	0	0.00%	7.59
2002	200	117	58.50%	0	0.00%	8.93	116	58.00%	63	54.31%	0	0.00%	9.44
2003	191	104	54.45%	0	0.00%	9.80	88	46.07%	51	57.95%	0	0.00%	11.27
2004	218	158	72.48%	4	1.83%	10.84	95	43.58%	72	75.79%	1	1.05%	9.93
2005	233	145	62.23%	1	0.43%	9.13	109	46.78%	72	66.06%	0	0.00%	9.26
2006	248	166	66.94%	2	0.81%	12.36	112	45.16%	75	66.96%	2	1.79%	11.60
2007	245	163	66.53%	3	1.22%	14.13	111	45.31%	71	63.96%	1	0.90%	14.04
2008	287	179	62.37%	2	0.70%	13.49	116	40.42%	73	62.93%	0	0.00%	15.41
2009	278	162	58.27%	2	0.72%	16.48	109	39.21%	65	59.63%	1	0.92%	16.47
2010	243	157	64.61%	0	0.00%	17.92	121	49.79%	80	66.12%	0	0.00%	16.63
2011	239	148	61.92%	4	1.67%	20.28	89	37.24%	66	74.16%	2	2.25%	19.80

Table 5.1 - continued

	(1) All Prop.	(2) Voted Prop.	(3) % of All	(4) Approv. Prop	(5) % of All	(6) Avg. Vote All	(7) Matrial Isssue	(8) % of All	(9) Material & Voted	(10) % of Material	(11) Material & Approv	(12) % of Material	(13) Avg. Vote Material
Panel B: By Proposal Sponsor													
SRI fund	530	271	51.13%	3	0.57%	14.30	222	41.89%	113	50.90%	0	0.00%	13.53
Asset manager	42	20	47.62%	1	2.38%	16.11	21	50.00%	11	52.38%	0	0.00%	14.06
Foundation/Endow.	101	65	64.36%	1	0.99%	20.02	77	76.24%	52	67.53%	1	1.30%	21.25
Individual	286	256	89.51%	1	0.35%	7.07	91	31.82%	82	90.11%	0	0.00%	8.90
Other	49	36	73.47%	1	2.04%	14.24	19	38.78%	17	89.47%	0	0.00%	11.17
Public pension fund	537	298	55.49%	7	1.30%	19.51	223	41.53%	134	60.09%	1	0.45%	15.77
Religious	1014	601	59.27%	4	0.39%	10.80	518	51.08%	329	63.51%	4	0.77%	10.95
Special interest	265	214	80.75%	0	0.00%	6.06	105	39.62%	84	80.00%	0	0.00%	5.92
Union	212	143	67.45%	1	0.47%	13.83	48	22.64%	37	77.08%	1	2.08%	15.90
Panel C: By Proposal Type													
Add minorities to board	19	11	57.89%	0	0.00%	14.27	7	36.84%	5	71.43%	0	0.00%	16.40
Animal rights	153	114	74.51%	0	0.00%	5.07	74	48.37%	55	74.32%	0	0.00%	5.13
Environmental issues	746	442	59.25%	3	0.40%	12.82	493	66.09%	314	63.69%	3	0.61%	14.39
Health issues	431	269	62.41%	1	0.23%	7.79	205	47.56%	140	68.29%	0	0.00%	7.75
Human rights	190	129	67.89%	1	0.53%	11.46	64	33.68%	42	65.63%	1	1.56%	11.49
Labour issues	665	354	53.23%	9	1.35%	14.93	231	34.74%	143	61.90%	2	0.87%	12.65
Other social issues	412	271	65.78%	1	0.24%	8.03	180	43.69%	107	59.44%	0	0.00%	9.18
Political issues	420	314	74.76%	4	0.95%	19.01	70	16.67%	53	75.71%	1	1.43%	23.94
Panel D: By Sector													
Consumption I	327	231	70.64%	1	0.31%	6.97	177	54.13%	131	74.01%	0	0.00%	6.22
Consumption II	381	214	56.17%	0	0.00%	12.75	220	57.74%	140	63.64%	0	0.00%	11.93
Financials	330	194	58.79%	4	1.21%	12.80	103	31.21%	34	33.01%	0	0.00%	8.09
Health Care	267	137	51.31%	1	0.37%	10.93	75	28.09%	41	54.67%	1	1.33%	11.06
Infrastructure	258	151	58.53%	4	1.55%	16.43	178	68.99%	114	64.04%	2	1.12%	15.84
Non-Renewable Res.	398	268	67.34%	2	0.50%	18.21	278	69.85%	201	72.30%	2	0.72%	17.49
Renewable Resources	31	25	80.65%	1	3.23%	9.60	8	25.81%	6	75.00%	0	0.00%	8.52
Res. Transformation	442	313	70.81%	1	0.23%	10.09	121	27.38%	98	80.99%	1	0.83%	9.75
Services	199	134	67.34%	1	0.50%	10.52	79	39.70%	49	62.03%	0	0.00%	8.25
Technology & Comm.	247	150	60.73%	3	1.21%	12.42	62	25.10%	35	56.45%	1	1.61%	13.32
Transportation	156	87	55.77%	1	0.64%	12.11	23	14.74%	10	43.48%	0	0.00%	9.83

This number is lower than that presented in earlier studies, such as Gillan & Starks (2000), who found that 86% of the corporate governance proposals over the period 1987 to 1994 have been put to a vote, but in line with later studies on environmental and social activism such as Tkac (2006) and Bauer et al. (2015). Although RiskMetrics does not provide information on the reason for withdrawal, analyses in Bauer et al. (2015) show that environmental and social proposals and proposals filed by influential shareholders, such as institutional investors and labour unions, are more likely to be withdrawn. The authors argue that these investors have entered into private negotiations with the targeted company and might have achieved a satisfactory agreement prior to the shareholder meeting (see also Pontiff & Spicer, 2006). Among the 1,904 shareholder proposals that have been put to a vote, only 19 proposals reached majority support by the shareholders. In comparison, the average percentage of votes received for an environmental or social proposal is only about 12.29%. This low voting support for environmental and social shareholder proposals is in line with the findings of previous studies (e.g. Thomas & Cotter, 2007; Flammer, 2015; Cao et al., 2016). Looking at the distribution of proposals over time, Panel A documents a positive trend, both in the number of proposals submitted as well as in the voting support for these proposals. While in 1997 the average environmental and social proposal only received 7.22% of votes cast in favour of the proposal, the vote support increased to 20.28% in 2011. Thus, over time several environmental and social topics have found greater backing by firms' shareholder base.

When classifying proposals according to their financial materiality, I identify that 1,324 of the 3,036 shareholder proposals are targeting a material environmental or social issue. Thus, the majority of proposals, around 56%, are addressing topics that the SASB regards as financially immaterial for the firm's industry.[91] The distribution of material proposals over the sample period is roughly constant, and only the first year and the last year of the sample show a lower proportion of material proposals. Thus, while shareholders have increased the time and efforts on targeting companies on

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[91] These numbers are in line with those reported in Grewal et al. (2016) who, based on a sample of 2,665 proposals over the period 1997 to 2013, find that around 58% of these proposals are filed on immaterial issues.

environmental and social issues, they have not directed their activism efforts towards more financially material topics over time. Comparing the voting characteristics of material proposals to those of all proposals, I find very comparable levels of vote support across both categories. This re-emphasises the lack of distinction between material and immaterial topics across the broad shareholder base.

Panel B of Table 5.1 divides proposals by sponsor type.[92] With a total of 1,014 proposals religious institutions are the most frequent sponsor, followed by public pension funds with 537 proposals and SRI funds with 530 proposals, respectively.[93] These three investor groups also show the highest proportion of proposal withdrawals, which is in line with the findings of Bauer et al. (2015).In comparison, the proposals submitted by individual investors and special interest groups have the highest probability to be put to a vote, with 89.51% and 80.75% of their proposals being voted on. However, the vote support received for their proposals of 6% to 7% is comparably low. In contrast, proposals sponsored by university and foundation endowments and public pension funds gather an average shareholder support of around 20%, indicating that the shareholder base regards these proposals as more beneficial for the target firm. In addition, while more than 76% of all proposals submitted by university and foundation endowments are classified as financially material, individuals and union investors have the lowest proportion of material proposals to submitted proposals of only 31.82% and 22.64%, respectively.

Looking at the kinds of topics that are addressed by the shareholder proposals (Panel C of Table 5.1), most of the proposals target environmental issues (746 proposals) followed by labour issues (665 proposals). Interestingly, the majority of the environmental proposals (66%) are classified as financially material, whereas for all other proposal types the proportion of material proposals to total

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[92] I use the first sponsor of a proposal as the determining sponsor type, even if additional sponsors might have joined the proposal.

[93] These findings are in line with earlier studies on environmental and social proposals (e.g. Campbell, Gillan & Niden, 1999; Monks et al., 2004; Pontiff & Spicer, 2006; Tkac, 2006; Flammer, 2015; Michelon & Rodrigue, 2015).

proposals lies below the majority threshold. I find strong differences in shareholder support when subdividing by proposal type. The strongest shareholder support is gathered for proposals targeting political issues (average vote outcome of 19% for all proposals and 24% for material proposals), while proposals targeting animal rights issues gather the lowest shareholder support of only 5%, on average.

Finally, Panel D of Table 5.1 provides an overview of the targeted companies by sector. Companies operating in the Resource Transformation sector (442 proposals), the Non-Renewable Resources sector (398 proposals) and the Consumption sectors (327/381 proposals), receive the highest number of environmental and social proposals. Interestingly, these sectors also show the highest proportion of material to total proposals. In particular, around 69% of proposals in the Infrastructure and Non-Renewable Resources sectors are material, while for the Consumption sectors this number ranges between 54% and 58%.

5.3.3 Environmental and Social Performance Data

One important factor that might impact whether an activist investor targets a company on an environmental or social issue is the prior performance of that company on the respective issue. To illustrate, even though a particular topic is regarded financially material for an investors' holding firm, the investor would only need to take action if the holding company underperformed on this issue. To measure the prior performance of the sample companies on environmental and social issues, I rely on the ESG ratings by KLD, introduced in Chapter 3.3.1.[94] In order to identify the financially material ESG categories from the financially immaterial ones for a given industry, I map all material environmental and social issues identified by the SASB to the existing KLD categories. All KLD

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[94] To recall, KLD assesses companies on seven categories on a point-by-point basis: community activities, diversity, employees' relations, environmental record, product quality, human rights, and corporate governance. It evaluates both positive policies and initiatives ('strengths') as well as violations and negative incidents ('concerns').

data items that could be mapped to a material SASB issue are classified as material for a given industry. All remaining KLD items are classified as immaterial for the same industry. To construct an index that measures a firm's performance on material and immaterial environmental and social issues, I follow the practice common in the prior literature of subtracting the KLD concerns from the KLD strengths. This results in two rating scores, one measuring the performance on material issues and one assessing the performance on immaterial factors. The scores are calculated as shown below:

$$Material\ KLD = \sum Mat.\ KLD\ Strengths - \sum Mat\ KLD\ Concerns \qquad (5.1)$$

$$Immaterial\ KLD = \sum Immat.\ KLD\ Strengths - \sum Immat\ KLD\ Concerns \qquad (5.2)$$

To account for industry-specific differences in the level of environmental and social performance, I deduct the average KLD score of all S&P500 companies in the same sector from a company's raw Material (Immaterial) KLD score, which I call the sector-adjusted Material (Immaterial) KLD score.[95]

5.3.4 Further Firm Characteristics

Previous literature has shown that both the likelihood of being targeted by a shareholder proposal as well as a company's environmental and social performance are related to a variety of firm characteristics (e.g. Karpoff et al., 1996; Smith, 1996; Strickland, Wiles & Zenner, 1996; Wahal, 1996; Ertimur et al., 2010; Renneboog & Szilagyi, 2011; Flammer, 2015; Bauer et al., 2015; Wang & Mao, 2015; Cao et al., 2016).[96] As a result, I account for the firm's total assets, its book-to-market ratio, the ratio of capital expenditure to total assets, its leverage, a firm's ratio of dividends to total

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[95] I confirm that my main empirical results remain qualitatively unchanged when replacing the sector-adjusted scores with the unadjusted KLD scores. The results are not reported in order to preserve space, but are available from the author upon request.

[96] Some other widely used firm characteristics in studies on shareholder proposals are a firm's market capitalisation, its annual net sales/turnover, a firm's Tobin's Q and its cash ratio. However due to the high correlation of these variables with other firm characteristics, they are not included in the baseline models of this study. In unreported robustness tests, I confirm that my baseline results remain robust to replacing these variables with their highly correlated counterparts.

assets and its return on assets in my empirical analyses. As studies on corporate governance proposals have shown that companies with poor past performance are more likely to be targeted by shareholder proposals (e.g. Strickland et al., 1996; Wahal, 1996; Thomas & Cotter, 2007), I also include a firm's stock performance over the prior year in the set of controls. In addition, the ownership structure of a company can impact both the likelihood that a company is being targeted by a shareholder proposal as well as the likelihood that the proposal is put to a vote (e.g. Karpoff et al., 1996; Ertimur et al., 2010; Renneboog & Szilagyi, 2011; Bauer et al., 2015; Flammer, 2015). Thus, I account for the percentage of shares outstanding held by institutional investors in my empirical tests.

To construct the firm controls, I rely on the standard data sources for U.S. accounting and firm-level financial data. Accounting information is retrieved from Compustat. I obtain stock prices and the number of shares outstanding from CRSP. The information on institutional ownership comes from Thomson Reuters' Institutional Holdings database which is based on SEC's 13f filings. In line with previous literature (e.g. Flammer, 2015), I compute all company characteristics at the fiscal year-end prior to the shareholder meeting. Following Dimson et al. (2015), I winsorise all variables at the 1st and 99th percentile. Detailed descriptions of the variable construction and data sources can be found in the Appendix to Chapter 5.

Table 5.2 reports summary statistics on the firm characteristics for the full sample of S&P500 companies (Panel A) and the sample of companies targeted by an environmental or social proposal (Panel B). By construction, the sector-adjusted KLD scores for the S&P500 sample have a mean value of zero, while median values also lie closely around zero. More interestingly, when comparing the range of scores, I find that all three immaterial scores, i.e. the net score, strengths score and concerns score, show a considerably wider range than their material counterparts. This indicates that the materiality classification of the SASB considerably limits the number of relevant environmental and social issues for a particular industry.[97]

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[97] These findings are also in line with results presented in Kahn et al. (2016) and Grewal et al. (2016).

Table 5.2: Summary Statistics of Main Independent Variables

Table 5.2 reports summary statistics of the main independent variables that will be used in later analysis. Panel A reports statistics for the sample of all S&P500 companies, while Panel B focuses on the companies that were subject to an environmental or social shareholder proposal according to the RiskMetrics database. The unit of measurement of Panel A is the company level. In Panel B, the unit of measurement is at the proposal-company level. Variable descriptions for all variables reported in the table can be found in Table A.1 in the Appendix. All variables except for the KLD scores are winsorised at the $1^{st}/99^{th}$ percentile.

