Mater Thesis

Danish Pension Funds and Climate Change

Risks and Opportunities in Investment Strategy

Hanne Jørgensen

Supervisor: Birger Schmidt

22nd of June 2010

Copenhagen Business School

Acknowledgements

During the process of writing this master thesis I have received and combined knowledge from many various sources. I would like to thank all of those involved in the creation of this project.

My gratitude goes to my advisor Birger Schmidt for his good advice and support throughout the whole thesis. He has encouraged and assisted me in challenging times during the duration of the thesis and been a great support and inspiration for me.

I would also like to thank all the experts from the pension funds for their valuable time and input to my research. Without them, this report could not have been written. I also owe special thanks to Ole Beier Sørensen. He has been a great inspiration for me. His expertise has been invaluable in the development of this thesis and I am deeply grateful to be able to draw on his know-how within this field.

Last, I would like to thank all my friends and my family who have all been supporting and motivating me throughout the whole project.

Hanne Jørgensen

Copenhagen, Denmark

June 2010

Abstract

This thesis represents a study of Danish pension funds and identifies their perception of and reaction to climate change in their investment strategy. The thesis looks specifically at the relationship between investor and investees and classifies the pension funds' role in this setting.

Initially, through exploration of various literature a theoretical analysis of pension funds and climate change is carried out, where establish financial and strategic theories are drawn upon. Risk management, corporate governance and socially responsible investment (SRI) are central terms in this respect. The theoretical analysis shows that it is crucial for investors to understand the potential impacts climate changes have on their investments. In addition, pension funds can play a key role in the development towards a low carbon economy.

Next, an empirical analysis is conducted. Eight of the largest pension funds in Denmark (in terms of wealth management) participated in the research. Active ownership is an emerging issue throughout the Western world, and the Danish market is no exception. By conducting interviews with experts from the pension funds, I found that engagement of Danish pension funds in respect to climate change up until now has been close to non-existing. However, the majority of the funds studied are starting to increasingly integrate climate change in their investment analysis. The funds' engagement is mainly evident in the support given to intergovernmental institutions, such as UN PRI and CDP. Nearly all the pension funds see it as their role to influence ESG strategies of their investees; however, over half of the funds have outsourced both their asset management as well as their active engagement to external parties. The thesis shows further that Danish pension funds wish to be responsible investors in addition to live up to their fiduciary responsibilities. In the end, the results of my analysis are benchmarked with studies of British and French investors, which show that the investors in the three countries are not that different.

I. INTRODUCTION

The intention of this thesis is to present a report on the Danish pension industry and analyze their perception of and reaction to climate change. A key question in the research is how institutional investors manage risks and opportunities linked to climate change and what knowledge can be extracted from that. In addition, the key interest group's perceptions of the climate issue and possible interpretations of their position as shareholders will be explored.

The aim of this chapter is to provide the reader with background information on the topic at hand, along with an introduction to the problem area itself and the purpose of this study. First, a short introduction will be given detailing climate change and its relevance as an emerging issue for investors to demonstrate the relevance of the chosen topic. Second, the actual problem definition and subsequent sub-questions are presented. In the third section, the scope of the thesis is determined and narrowed down to the manageable. Fourth, a paragraph on relevant theories and concepts are outlined. In the last section, the structure of the thesis and the key content of the various chapters are presented.

I.1 Background and motivation

Climate change and environmental sustainability are topics that are very much debated these days and are increasing in importance every day, even more so due to the recent climate conference in Copenhagen. Climate change has emerged as an important matter for institutional investors in recent years. Prior to COP15[1] in Copenhagen, an influential group of investors, including among others the *Investor Network on Climate Risk* in the US and the European *Institutional Investors Group on Climate Change* (IIGCC), demanded a strong deal in Copenhagen. This group, that combined has a pool of assets under management of $13,000bn, highlights the power these investors hold as well as their commitment towards the climate issue.[2]

[1] United Nations Climate Change Conference 2009 (COP 15 = 15th Conference of the Parties)
[2] (Harvey, 2009)

"…*solid scientific evidence shows that human activities, notably the way we produce and use energy, have resulted in an increase in global atmospheric concentrations of greenhouse gases (GHGs) that are linked to global warming*."[3]

Thus, one of the reasons for the increased attention given to climate change seems to be a merger between a climate agenda and social-political agenda to safeguard future energy supplies. As the living standard throughout the developing world continues to increase, the demand for energy persists and gradually rises, again putting pressure on the energy sector, and highlighting that there will be a greater demand for energy in the future. Conversely however, we are consuming fossil fuels at a strong pace, therefore, what took the earth several thousand years to produce will be gone in a relatively short time. In addition to this predicted shortage of supply, the energy sector is, as mentioned above, profoundly contributing to increasing the concentration of GHG in the atmosphere through fossil fuels. In order not to create a deadlock in carbon intensive energy, it is vital that this sector continues to develop renewable energy sources. Energy is a key driver for economic development and social progress, yet access to sustainable energy services remains a challenge for low-income communities in developing countries. In order to reach this increasing target group and also secure the energy supply to the developed world, the energy industry is dependent on funds from investors in order to innovate and come up with smarter solutions. The industry has already come a long way in the development of alternative energy sources, however, there is still some way to go in order to meet the energy demand of the future.

"*Pension funds are among the most powerful investors of our day and the investment expectations of pension funds attached to large state organizations in government and in the wider economy can make a difference to the way businesses are run*."[4]

It is commonly known that pension funds are a key investor group. As global institutional investors, they undertake investments in assets and companies across sectors and markets. Consequently, their potential influence on other players in the market is huge. Furthermore, pension funds fit well into this analysis as they are interested in long-term returns. While many investors prefer short-term profits at the expense of sustainable targets, this is generally

[3] (World Business Council for Sustainable Development, October, 2009)
[4] (Hancock, 2002)

not the case for pension funds. Thus pension funds represent a perfect match when it comes to environmental goals and climate change.