Panel A: S&P500 Sample	N	Mean	Median	Std.-Dev.	Skewness	Kurtosis	Min.	Max.	5th Perc.	95th Perc.
Material KLD Score	7,230	0.00	0.09	1.07	-0.58	4.98	-5.81	4.98	-1.88	1.60
Material KLD Strengths	7,169	0.00	-0.20	0.66	1.48	6.46	-2.09	3.98	-0.72	1.43
Material KLD Concerns	7,161	0.00	-0.21	1.05	1.23	6.05	-2.53	6.15	-1.50	2.02
Immaterial KLD Score	7,100	0.00	-0.25	2.59	0.49	4.18	-10.24	14.18	-3.94	4.54
Immaterial KLD Strengths	7,169	0.00	-0.61	2.56	1.31	5.59	-7.36	13.63	-3.02	4.90
Immaterial KLD Concerns	7,161	0.00	-0.36	1.80	1.23	5.27	-4.38	9.13	-2.34	3.55
Institutional Ownership	6,074	0.68	0.71	0.17	-1.09	4.94	0.02	0.95	0.39	0.91
Ownership by Bank Trusts	6,051	0.16	0.15	0.05	1.42	9.30	0.00	0.56	0.09	0.24
Ownership by Corporate Pension Funds	6,049	0.01	0.00	0.01	22.74	757.67	0.00	0.51	0.00	0.02
Ownership by Indep. Invest. Advisors	6,063	0.31	0.30	0.11	0.18	2.76	0.00	0.85	0.13	0.49
Ownership by Insurance Companies	6,049	0.05	0.04	0.03	1.99	9.04	0.01	0.30	0.02	0.12
Ownership by Investment Companies	6,052	0.13	0.12	0.06	0.89	4.51	0.00	0.55	0.05	0.24
Ownership by Misc. Instit. Investors	5,652	0.02	0.01	0.02	3.02	19.10	0.00	0.28	0.00	0.06
Ownership by Univ. and Found. Endowments	5,887	0.00	0.00	0.01	7.08	65.96	0.00	0.10	0.00	0.01
Ownership by Public Pension Funds	6,050	0.03	0.03	0.01	2.23	16.72	0.00	0.14	0.02	0.04
Log Book-to-Market	7,108	-1.03	-0.96	0.72	-0.54	3.50	-3.28	0.55	-2.32	0.04
Log Assets	7,230	9.29	9.18	1.39	0.59	3.23	6.70	13.47	7.28	11.91
CapEx	6,926	4.86	3.91	4.21	1.57	6.08	0.00	21.81	0.06	13.13
Leverage	7,202	24.85	23.61	16.64	0.65	3.31	0.00	77.38	0.03	55.46
Dividends	7,183	1.63	1.04	1.95	1.94	7.46	0.00	10.19	0.00	5.64
RoA	7,229	5.30	4.83	6.78	-0.73	7.29	-24.76	24.34	-3.38	16.42
Log Prior-Year Return	7,201	-0.04	0.03	0.41	-1.04	5.10	-1.56	0.88	-0.83	0.52

Table 5.2 - continued

Panel B: RiskMetrics Sample	N	Mean	Median	Std.-Dev.	Skewness	Kurtosis	Min.	Max.	5th Perc.	95th Perc.
Material KLD Score	3,036	-0.45	-0.31	1.33	-0.46	3.60	-5.46	4.98	-2.61	1.52
Material KLD Strengths	3,031	0.25	-0.15	0.90	1.26	4.68	-2.09	3.98	-0.72	2.09
Material KLD Concerns	3,017	0.71	0.40	1.51	0.91	3.78	-2.42	6.15	-1.14	3.84
Immaterial KLD Score	3,012	0.13	-0.13	3.11	0.32	3.44	-10.24	13.06	-4.59	5.42
Immaterial KLD Strengths	3,031	1.44	1.03	3.32	0.75	3.40	-7.36	13.63	-2.94	7.76
Immaterial KLD Concerns	3,017	1.32	0.79	2.57	0.73	3.01	-3.95	9.13	-2.13	6.59
Institutional Ownership	2,638	0.66	0.66	0.16	-0.75	4.26	0.05	0.94	0.38	0.89
Ownership by Bank Trusts	2,629	0.17	0.17	0.05	0.43	3.62	0.06	0.31	0.09	0.24
Ownership by Corporate Pension Funds	2,618	0.01	0.00	0.00	3.25	18.34	0.00	0.04	0.00	0.01
Ownership by Indep. Invest. Advisors	2,630	0.28	0.27	0.11	0.45	2.48	0.09	0.57	0.13	0.48
Ownership by Insurance Companies	2,629	0.05	0.04	0.02	1.56	6.14	0.01	0.15	0.02	0.10
Ownership by Investment Companies	2,629	0.12	0.11	0.05	0.75	3.47	0.03	0.29	0.05	0.22
Ownership by Misc. Instit. Investors	2,565	0.02	0.02	0.02	2.32	9.68	0.00	0.11	0.00	0.06
Ownership by Univ. and Found. Endowments	2,548	0.00	0.00	0.00	5.13	32.43	0.00	0.03	0.00	0.01
Ownership by Public Pension Funds	2,629	0.03	0.03	0.01	0.55	5.56	0.01	0.06	0.02	0.04
Log Book-to-Market	2,959	-1.06	-1.03	0.72	-0.35	3.16	-3.13	0.51	-2.34	0.07
Log Assets	3,035	10.14	10.15	1.68	0.17	2.98	6.29	14.43	7.34	13.26
CapEx	2,965	5.35	4.47	4.19	1.26	4.89	0.00	21.43	0.16	13.43
Leverage	3,030	26.23	24.84	15.60	0.49	2.90	0.00	68.73	2.76	55.92
Dividends	3,015	2.17	1.50	2.25	1.51	5.48	0.00	11.24	0.00	6.82
RoA	3,035	5.98	5.47	6.23	-0.33	5.21	-19.11	22.26	-1.81	16.66
Log Prior-Year Return	3,019	-0.03	0.03	0.37	-0.89	4.23	-1.32	0.74	-0.75	0.48

While similar patterns regarding the distribution and range of the material and immaterial KLD scores can be observed for the sample of targeted companies (Panel B), I note that the average KLD material score is slightly lower than the S&P500 average, indicating that these companies perform worse on material issues. In addition, the average immaterial KLD score of the targeted companies is higher than the S&P500 counterpart, though only marginally so.The mean (median) institutional ownership in S&P500 companies of 0.68% (0.71%) is slightly higher than that in the RiskMetrics sample (0.66% in both cases). However, the two samples show very similar patterns when comparing the institutional ownership by different investor subgroups. Based on the firm's total assets, the companies being targeted by shareholder proposals tend to be slightly larger than the mean (median) S&P500 company. This confirms findings in the prior literature that larger, more visible companies are more likely to be the target of shareholder activism. Similarly, targeted companies tend to have a slightly higher book-to-market value, show higher capital expenditure and higher leverage relative to the S&P500 sample. They also tend to pay out more dividends and are slightly more profitable as indicated by their higher return on assets. In contrast, I do not find strong differences regarding both samples' prior stock performance.

Table 5.3 reports the correlations between the firm characteristics for the RiskMetrics sample. The high negative correlation between the material KLD net score and the material KLD concerns of -80% suggests that the former is mainly driven by violations of environmental and social standards, as opposed to positive policies. In contrast, the immaterial KLD net score is less dominated by either one of its two sub-components. Another interesting difference between the material and immaterial scores is their relation to other firm characteristics. For instance, the material KLD net score shows a negative correlation with firm's total assets of -31%, indicating that larger companies tend to perform less well on material factors. By comparison, the immaterial KLD net score seems to be almost uncorrelated to the measure of firm size. Interestingly, however, the sub-components of the immaterial KLD score are strongly and positively related to a firm's total assets. In other words, larger firms tend to show more concerns on immaterial issues but also invest more in immaterial environmental and social policies, possibly to counterbalance their shortcomings. Finally, the

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institutional ownership of a firm is positively related to a firm's material KLD score, while being uncorrelated to firm performance on immaterial issues. This finding might be suggestive of institutional investors fulfilling their monitoring duties and preventing resource allocations to environmental and social policies that are irrelevant to a company's business success. However, this conjecture need to be tested in a more rigorous empirical setup.

Table 5.3: Correlation Matrix of Main Independent Variables

Table 5.3 reports the pairwise correlation of the main independent variables. The sample represents the targeted companies in the RiskMetrics sample over the period 1997 to 2011. Variable descriptions for all variables reported in the table can be found in Table A.1 in the Appendix. All variables except for the KLD scores are winsorised at the 1st/99th percentile.

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	Mat. KLD	1.00													
(2)	Mat. KLD Str.	0.10	1.00												
(3)	Mat. KLD Con.	-0.80	0.51	1.00											
(4)	Imm. KLD	0.15	0.21	0.00	1.00										
(5)	Imm. KLD Str.	-0.14	0.44	0.39	0.68	1.00									
(6)	Imm. KLD Con.	-0.36	0.30	0.50	-0.37	0.43	1.00								
(7)	Inst. Ownership	0.20	-0.16	-0.27	-0.01	-0.24	-0.29	1.00							
(8)	Log Book-to-Market	-0.03	-0.03	0.00	-0.09	-0.12	-0.05	0.08	1.00						
(9)	Log Assets	-0.31	0.37	0.49	0.07	0.55	0.62	-0.33	0.10	1.00					
(10)	CapEx	-0.05	0.05	0.07	-0.07	-0.12	-0.07	-0.01	-0.15	-0.22	1.00				
(11)	Leverage	-0.01	-0.13	-0.07	-0.04	0.00	0.04	-0.09	0.01	0.10	-0.07	1.00			
(12)	Dividends	-0.18	0.16	0.25	0.15	0.23	0.11	-0.19	-0.48	0.02	-0.02	-0.05	1.00		
(13)	RoA	-0.04	0.16	0.13	0.09	0.11	0.03	-0.04	-0.51	-0.09	0.17	-0.39	0.50	1.00	
(14)	Log Prior-Year Return	-0.01	0.02	0.02	-0.05	-0.05	0.00	0.02	0.23	-0.03	-0.07	-0.07	-0.03	0.04	1.00

5.4 Empirical Strategy and Results

5.4.1 Which Companies are Targeted by Material Proposals?

I first examine the determinants of becoming the target of environmental and social shareholder activism and analyse whether these differ between material and immaterial proposals. To do so, I focus on a sample of S&P500 firms and see whether a particular S&P500 firm has been subject to an environmental or social proposal in a given year. Following prior studies by Karpoff et al. (1996) and Wang & Mao (2015), I estimate a logistic regression explaining an S&P500 firm i's likelihood

of being targeted by a proposal in a given year *t* using a variety of ownership and firm specific characteristics:[98]

$$Dep.Var._{i,t} = \beta_0 + \beta_1 Mat.KLD_{i,t} + \beta_2 Imm.KLD_{i,t} + B_3(Ownership)_{i,t}$$
$$+ B_4(Firm\ Controls)_{i,t} + Year\ FE + Industry\ FE + \varepsilon_{i,t} \qquad (5.3)$$

where $Dep.Var._{i,t}$ is either a dummy variable that equals one if firm *i* is targeted by at least one environmental or social shareholder proposals *(Prop. Dummy_{i,t})* or a dummy equal to one if firm *i* is targeted by a material environmental or social proposal ($Mat.Prop.Dummy_{i,t}$) during year *t*. $Mat.KLD_{i,t}$ and $Imm.KLD_{i,t}$ are the sector-adjusted KLD scores of firm *i* on material and immaterial issues, $(Ownership)_{i,t}$ is a vector that comprises the different ownership variables, $(Firm\ Controls)_{i,t}$ is a vector that comprises the firm-specific control variables,[99] $Year\ FE$ are dummy variables that indicate the year of the shareholder meeting, $Industry\ FE$ are dummy variables that indicate the industry that firm *i* operates in according to the SASB's SICS, and $\varepsilon_{i,t}$ is an idiosyncratic disturbance term.

The results of these regressions are reported in Table 5.4. I find that firms with a higher material KLD score relative to their sector peers show a lower likelihood of being targeted by an environmental or social proposal in general as well as by a material proposal. Specifically, if the material KLD score of the average S&P500 firm increases by one unit, its likelihood to be targeted by an environmental or social proposal decreases by 1.84% while its likelihood of being targeted by a material proposal decreases by 2.09%. Thus, a better performance on material environmental and social issues seems to provide companies with a shield against environmental and social shareholder activism, although the effect is relatively small in economic magnitude. By comparison, the likelihood of being targeted by an environmental or social proposal is not significantly affected by a

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[98] Using a probit instead of a logistic model leads to quantitatively almost identical results. The results of this robustness test are unreported but are available from the author upon request.
[99] In particular, the firm controls comprise: Mat. KLD Concerns, Imm. KLD Concerns, Instit. Ownership, Log Assets, Log Book-to-Market, CapEx, Leverage, Dividends, RoA, and Log Prior-Year Return. The details of the variable construction can be found in the Appendix to Chapter 5.

company's performance on immaterial environmental and social issues. This finding provides first evidence that proposal sponsors seem to differentiate between a company's performance on material and immaterial environmental and social factors when choosing their activism targets.

I further analyse this relation by looking at what aspect of a company's prior environmental and social performance drives the target likelihood. Is it the number of violations of environmental and social standards and the negative externalities produced by a firm – captured by the KLD concerns – or is the KLD strength score and as such the firm's voluntary engagement in environmental and social policies and programs the driving factor? In fact, prior empirical evidence suggests that environmental and social strengths and concerns capture different concepts and thus their effect on economic outcomes needs to be investigated separately (e.g. Oikonomou, Brooks & Pavelin, 2014). Thus, I replace the KLD net scores with the KLD strengths and KLD concerns as main independent variables. The results of this analysis are presented in specifications (5) to (12) of Table 5.4.

I find that if a firm has greater concerns on material and immaterial issues relative to its sector, this significantly increases its likelihood of being targeted by an environmental or social proposal. This is true both for all environmental and social proposals as well as the subgroup of material proposals. However, the impact of prior material concerns is considerably stronger than the impact of prior immaterial concerns. In terms of marginal effects, a further material KLD concern relative to a firm's sector increases the firm's likelihood of being targeted by a (material) environmental or social proposal by 2.37% (2.78%). In contrast, a one unit increase in immaterial KLD concerns only leads to increased target likelihood of 1.27% for all proposals and 0.51% for material proposals, the latter being of weak statistical significance. By comparison, companies' prior performance on material and immaterial KLD strengths does not affect target likelihood, suggesting that companies cannot shield themselves from being targeted by increasing their voluntary engagement in environmental and social policies.

Table 5.4: Probability of Being Targeted – S&P500 Sample

Table 5.4 presents the results of logistic regressions of Eq. (5.3) explaining a firm's likelihood of being targeted by an environmental or social proposal. The sample includes all S&P500 firms over 1997 to 2011. The dependent variable in columns (1) and (5) is a binary variable that equals one if a firm is targeted by a proposal in a particular year, and 0 otherwise. The dependent variable in columns (3) and (7) is a binary variable that equals one if a firm is targeted by a material proposal in a particular year, and 0 otherwise. Columns (2), (4), (6) and (8) report marginal effects. The unit of measurement is the firm-year level. All specifications include industry and year fixed effects. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

	(1) All Prop.	(2) Marg. Eff.	(3) Mat. Prop.	(4) Marg. Eff.	(5) All Prop.	(6) Marg. Eff.	(7) Mat. Prop.	(8) Marg. Eff.	(9) All Prop.	(10) Marg. Eff.	(11) Mat. Prop.	(12) Marg. Eff.
Mat. KLD	-0.121***	-0.0184***	-0.209***	-0.0208***								
	(0.0341)	(0.00513)	(0.0410)	(0.00403)								
Imm. KLD	-0.0210	-0.00318	0.00140	0.000140								
	(0.0144)	(0.00218)	(0.0184)	(0.00184)								
Mat. KLD Strengths					-0.00244	-0.000373	0.0275	0.00278				
					(0.0558)	(0.00850)	(0.0687)	(0.00694)				
Imm. KLD Strengths					0.00892	0.00136	0.0192	0.00194				
					(0.0168)	(0.00257)	(0.0213)	(0.00216)				
Mat. KLD Concerns									0.158***	0.0237***	0.282***	0.0278***
									(0.0413)	(0.00614)	(0.0480)	(0.00462)
Imm. KLD Concerns									0.0849***	0.0127***	0.0521*	0.00512*
									(0.0235)	(0.00351)	(0.0284)	(0.00279)
Instit. Ownership	0.494*	0.0749*	1.168***	0.117***	0.532*	0.0810*	1.174***	0.119***	0.536*	0.0803*	1.221***	0.120***
	(0.279)	(0.0422)	(0.391)	(0.0390)	(0.274)	(0.0417)	(0.379)	(0.0383)	(0.279)	(0.0417)	(0.392)	(0.0385)
Log Assets	1.156***	0.175***	1.048***	0.105***	1.147***	0.175***	1.048***	0.106***	1.027***	0.154***	0.913***	0.0897***
	(0.0452)	(0.00525)	(0.0590)	(0.00527)	(0.0508)	(0.00641)	(0.0671)	(0.00618)	(0.0493)	(0.00638)	(0.0662)	(0.00617)
Log Book-to-Market	-0.177**	-0.0269**	-0.209**	-0.0209**	-0.154**	-0.0235**	-0.192**	-0.0194**	-0.164**	-0.0247**	-0.200**	-0.0197**
	(0.0722)	(0.0109)	(0.0972)	(0.00965)	(0.0718)	(0.0109)	(0.0969)	(0.00975)	(0.0718)	(0.0107)	(0.0969)	(0.00949)
CapEx	0.0377***	0.0057***	0.0380**	0.00379**	0.0327***	0.0050***	0.0299*	0.00302*	0.0363***	0.0054***	0.0401***	0.0039***
	(0.0125)	(0.00189)	(0.0156)	(0.00156)	(0.0126)	(0.00192)	(0.0157)	(0.00158)	(0.0124)	(0.00186)	(0.0155)	(0.00152)
Leverage	-0.0073**	-0.00111**	-0.00710*	-0.000709*	-0.0073**	-0.0011**	-0.00688*	-0.00069*	-0.0075**	-0.0011**	-0.00678*	-0.00067*
	(0.00313)	(0.000474)	(0.00406)	(0.00041)	(0.00311)	(0.000473)	(0.00404)	(0.000408)	(0.00311)	(0.000466)	(0.00404)	(0.000397)
Dividends	0.135***	0.0204***	0.163***	0.0162***	0.129***	0.0197***	0.158***	0.0159***	0.123***	0.0185***	0.145***	0.0142***
	(0.0243)	(0.00364)	(0.0310)	(0.00307)	(0.0243)	(0.00368)	(0.0312)	(0.00312)	(0.0242)	(0.00360)	(0.0311)	(0.00304)
RoA	0.0148*	0.00224*	-0.000966	-0.0001	0.0133	0.00202	-0.00185	-0.000187	0.0176**	0.00263**	0.00242	0.000238
	(0.00848)	(0.00128)	(0.0106)	(0.00106)	(0.00848)	(0.00129)	(0.0107)	(0.00108)	(0.00847)	(0.00127)	(0.0106)	(0.00105)
Log Prior-Year Return	0.173*	0.0262*	0.141	0.0141	0.144	0.0220	0.115	0.0116	0.170*	0.0255*	0.134	0.0132
	(0.0986)	(0.0149)	(0.131)	(0.0130)	(0.0973)	(0.0148)	(0.128)	(0.0129)	(0.0963)	(0.0144)	(0.129)	(0.0127)
Constant	-12.44***		-15.45***		-12.29***		-15.01***		-11.14***		-14.47***	
	(0.732)		(1.262)		(0.767)		(1.312)		(0.749)		(1.276)	
Observations	5,585	5,585	5,234	5,234	5,628	5,628	5,271	5,271	5,634	5,634	5,283	5,283
Pseudo R-squared	0.247		0.284		0.244		0.276		0.251		0.288	

Turning to the importance of a firm's ownership composition for target likelihood, I find that the higher the proportion of institutional investors among a firm's shareholder base the higher the likelihood that the company becomes the target of environmental and social shareholder activism. However, the statistical significance and economic impact of the institutional ownership on target likelihood differs strongly between the total set of environmental and social proposals and the subset of material proposals. To illustrate, while the impact of a one percentage point increase in institutional ownership increases the likelihood of being targeted by a general environmental and social proposal by 7.49%, the same increase in institutional ownership raises the likelihood of being subjected to a material proposal by 11.7%. In addition, while the effect for the total of proposals is only significant at the 10% level, the estimate for the material proposals is more statistically reliable, being significant at the 1% level.

To shed further light on the link between a firm's ownership structure and its target likelihood, I decompose the institutional ownership variable according to the ownership by different investor classes, following the classification by Bushee (1998). In particular, prior research suggests that different investment objectives and incentive systems across investor classes impact their propensity to engage in shareholder activism to varying degrees (e.g. Ryan & Schneider, 2002, for a theoretical model; and Del Guercio & Hawkins, 1999, for empirical evidence). The results of this analysis are presented in Table 5.5.

It appears that the positive relation between institutional ownership and target likelihood is driven by only three investor groups: public pension funds, investment companies and independent investment advisors. The strongest impact on target likelihood is documented for public pension funds whose ownership in a company considerably increases the likelihood that the firm becomes the target of environmental and social activism. Interestingly, this effect is even stronger in both statistical significance and economic magnitude when restricting the sample to the material proposals. In contrast, the positive effect of ownership by investment companies and investment

advisors is entirely restricted to material proposals. In addition, the statistical significance of the

effect is very weak for the case of investment advisors, rendering it less statistically reliable.[100]

Table 5.5: Probability of Being Targeted – Ownership by Different Institutional Investor Groups

Table 5.5 presents the results of logistic regressions of Eq. (3), where the institutional ownership measure has been disaggregated into different investor classes. All other specifications are the same as in Table 5.4. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

Panel A	(1) All Prop.	(2) Mat. Prop.	(3) All Prop.	(4) Mat. Prop.	(5) All Prop.	(6) Mat. Prop.	(7) All Prop.	(8) Mat. Prop.
Own. Banks	0.641	-0.113						
	(0.756)	(0.968)						
Own. Corp. Pens. Funds			-0.696	-2.953				
			(1.796)	(2.275)				
Own. Indep. Invest. Advisors					0.519	1.136*		
					(0.449)	(0.616)		
Own. Insurance Companies							-0.778	2.533
							(1.282)	(1.694)
Constant	-11.97***	-14.26***	-11.93***	-14.27***	-12.28***	-15.05***	-11.89***	-14.37***
	(0.673)	(1.197)	(0.671)	(1.196)	(0.731)	(1.262)	(0.677)	(1.201)
Ind. FE & Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Control Variables	YES	YES	YES	YES	YES	YES	YES	YES
Observations	5,563	5,213	5,561	5,211	5,574	5,224	5,561	5,211
Pseudo R-squared	0.247	0.281	0.247	0.281	0.247	0.282	0.247	0.281
Panel B	(9) All Prop.	(10) Mat. Prop.	(11) All Prop.	(12) Mat. Prop.	(13) All Prop.	(14) Mat. Prop.	(15) All Prop.	(16) Mat. Prop.
Own. Invest. Companies	0.849	3.323***						
	(0.680)	(0.869)						
Own. Misc. Instit. Investors			-0.477	-4.479				
			(2.132)	(2.960)				
Own. Univ. and Found. Endow.					7.482	9.149		
					(6.012)	(7.567)		
Own. Public Pens. Funds							9.779*	14.23**
							(5.047)	(6.740)
Constant	-12.09***	-14.95***	-11.65***	-14.17***	-11.89***	-14.36***	-12.31***	-14.83***
	(0.681)	(1.231)	(0.688)	(1.218)	(0.678)	(1.170)	(0.708)	(1.252)
Ind. FE & Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Control Variables	YES	YES	YES	YES	YES	YES	YES	YES
Observations	5,564	5,214	5,193	4,883	5,384	5,079	5,562	5,212
Pseudo R-squared	0.247	0.284	0.247	0.283	0.246	0.280	0.248	0.282

[100] In unreported results, I interact the institutional investor variables with the KLD scores to test whether the prior KLD performance moderates the impact of institutional ownership on target likelihood. While several additional estimates become statistically significant, the main conclusions of the prior analyses remain unchanged. The results are not reported to preserve space, but are available from the author upon request.

Another noteworthy difference in the determinants of being targeted by an environmental or social proposal is the prior profitability and performance of the company. While the likelihood of receiving a general environmental or social proposal is significantly and positively related to both the prior return on assets and the prior one-year stock return of the company – at a 10% level –; these factors do not seem to impact the target likelihood by material proposals. Finally, several other firm characteristics have proven to be significant determinants of the activism target likelihood; though their impact does not differ between the two subgroups of overall and material proposals. In particular, larger firms, firms with lower book-to-market ratios, firms with higher capital expenditures and lower leverage as well as firms that pay higher dividends, are more likely to be targeted by (material) environmental and social shareholder proposals. These results are broadly in line with findings regarding corporate governance activism (e.g. Karpoff et al., 1996).[101]

5.4.2 Who Submits Material Shareholder Proposals?

The results in the previous chapter suggest that the composition of a company's shareholder base significantly affects its likelihood of becoming the target of environmental and social shareholder activism. In this chapter, I shed further light on the ability of particular investor groups to target companies on material environmental and social issues, by shifting the analysis from the firm to the proposal level. Inspired by a similar empirical design in Bauer et al. (2015) and Dimson et al. (2015), I estimate the following logistic regression explaining the likelihood that an environmental or social proposal received by a firm in a given year is on a financially material topic for the firm's industry.

$$Material\ Dummy_{j,i,t} = \beta_0 + B_1(Sponsor\ Type)_j + \beta_2\ Mat.KLD_{i,t} + \beta_3\ Imm.KLD_{i,t}$$
$$+ B_4(Ownership)_{i,t} + B_5(Firm\ Controls)_{i,t} + \beta_6 Voted\ Dummy_{j}\quad(5.4)$$
$$+ B_7(Resolution\ Type)_j + Year\ FE + Industry\ FE + \varepsilon_{j,i,t}$$

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[101] The only difference arises for the impact of leverage on target likelihood, as Karpoff et al. (1996) find that firms with higher leverage are more likely to be targeted.

The financial materiality of a proposal is indicated by a dummy variable that equals one if the proposal j of firm i in year t is on a financially material issue for firm i's industry ($Material\ Dummy_{i,t}$). The main variable of interest is ($Sponsor\ Type)_j$ which is a vector of dummy variables that indicate the type of sponsor that has submitted the resolution j.[102] The omitted category regarding sponsor types is proposals sponsored by individuals. Hence, the coefficient estimates have to be interpreted as deviations from this base category. Further variables included in the model comprise $Mat.KLD_{i,t}$ and $Imm.KLD_{i,t}$, ($Ownership)_{i,t}$, ($Firm\ Controls)_{i,t}$ and $Voted - Dummy_{j,i,t}$ which is a dummy variable that equals one if the proposal j has been put to a vote and zero otherwise. Additionally, the model includes a vector of dummy variables that indicate the topic of the resolution j ($Resolution\ Type)_j$ as well as year fixed effects ($Year\ FE$) and industry fixed effects ($Industry\ FE$).[103] The sample comprises all voted and withdrawn environmental and social proposals in the RiskMetrics database. Table 5.6 presents the results of the above model.

By far the largest probability of submitting a material proposal is reported for university and foundation endowments. Having a university or foundation as a sponsor increases the probability that the proposal is material by 27% to 28%, relative to individual investors. Additionally, SRI funds, asset managers, public pension funds and religious institutions also show a higher likelihood that their submitted proposals are on topics of financial impact. Proposals by these four investor types have a 12% to 18% higher likelihood of being material than proposals sponsored by individuals. Interestingly, these investor groups are also the ones that are regarded as more professional in their investment approach, more focused on the financial impact of their investment – often due to their fiduciary duties – and more long-term oriented (Gillan & Starks, 2000; Del Guercio & Tran, 2012).

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[102] The classification of sponsor types is presented in Panel B of Table 5.1.

[103] The coefficients on the resolution type dummies are omitted from the presentation to preserve space but are available upon request. Summarising the results on resolution types, resolutions targeting environmental issues are most likely to be financially material. Across the different model specifications, proposals on environmental issues increase the likelihood of the proposal being material by more than 30%, relative to proposals that focus on women and/or minorities on the board. Additionally, I find mixed evidence for the case of proposals on health issues. Note that the omitted category is proposals requesting more women and/or minorities on boards.

Table 5.6: Probability of Proposal Being Material

Table 5.6 presents the results of logistic regressions of Eq. (5.4), explaining the likelihood that a proposal is material. The dependent variable is a binary variable that equals 1 if the proposal is classified as financially material for the firm's industry, according to the SASB standards, and 0 otherwise. The unit of measurement is the proposal-firm-year level. All specifications contain industry and year fixed effects. Robust standard errors are shown in brackets. *, **, *** indicate significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) Material	(2) Mar. Eff.	(3) Material	(4) Mar. Eff.	(5) Material	(6) Mar. Eff.
Mat. KLD	-0.133**	-0.0217**				
	(0.0540)	(0.00877)				
Imm. KLD	0.0335*	0.00547*				
	(0.0190)	(0.00310)				
Mat. KLD Strengths			0.128*	0.0210*		
			(0.0747)	(0.0122)		
Imm. KLD Strengths			0.00957	0.00157		
			(0.0236)	(0.00387)		
Mat. KLD Concerns					0.273***	0.0443***
					(0.0651)	(0.0104)
Imm. KLD Concerns					-0.0528*	-0.00855*
					(0.0296)	(0.00478)
SRI Fund	0.804***	0.132***	0.811***	0.134***	0.784***	0.129***
	(0.232)	(0.0371)	(0.235)	(0.0376)	(0.233)	(0.0371)
Asset Manager	0.890**	0.147**	0.825*	0.136*	0.857*	0.141*
	(0.443)	(0.0734)	(0.437)	(0.0729)	(0.445)	(0.0733)
Foundation/Endow.	1.659***	0.273***	1.719***	0.284***	1.579***	0.258***
	(0.365)	(0.0577)	(0.377)	(0.0595)	(0.369)	(0.0583)
Other	-0.155	-0.0241	-0.135	-0.0211	-0.214	-0.0333
	(0.433)	(0.0669)	(0.431)	(0.0670)	(0.434)	(0.0666)
Public Pension Fund	0.776***	0.128***	0.802***	0.132***	0.732***	0.120***
	(0.258)	(0.0416)	(0.262)	(0.0422)	(0.257)	(0.0414)
Religious Institution	0.929***	0.153***	0.945***	0.157***	0.852***	0.140***
	(0.222)	(0.0351)	(0.226)	(0.0359)	(0.220)	(0.0349)
Special Interest	-0.567*	-0.0849*	-0.565*	-0.0848*	-0.606*	-0.0908*
	(0.327)	(0.0482)	(0.329)	(0.0485)	(0.330)	(0.0485)
Union Fund	-0.134	-0.0210	-0.0916	-0.0144	-0.216	-0.0335
	(0.302)	(0.0471)	(0.302)	(0.0474)	(0.306)	(0.0474)
Voted Dummy	0.396***	0.0642***	0.375***	0.0612***	0.370***	0.0597***
	(0.121)	(0.0195)	(0.121)	(0.0195)	(0.121)	(0.0194)
Instit. Ownership	1.036**	0.169**	1.068**	0.175**	1.134**	0.184**
	(0.446)	(0.0725)	(0.444)	(0.0725)	(0.450)	(0.0726)
Log Assets	-0.0934*	-0.0152*	-0.0851	-0.0140	-0.126*	-0.0204*
	(0.0557)	(0.00908)	(0.0613)	(0.0100)	(0.0662)	(0.0107)
Log Book-to-Market	0.221*	0.0361*	0.222*	0.0364*	0.194	0.0314
	(0.128)	(0.0207)	(0.128)	(0.0208)	(0.128)	(0.0206)
CapEx	0.00608	0.000992	0.00493	0.000808	0.00346	0.000560
	(0.0232)	(0.00379)	(0.0231)	(0.00379)	(0.0230)	(0.00372)
Leverage	-0.000822	-0.000134	-0.000430	-7.04e-05	-0.00119	-0.000192
	(0.00551)	(0.000899)	(0.00545)	(0.000894)	(0.00550)	(0.000891)
Dividends	0.106**	0.0174**	0.111**	0.0181**	0.0908**	0.0147**
	(0.0431)	(0.00701)	(0.0438)	(0.00715)	(0.0435)	(0.00704)
RoA	0.00828	0.00135	0.00485	0.000795	0.00662	0.00107
	(0.0153)	(0.00249)	(0.0151)	(0.00247)	(0.0154)	(0.00250)
Log Prior-Year Return	0.136	0.0221	0.132	0.0216	0.135	0.0220
	(0.177)	(0.0289)	(0.176)	(0.0289)	(0.179)	(0.0290)
Constant	-2.494**		-2.308**		-2.140*	
	(1.066)		(1.096)		(1.094)	
Industry FE & Year FE	YES		YES		YES	
Proposal Type FE	YES		YES		YES	
Observations	2,327	2,327	2,332	2,332	2,331	2,331
Pseudo R-squared	0.287		0.284		0.292	

A natural question that follows on from this finding and those presented in the previous chapter is whether resolution sponsors explicitly link the materiality of a topic to the prior performance on other material issues. If this is the case, I expect shareholders to direct the firm's focus and resources towards those environmental and social issues that are relevant and financially material for the firm and away from "pet" projects that do not help to improve the firm's competitive position within its industry. Thus, firms with a weaker performance on material environmental and social issues as well as firms with stronger performance on immaterial issues should be subject to relatively more material than immaterial proposals. Surprisingly, however, I do not find a consistent relation to prior environmental and social performance as measured by the KLD net scores, neither regarding material nor immaterial issues. While the coefficient estimates show the expected signs, most of them lack statistical significance or the statistical significance tends to be highly dependent on the model specification.