However, why does climate change matter to long-term investors? Institutional investors are concerned with climate change and climate policy, as these factors have a potentially great impact on the global economy. Hence, risks that threaten to disrupt the economy such as climate change are significant and crucial for investors to understand and manage. The great significance of climate change is that it is a global problem, but often the solution lies in local action. Different studies indicate that economic costs from climate change will increase exponentially the longer we wait to take action. Passive action creates a deadlock in carbon-intensive infrastructure and development. This again has a direct impact for pension funds in deciding upon the investment allocation, as climate risks and opportunities may have significant financial implications for the companies and their asset value. It is therefore in every investor's interest to understand how environmental changes affect their investments.

It is important to note, however, that climate change does not only create risks, but also business opportunities. As one door closes, another one opens. As business practices and processes change in response to climate changes, golden investment opportunities such as investment in low-carbon infrastructure and energy efficiency on all fronts are born.

This report will take an in-depth look into concerns about climate change and see how pension funds can make a difference. The area of particular interest is how investors through their investments can limit the effects of climate change. Large investors such as institutional investors, have potentially huge impact. If they steer their power in a certain direction, they can achieve great things. This brings me over to the research question.

I.2 Research Question

How do Danish pension funds manage risks and opportunities linked to climate changes in their investment strategy, hereunder specifically investments in companies?

In order to answer the research question, the following sub-questions were developed and sought to answer:

- What are the pension funds perception of and reaction to climate change?
- To what extent do they account for climate change in their investment analysis?
- What are the possible interpretations of their position as institutional investors?

The first question seeks to establish the industry's perception of climate change. That is, do the pension funds even see climate change as an investment issue? The next sub-question will reveal if the pension funds consider this matter and how they possibly incorporate it into their investment decision and analysis. This will either confirm or reject the answers obtained in the first sub-question. Finally, the pension funds' own stance concerning their role as shareholders will be identified. These three sub-questions will facilitate a more comprehensive analysis of the research question.

I.3 Delimitation

The aim of this section is to clarify the exact field of research for the thesis. First of all, there are many investment strategies that can promote the preservation of the environment, of which investment in companies is only one of them. Investments in green or socially responsible funds, direct investment in green initiatives or indirect investment in suppliers of the green producers, are other examples. However, through investments in shares, investors have the potential to greatly influence the companies in which they invest and thus be able to steer development in certain directions, like for instance towards more CO_2 neutral markets. Thus the investors do not only fuel money into sustainable targets, they also have the possibility to convert polluting firms into more climate friendly businesses. Thus, in the thesis, I chose to focus on the relationship between the investors and the investees in order to narrow the subject down.

When conducting the research, I found that many of the pension funds had outsourced their asset management and engagement process to third parties. Consequently, this may have rendered my research less valuable since the pension funds have limited control over their investments and how their responsibilities as active shareholders are carried out. It would have enriched my thesis to have carried out a much more in-depth investigation into the relationship between the pension funds and their external asset managers. However, due to time constraints and scope of the thesis, this was not feasible.

In order to find the relevant pension funds for the study, the pension funds were ranked according to their total assets. The Danish pension industry is complex and a variety of different kinds of pension funds exists, thus many selection criteria could have been chosen. However, I judged the pension funds' wealth to be the most important selection factor as the intention of the thesis was to look at their asset management. More specifically, to investigate how the pension funds invest their capital in stocks and whether or not they use their power as large institutional investors in relation to their investees. The relevant financial data were obtained from the Danish Financial Supervisory Authority (DFSA) in addition to the various funds' annual reports.

Furthermore, the varied types of pension funds are not taken into consideration here. That is, whether they are mandatory arrangements, like ATP, or belong to a common administration of pension wealth do not matter. Naturally, this aspect has some influence on the contributions and claims related to the funds and the impact each pension holder has on the fund: Large corporate clients, for example, have a larger impact on a pension fund than small, individual pension holders. Nevertheless, I have chosen to focus on the asset side of the pension funds, thus I disregard these considerations in the thesis.

The following pension funds were asked to participate in the study; ATP, Danica Pension, PFA, Sampension, Nordea Liv og Pension, SEB Pension, Pension Danmark, UNIPension, Industriens Pension, and PKA. A complete list of the solicited pension funds and their respective total assets can be found in Appendix I. Eight of the funds chose to participate in the analysis.

As one can see from the overview of the pension funds in Appendix I, I chose to exclude LD from the analysis. This is due to the fact that this pension scheme is scheduled to be terminated over the next few years leaving its investment horizon too short for my analysis. In addition, MP Pension and Pensionskassen for Sygeplejersker[5] are managed by respectively UNIPension and PKA, and are therefore not evaluated on an individual basis but rather through the joint administration companies.

In the analysis I compare the Danish pension funds to British and French institutional investors. I chose to benchmark with these two studies as they were the only ones relevant and available at that time. I found it valuable to compare my findings with these two studies in order to put my research into perspective. A drawback with this benchmark is that the studies are not identical, thus a direct comparison between outcomes is not possible. However, broad conclusions can be drawn upon which highlight differences and similarities of the results of the studies.

Despite these constraints and potential shortcomings, I find the analysis valid and as a good representation of the Danish pension industry as the largest and most influential pension funds participated.

I.4 Introduction to relevant theories and concepts

In this part, important definition and concepts relevant for understanding the argumentation of the thesis will be presented. In addition, a few of the most important initiatives and organizations in relation to climate change and ethical investment will be introduced.

I.4.1 Central definitions

Institutional investors are understood as "*…specialized financial institutions that manage savings collectively on behalf of small investors toward a specific objective in terms of acceptable risk, return maximization, and maturity of claims.*"[6] Pension funds, insurance companies, and mutual funds are examples of institutional investors. These investors are subject to fewer protective regulations as it is assumed that they are more knowledgeable and

[5] The pension fund for nurses
[6] (Davis & Steil, 2001)

better able to protect themselves.[7] In the report I refer to the companies in which the pension funds invest as ***investees***.[8]

The institutional investors have also a fiduciary responsibility. **Fiduciary responsibility** entails "*an individual, corporation or association holding assets for another party, often with the legal authority and duty to make decisions regarding financial matters on behalf of the other party*."[9] The people that have placed their pension savings in a pension scheme/fund are referred to as the ***pension holders***.

Investment strategy can be defined as an investor's plan to allocate assets to various investments, taking into consideration factors such as individual objectives, risk tolerance and horizon.[10] I will focus on the pension funds' investments in shares.

When looking at the literature, the definition of ***green investments*** is a rather grey area. Different points of views on what represents a green investment vary. Some investors consider it a green investment to purchase stocks in a company that has outstanding environmental business practices and is an industry leader in terms of employing those, even though the company in question is operating in a traditionally "non-green" industry.[11] Consider, for example, an investment in an oil company. Even though the company has the finest record of environmental practices and is taking the uttermost precautions in preventing any direct damage to the environment through its daily operations, the company's main activity is still oil drilling and extraction of fossil fuel. Thus some people will reject this as a green investment since burning fossil fuel is a leading contributor to the increased levels of carbon in the atmosphere. Nevertheless, a broad definition of green investments has been adopted in the thesis. The following definition from Investopedia is applied:

"*Green investments are traditional investment vehicles (…) in which the underlying business(es) are somehow involved in operations aimed at improving the*

[7] (InvestorWords.com: Institutional Investor)
[8] (ENCYCLO Online Encyclopedia)
[9] (InvestorWords.com: Fiduciary)
[10] (InvestorWords.com: Investment Strategy)
[11] (What are green investments)

environment. This can range from companies that are developing alternative energy technology to companies that have the best environmental practices."[12]

A broad definition of green investments enables a more in-depth analysis of the active engagement process of the pension funds. That is, the given definition of green investments makes room for both positive/negative screening and absolute/relative screening, which are concepts that will be further elaborated in the chapter labelled "*Screening*".

When it comes to ***climate change***, it is assumed that the changes to the Earth's ecosystem are due to human activity. Human activities are increasing the concentration of carbon dioxide in the atmosphere, predominantly as a result of burning fossil fuels, deforestation, and other changes in land-use: such actions lead to changes in the Earth's climate. Previous studies and debates, among others the "Hockey Stick" debate,[13] are considered reliable and verifies climate change as a valid risk to businesses.[14] I will refrain from the scientific debate as this goes beyond the borders of my thesis. However, understanding the scientific evidence is essential. In the light of the scientific facts, we are able to grasp the scope of the problem area and identify potential risks and opportunities linked to climate change.

Furthermore, climate change is an issue that falls under a variety of similar concepts, among other Social Responsible Investments (SRI), Corporate Social Responsibility (CSR), Responsible Investment (RI), and Environmental, Social, and Governance (ESG). Whereas SRI and RI are concept primarily applicable to investors, CSR and ESG consider the issues of social responsibility from a company's perspective.

Socially responsible investing (SRI) "*... implies that investors account for social/ethical responsibilities into investment policy. SRI is the international term used for incorporating ethical concerns into investment policy*."[15] Thus SRI describes an investment strategy that seeks to maximize both financial return and social good.[16] This philosophy is grounded on ethical guidelines that help steer the investment selection process.[17] The major areas of

[12] (What are green investments)
[13] The "Hockey Stick" debate is a term used for the debate on whether the current trend in rising global temperatures is unprecedented or within the range expected from natural variations.
[14] (Stern, 2006)
[15] (Sørensen, et al., 2007)
[16] (Dannenberg, October 1st, 2008)
[17] (Is there a difference between socially responsible investing and green investing, 2010)

concern include business practices that promote environmental sustainability, human rights, and corporate governance. For instance, common themes include seeking out companies that are engaged in environmental sustainability, alternative energy and clean technology efforts as well as avoiding investment in companies that produce or sell addictive substances, like for example alcohol and tobacco.

Responsible Investment (RI) is a concept similar to the notion of ESG. These two concepts are broader than SRI since they include the notion of good corporate governance into their definitions. "*RI implies that investors, in addition to a number of ethical requirements, also impose requirements on the company's behaviour towards stakeholders, employees and the surrounding communities, in the investment decision.*"[18]

ESG "*… is the common term employed for issues concerning environmental, social, and governance factors, which can be considered by the management of a company*."[19] Hence, the concepts diverge in the sense that RI takes the investor's perspective into consideration, whereas the starting point for the ESG issues is the firm's management.

In addition, ***Corporate Social Responsibility*** (***CSR***) is also company specific and implies that a given company seeks to promote societal responsibility.[20] CSR is about integrating social and environmental concerns into business strategy and operations. The European Commission's definition of CSR is: "*A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.*"[21]

Triple bottom line accounting means expanding the traditional reporting framework to take into account ecological and social performance in addition to financial performance.[22] This concept will be explained in more detail later on in the report.

Thomsen (2008) define ***corporate governance*** as the control and direction of companies by ownership, boards, incentives, company law, and other mechanisms. His definition follows

[18] (Sørensen, et al., 2007)
[19] Ibid
[20] Ibid
[21] (Euopean Commission)
[22] (triple bottom line)

from a widely-applied definition by Cadburry (1992), which sees corporate governance as the system by which companies are directed and controlled.[23]

Screening is a preliminary assessment of investment opportunities based on specified criteria.[24] Different screening strategies will be elaborated on in the section *screening strategies*.

Another central theme in this report is ***shareholder activism***. This is a way in which shareholders can influence a corporation's behaviour by exercising their rights as owners.[25] There are a variety of ways shareholders can influence a company, among others voting at annual meetings and dialog with management to voice their concerns about particular issues. ***Active ownership*** and the ***engagement approach*** are also notions that fall within this definition.