Again, the netting of concerns and strengths might mask that shareholders evaluate firms differently with respect to their environmental and social strengths and concerns. And indeed when disaggregating the KLD score into its subcomponents some interesting insights on the potential triggers of material proposals emerge. Looking at the impact of environmental and social strengths (columns (3) and (4), Table 5.6), I am surprised to find that companies with more material strengths have a higher likelihood of receiving further proposals on material issues. However, the statistical significance as well as the economic magnitude of this relation are relatively weak such that I am cautious in attaching too much weight to this finding. Turning to the results for the concerns scores presented in the last two columns of Table 5.6, both immaterial and material KLD concern scores have a statistically significant impact on the likelihood that the sponsored proposal is financially material. While one further material environmental and social concern raises the likelihood that the proposal is material by up to 4%, an additional immaterial concern lowers materiality likelihood by up to 1.9%. This indicates that proposal sponsors seem to differentiate between the performance on material and immaterial issues. Additionally, the main trigger for their activism are violations of environmental or labour standards rather than voluntary policies and programs captured by the KLD

strength scores. This corroborates prior findings on the importance of treating environmental and social concerns and strengths as independent concepts (e.g. Oikonomou et al., 2014), though I provide evidence in a new setting, namely that of shareholder activism.

In line with the results presented in the previous section, a higher ownership by institutional investors significantly raises the likelihood of the proposal being material by 16.9%. In unreported results, I disaggregated the institutional ownership variable into the ownership by different investors types, following the approach described in the previous chapter. In line with the prior results, a higher ownership by investment advisors and investment companies positively impacts the submission of material proposals over immaterial ones.[104] In contrast, other investor groups that are particularly known for their shareholder activism, such as public pension funds, corporate pension funds and endowments do not seem to encourage the submission of material proposals over immaterial ones.

Finally, turning to the coefficient estimate on the *Voted-Dummy*, I find that proposals which are being put to a vote are more likely to be material than those that are withdrawn. Looking at the marginal effects, it appears that if a proposal is voted on, the likelihood that this proposal is material is increased by about 6.42 %, relative to withdrawn proposals. Most of the other firm characteristics seem to a have a negligible effect on whether a proposal is more likely to be material.

5.4.3   Do Material Proposals Gather Greater Shareholder Support?

The results presented in the previous chapter suggest that certain proposal sponsors seem to do better at identifying financially material environmental and social issues and target companies that show shortcomings in those particular areas. An unanswered question remains whether the broad shareholder base possesses comparable skill in distinguishing between financially material and

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[104] In terms of marginal effects, a one percentage point higher ownership by independent investment advisors raises the likelihood that the proposal is material by 28.4%, while a one percentage point increase in investment companies' ownership is associated with an increase in materiality likelihood by 59.3%. The results of this analysis are available from the author upon request.

immaterial issues. To answer this question, I employ the percentage of votes in favour of a proposal as an indication of shareholder support for the topic targeted by the proposal (Pontiff & Spicer, 2002; Monks et al., 2004). Similar to models in Gillan & Starks (2000) and Thomas & Cotter (2007) that explain the vote outcome for shareholder proposals, I estimate the following OLS regression:

$$\% \ of \ Votes_{j,i,t} = \ \beta_0 + \beta_1 Material \ Dummy_{j,i,t} + \beta_2 \ Mat. KLD_{i,t} + \beta_3 \ Imm. KLD_{i,t}$$
$$+ B_4(Sponsor \ Type)_j \ + B_5(Ownership)_{i,t} + B_6(Firm \ Controls)_{i,t} \quad (5.5)$$
$$+ B_7(Resolution \ Type)_j + Year \ FE + Industry \ FE + \varepsilon_{j,i,t}$$

The dependent variable $\% \ of \ Votes_{j,i,t}$ measures the percentage of shareholder votes in support of proposal j targeted at firm i in year t. The main variable of interest is $Material - Dummy_{i,t}$ which indicates whether the proposal j targets a financially material issue for firm i's industry.

As highlighted by findings in Gillan and Starks (2000) and Thomas & Cotter (2007), sponsor identity, proposal topic, a company's ownership composition, a company's prior performance and the time period are important influences on the voting outcome. As a consequence, I include a variety of resolution type, sponsor type and time fixed effects as well as controls for ownership and other firm characteristics, together with my main variables of interest. The sample comprises all voted shareholder proposals between 1997 and 2011.

Table 5.7 reports the results of this analysis.[105] The main finding is that the materiality of a shareholder proposal does not seem to impact the shareholder support that the proposal receives when put to a vote, as evidenced by the insignificant coefficient estimates on the Material-Dummy in all specifications. Additionally, while a company's prior performance on material environmental and social issues does not appear to impact the vote outcome either, a higher performance score on immaterial issues tends to significantly lower the support that a proposal receives.

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[105] To preserve space, I do not report the coefficient estimates on the resolution type dummies, but the results are available from the author upon request. To summarise, all proposal topics with the exception of political issues – such as political corruption and spending – tend to receive significantly lower shareholder support than the base category of promoting women and/or minorities on corporate boards. However, given the low number of proposals that target women/minorities on boards these results have to be interpreted with some caution.

Table 5.7: Vote Support for Environmental and Social Shareholder Proposals

Table 5.7 presents the results of OLS regressions of Eq. (5.5). The dependent variable is the percentage of vote in support of the proposal. The sample includes all proposals that were put to a vote. The unit of measurement is the proposal-firm-year level. All specifications include industry and year fixed effects. Robust standard errors are shown in brackets. *, **, *** indicate significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) % of Votes	(2) % of Votes	(3) % of Votes	(4) % of Votes
Material Dummy	0.619	0.426	0.647	0.647
	(0.632)	(0.711)	(0.634)	(0.635)
Mat. KLD	-0.0955	0.0662		
	(0.224)	(0.281)		
Imm. KLD	-0.271***	-0.325**		
	(0.0949)	(0.132)		
Mat. KLD X Material		-0.289		
		(0.386)		
Imm. KLD X Material		0.106		
		(0.157)		
Mat. KLD Strengths			-0.538*	
			(0.310)	
Imm. KLD Strengths			-0.262**	
			(0.105)	
Mat. KLD Concerns				-0.281
				(0.270)
Imm. KLD Concerns				0.204
				(0.146)
SRI Fund	7.140***	7.148***	6.959***	7.147***
	(0.959)	(0.960)	(0.966)	(0.952)
Asset Manager	1.750	1.676	1.626	1.214
	(3.145)	(3.165)	(3.081)	(3.143)
Foundation/Endow.	6.961***	6.951***	6.832***	7.025***
	(1.974)	(1.978)	(1.980)	(1.991)
Other	7.297**	7.344**	7.009*	7.336**
	(3.639)	(3.647)	(3.575)	(3.715)
Public Pension Fund	7.827***	7.800***	7.636***	8.066***
	(1.006)	(1.004)	(1.011)	(1.022)
Religious Institution	6.000***	5.960***	5.943***	6.240***
	(0.802)	(0.805)	(0.798)	(0.804)
Special Interest	0.924	0.940	0.930	0.789
	(0.926)	(0.927)	(0.919)	(0.929)
Union Fund	2.945***	2.932***	2.811***	3.168***
	(0.994)	(0.996)	(0.993)	(1.005)
Instit. Ownership	4.903**	4.941**	4.017*	4.656**
	(2.040)	(2.039)	(2.048)	(2.066)
Log Assets	-0.517**	-0.508**	-0.0996	-0.608**
	(0.251)	(0.252)	(0.258)	(0.307)
Log Book-to-Market	-0.313	-0.333	-0.332	-0.362
	(0.511)	(0.516)	(0.514)	(0.511)
CapEx	0.0987	0.0980	0.112	0.0865
	(0.0937)	(0.0938)	(0.0942)	(0.0942)
Leverage	-0.0415*	-0.0425*	-0.0387*	-0.0369
	(0.0231)	(0.0233)	(0.0230)	(0.0230)
Dividends	-0.318	-0.321	-0.280	-0.360*
	(0.213)	(0.213)	(0.211)	(0.209)
RoA	0.0424	0.0417	0.0376	0.0526
	(0.0673)	(0.0674)	(0.0682)	(0.0676)
Log Prior-Year Return	-0.697	-0.712	-0.671	-0.653
	(0.892)	(0.897)	(0.891)	(0.889)
Constant	6.715	6.824	3.652	7.667*
	(4.154)	(4.185)	(4.204)	(4.306)
Industry FE & Year FE	YES	YES	YES	YES
Resolution Type FE	YES	YES	YES	YES
Observations	1,519	1,519	1,522	1,521
Adj. R-squared	0.417	0.417	0.417	0.415

Interestingly, the significant and negative effect of prior immaterial environmental and social performance on vote outcome seems to entirely stem from a firm's prior performance on immaterial KLD strengths issues. These findings suggest that shareholders do not seem willing to support further resource allocations towards environmental and social policies if the company has previously (mis-)allocated resources to policies of no or little financial impact. Taken even further, this result might indicate that shareholders as a whole are able to differentiate between material and immaterial environmental and social topics and can exercise a corrective force when a company is already overinvested in immaterial environmental and social policies. However, this ability does not seem to extend to the assessment of the financial materiality of the proposal under question. Specifically, the interactions of the Material-Dummy with the prior environmental and social performance measures are not statistically significant, suggesting that there is no conditioning effect of the materiality on the impact of material and immaterial environmental and social performance regarding vote outcome.

In terms of other determinants of vote outcome the findings mainly confirm those reported in earlier studies (e.g. Gillan & Starks, 2000, on corporate governance proposals, and Thomas & Cotter, 2007, on corporate governance and environmental and social proposals). Institutional sponsors tend to gather a higher support for their proposals than the baseline of individual sponsors. Moreover, public pension funds, university and foundation endowments, SRI funds and religious institutions are able to obtain a particularly high vote support of their proposals (Table 5.8). A larger institutional ownership base positively impacts the percentage of votes that a proposal receives.[106] All other firm characteristics have little to no impact on vote outcome. Interestingly, in comparison to corporate governance proposals (e.g. Gillan & Starks, 2000), prior firm performance does not impact the shareholder support for environmental and social proposals as indicated by the statistically insignificant coefficients on the variables return on assets and 1-year prior stock return.

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[106] Interestingly, the impact of institutional ownership on voting support for environmental and social proposals is considerably larger in magnitude than for the corporate governance proposals analysed in Gillan & Starks (2000), although a non-overlap in sample periods impedes a direct comparison of the findings.

Table 5.8: Vote Support for Environmental and Social Shareholder Proposals – Ownership by Different Institutional Investor Groups

Table 5.8 presents the results of OLS regressions of Eq. (5.5), where the institutional ownership measure has been disaggregated into different types of owners, according to Bushee (1998). Robust standard errors are shown in brackets. *, **, *** indicate significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) % of Votes	(2) % of Votes	(3) % of Votes	(4) % of Votes	(5) % of Votes	(6) % of Votes	(7) % of Votes	(8) % of Votes
Material Dummy	0.661	0.658	0.702	0.683	0.703	0.786	0.708	0.686
	(0.634)	(0.637)	(0.631)	(0.631)	(0.632)	(0.650)	(0.647)	(0.631)
Mat. KLD	-0.140	-0.131	-0.109	-0.101	-0.109	-0.109	-0.223	-0.126
	(0.226)	(0.227)	(0.225)	(0.224)	(0.226)	(0.231)	(0.221)	(0.227)
Imm. KLD	-0.262***	-0.271***	-0.252***	-0.273***	-0.252***	-0.268***	-0.247**	-0.264***
	(0.0955)	(0.0955)	(0.0951)	(0.0950)	(0.0958)	(0.0973)	(0.0969)	(0.0954)
Own. Banks	23.79***							
	(5.713)							
Own. Corp. Pens. Funds		189.4**						
		(77.09)						
Own. Indep. Invest. Advisors			-0.218					
			(3.914)					
Own. Insurance Companies				35.27***				
				(11.70)				
Own. Invest. Companies					-0.313			
					(5.964)			
Own. Misc. Instit. Investors						3.575		
						(24.19)		
Own. Univ. & Found.							71.66	
							(44.42)	
Own. Public Pens. Funds								57.58
								(45.36)
Constant	9.566**	11.23***	12.33***	10.89***	12.23***	11.41***	13.30***	10.52***
	(3.817)	(3.932)	(4.512)	(3.827)	(3.917)	(4.025)	(3.876)	(3.957)
Industry FE & Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Res. Type FE & Sponsor FE	YES	YES	YES	YES	YES	YES	YES	YES
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,518	1,514	1,518	1,518	1,518	1,483	1,483	1,518
Adj. R-squared	0.420	0.415	0.415	0.418	0.415	0.414	0.415	0.415

5.4.4 How Does the Market React to Material Shareholder Proposals?

Another way of analysing the impact of shareholder activism on a firm's shareholder base is by looking at the share price reaction to the news that a company is targeted by an environmental or social proposal. In particular, I am interested in whether the market reacts differently when companies are targeted on material versus immaterial issues. Grewal et al. (2016) find that material environmental and social proposals increase future firm value, while immaterial ones have the potential to destroy shareholder wealth. Thus, if the market is able to distinguish between material and immaterial proposals then I expect to observe a positive and significant market reaction when the market learns about the company being targeted by material proposals. In comparison, I expect a negative market effect regarding information on immaterial proposals.

While several previous studies have attempted to measure the market reaction to shareholder proposals, this analysis and the interpretation of results derived from it is complicated by several factors, as explained at length in Gillan & Starks (2007). Firstly, it is not clear when investors learn about the company being targeted by a proposal. As a consequence, the literature suggests several alternative event days for the analysis of the market reaction. Secondly, some events might not contain any 'news' to the market, especially in cases when the company has been repeatedly targeted on the same issue. Thirdly, the expected a-prior response to the news of the targeting might not be clear. On the one hand, the market might interpret the targeting as 'good' news as it indicates increased monitoring by the shareholders. On the other hand, shareholders might take the targeting as a signal that prior negotiations with management have failed which they could regard as 'bad' news. Finally, the announcement of the news of companies being targeted by a shareholder proposal is usually accompanied by other (value relevant) corporate information. For instance, the proxy statement might inform about additional corporate governance related proposals as well as proposed changes to executive compensation. In addition, at the shareholder meeting when the proposal is put to a vote, shareholders usually vote on a variety of different issues and companies use this opportunity to reveal other news to shareholders. Thus, it is difficult to uniquely link the market reaction on these

days to a particular piece of information. While I try to address several of these issues in my analysis, I cannot completely eliminate the confounding effects of the above factors. Thus, I interpret the results of the following analysis rather as an indication of the potential market reaction.