I.4.2 Key Initiatives/Organisations

Moreover, in order to fully grasp the argumentation in the thesis, I find it important to also present three of the most well-known initiatives within sustainable investment and development. These include the United Nations Principles for Responsible Investment (UN PRI), Global Compact, and the Carbon Disclosure Project (CDP). These initiatives play a central part in sustainable development and are central elements in this report. Voluntary schemes, like these ones, can be general or tailored to specific target groups. Whereas all companies can sign up to the UN Global Compact and CDP, UN PRI are targeted only at investors.[26] A brief introduction to all three initiatives will be given below.

I.4.2.1 United Nations Principles for Responsible Investment

United Nations Principles for Responsible Investment (UN PRI) is concerned with environmental, social and governance (ESG) issues and was developed by institutional investors. It is based on six principles. By signing up to UN PRI, the investors commit to:[27]

[23] (Thomsen S. , 2008)
[24] (InvestorWords.com: screening)
[25] (Investopedia: shareholder activist)
[26] (European Workshops on Disclosure of Environmental, Social and Governance Information. The investor perspective, 2009)
[27] (The Principles for Responsible Investment)

- Incorporate ESG issues into investment analysis and decision making processes.
- Be active owners and to incorporate ESG issues into the fund’s policies and practices.
- Seek appropriate disclosure on ESG issues by the entities they invest in.
- Promote acceptance and implementation of the principles within the investment industry.
- Work together to enhance their effectiveness in implementing the principles.
- Report on their activities and progress towards implementing the principles.

UN PRI provides a set of possible actions for incorporating ESG issues into mainstream investment decision-making and ownership practices.[28] Even though the Principles are voluntary, signing up to them represents a real commitment to these principles. It expresses support from the top-level management on ESG issues. The aim is to obtain better long-term financial returns as well as closer alignment between the objectives of the institutional investors and the society at large.

I.4.2.2 United Nations Global Compact

The UN Global Compact is the largest initiative for corporate social responsibility and has two main objectives.[29] Firstly, Global Compact has developed ten principles within the topics human rights, labour rights, environment and corruption.[30] Companies are encouraged to support these principles and to implement them within their practices. Regarding the environment, the following principles are emphasized:

- “*Businesses are asked to support a precautionary approach to environmental challenges;*
- *undertake initiatives to promote greater environmental responsibility; and*
- *encourage the development and diffusion of environmentally friendly technologies*.”[31]

Secondly, companies are encouraged to contribute with voluntary initiatives to promote the UN's sustainable development goals. Both UN PRI and Global Compact are initiatives that are intended to reach a broader perspective of corporate social responsibility. Thus, signing up for these initiatives entails that the pension funds are engaged within a broader sphere of CSR

[28] (About: Principles for Responsible Investment)
[29] (FNs Global Compact - Virksomhedernes Samfundsmæssige ansvar)
[30] A full list of the principles can be seen in Appendix II
[31] (UN Global Compact: Corporate Citizenship in the World Economy)

issues. It does not indicate that the pension funds are committed to environmental matters and climate change in particular.

I.4.2.3 Carbon Disclosure Project

Carbon Disclosure Project (CDP) is an independent not-for-profit organization founded in 2000. CDP collects key climate change data from approximately 2,500 companies around the world.[32] It provides companies with the tools they need to identify and report material risk and opportunity arising from climate change. Throughout nearly a decade, CDP has assembled the largest database of corporate greenhouse gas emissions and climate change information in the world. Furthermore, it is the world's largest institutional investor collaboration working to inform the global market-place on investment risks and opportunities linked to climate change.[33] The number of institutional investors that signed CDP's annual request for climate change information has risen from 475 in 2009, to a record 534 this year. Combined, this group of investors has assets under management of US$64 trillion.[34] Hence, this highlights the emphasis international institutional investors put on climate change.

I.5 Structure of the Thesis

This section gives a brief outline of the thesis. The aim is to provide the reader with an overview of the different parts of the report, along with an explanation of the purpose of each section in relation to the thesis in general.

The following chapter will outline and discuss the method used in completing the thesis. The methodology will shed light on how I worked with the thesis and reached my conclusions. A theoretical analysis of pension funds and climate change will then follow. The theoretical chapter will investigate the subject from a financial perspective as well as from a strategic point of view. Summaries of each section will be given at the end of the respective parts. The theoretical study creates a basis from which the empirical findings can be analysed. The results of the empirical research are then presented. The empirical analysis is divided into six parts. To get a deeper understanding of the Danish pension industry, an introduction to the Danish pension system is given in the first part. Then, in order to establish the pension

[32] (Lee, 2010)
[33] Ibid
[34] Ibid

industry's perception of climate change, an assessment of climate change as an investment issue is carried out. How the pension funds use climate change data is the topic of the third part. The fourth part analyses the funds engagement on climate issues and what they perceive their role to be in this setting. The fifth section looks at the pension funds own reporting standards. Finally, a conclusion of the empirical analysis is given in the end. Before concluding the report and presenting the future perspective of the topic at hand, my research is benchmarked with studies of French and British institutional investors.

II. Methodology

The following section will outline the methodological aspects of this thesis, namely to outline how I have procured and treated data and give criticism of the method applied, as well as explain which consequences my choices have had for the results and conclusions reached. To provide an in depth and valuable analysis of the chosen topic, both primary and secondary sources have been used. A qualitative research was conducted, as the majority of data is not measurable and quantifiable. Rather the data is built on circumstances and conduct, which is difficult to measure.

Initially, a desk research was carried out in order to gain background knowledge of the topic and attain useful leads. During the desk research, I found that there was limited written literature on the specific subject in book format; however a variety of online resources existed. In addition, academic works offered established theories within portfolio theory, ownership and asset management, screening and governance mechanisms that could be drawn upon. As the research progressed, I substantiated my findings with empirical data from the industry in form of interviews with experts within the largest pension funds in Denmark. A thorough review of the data is given in the subsequent section.

II.1 Data Collection and Criticism

Out of the ten pension funds invited to participate in the research, six participated in interviews, two completed a questionnaire, one chose not to participate, and the last one did not respond at all. The decline from one pension fund was due to an ongoing discussion on the subject in-house and a lack of willingness to share that progress with the public. Hence, the respond rate was 80 per cent. Considering that the total assets of the five largest pension funds, which all participated in the survey, is considerably larger and superior in comparison to the other funds, I am satisfied with the response rate. This reasoning is based on the assumption that the largest pension funds are the most influential investors.

I chose to focus on a qualitative research approach as the topic at hand is quite complex and the questions I sought answered required thoughtful consideration from the respondents. As a result, a quantitative study could have lead to ill-considered responses and provided poor data for later analysis. Thus, I found the research topic unsuitable to a quantitative approach since the aim was to go more in-depth and discuss the problems and the various possible courses of action linked to investment and climate change.

As mentioned above, the main empirical data were collected in the form of interviews with experts from the pension funds.[35] However, upon request from two pension funds, data in form of questionnaires were also included. The two funds were unable to meet me in person; still, they wanted to participate in the study through answering the questions via a questionnaire. Thus, the acquired data consists of both primary and secondary data. In order to reach as many as possible of my target group, I chose to carry out both the questionnaires and the interviews. In the interviews, I was able to safeguard the answers. That is, both I as an interviewer and the interviewees were able to verify the information we exchanged. Thus, this primary data have a minimum of possible misinterpretations. However, in the questionnaire, closed-end answers were given; as a result errors could have occurred as it leaves room for different interpretations of the questions. Thus, this data are less reliable than the ones obtained in the interviews. Furthermore, when it comes to the desk research and the written literature, I assume the obtained information is reliable as the data comes from trustworthy sources. However, were tertiary sources are used; the fact that information has passed through several channels may render the information less reliable as it leave room for different interpretations. Hence, these data has been utilized with caution.

[35] Due to confidentiality reasons, a list of the experts I have talked to will not be provided

Furthermore, when preparing the questions, I was motivated by surveys conducted by the UK based company FairPensions and the French firm Novethics. FairPensions' survey sought to identify the attitudes, actions and reporting standards of UK fund managers in relation to the risks and opportunities linked to climate change. FairPensions' study included fund management companies that managed assets of pension schemes, charitable foundations and individuals.[36] Novethics, on the other hand, looked at asset owners as active shareholders and sought to identify the attitude towards and motivation behind ESG (Environmental, Social and Governance) policies of French and UK asset owners.[37] In Novethics' study over 60 asset owners from France and UK participated. In the UK, only pension funds took part whereas in France a variety of long-term asset owners were included in the study.[38]

By the permission of both FairPensions and Novethics, I was allowed to use some of the questions from their surveys in my interviews and questionnaire. By using similar questions, in addition to matching investor profiles, I was able to compare my findings with that of FairPensions and Novethics. Thus, a comparison between the Danish institutional investors and the British and French investors was possible. Furthermore, when obtaining empirical data, I used the same questions at the interviews as in the questionnaire. However, additional information was revealed in the interviews as I was able to elaborate on the experts' answers by asking them more in-depth questions during the interviews.

III. Theoretical Analysis of Pension Funds and Climate Change

"*Investment provides the bridge between an unsustainable present and a sustainable future. Investors have a unique role to play in shifting the engine of commerce into sustainability gear [and] are capable of creating a sustainability revolution*"[39]

Is this philosophy theoretically feasible and do the institutional investors agree on the given task? How does climate change affect institutional investors and how does it influence investment decisions? In this section I will discuss how climate change can affect pension

[36] (FairPensions, 2009)
[37] (novethic, 2009)
[38] Ibid
[39] (Welcome to The Green Investment Guide)

funds seen from a financial perspective and from a strategic point of view. The section is structured as follows: the financial aspects of climate change discusses issues such as climate change and risk management, role of shareholders, reliability of climate data, and screening strategies, among others. The following section will focus on the strategic and ethical aspects of climate change and institutional investors. Issues of importance here are socially responsible investments [SRI] and the triple bottom line concept. In addition, there will be a discussion on shareholder versus stakeholder views of the firm.

III.1 Climate Change seen from a Financial Perspective

From a financial point of view, climate change can impact institutional investors in various ways: risk management, for instance, is of key importance. How will climate change affect the different investments in the funds' portfolios? What are the major risks and opportunities arising from climate change? Where will the investors encounter changes and to what extent will these influence their portfolios? What tools can be exploited in order to limit the influence of climate change? Can investors boost a low-carbon development through their investments as well as limit or even mitigate current influence from carbon intensive industries through active engagement and dialog with the relevant companies? What are the major concerns for institutional investors when it comes to climate change viewed from a financial perspective? These are questions that will be addressed in this section.

III.1.1 Economic Growth and Climate Change

According to Sir Nicholas Stern, economist and author of the Stern Review, "*Development and climate change are the central problems of the 21st Century. If the world fails on either, it will fail on both. Climate change undermines development. No deal on climate change which stalls development will succeed.*"[40]

The third world is getting richer and aspires to a way of life seen in the Western world. However, the Western way of life is a burden to the Earth's resources. Unless we decouple the link between economic growth and GHG emissions, we will create a situation that is irreversible. Thus, the crucial question is whether or not the inevitable development can be steered onto a sustainable path. This is one of the areas where increased pressure from

[40] (WBCSD, 2009)

institutional investors is vital. Low-carbon investments are in accordance with the overall aim for pension funds to look for business opportunities that yield sustainable profits in the long run. The increased attention given to climate change and the expected future regulations within the business market will presumably make investors favour low-carbon development. However, can sustainability goals be aligned with financial goals?