As is common in the literature, I measure the market reaction to environmental and social shareholder proposals by calculating cumulative abnormal returns (CARs) in the share price of the targeted company around the announcement of the activism. Following Flammer (2015) and Cunat et al. (2012), I estimate abnormal returns using the four-factor model of Carhart (1997). In Carhart's model, the excess return of a stock is regressed on a constant (the alpha), the excess return on the market, a size factor ('small minus big' market capitalisation), a value factor ('high minus low' book-to-market), and a momentum factor ('winners minus losers' based on prior stock return). The market factor is the value-weighted CRSP index minus the risk-free rate and the size, value and momentum factors are downloaded from Kenneth French's website.[107] The coefficients of the four-factor model are estimated by the OLS estimator using an estimation window of 200 trading days that ends 20 days prior to the event date (e.g. Cunat et al., 2012; Flammer, 2015).[108]

As previously mentioned, one difficulty of analysing the market reaction to (material) shareholder proposals is identifying when the market learns about a company being targeted on an environmental or social issue. There are three relevant days during which the market may learn about shareholder proposals: (1) the day that the proxy statement containing the shareholder proposal has been mailed to shareholders, i.e. the proxy mailing date (e.g. Karpoff et al., 1996; Gillan & Starks, 2000; Prevost & Rao, 2000); (2) the day that the company has filed its proxy statement with the SEC, as is its duty under U.S. security law; and (3) the date of the shareholder meeting when the proposal has been put

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[107] See http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html .
[108] Similar to Cunat et al. (2012) and Flammer (2015), I require a stock to have at least 15 days with non-missing returns during the 200-day estimation window in order to be included in the sample. However, this restriction only led to one exclusion of a company that did not have any observations during the estimation period.

to a vote, i.e. the meeting date (e.g. Karpoff et al., 1996).[109] For completeness, I test the market reaction around all three dates. The date of the shareholder meeting is reported in the RiskMetrics database. Following related studies (e.g. Karpoff et al., 1996; Gillan & Starks, 2000; Prevost & Rao, 2000), I retrieve the proxy mailing date from the company's proxy statement (DEF 14a filing) for all firm-year combinations.[110] In particular, I read every proxy statement and extracted the date on the cover letter to the proxy statement. In this context, I also checked that the shareholder meeting date recorded in RiskMetrics matches the date mentioned in the proxy statement. The proxy filing date is defined as the date that the documents were filed with the SEC and is retrieved from the SEC's EDGAR database. For proxy statements without a mailing date on the letter cover, I replace the mailing date with the filing date. However, these instances are very rare. In cases where the proxy mailing date or the proxy filing date fall on a non-trading day, I replace the respective date with the next trading day. In accordance with the literature (e.g. Cao et al., 2016), I focus on the 3-day event window around the shareholder meeting date. In particular, I compute 3-day CARs over the window [-1; +1], where day 0 is the day of the shareholder meeting. For the proxy mailing and filing dates, I adopt a larger event window of 10 days [-2; +7], with day 0 being either the mailing or the filing date, to account for slower information dissemination due to postage and other potential delays in sending the proxy statements. Summary statistics for the three different CARs are provided in Table A.5.1 in the Appendix to Chapter 5.

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[109] Additionally, shareholders could already learn about a potential targeting prior to the proxy statement in case the sponsor has engaged in private dialogue with the company, the sponsor has publicly announced its intention to target a company on a particular issue or the financial press has covered a potential targeting intention. However, as shown by other studies, these instances are rare (see e.g. Del Guercio & Hawkins, 1999). Additionally, the sponsor could still withdraw the proposal prior to the mailing of the proxy statement.
[110] The proxy statements are obtained from the SEC's EDGAR database.

Univariate Comparison of CARs

Table 5.9 provides a univariate comparison of CARs for firms that have been targeted by material environmental and social proposals and firms that have been targeted by immaterial proposals. Panel A focuses on the market reaction around the shareholder meeting date, while Panel B and Panel C present averages and median values of CARs around the proxy mailing date and proxy filing date, respectively. All CARs are reported in percentage points. Overall, I find that the CARs are quite small. This finding is in line with previous research (e.g. Karpoff et al., 1996; Gillan & Starks, 2000) and can be attributed to different effects, e.g. information leakages prior to proxy statements and/or shareholder meetings as well as shareholder proposals targeting topics with lower impact on firm value as compared to e.g. corporate take-overs and mergers. For the case of the 3-day CARs around the meeting date, my results do not suggest a significantly different market reaction to proposals on material versus immaterial issues. This finding holds when controlling for confounding effects due to other environmental and social proposals as well as corporate governance proposals (see results in Panels B and C of Table 5.9). Similarly, the 10-day CARs around the mailing date also do not show significant differences based on the materiality of the proposal topic. The only significant effects relate to the comparison of 10-day CARs around the proxy filing date.

Contrary to my expectation that material proposals should be evaluated more favourably by the market, I actually find that the 10-day CARs for companies being targeted by material proposals are more than 0.4 percentage points lower than those for companies being targeted by immaterial proposals. However, once I introduce a stricter sample selection that accounts for the confounding effects of other proposals, I observe that both the statistical significance as well as the economic magnitude of the effect vanishes. Thus, the results of my univariate comparison generally suggest that the market does not react very strongly to the news of environmental or social activism and, more importantly, does not react differently based on the financial materiality of the topic targeted.

Table 5.9: Differences in CARs between Material and Immaterial Proposals

Table 5.9 reports cumulative abnormal returns (CARs). Abnormal returns are calculated by subtracting the predicted return, based on a 4-Factor Fama-French Model from the actual return of the firm, and are reported in percentage points. Panel A focuses on abnormal returns around a three-day event window starting one day before the meeting [-1] and ending one day after the meeting [+1] and it only focuses on proposals that have been put to a vote. Panel B and Panel C focus on abnormal returns around a ten-day event window starting two days before the proxy mailing/filing date [-2] and ending seven days after the mailing/filing date [+7], and they comprise both voted and withdrawn proxies. The sample is split between proposals classified as financially material and financially immaterial. The last column reports t-statistics for the difference of the means as well as Wilcoxon rank-sum z-statistics for the difference of the medians. The second set of rows for each panel compares proposals where either all proposals submitted for one firm during one year were material or all were immaterial. The third set of rows only includes proposals when there was no confounding corporate governance proposal for the same firm in the same year. *, **, *** indicate statistical significance at the 10%, 5% and 1% levels, respectively.

		All Prop. (1)	All Mat. (2)	All Immat. (3)	Difference (2)-(3)	t/z statistic diff. test
Panel A: CARs of voted proposals around Meeting Date						
CAR	Mean	0.26	0.23	0.30	-0.07	-0.411
(-1;+1)	Median	0.11	0.10	0.11	-0.01	-0.258
	N	1838	851	987		
CAR	Mean	0.41	0.44	0.39	0.05	0.209
(-1;+1)	Median	0.10	0.14	0.08	0.06	1.185
all material vs. all immat.	N	1077	473	604		
CAR	Mean	0.36	0.28	0.44	-0.15	-0.493
(-1;+1)	Median	0.37	0.38	0.36	0.02	-0.731
no corp. gov. prop.	N	514	264	250		
Panel B: CARs around Proxy Mailing Date (voted and withdrawn proposals)						
CAR	Mean	0.22	0.03	0.37	-0.34	-1.559
(-2;+7)	Median	0.01	-0.05	0.09	-0.14	-1.007
	N	2898	1306	1592		
CAR	Mean	0.38	0.15	0.55	-0.39	-1.309
(-2;+7)	Median	0.16	0.04	0.27	-0.22	-0.921
all material vs. all immat.	N	1844	780	1064		
CAR	Mean	-0.10	0.01	-0.20	0.21	0.500
(-2;+7)	Median	-0.32	-0.31	-0.34	0.03	0.561
no corp. gov. prop.	N	914	430	484		
Panel C: CARs around Proxy Filing Date (voted and withdrawn proposals)						
CAR	Mean	0.23	0.00	0.42	-0.42**	-1.962
(-2;+7)	Median	0.03	-0.06	0.20	-0.26	-1.397
	N	2898	1306	1592		
CAR	Mean	0.40	0.09	0.62	-0.53*	-1.773
(-2;+7)	Median	0.16	-0.06	0.38	-0.43	-1.439
all material vs. all immat.	N	1844	780	1064		
CAR	Mean	0.01	-0.01	0.03	-0.04	-0.100
(-2;+7)	Median	-0.22	-0.16	-0.24	0.08	0.318
no corp. gov. prop.	N	914	430	484		

Multivariate Analysis of CARs

The insignificant return differences between material and immaterial proposals could reflect the correlation of CARs with other determinants. To control for such potential influences of observable covariates, I next compare the CARs in a multivariate regression framework, following similar approaches in Thomas & Cotter (2007) and Becht, Polo & Rossi (2016). I test the following OLS regression where the dependent variable is one of the three CARs that I have computed earlier.[111]

$$
\begin{aligned}
CAR_{j,i,t} = \ & \beta_0 + \beta_1 Material\ Dummy_{\ j,i,t} + \beta_2\ Mat.KLD_{\ i,t} + \beta_3\ Imm.KLD_{\ i,t} \\
& + B_3(Resolution\ Type)_j + B_4(Sponsor\ Type)_j\ + B_5(Ownership)_{i,t} \\
& + B_6(Firm\ Controls)_{i,t} + \beta_7 Voted\ Dummy_{j,i,t} + \beta_8 CGov.Prop.\ Dummy_{i,t} \\
& + Year\ FE + Industry\ FE + \varepsilon_{j,i,t}
\end{aligned}
\tag{5.6}
$$

Besides the previously introduced variables, I include the variable $CGov.Prop.\ Dummy_{i,t}$ which is a dummy variable that takes the value of one if firm *i* has been targeted by a corporate governance proposal in the same year *t*.

In line with the univariate analysis, I repeat the multivariate analysis on different subsamples in which I explicitly control for the confounding effects of corporate governance proposals and competing environmental and social proposals by excluding these from the sample. The results are presented in Table 5.10. To preserve space, I only report the coefficient estimates on the Material-Dummy and the KLD scores.

Overall, the results of the multivariate analysis confirm those derived from the univariate comparison. The materiality of a proposal does not seem to impact the market reaction to the news of targeting, especially when controlling for confounding effects (see specifications (4) to (12) in Table 5.10).

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[111] I acknowledge that using an estimated variable as the dependent variable introduces an estimation bias to the model. When using estimated variables as dependent variables, the coefficient estimates are still consistently estimated. However, in cases of very large measurement errors in the dependent variable standard errors might be inflated so that OLS is a consistent but inefficient estimator.

Table 5.10: Multivariate Analysis of CARs

Table 5.10 presents the results of OLS regressions of Eq. (5.6), explaining the cumulative abnormal returns (CARs) around meeting dates when an environmental or social proposal has been voted on, around the proxy mailing date that contained the shareholder proposal and around the filing date to the SEC of the proxy statement that contained the shareholder proposal. The unit of measurement is the firm-year level. The dependent variable is either the three-day CAR[-1;+1] around the meeting date, the ten-day CAR[-2;+7] around the proxy mailing date, or the ten-day CAR[-2;+7] around the date that the proxy has been filed with the SEC. The sample in specification (1) comprises only voted proposals, while the sample in specifications (2) and (3) comprise voted and withdrawn proposals. The sample in specifications (4) to (6) comprises only proposals where the other submitted/voted environmental and social proposals have either all been material or have all been immaterial. The sample in specifications (7) to (9) excludes environmental and social proposals when the same firm was subject to a corporate governance proposal in the same year. The sample in specifications (10) to (12) comprises only proposals where the other submitted/voted proposals have either all been material or all been immaterial and it excludes proposals when the same firm was subject to a corporate governance proposal in the same year. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	All Proposals			Only Material or Only Immaterial Prop.			No Corp. Gov. Prop.			Only Mat. or Only Immat. Prop & No Corp. Gov. Prop.		
	CAR[-1;+1] Meeting Date (1)	CAR[-2;+7] Mailing Date (2)	CAR[-2;+7] Filing Date (3)	CAR[-1;+1] Meeting Date (4)	CAR[-2;+7] Mailing Date (5)	CAR[-2;+7] Filing Date (6)	CAR[-1;+1] Meeting Date (7)	CAR[-2;+7] Mailing Date (8)	CAR[-2;+7] Filing Date (9)	CAR[-1;+1] Meeting Date (10)	CAR[-2;+7] Mailing Date (11)	CAR[-2;+7] Filing Date (12)
Material Dum.	0.0261	-0.475*	-0.553**	0.202	-0.531	-0.794*	-0.0909	-0.734	-0.599	0.476	-0.736	-0.583
	(0.223)	(0.278)	(0.271)	(0.327)	(0.442)	(0.435)	(0.458)	(0.645)	(0.626)	(0.716)	(0.852)	(0.840)
Mat. KLD	0.0590	-0.0871	-0.172	-0.0410	-0.217	-0.259*	-0.272	-0.723***	-0.788***	-0.484**	-0.923***	-0.919***
	(0.0967)	(0.107)	(0.105)	(0.131)	(0.155)	(0.152)	(0.186)	(0.262)	(0.260)	(0.223)	(0.302)	(0.302)
Imm. KLD	-0.0219	0.0302	0.0325	-0.0232	0.0233	0.0460	-0.0646	0.199**	0.194**	-0.0719	0.0724	0.0753
	(0.0378)	(0.0392)	(0.0385)	(0.0619)	(0.0587)	(0.0576)	(0.0736)	(0.0861)	(0.0851)	(0.121)	(0.123)	(0.122)
Constant	0.926	8.127**	7.579**	3.192	11.94***	11.57***	2.185	12.26**	11.81**	2.437	13.39***	12.81**
	(2.501)	(3.489)	(3.502)	(2.359)	(4.232)	(4.312)	(3.621)	(4.784)	(4.850)	(4.254)	(4.975)	(5.114)
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Res. Type FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Sponsor FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Control Var.	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1,519	2,398	2,398	883	1,504	1,504	417	742	742	321	598	598
Adj. R-squared	0.0816	0.0649	0.101	0.0904	0.0753	0.114	0.0706	0.125	0.129	0.0423	0.137	0.135

However, interestingly, the prior performance on material environmental and social issues proves to be an important determinant of the size of the CARs, at least for the proxy mailing date and proxy filing date, and when looking at the stricter sample selections. In particular, the negative and highly significant coefficient estimate on the sector-adjusted material KLD score suggests that companies that are already doing well on material issues experience a less favourable market reaction than those that are doing less well on material issues. This finding suggests a decreasing financial value of additional improvements on material environmental and social performance. However, as these results are derived from a considerably decreased sample size, I am cautious in attaching too much weight to these findings.

Propensity Score Matching

As a final test I address the possibility that the multivariate results were driven by observable variables that affect both the likelihood of being the target of a material environmental or social proposal and the target stock return around event days. To account for these effects, I apply several versions of a non-parametric propensity score matching method, following the example of Becht et al. (2016). The idea behind the propensity score matching exercise is to estimate the counterfactual outcome of companies (i.e. the CAR if they were not targeted by a material proposal) by using the outcomes form a subsample of 'similar' subjects from the control group (Becht et al., 2016). In order to conveniently compare companies based on these observable characteristics, the propensity score summarises a company's pre-treatment characteristics into one single index variable (Becker & Ichino, 2002).[112] Relative to the multivariate tests presented in the previous section, the propensity score matching technique relaxes the assumption of linearity in the relationship between materiality and stock market reaction (Becht et al., 2016). Due to these benefits, the propensity score matching

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[112] However, as pointed out by Becker & Ichino (2002), propensity score matching only allows reducing the bias generated by unobservable confounding factors. A total elimination is only achieved if exposure to the treatment was purely random among observations with the same propensity score.

approach is a commonly applied technique in the shareholder proposal literature (e.g .Bauer et al., 2015; Becht et al., 2016; Grewal et al., 2016).