Traditionally, financial models have not included climate change as a factor in their analysis as it has not been measurable. The philosophy behind this is: what cannot be measured cannot be managed. Nevertheless, climate change can greatly affect investment opportunities: it can both render certain investments unattractive as well as give rise to investment prospects in new areas. Hence, investment analysis is more than purely financial calculations. It includes examination and assessment of economic and market trends, and other various indicators and factors that help determine appropriate investment strategies, in addition to calculations of expected future earnings and future cash flows. Thus, climate change should be included in a broader perspective of the investment analysis, for instance when assessing various risk aspects of an investment.

III.1.2 Risk Management of Climate Change

The coming paragraphs raise issues concerning risk management. ATP assessed their exposure to climate changes across their holding of various assets in 2008.[41] The asset class that above all was the largest contributor towards exposure to climate changes in their portfolio was direct exposure through holding of shares. As briefly touched upon previously, climate change presents a number of risks and opportunities for companies and investors. Some of the most significant threats include regulatory challenges, physical and reputational risks.[42] These factors will be discussed separately below.

III.1.2.1 Regulatory Risk

Existing and emerging regulations on green house gas emissions, environmental taxes and compliance costs are some of the regulatory challenges posed by climate change. These have the potential, or in other words are highly likely to affect the pension funds' long term investments. Thus it is crucial for the institutional investors to map and understand the risks

[41] (ATP Koncernen Klima Rapport 2008)
[42] (Stephanie Maier, 2008)

and opportunities linked to climate changes. How will prospective regulation on GHG emissions, for instance, affect the pension funds' investments? What are the consequences for an investee if taxes on GHG emissions are implemented in order to reduce the overall CO_2 emissions? Of course, some companies in the portfolio will be more affected than others. The clue is to separate the wheat from the chaff. The firms in carbon intensive industries will be at a disadvantage due to increased operational costs and lower realized returns, which again will render them less desirable as investments objects. The cost to comply with the new regulation can potentially be very high. Consequently, in the future, carbon intensive industries face the probability of a decreased value in the market as regulatory changes will make it too expensive to operate. In addition, new technology will provide the market with smarter solutions to cover the increased demand for energy through alternative sources.

Furthermore, as a result of new regulations, market dynamics may change. This represents a primary concern for the investees and corresponds to a secondary concern for investors. Nevertheless, it has great potential to affect the investments and investment allocations, thus it should therefore not be underestimated. Consumer attitudes and demand patterns both open up for new business opportunities as well as removes the basis for continued business for others, an example of this can be provided by the energy market. Higher demand for energy in addition to a potential constraint of energy supply, presents a significant challenge in the market, both for companies in the energy sector as well as the economy as a whole. Higher and fluctuating energy costs will have consequences that will be felt throughout the whole market.

III.1.2.2 Physical Risk

Physical risks, such as changing and extreme weather conditions, may have tremendous effect on companies, both in terms of business opportunities as well as detrimental effect on existing locations and assets, like for example buildings and equipment. Physical risks are of crucial importance in investment in properties. However, it has also the potential to affect share values and in worst case scenario put companies out of business. Apart from direct physical risks related to landscape changes and extreme weather conditions concerning the location of the business, environmental taxes and new legislation regarding climate can lead to increased costs and lower realized returns.

As a result of extreme weather conditions, companies may be forced to move production facilities to new areas as the current location may be threatened by for example flooding and rising sea levels. This is again primarily a concerns for the companies in which the pension funds invest. However, if the pension funds do not take these factors into consideration in their investment analysis, they are exposed to these threats in the future. The companies that take the time to understand and address the complex area of climate change will represent better investment prospects as a result of their effort to manage future climate related challenges. These companies have assessed how climate changes potentially can affect their business and have most likely taken proactive steps in order to avoid these effects.

III.1.2.3 Reputational Risk

Moreover, management of climate change or lack of it, can pose reputational risk. There is, as mentioned previously on a number of occasions, increased focus on climate change and how companies nowadays manage this external force. Poor practices and ignorance can become serious threats to a firm's reputation both for investors as well as for the companies. The corporate reputation of pension funds can both be harmed by their own practices and investment decisions as well as from their investees' management and practices of complex issues. Perceptions from various stakeholders, such as investors, customers, employees and the overall society, are having a strong impact on the brand value of firms. Thus, for a complete picture of a company's risk profile, investors should look beyond financial calculations and also consider how the company is responding to the challenges of climate change.

When it comes to the management of climate change, there will be winners and losers at sector level as well as at company-level within different sectors. Some sectors are making progress towards tackling this issue, whereas others have a high percentage of companies with unmitigated climate risk.[43] Furthermore, high performing stocks are often companies with high environmental impact: "*…over a third (35,6%) of companies in the global 300 are classified as high or very high impact for climate change*".[44] Hence, many large cap companies are impacted by climate change, such as highly profitable companies in the oil and gas industry for example. The consequences of climate regulation compliance cost can be fatal for these companies and as a result terminate their existence if they are not able to

[43] Ibid
[44] Ibid

mitigate or limit their carbon emissions or find innovative ways to handle their carbon emissions. When selecting the companies to invest in, the funds are looking for those stocks that will outperform in the long run. It is vital that investors understand the effect these large cap companies may have on their portfolios. The management of climate change can be a key indicator in this respect in the future.

All the risks mentioned above, have the potential to influence the financial situation of the pension funds and their investees in various ways. Reputational risk may change consumer demands for the investees' products. Regulatory changes can either impose constraints or facilitate growth. Physical risk can obviously create huge problems for the companies. Consequently, all this risks have the potential to affect the pension funds' result. The institutional investors should therefore focus on limiting their exposure to these risks. This can be achieved through active engagement with investees in order to encourage them to mitigate their climate risks, as well as through diversifying the portfolio to include various companies across different markets.

III.1.2.4 Spreading the Risk

When it comes to spreading the risk of the investments, diversification reduces the variability of individual stocks: by diversifying the portfolio, the pension funds obtain a more stable rate of return and reduced risk exposure. Diversification works because the prices of different stocks do not move exactly in the same direction, they are not perfectly correlated. Pension funds diversify their portfolio by including a mix of different assets and a variety of shares. Consequently, they can minimize *unique risk* posed by a specific company by investing in different companies across a variety of sectors. *Market risk*, on the other hand, comes from economy wide perils that threaten all businesses.[45] Climate change can be viewed as such a risk. Naturally, climate change will affect some businesses more than others, but it is nevertheless an overall threat to the whole economy as it has the potential to affect the way business is carried out in the future, such as create a shift towards a low carbon economy. Furthermore, the market is increasingly interlinked, thus if one sector is heavily influenced by a specific factor, there is a high probability that it will have ripple effects on other sectors. Thus, the risk of a well-diversified portfolio depends on the market risk of the securities included in that portfolio. Hence, a stock's contribution to the risk of a fully diversified

[45] (Brealey, Myers, & Allen, 2006)

portfolio depends on its sensitivity to market changes, which could be climatic changes. Consequently, a shift towards a low-carbon economy opens up for the possibility that some businesses may disappear in the future.

A common argument in respect to diversification is that the funds may tie their wealth up in only green initiatives leaving them at a disadvantage by not spreading the risk over several assets and industries. However, today, this is a weak argument. Climate change as an issue is increasing in importance across a variety of sectors. Industries that are not obvious fore fighters of low-carbon development are now seeking out climate friendly solutions for their business and are mapping their carbon footprint. Several examples of which can be provided:. the insurance industry, for instance, is now exploring new ways to see how they can contribute positively towards the climate challenge.[46] That is, both by supporting sustainable growth through investments as well as developing new insurance products to their policy holders. Furthermore, the insurance companies can choose green suppliers of services and products when handling demands from policy holders. Another industry that also sees advantages by adapting to more sustainable development is the building and construction industry. Along with increased awareness of sustainability in the society at large, environmental considerations are viewed as opportunities to create fundamentally better buildings and communities to meet demands of increasingly aware and sophisticated customers. Energy labelling of buildings, for instance, can become a competitive force of the real estate industry. It is already mandatory in Norway to include energy classification of the apartments or buildings one wish to rent or sell.[47]

As several studies confirm, climate change is a real threat to societies and investors that do not take it into account, they face the risk of making poor investment decisions in the long run. For instance, if a fund has large share holdings in CO_2 heavy industries, the future cash flow might be at risk as the businesses lose attractiveness or the shares might be sold at a depreciated value due to inability to innovate in this area. The value of the investment will go down as it will not be viable in the future. On the other hand, the climate hype has also the potential to drive up the value of certain companies or products to the unreasonable as a result of increased demand for the companies' shares or products. Overinvestment in certain sectors can thus become an investor trap. Market trends may steer a majority of investors in a certain

[46] Nordic Insurers Climate Conference in September
[47] (Olje- og Energidepartementet: Aktuelt: Nyheter, 2009)

direction, driving the value of that sector up, and leading the investors in the end to overpay for the investments.

Moreover, full diversification effects are obtained at around 50 different stocks. Beyond this point the diversification effects are minimal.[48] Thus, funds with an overwhelming amount of share holdings lose the supervision and control of their investments in terms of active ownership. This can be seen in the Norwegian Oil Fund, which has approximately 7200 various shares[49] in their portfolio and thus very limited control over these holdings. Hence, the institutional investors seeking to engage actively with the investees need to constrain their stock positions to the manageable. It is too costly and requires too many resources to monitor such a large amount of companies. Therefore, the decision to hold shares and to adopt an active engagement strategy must be related to the value of the investment and the potential influence it has on the fund's performance. For instance, if the investment is large with a high probability to influence the value of the fund, the investor has an interest in controlling and steering the direction of that investment. On the other hand, there can be investments that are attractive to hold which requires no or very limited supervision and active engagement. A counter argument is to outsource the engagement process. This topic will be further discussed later on in the analysis.

III.1.3 Reliability and Availability of Data

Another subject that is of crucial importance when it comes to finance and climate change is availability and reliability of data. As mentioned previously, financial philosophy tends to believe that what cannot be measured cannot be managed. Forecasts indicate that disclosure in the area of climate change will increase as a result of pressure from investors, regulators and the wider stakeholder group.[50] This is an important step in order to manage the emission of GHG and to be able to hold the polluting companies responsible for their contamination. However, when it comes to the use of climate change data, lack of clarity and comparability of quantitative data can compromise investment decisions based solely on the disclosure of these data. At present, quantitative disclosure of emissions data is still highly variable; the Carbon Disclosure Project (CDP) is, however, working towards more reliable reporting of CO_2 emission. However, in order to reach a wider market and thus broader application of

[48] (Elton, Gruber, Brown, & Goetzmann, 2007)
[49] (NBIM, 2010)
[50] (Stephanie Maier, 2008)

their reporting scheme, CDP needs the help of other players in the market, including institutional investors such as the pension funds.

In order to compare data between sectors and markets, a uniform standard of reporting is essential. This can be achieved by collecting data through CDP. In this way, the data are also verified by an external party. There is still room for improvement in the reporting standards, nonetheless, it is a step in the right direction. The achievement of a uniform standard of reporting is crucial since it makes the investors able to compare companies across a range of sectors and markets. Moreover, for investors and indeed for companies themselves, data need to be linked to context, strategy, risks and financial results in order to be material.[51] That is, in order to be applicable, the data need to be linked to consequences related to the specific companies.