I want to compare the CARs of a material proposal with the CAR of the 'closest' immaterial counterpart according to all observable variables determining the materiality status and the CAR on the event date. Following Becht et al. (2016), I estimate the propensity score as the probability of being a material proposal conditional on the covariates, using a logit regression. The list of covariates is the following: material KLD score, immaterial KLD score, institutional ownership, assets, book-to-market ratio, capex, leverage, dividends, RoA, 1-year prior return, corporate governance dummy and SASB-sector dummies.[113] The estimation of the propensity score is carried out using the Stata module *pscore*, developed by and explained in Becker & Ichino (2002). A graphical comparison of the propensity scores of both material and immaterial proposals also shows that the overlap condition between the treatment and the comparison group is satisfied. I then estimate the average treatment effects for the treated proposals given the propensity score using different matching techniques. The matching techniques include Kernel matching, Nearest Neighbour matching and Radius matching. Further details on the different matching techniques are provided in the Appendix to Chapter 5.

The results for the average treatment effects on the treated (ATET) for the different sets of CARs are presented in Table 5.11. They confirm my earlier findings that companies targeted by material proposals do not have statistically different returns around the shareholder meeting date, the proxy mailing date and the proxy failing date than comparable companies targeted by immaterial proposals. This finding provides final evidence that the stock market does not differentiate between the materiality, or otherwise, of a shareholder proposal.

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[113] In this specification, I calculate the KLD scores as deviations from the RiskMetrics sample mean in order to satisfy the balancing property required for the estimation of propensity scores, by which observations with the same propensity score have the same distribution of observable covariates independently of treatment status (Becker & Ichino, 2002). However, when repeating the analysis with the KLD scores based on S&P500 deviations, I obtain quantitatively similar estimates for the ATET and my qualitative conclusions regarding the differential market reaction to material and immaterial proposals remain the same.

Table 5.11: Comparison of CARs based on Propensity Score Matching

Table 5.11 presents a comparison of CARs around the meeting date (*Panel A*), the proxy mailing date (*Panel B*) and the proxy filing date (*Panel C*) between firms subject to material environmental and social proposals and firms subject to immaterial proposals. Average treatment effects on the treated (ATET) are reported where the treatment is the materiality status. The propensity scores to match treated with appropriate control observations have been estimated based on the treatment model specified in Section 4.4. In order to match treated observations (material proposals) with appropriate control observations (immaterial proposals) based on their propensity score, I use three different matching techniques: Kernel method, Nearest Neighbour matching and Radius matching. The standard errors are bootstrapped (200 replications). The estimation of the propensity scores was performed using the Stata *pscore* module, introduced by Becker & Ichino (2002).

		N of Treated (Mat. Prop.)	N of Control (Immat. Prop.)	ATET	*t*-stat.
Panel A					
CAR[-1;+1] Meeting Date	Kernel	715	799	0.201	0.923
CAR[-1;+1] Meeting Date	Nearest Neighbour	715	384	0.281	1.097
CAR[-1;+1] Meeting Date	Radius	715	799	0.018	0.095
Panel B					
CAR[-2;+7] Mailing Date	Kernel	1094	1304	-0.162	-0.668
CAR[-2;+7] Mailing Date	Nearest Neighbour	1094	668	-0.006	-0.021
CAR[-2;+7] Mailing Date	Radius	1094	1304	-0.244	-1.114
Panel C					
CAR[-2;+7] Filing Date	Kernel	1094	1304	-0.242	-0.972
CAR[-2;+7] Filing Date	Nearest Neighbour	1094	668	-0.025	-0.090
CAR[-2;+7] Filing Date	Radius	1094	1304	-0.330	-1.427

5.5 Additional Tests and Alternative Explanations

A striking conclusion from my previous analysis is the large number of proposals on immaterial environmental and social issues and thus the considerable (mis-)allocation of resources, both on the part of the sponsoring investor as well as the target firms' management that has to respond to these demands. Despite these empirical results, one potential concern is that in defining material issues for a specific industry the SASB was guided by the pattern of past shareholder proposals, including the success of the proposal and the identity of the sponsoring investor. In other words, the SASB could

have been more likely to classify those issues as financially material which were the target of a prior shareholder proposal and which resulted in a positive financial impact on the target company. Even though my previously presented findings provide very little empirical backing for this assumption and I do not find any indication of this effect in the SASB's documentation, the argument is nevertheless worthy of further investigation.[114] While it is difficult to completely rule out this alternative story, I can offer some pieces of evidence that are inconsistent with it. Particularly, if the SASB based its definition of materiality on the characteristics of past shareholder proposals, I would expect to find the following patterns in my data: (1) Most (or all) of the material topics featured in the SASB industry standards should have been the target of at least one shareholder proposal during my sample period. (2) Material topics should receive a higher number of proposals per topic, they should receive greater shareholder support and they should more likely be submitted by more 'professional' sponsors, such as institutional investors. (3) The more recent proposals should be more relevant as indicators of financial materiality resulting in a higher share of material proposals in more recent years.

To shed light on this matter, I first revisit the mapping of the material issues identified by the SASB and the topics of the shareholder proposals. Specifically, I categorise environmental and social issues into three categories: (a) those that are classified as financially material by the SASB and that were the topic of at least one shareholder proposal directed at a company in a particular industry, (b) those topics that the SASB considers material but that were not the topic of any shareholder proposal during my sample period, and (c) those topics that did not appear on the SASB's list of material issues for the specific industry but that were the topic of a shareholder proposal targeted at a company in that particular industry. For categories (a) and (b), I also document the number of proposals that targeted the particular environmental or social issue as well as the distribution of topic-specific proposals

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[114] In addition, the issue of such a possible endogenous relationship between the materiality of a proposal topic and the proposal characteristics is more pressing for studies on the financial impact of shareholder proposals, which is not the focus of this study.

across sponsors and time. Table A.5.2 in the Appendix to Chapter 5 provides an overview of the topics across industries and the three categories. To summarise the main findings of this exercise, I do not find any patterns indicating that the SASB has systematically based its classification of the financial materiality of environmental and social issues on the patterns of past shareholder proposals. Firstly, I find that the majority of topics classified by the SASB as material have not been the subject of any shareholder proposal in my sample. Thus, even if SASB relied on past patterns of shareholder proposals it certainly was not their main source for classification. Similarly, there are a variety of issue topics that were the subject of a shareholder proposal in a particular industry but that did not appear in the SASB's industry-specific materiality standard.[115] Additionally, I do not find that proposals by institutional investors or more recent proposals are more likely to be classified as material.

I re-estimated the benchmark models for the time period from 2008 to 2011, i.e. the four years prior to the start of consultations for the industry standards, and the remainder period 1997 to 2007 (Tables A.5.3 and A.5.4 in the Apendix to Chapter 5). Again, I do not find any systematic evidence that the SASB linked its definition of materiality to proposal characteristics and vote support, particularly for the latter sample period.

Finally, I formally tested whether the 'success' of a proposal was a determinant of whether the SASB classified the topic as material or otherwise. As measures of proposal success, I used both the percentage of votes in favour of a proposal as well as an indicator whether the proposal has been withdrawn to explain the materiality of the proposal topic. Presumably, if the SASB used the 'success' of a proposal as the main criterion for financial materiality, then I should expect to find that the vote outcome and the withdrawal indicator are positively and significantly related to the likelihood of the proposal being material and that this relation strengthens in the later sub-period

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[115] I acknowledge that the number of material but not targeted topics is subject to an upward bias as the SASB might have grouped more sub-topics under one topic. However, I regard this bias to be only of limited extent as, across industries, I have far less targeted but immaterial topics than there are material and targeted topics.

(Table A.5.5 in the Appendix to Chapter 5). Overall the results of these additional analysis do not provide any indication that the SASB has systematically conditioned its definition of financial materiality on the voting outcome or the withdrawal of a proposal, strengthening the robustness of my research design against potential concerns of endogeneity.

5.6 Summary

Shareholder activism on environmental and social topics has seen a strong increase over recent decades. However, little is known about its underlying motives. The prevalent opinions range from seeing activism as an investment strategy to increase shareholder wealth to condemning it as an opportunity for investors to advance their ulterior motives and gain private benefits. By classifying the topics of environmental and social shareholder proposals into financially material and financially immaterial ones this study aims to shed new light on the debate about the underlying drivers of shareholder activism. Based on a sample of over 3,000 shareholder proposals over the period 1997 to 2011, I find that the majority of shareholder proposals target financially immaterial environmental and social issues. However, a subset of investors, comprising public pension funds, university and foundation endowments, religious institutions and certain asset managers, seems to be more successful at identifying matters of financial impact to the targeted company. Based on the pattern of votes cast in favour of the proposals, I find only limited support that the overall shareholder base is able to differentiate between the proposal's financial materiality, or otherwise. However, shareholders seem less willing to support additional environmental and social proposals if the company has already invested considerable resources on immaterial environmental and social policies. Overall, my results indicate that investors expend a considerable amount of resources on advancing immaterial environmental and social issues through shareholder activism.

My findings have important implications both for the academic literature on responsible investment and shareholder activism as well as for the sponsors and targets of such activities. Marisa Mackay, Associate Director of Education at the SASB, highlights that "as much as 60 to 70 percent of the

information in [corporate social responsibility] reports is on immaterial issues".[116] This mirrors statements by the U.S. Chamber of Commerce which reiterate that companies spend too much time and money on issues that have no effect on the bottom line and that divert the attentions of senior management and directors from more important work.[117] However, I find that it is not only the companies themselves which are to blame for this potential (mis-) allocation of resources, but that these tendencies are at least partially driven by pressures from activist investors who engage companies on such immaterial environmental and social issues. Overall, the evidence presented in this paper suggests that more work is needed to educate both companies and its shareholders about which environmental and social factors are relevant for a particular industry.

In addition, my study suggests that companies can impact the likelihood of becoming the target of shareholder activism through their performance on environmental and social issues. However, I find that investors pay attention to the type of environmental and social matters addressed by the company suggesting that simple 'green washing' strategies are not likely to mask environmental or social violations on other material areas. In particular, my results highlight that companies are more likely to be targeted if they show past concerns on material environmental and social issues. In contrast, the relative strength of their environmental and social policies does not systematically impact target likelihood. In this way, my study contributes new insights to the literature in that companies do not only benefit from prudent management of their environmental and social policies through improved labour productivity and sales growth (Flammer, 2015) but also through reducing the likelihood of becoming the target of environmental and social shareholder activism.

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[116] See https://www.corporatesecretary.com/articles/compliance-ethics-csr/12425/sasb-previews-sustainability-standards-financials/ .

[117] In addition, former Securities and Exchange Commissioner Troy Paredes' evaluation of the recent increase in social and environmental policy proposals echoes a similar attitude: "You can imagine 100 shareholders. And you can imagine 90 of them want laser-like focus on strategy, execution and increasing value," he said. "You also can imagine another 10 who are motivated by ESG or social goals and they are willing to sacrifice the economic growth, the competitiveness and the like, willing to give up returns in order to advance their view of what social rules ought to be." Available via: http://www.bna.com/us-chamber-calls-n57982063976/ .

While my study tries to answer many of the important questions regarding the relatively new phenomenon of environmental and social shareholder activism, several questions still remain unanswered. In my study, I explicitly focus on a sample period prior to the introduction of and consultations on the SASB industry standards in order to determine whether the shareholders themselves are able to distinguish between financially material and immaterial environmental and social issues on a company-by-company basis. In this regard an interesting avenue for future research is to investigate whether the introduction of the SASB industry standards impacts the shareholder activism of investors. Does the public availability of the materiality classification of specific environmental and social topics on an industry basis raise the number of material proposals? Does it make the success of these proposals more dependent on a firm's prior environmental and social performance on the targeted issue? I leave these questions for future research to explore.

APPENDIX TO CHAPTER 5

Variable Description and Data Sources

Variable	Description	Data Source
Proposal – Related Variables		
Material Dummy	Dummy variable that takes the value of one if the environmental or social shareholder proposal is classified as financially material for the firm's industry, according to the SASB standards, and 0 otherwise	RiskMetrics, SASB
Voted Dummy	Dummy variable that takes the value of one if the environmental or social shareholder proposal has been put to a vote at the shareholder meeting, and 0 otherwise, the alternative category comprises proposals that have been withdrawn between the mailing of the proxy statement and the shareholder meeting	RiskMetrics
% of Votes	Percentage of shareholder votes in support of the environmental or social proposal at the shareholder meeting, in percentage points	RiskMetrics
Environmental and Social Performance Scores		
Mat. KLD Strengths	KLD materiality strength score in excess of sector average, computed as the sum of all strength scores in KLD categories that are classified as financially material for the industry that the firm operates (according to the SASB industry standard) minus the average KLD materiality strength score of S&P500 companies in the same sector	MSCI KLD, SASB
Mat. KLD Concerns	KLD materiality concern score in excess of sector average, computed as the sum of all concern scores in KLD categories that are classified as financially material for the industry that the firm operates (according to the SASB industry standard) minus the average KLD materiality concern score of S&P500 companies in the same sector	MSCI KLD, SASB
Mat. KLD	Mat. KLD Strengths minus Mat. KLD Concerns	MSCI KLD, SASB
Imm. KLD Strengths	Sum of a firm's strength scores in all KLD categories that are not classified as financially material for the industry that the firm operates (according to the SASB industry standard) minus the average sum of KLD strengths on financially immaterial issues of S&P500 companies in the same sector	MSCI KLD, SASB
Imm. KLD Concerns	Sum of a firm's concern scores in all KLD categories that are not classified as financially material for the industry that the firm operates (according to the SASB industry standard) minus the average sum of KLD concerns on financially immaterial issues of S&P500 companies in the same sector	MSCI KLD, SASB
Imm. KLD	Imm. KLD Strengths minus Imm. KLD Concerns	MSCI KLD, SASB

Ownership Variables

Instit. Ownership	Average percentage of shares outstanding owned by institutional investors that hold at least $100 million in equity securities in the year preceding the shareholder meeting, in percentage points	Thomson Reuters (TR) Holdings database
Own. Banks	Average percentage of shares outstanding owned by bank trusts in the year preceding the shareholder meeting, in percentage points	
Own. Corp. Pens. Funds	Average percentage of shares outstanding owned by corporate pension funds in the year preceding the shareholder meeting, in percentage points	
Own. Indep. Invest. Advisors	Average percentage of shares outstanding owned by independent investment advisors in the year preceding the shareholder meeting, in percentage points	
Own. Insurance Companies	Average percentage of shares outstanding owned by insurance companies in the year preceding the shareholder meeting, in percentage points	
Own. Invest. Companies	Average percentage of shares outstanding owned by investment companies in the year preceding the shareholder meeting, in percentage points	
Own. Misc. Instit. Investors	Average percentage of shares outstanding owned by miscellaneous institutional investors in the year preceding the shareholder meeting, in percentage points	
Own. Univ. and Found. Endow.	Average percentage of shares outstanding owned by university and foundation endowments in the year preceding the shareholder meeting, in percentage points	
Own. Public Pens. Funds	Average percentage of shares outstanding owned by public pension funds in the year preceding the shareholder meeting, in percentage points	

Other Firm Controls

Log Book-to-Market	Natural logarithm of the book value of common equity divided by the market value of common equity at the fiscal year-end prior to the year of the shareholder proposal	CRSP, Compustat
Log Market Capitalisation	Natural logarithm of the market value of common equity, calculated as the product of share price and shares outstanding, at the fiscal year-end prior to the year of the shareholder proposal	CRSP
Log Sales	Natural logarithm of the firm's net sales/turnover at the fiscal year-end prior to the year of the shareholder proposal	Compustat
Log Assets	Natural logarithm of the firm's total assets at the fiscal year-end prior to the year of the shareholder proposal	Compustat
CapEx	Ratio of capital expenditures to total assets at the fiscal year-end prior to the year of the shareholder proposal, in percentage points	Compustat
Leverage	Ratio of book value of debt to book value of assets at the fiscal year-end prior to the year of the shareholder proposal, in percentage points	Compustat
Tobin's Q	Ratio of market value of assets to book value of assets at the fiscal year-end prior to the year of the shareholder proposal, in percentage points,	CRSP, Compustat
Dividends	Ratio of total dividends to total assets at the fiscal year-end prior to the year of the shareholder proposal, in percentage points	Compustat

Cash	Ratio of firm's cash and short-term investments to total assets at the fiscal year-end prior to the year of the shareholder proposal, in percentage points	Compustat
RoA	Ratio of income before extraordinary items to total assets at the fiscal year-end prior to the year of the shareholder proposal, in percentage points	Compustat
Log Prior-Year Return	Natural logarithm of the firm's prior-year stock return ending at the fiscal year-end prior to the date of the shareholder meeting, in percentage points	CRSP
CGov. Prop. -Dummy	Dummy variable that takes the value of 1 if the company was targeted by a corporate governance related shareholder proposal in the same year that it was targeted by an environmental or social proposal, and 0 otherwise	RiskMetrics

Cumulative Abnormal Returns (CARs)

CAR[-1;+1] Meeting Date	CAR around a three-day event window starting one day before the shareholder meeting date at which an environmental or social proposal has been put to a vote [-1] and ending one day after the shareholder meeting date [+1], where abnormal returns are measured as the difference of actual returns on the event days and returns predicted based on a Four-Factor Fama-French Model over a 200-days estimation period ending 20 days prior to the shareholder meeting, in percentage points	CRSP, RiskMetrics
CAR[-2;+7] Mailing Date	CAR around a ten-day event window starting two days before the proxy mailing date of a proxy statement that contained an environmental or social related proposal [-2] and ending seven days after the mailing date [+7], where abnormal returns are measured as the difference of actual returns on the event days and returns predicted based on a Four-Factor Fama-French Model over a 200-days estimation period ending 20 days prior to the proxy mailing date, in percentage points	CRSP, SEC's Def14a - Proxy Statement
CAR[-2;+7] Filing Date	CAR around a ten-day event window starting two days before the proxy has been filed with the SEC [-2] and ending seven days after the filing date [+7], where abnormal returns are measured as the difference of actual returns on the event days and returns predicted based on a Four-Factor Fama-French Model over a 200-days estimation period ending 20 days prior to the proxy filing date, in percentage points	CRSP, SEC's Def14a - Proxy Statement

Table A.5.1: Summary Statistics on CARs

Table A.5.1 presents summary statistics of the cumulative abnormal returns (CARs). Abnormal returns are calculated by subtracting the predicted return, based on a 4-Factor Fama-French Model, from the realised return of the firm, and are reported in percentage points. The first row provides summary statistics for CARs around a three-day event window starting one day before the shareholder meeting date at which an environmental or social proposal has been put to a vote [-1] and ending one day after the shareholder meeting date [+1]. The second row reports summary statistics for CARs around a ten-day event window starting two days before the proxy mailing date when a proxy statement contained an environmental or social proposal [-2] and ending seven days after the mailing date [+7]. The mailing date is the date that is stated on the cover letter of the proxy statement. Row 3 reports summary statistics for CARs around a ten-day event window starting two days before the proxy has been filed with the SEC [-2] and ending seven days after the filing date [+7].

	N	Mean	Median	Std.-Dev.	Skewness	Kurtosis	Min.	Max.	1th Perc.	5th Perc.	95th Perc.	99th Perc.
CAR[-1;+1] Meeting Date	1,893	0.252	0.100	3.698	3.201	54.238	-20.110	62.980	-10.250	-4.040	5.720	9.910
CAR[-2;+7] Mailing Date	2,998	0.198	-0.008	5.770	0.361	12.370	-47.321	58.545	-15.894	-8.113	9.126	17.799
CAR[-2;+7] Filing Date	2,998	0.210	0.011	5.721	0.552	12.488	-43.521	58.545	-15.377	-8.246	8.897	17.799

Description of Different Matching Techniques in the Propoensity Score Matching

The propensity score matching procedure is carried out for three different matching techniques: Kernel matching, Nearest Neighbour matching and Radius matching. The following paragraph explains the differences between each techniques.

With Nearest Neighbour matching, the estimation algorithm takes each treated unit and searches for the control unit with the closest propensity score. It then takes the difference between the outcomes of the treated and its matched control unit. The average over these differences is the ATET.[118] With Radius matching, each treated observation is matched only with the control units whose propensity score falls into a predefined neighbourhood of the propensity score of the treated, i.e. the radius. For my estimation I keep the default radius of 0.1.Regarding the Kernel matching, all treated observations are matched with the weighted average of all control observations where the weights are inversely proportional to the distance between the propensity scores of the treated and the controls (Becker & Ichino, 2002). Put simply, the closer the control observation to the treated observations given their propensity scores, the greater the weight that this control observation receives in the estimation of the counterfactual outcome. It is noteworthy that none of the matching methods is a priori superior to the other but they represent different trade-offs between the quality and quantity of the matches, as highlighted by Becker & Ichino (2002). Thus the authors recommend a joint consideration of the ATETs based on the different matching methods in order to assess the robustness of the estimates.

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[118] Regarding the estimation of ATET based on Nearest Neighbour matching, when using the Stata module *pscore* and the accompanying module *attnw*, the program first sorts all records by their estimated propensity score and then searches forward and backward for the closest control unit. Details on the algorithm that I used to estimate the propensity score and to test the balancing property (*pscore*) as well as the algorithms to estimate the ATETs (*attk, attnw, attr*) can be found in Becker & Ichino (2002).

Table A.5.2: Overview of Materiality and Target Status

Table A.5.2 presents the distribution of environmental and social topics based on their materiality as defined by SASB as well as whether the topic has been the target of a shareholder proposal for companies operating in the industry. Topics are classified into three categories (1) material according to SASB and also subject of a shareholder proposal, (2) material according to SASB but no shareholder proposal addressing that issue, and (3) not material according to SASB but topic has been addressed by a shareholder proposal at companies in that particular industry. I then document the number of topics in each of these categories. I count the number of total proposals, proposals submitted by "institutional investors" and "non-institutional investors" and proposals in each of the sub-periods 1997-2001, 2002-2006 and 2007-2011. "Instit. Investors" comprise asset managers, SRI funds, public pension funds, union funds and university and foundation endowments. "Non-Instit. Investors" comprise religious organisations, special interest groups, individuals and others.

	Number of Topics	% of Topics	Number of Proposals	% of Proposals	"Instit. Investors"	"Non-Instit. Investors"	1997-2001	2002-2006	2007-2011
All Sectors									
Material and Targeted	178	*22.53%*	1,755	*49.41%*	750	993	437	643	673
Material and Not Targeted	256	*32.41%*	0	*0.00%*					
Immaterial and Targeted	356	*45.06%*	1,796	*50.56%*	855	921	368	619	773
All	790		3,552		1,605	1,914	805	1,262	1,446
Consumption II									
Material and Targeted	*17*	*20.73%*	294	*60.00%*	159	135	94	130	70
Material and Not Targeted	*19*	*23.17%*	0	*0.00%*					
Immaterial and Targeted	*46*	*56.10%*	196	*40.00%*	98	98	42	44	101
All	*82*		490		257	233	*136*	174	*171*
Resource Transformation									
Material and Targeted	*18*	*22.78%*	149	*32.04%*	38	111	52	69	28
Material and Not Targeted	*17*	*21.52%*	0	*0.00%*					
Immaterial and Targeted	*44*	*55.70%*	316	*67.96%*	135	177	80	111	126
All	*79*		465		173	288	132	180	154
Non-Renewable									
Material and Targeted	*31*	*35.63%*	339	*73.54%*	164	175	68	94	176
Material and Not Targeted	*33*	*37.93%*	0	*0.00%*					
Immaterial and Targeted	*23*	*26.44%*	122	*26.46%*	76	45	21	34	67
All	*87*		461		240	220	89	128	243
Consumption I									
Material and Targeted	*30*	*33.33%*	237	*59.10%*	91	*145*	66	*91*	81
Material and Not Targeted	*13*	*14.44%*	0	*0.00%*					
Immaterial and Targeted	*47*	*52.22%*	164	*40.90%*	65	*99*	37	*65*	55
All	*90*		401		156	244	*103*	156	*136*

Table A.5.2 - continued

Financials									
Material and Targeted	*19*	*31.67%*	161	*44.85%*	51	110	56	46	59
Material and Not Targeted	*13*	*21.67%*	0	*0.00%*					
Immaterial and Targeted	*28*	*46.67%*	197	*54.87%*	118	78	32	61	105
All	*60*		359		169	188	88	107	164
Health Care									
Material and Targeted	*15*	*18.99%*	109	*32.63%*	32	72	24	62	23
Material and Not Targeted	*33*	*41.77%*	0	*0.00%*					
Immaterial and Targeted	*31*	*39.24%*	225	*67.37%*	71	151	26	99	100
All	*79*		334		103	223	50	161	123
Infrastructure									
Material and Targeted	*15*	*23.08%*	216	*71.52%*	93	118	32	75	109
Material and Not Targeted	*29*	*44.62%*	0	*0.00%*					
Immaterial and Targeted	*21*	*32.31%*	86	*28.48%*	41	44	15	30	41
All	*65*		302		134	162	47	105	150
Technology & Communication									
Material and Targeted	*13*	*18.31%*	87	*31.87%*	63	22	18	27	41
Material and Not Targeted	*20*	*28.17%*	0	*0.00%*					
Immaterial and Targeted	*38*	*53.52%*	186	*68.13%*	112	74	35	60	68
All	*71*		273		175	96	53	87	109
Services									
Material and Targeted	*11*	*15.71%*	105	*44.30%*	37	69	18	31	55
Material and Not Targeted	*26*	*37.14%*	0	*0.00%*					
Immaterial and Targeted	*33*	*47.14%*	132	*55.70%*	76	54	26	63	43
All	*70*		237		113	123	44	94	98
Transportation									
Material and Targeted	*5*	*7.69%*	48	*24.12%*	17	31	8	13	27
Material and Not Targeted	*26*	*40.00%*	0	*0.00%*					
Immaterial and Targeted	*34*	*52.31%*	151	*75.88%*	53	90	42	48	62
All	*65*		199		70	121	50	61	89
Renewable Res. & Altern. Energy									
Material and Targeted	*4*	*9.52%*	10	*32.26%*	5	5	1	5	4
Material and Not Targeted	*27*	*64.29%*	0	*0.00%*					
Immaterial and Targeted	*11*	*26.19%*	21	*67.74%*	10	11	12	4	5
All	*42*		31		15	16	13	9	9

Table A.5.3: Probability of Proposal Being Material – Sub-Periods

Table A.5.3 presents the results of logistic regressions of Eq. (5.4), explaining the likelihood that a proposal is material, over the period 1997-2007 (specification (1)) and over the period 2008-2011 (specification (2)). The dependent variable is a binary variable that equals 1 if the proposal is classified as financially material for the firm's industry, according to the SASB standards, and 0 otherwise. The unit of measurement is the proposal-firm-year level. All specifications contain industry and year fixed effects. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) Material 1997-2007	(2) Material 2008 - 2011
Mat. KLD	-0.0505	-0.205**
	(0.0678)	(0.102)
Imm. KLD	-0.00469	0.0256
	(0.0262)	(0.0365)
Animal Rights	0.840	-
	(0.695)	-
Env. Issues	2.004***	-0.822
	(0.579)	(0.759)
Health Issues	0.903	-1.137
	(0.554)	(0.776)
Human Rights	0.355	-3.136***
	(0.589)	(0.796)
Labour Issues	0.237	-3.074***
	(0.552)	(0.829)
Other Social Issues	0.420	-0.707
	(0.562)	(0.679)
Political Issues	-1.143*	-3.034***
	(0.602)	(0.728)
SRI Fund	0.727***	1.355***
	(0.280)	(0.513)
Asset Manager	-0.267	3.312***
	(0.773)	(0.874)
Foundation/Endow.	1.613***	1.906***
	(0.558)	(0.584)
Other	-0.656	0.909
	(0.636)	(0.793)
Public Pension Fund	0.795**	0.780
	(0.310)	(0.581)
Religious Institution	0.870***	1.582***
	(0.261)	(0.530)
Special Interest	-0.500	-0.392
	(0.403)	(0.779)
Union Fund	0.176	-0.148
	(0.403)	(0.557)
Constant	-2.648**	-1.448
	(1.191)	(1.897)
Industry FE	YES	YES
Year FE	YES	YES
Control Variables	YES	YES
Observations	1,425	829
Pseudo R-squared	0.286	0.405

Table A.5.4: Vote Support for Environmental and Social Shareholder Proposals – Sub-Periods

Table A.5.4 presents the results of OLS regressions of Eq. (5.5), for the subsample of proposals put to a vote between 1997 to 2007 (specification (1)) and between 2008 to 2011 (specification (2)). The dependent variable is the percentage of vote in support of the proposal. The sample includes all proposals that were put to a vote. The unit of measurement is the proposal-firm-year level. The variables are described in Table A.1 of the Appendix. All specifications include industry and year fixed effects. Robust standard errors are shown in brackets. *, **, *** indicate statistical significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) % of Votes 1997-2007	(2) % of Votes 2008-2011
Material Dummy	-0.257	1.631
	(0.896)	(1.339)
Mat. KLD	0.0649	0.256
	(0.277)	(0.640)
Imm. KLD	-0.281	-0.284
	(0.181)	(0.208)
Mat. KLD X Material	-0.272	-0.0318
	(0.399)	(0.889)
Imm. KLD X Material	0.239	0.0942
	(0.204)	(0.266)
SRI Fund	5.442***	10.30***
	(1.071)	(2.061)
Asset Manager	7.482**	1.185
	(3.306)	(4.684)
Foundation/Endow.	4.217*	9.820***
	(2.409)	(3.032)
Other	11.27*	4.174
	(6.111)	(3.129)
Public Pension Fund	6.006***	9.798***
	(1.216)	(2.107)
Religious Institution	4.432***	9.827***
	(0.895)	(1.994)
Special Interest	0.706	3.369
	(1.035)	(2.089)
Union Fund	2.568**	5.832**
	(1.034)	(2.256)
Animal Rights	-9.339***	-
	(3.019)	-
Env. Issues	-7.749***	3.909*
	(2.802)	(2.325)
Health Issues	-8.754***	-1.081
	(2.853)	(2.794)
Human Rights	-4.579	3.191
	(3.231)	(2.752)
Labour Issues	-4.267	8.802***
	(2.791)	(2.814)
Other Social Issues	-9.699***	1.475
	(2.786)	(2.296)
Political Issues	-3.876	13.66***
	(2.888)	(2.573)
Constant	10.32**	-11.88
	(4.445)	(9.630)
Industry FE & Year FE	YES	YES
Control Variables	YES	YES
Observations	960	559
Adj. R-squared	0.270	0.515

Table A.5.5: Vote Outcome and Withdrawal Status Explaining Materiality

Table A.5.5 presents the results of logistic regressions, explaining the likelihood that an SRI shareholder proposal is being classified as material for the industry that the firm operates in based on the percentage of votes in favour of the proposal. The dependent variable in all specifications is a binary variable that equals 1 if the SRI shareholder proposal is classified as financially material for the firm's industry, according to the SASB standards, and 0 otherwise. The main explanatory variable in specification (1) is a the percentage of votes in favour of the proposal. The main explanatory variable in specification (2) is the Withdrawn Dummywhich takes a value of one if the proposal has been withdrawn, and a value of zero otherwise.. Robust standard errors are shown in brackets. *, **, *** indicate significance at the 10 %, 5 % and 1 % levels, respectively.

	(1) Material	(2) Material
% of Votes	0.147*	
	(0.0754)	
SRI Fund X % of Votes	-0.102	
	(0.0764)	
Asset Manager X % of Votes	-0.196**	
	(0.0811)	
Foundation/Endow. X % of Votes	-0.0516	
	(0.0842)	
Other X % of Votes	-0.165**	
	(0.0777)	
Public Pension Fund X % of Votes	-0.192**	
	(0.0772)	
Religious Institution X % of Votes	-0.134*	
	(0.0757)	
Special Interest X % of Votes	-0.0566	
	(0.0959)	
Union Fund X % of Votes	-0.0891	
	(0.0767)	
Withdrawn Dummy		0.0257
		(0.608)
Withdrawn X SRI Fund		-0.198
		(0.659)
Withdrawn X Asset Manager		-1.642*
		(0.998)
Withdrawn X Found./Endow.		-1.067
		(0.857)
Withdrawn X Other		-2.438*
		(1.282)
Withdrawn X Pub. Pension Fund		-0.173
		(0.669)
Withdrawn X Relig. Institution		-0.471
		(0.640)
Withdrawn X Special Interest		-0.0990
		(0.719)
Withdrawn X Union Fund		-1.398*
		(0.838)
Constant	-2.361*	-2.187**
	(1.434)	(1.066)
Industry FE & Year FE	YES	YES
Resolution Type FE	YES	YES
Sponsor Type FE	YES	YES
Control Variables	YES	YES
Observations	1,463	2,327
Pseudo R-squared	0.358	0.291

6 CONCLUSIONS

6.1 Summary of the Findings and Contributions of the Thesis

SRI has seen a strong growth over recent years with many institutional investors pledging to invest their assets in a 'responsible' way by considering the environmental, social, ethical and governance performance of their holding companies, besides pure risk and return considerations. This trend raises the question as to what fuelled this interest in SRI by some of the largest global asset owners. The aim of this thesis is to extend our knowledge regarding the drivers of institutional SRI investment. Each of the three empirical chapters in this thesis focuses on a specific SRI strategy applied by a particular group of institutional investors and attempts to shed light on potential drivers of the institutions' SRI preferences.

In Chapter 3, I assess the impact of different political dimensions on public pension funds' SRI investment. Studying the equity holdings of 31 U.S. state pension funds, I provide evidence that both the political leaning of funds' members as well as political pressures by state politicians impact the funds' investment decisions. However, the findings presented in Chapter 3 suggest that the members' preferences are the dominant driver of the SRI investment, while pressures by state politicians merely have a moderating effect. In particular, I find that state pension funds from states with Democratic leaning members tend to tilt their portfolios more strongly towards companies that perform well on ESG issues, as compared to their Republican counterparts. This tendency is especially strong if the majority of the state government are Democrats. Interestingly, state pension funds seem to intensify their SRI investing when their members' political leaning changes from Republican to Democratic, and vice versa, suggesting that these funds align their SRI investment approach with the political leaning of their members. Finally, the results in Chapter 3 suggest that the sample funds neither under- nor outperform on their politically-motivated investment tilts, implying that their SRI preferences are unlikely financially-driven.

Chapter 4 analyses the way that Scandinavian public asset owners balance their financial and ethical objectives through exclusionary screening. In particular, I empirically analyse the exclusion of 'unethical' companies from the equity portfolios of two leading Nordic investors, Norway's GPFG and Sweden's AP-funds. These investors exclude companies from their investment universe either due to the company's business model which is deemed 'unethical' (sector-based exclusion) or due to its violations of international norms (norm-based exclusion). Based on a time-series analysis of the performance implications of the exclusion decisions, I show that the portfolios of excluded companies do not generate an abnormal return relative to the funds' benchmark index, indicating that the exclusion decisions generally did not harm funds' performance.

Finally, I evaluate the extent to which investors account for the financial materiality of environmental and social factors in their shareholder activism. An important question in the shareholder activism literature is whether environmental and social activism by institutional investors is driven by a quest for shareholder value maximisation or whether sponsors of environmental and social proposals use this channel to advance ulterior motives. In Chapter 5, I address this question from a new angle by using the industry-specific materiality standards by the SASB to classify the environmental and social proposals into financially material or immaterial for the target firm. Overall, the results indicate that a considerable amount of investor resources is spent on advancing immaterial environmental and social issues through shareholder activism. While certain "dedicated" investors such as public pension funds, university and foundation endowments, religious institutions and asset managers are better at targeting financially material issues, the overall shareholder base does not seem to differentiate between the financial materiality, or otherwise, of a proposal. Material proposals neither receive greater vote support nor does the market react more positively to learning that a company has been targeted by a material proposal.

Taken together, the results presented in this thesis make several important contributions to the literature on SRI and institutional investment. One of the main contributions of this thesis is the acknowledgement that different institutional investors have different preferences for incorporating

environmental, social and ethical considerations into their investment strategies. Depending on the institutional background, their investment objectives and horizons as well as the composition of their ultimate beneficiary base, they have to carefully manage their financial goals and their social and environmental objectives.

While a large part of the SRI literature argues that CSR policies and SRI strategies are a way to advance the financial performance for both companies and investors, indicating that there is no conflicting relation but rather a reinforcing effect between financial and social objectives, throughout the three empirical chapters of this thesis I do not find that the SRI strategies employed by the institutional investors result in significant financial outperformance. Instead, I find that incorporating environmental, social and ethical factors into the investment process does not significantly impact investors' risk-adjusted returns. While this contradicts claims about the financial impact of SRI made in the earlier literature, it is in line with findings of an insignificant performance difference between SRI investment and conventional investment strategies (e.g. Bialkowski & Starks, 2016). This leads me to the overall conclusion that a considerable share of the increase in SRI by institutional investors is not driven by pure return-maximising motives but that the growth in institutional SRI is, at least partially, related to other factors, such as investors catering to the demands of their ultimate beneficiaries. What is more, I show that this conclusion holds across the three main SRI strategies, i.e. exclusionary screening (Chapter 4), positive screening (Chapter 3) and shareholder activism (Chapter 5).

Additionally, I find that these conclusions do not only apply to U.S. institutional investors, as analysed in Chapters 3 and 5, but also extend to institutions in markets less studied by the empirical literature, such as the Scandinavian market for SRI (Chapter 4). While most of our understanding about institutional investors' preferences for SRI and the link between SRI and financial performance is based on findings derived from U.S. data, recent survey results suggest that the attitudes of U.S. portfolio managers towards SRI and its financial benefits strongly differ from those of European portfolio managers (van Duuren et al., 2016). Thus, extending our knowledge about institutional SRI

investment in other countries but the U.S. represents an important contribution to the existing literature and should be one of the major focuses of future research in this area.

Another major finding of this thesis is that different investor types show different propensities for incorporating environmental, social and ethical factors into their investment processes. One of the main contributions of my work is to relate this propensity to the demands that different investors face from their ultimate beneficiary base. In particular, I show that the extent to which U.S. state pension funds tilt towards companies with higher ESG ratings is related to the importance that their ultimate beneficiaries attach to ESG factors, as measured by their political leaning (Chapter 3); while Scandinavian public asset owners employ exclusionary screening approaches to ensure that their investment holdings conform to the ethical standards imposed by society (Chapter 4).

The findings presented in this thesis do not only make contributions to the academic literature on SRI and institutional investment but they also have important implications for (a) the institutional investors themselves, (b) for their holding companies, as well as (c) for policy makers and regulators. In what follows, I outline the main implications for these three actors, based on a holistic review of the findings of the three empirical chapters. In addition, Table 1.1 in Chapter 1.3 provides a summary of the research implications for all three actors on a per chapter basis.

The findings presented in this study reveal that institutional investors' SRI policies are to a considerable extent driven by the demands of their ultimate beneficiaries. However, as different SRI strategies are suitable for different investment objectives, institutional investors should take great care in choosing an SRI approach that best serves their investment objectives and fits in with their beneficiary structure. This thesis shows that if chosen carefully, institutional investors can employ SRI policies to incorporate their beneficiaries' non-financial demands without sacrificing investment return. However, the findings presented in Chapter 5 also imply that investors allocate considerable resources to targeting companies on financially immaterial issues. This suggests that they use their shareholder rights to advance ulterior motives or that they are unaware of the industry-specific financial materiality of environmental and social topics. While the answer to this question is crucial

to evaluate how well institutional investors serve their beneficiaries this is beyond the scope of this thesis and is left for future research to explore.

Regarding the implications for companies, the heterogeneity in institutional SRI preferences implies that firms should pay close attention to their ownership structure and the propensity for SRI of their major institutional owners. As investor groups differ in their preferences for SRI, both regarding their overall likelihood to engage in SRI as well as the specific SRI strategy applied, firms with different ownership structures are likely to focus on different aspects of their CSR approach in order to cater to the needs and demands of their shareholder base. While many firms already incorporate their ownership structure and its underlying objectives when setting their financial and operative targets, my results suggest that they should do the same in terms of their CSR policies. In particular, the results of Chapter 5 suggest that companies should specifically focus on reducing negative exposure to environmental and social factors that are financially material to their business operations, especially if a large share of their owners can be regarded as 'dedicated' institutional investors, as higher material concerns can increase the likelihood of becoming the target of environmental and social shareholder activism.

The findings of this thesis also have important implications for policy makers and regulators. One of the main takeaways of this thesis is that institutional investors have heterogeneous preferences for SRI depending on their investment objectives and beneficiary composition. Thus, policy makers and regulators should promote the transparency of ownership information and company's CSR performance to help both investors and companies to better assess and manage these linkages. In addition, since the evidence presented in Chapter 5 suggests that many shareholders are unaware of the financial materiality of environmental, social and ethical factors across different industries, policy makers should specifically promote regulations and standards that highlight the industry-specific financial materiality of different environmental and social topics. The SASB standards used in Chapter 5 offer a promising route in this regard, but the results presented in this thesis suggest that more needs to be done to educate both companies and shareholders about the financial materiality of

environmental and social factors. Finally, the results suggest that investors account for their beneficiaries' political values and ethical standards with regard to their SRI policies. This links to the debate about whether accounting for such non-financial objectives in the investment process is in line with the fiduciary duties that many of the funds studied in this thesis are bound to. So far the position of the regulatory bodies regarding whether the incorporation of such non-financial objectives in the investment process is in line with the funds' duties towards their beneficiaries is not clear. Thus, I argue that regulators should clarify this pending question and particularly comment on the prioritisation of ethical investment objectives relative to financial objectives. Not only would this improve the decision making process for institutional investors, but it might potentially boost the SRI movement and further legitimise SRI as an alternative to conventional investment policies.

6.2   Limitations of the Findings

Like any academic study, the findings drawn from the empirical analyses are subject to certain limitations. In the following, I will briefly outline important limitations of this work.

As with every empirical work, the validity of the results crucially relies upon the quality and availability of the datasets used to measure both institutional investments and the environmental and social performance of the holding companies. While great care has been given to the choice of adequate data sources, the definition of the main variables as well as the specification of appropriate econometric models, several methodological features are nevertheless subject to practical limitations.

For instance, the U.S. focus of chapters 3 and 5 is largely explained by reasons of data availability, regarding a long history of institutional ownership data, shareholder proposal data and ESG ratings. Given that prior research shows that institutional investment preferences in general and institutional investors' propensity for SRI in particular depend on the national and institutional background (e.g. legal and cultural factors), it is not clear that the results derived from these analyses can be extended to other national contexts.

In addition, many of the aspects that SRI decisions are based upon, such as the environmental consequences of firm's operations, the social impact of business and ethical considerations, are qualitative in nature. However, in order to make them measureable and comparable across companies these qualitative features need to be transformed into quantifiable measures, before they can be employed in empirical studies. As such, the results presented in this thesis are subject to the more general criticism of ESG ratings with regards to their limited validity and reliability (e.g. Chatterji et al., 2009). This is a drawback with regards to almost all empirical CSR and SRI studies and results from the fact that there is no appropriate and comparable CSR accounting. While more and more CSR data has been collected over the more recent years and alternative ESG ratings have become available, it will still require several years until they provide a long enough history in order to be employed in empirical studies. The recently launched SASB industry standards, which have been employed in Chapter 5, represent a promising avenue for future research in this direction, which I will elaborate on in the following chapter.

While the SASB industry standards provide an interesting setting for examining the motivations of institutional investors for SRI, and in this respect the link between financial impact and SRI engagement, the circumstance that it has only recently been launched brings with it its own challenges. As discussed in Chapter 5.5, one potential concern of using the SASB standards in empirical analyses is that, in defining material issues for a specific industry, the SASB might have been guided by the pattern of past shareholder proposals, including the success of the proposal and the identity of the sponsoring investor. While none of my additional tests provides any indication that the SASB has systematically conditioned its definition of financial materiality on the identity of the sponsor, the voting outcome or the withdrawal of a proposal, none of these tests are sufficient to completely rule out this alternative story. However, this limitation also opens up opportunities for future research as will be discussed in the following chapter.

6.3 Suggestions for Future Research

While I believe that the findings of this thesis significantly contribute to the empirical research on the relation between institutional investment and environmental, social and ethical factors, there are still a great many issues that could not be addressed in this study but that would crucially extend our knowledge about institutional SRI. In the following I sketch several routes for future research.

As pointed out in the previous section, institutional investment preferences and especially attitudes towards SRI and the relative importance of ESG factors differs depending on the regional and cultural background of investors. It has been shown that the idea of what constitutes responsible investment practices and the motivations that drive investors to engage in SRI are not universal across the globe. Therefore, it would be interesting to expand the analyses of Chapters 3 and 5 to other markets in order to evaluate whether institutional SRI is driven by the same motives, i.e. political values of the ultimate beneficiaries and the financial materiality of the environmental or social issue at hand. In particular, given that survey findings suggest that European institutional investors are more likely to engage in SRI for financial motivations, i.e. to improve their portfolio returns and/or to limit their risks (e.g. van Duuren et al., 2016), it remains an open question whether these investors are more likely to engage companies on financially material environmental and social matters than their U.S. counterparts.

Relatedly, while the results presented in Chapter 5 suggest that in the past shareholders have allocated considerable resources to targeting companies on financially immaterial issues, it presents an interesting question for future research whether the implementation of the SASB standards will lead to more efficient CSR policies by companies as well as more targeted actions by shareholders on topics of materiality. Thus, it would be worthwhile to revisit the analysis carried out in Chapter 5 in several years in order to analyse whether the documented relationships have changed. Not only would such a re-examination represent an interesting endeavour from an academic point of view, but it would also be very informative to policy makers as to whether the publication and promotion of sustainability standards, such as the ones by the SASB, impact corporate decision makers and

shareholders and whether they might even have the potential to improve resource allocation regarding ESG policies.

Additionally, throughout the three empirical chapters I have looked at each of the SRI strategies – negative screening, positive screening and shareholder activism – in isolation. However, investors increasingly integrate the three strategies and develop an overall SRI process, where one strategy complements the other. While such integrated SRI approaches have been touched upon in Chapter 4,[119] it would be interesting to more comprehensively analyse the overall impact and motivations of investors' integrated SRI approach. For instance, do investors employ different strategies to achieve different goals (e.g. positive screening for financial objectives, negative screening to safeguard against reputational risks, shareholder activism to advance social and environmental causes)? Or are all strategies motivated by the same underlying goals? Do the different aspects and strategies of the SRI approach complement each other or are they matched to different scenarios and target companies? However, in order to answer such questions, researchers would need access to the entire investment portfolio of an institutional investor across all asset classes and inlcuding all investment and engagement actions. To the best of my knowledge, no prior study has investigated the drivers of institutions' overall SRI strategies in such a holistic manner.

Finally, a large body of prior research has analysed the financial impact of SRI, while relatively little is known whether SRI is effective in impacting the environmental, social and ethical performance of the holding companies. Given the finding presented in this thesis that the SRI strategies applied by the institutions analysed in this study mainly have an insignificant performance impact, it presents an interesting route for future research whether the applied SRI strategies meet the beneficiaries' environmental, social and ethical objectives and potentially have the power to improve the ESG performance of the portfolio companies.

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[119] The GPFG and the AP-funds mainly excluded companies after prior engagement has proven unsuccessful, implying that they have an integrated engagement and exclusion strategy where exclusion is considered as a measure of last resort after prior engagement with a company.

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