Henk de Bruin, Head of Corporate Sustainability at Philips, said:
"*Measurement, reporting and verification of emissions is a vital step for organisations looking to increase awareness of the impact of climate change and improve the management of greenhouse gas emissions. The new reporting tools enable greater analysis of the CDP data to benchmark against peers and other sectors and geographies.*"[52]

This emphasises the work of CDP and how important it is to obtain a uniform standard of reporting, both for the investors and the companies, and to include more players on the market. For institutional investors investing in a range of companies across a variety of sectors and markets, a uniform standard of reporting is essential as it will require too many resources to have various benchmarks for different markets. This will easily become too costly and unmanageable, thus it is in the pension funds' interest to obtain a uniform reporting standard.

Nevertheless, from a financial perspective, can it be too much reporting? For instance, is reporting beyond the law an unnecessary cost or an innovative risk management tool? There are diverse opinions about this. Financial theory will render reporting beyond the law an unnecessary cost, whereas from a strategic perspective it may make sense in respect to long

[51] (European Workshops on Disclosure of Environmental, Social and Governance Information. The enterprise perspective, 2009)
[52] (Lee, 2010)

term goals. When it comes to corporate image and reputation for instance, it is sometimes worth putting in extra effort in order to avoid unexpected additional costs in the future. An example here can be given by a particular company's business practice: it may be completely legitimate in a legal sense, but still cause public harm and thus lead to serious consequences for the business. In addition, it is also a question about putting your money where your mouth is, which is a familiar ideology within financial theory.

III.1.4 Asymmetric information

In relation to corporate governance and financial transactions, asymmetric information is a familiar term. One party, e.g. the company, has often more knowledge than the other, e.g. the investor, leaving it difficult to judge the quality of the assets one is buying. As we have seen numerous examples of in the real world, this opens up for plenty of opportunities for moral hazards and fraudulent behaviour. A way to overcome this challenge is to build long-term relationships with essential stakeholders and to obtain a good reputation: many companies know that their most valuable asset is their reputation and when something happens to undermine that reputation, the costs can be enormous.[53] Another way to overcome this gap in information is through screening. Good screening methods help the pension funds disclose bad corporate behaviour, for example to reveal whether a company is hiding hazardous environmental practices or not.

Historically, investors have mainly used financial screens in making investment decisions. However, more recently, social screens have been developed that allow investors the use of non-financial criteria to express their social or environmental concerns in their investment decision making.[54] Different screening strategies will be presented in the following chapter.

III.1.5 Screening

The initial financial analysis is carried out before the funds decide whether or not to invest in a company. Thus, the pension funds can initially eliminate companies with poor forecasts concerning climate change from their investment universe. As we will see later on in the empirical analysis, this is what most of the funds do. Hence, screening is one tool investors can use in order to construct value-based portfolios. Normally, a third party carries out the

[53] (Brealey, Myers, & Allen, 2006)
[54] (Labatt & White, 2002)

screening process and report back to the pension funds. The screening process can be carried out based on different strategies.

III.1.5.1 Screening Strategies

The four most commonly used approaches within ethical screening include negative screening, positive screening, "best in class", and engagement.[55] Through negative screening, the pension funds exclude companies from their investment universe based on certain standards or practices, such as for instance a decision to exclude tobacco companies and weapon manufacturers on the grounds of ethical standards.

Conversely, positive screening can be applied when the pension funds wish to include certain businesses in their portfolio. For instance, if a fund wishes to become more environmental friendly, it can search only for businesses with exceptional standards and practices within this field.

The "best-in-class" approach uses social, environmental or ethical guidelines to select the companies that within their own category best meet these requirements. Thus, it can be investments within a certain sector, such as the clean-tech industry, or it may be an investment based on financial returns as well as ethical considerations. An extension of the best-in-class strategy is found in the application of the criteria of eco-efficiency.[56] The eco-efficiency concept describes a vision for the production of economically valuable goods and services while reducing the ecological impacts of production.[57] In other words eco-efficiency means producing more with less. The theory of eco-efficiency implies that companies that meet environmental challenges also deliver superior profitability. Hence, the application of the eco-efficient concept, allow investors to include environmental responsibility while meeting their fiduciary responsibility. Furthermore, testing for superior eco-efficiency recognizes that it is not only the responsible management of downside risk, but also the strategic and operational ability of that management to identify and take advantage of upside opportunities that contributes to shareholder value and competitiveness.[58]

[55] (Sørensen, et al., 2007)
[56] (Labatt & White, 2002)
[57] (Verfaillie & Bidwell, 2000)
[58] (Labatt & White, 2002)

Last, but not least, in the engagement approach investors actively seek to influence the companies, in which they invest, to make them adapt to or adopt certain ethical standards. Whereas the first three are screening strategies concerned with gathering information about the companies in order to take educated investment decisions, the last strategy, the engagement approach, seeks to influence the company in order to achieve harmony with their own ethical standards. Thus, the process evolves from a pure information seeking task towards actively trying to influence the companies. The engagement approach will be further elaborated in the paragraph below: "*Active ownership*".

Furthermore, the screening process can also be divided into absolute and relative screening. Whereas absolute screening is a no-tolerance for certain industries and firms, relative screening is similar to the engagement approach and open up for interaction between investors and companies. Through relative screening investors are able to play a larger part when it comes to the issue of climate change. Instead of passing the problem on, they can take matters in their own hands and try to steer the company in a preferred direction. In the market, there is a clear trend among investment professionals to use positive screening and engagement with companies instead of simply avoiding the troubled corporations.[59] An example can be given by Company X. Company X represents a very profitable equity investment although it has a poor management of climate issues or are, in general, seriously exposed to climate changes. In this case, the pension fund can initiate a dialog with Company X in order to tackle the problems together. This can be achieved through active engagement from the institutional investor. Consequently, screening is one way to be on the forefront with the problems linked to SRI.

III.1.6 Role of Shareholder

Historically, the role of shareholders has evolved from being sole owners of their own company, to becoming a central part of the management team in family holdings, to the separation of ownership and management, and recently to active shareholders. Whether or not this is good or bad remains to be seen. However, several factors, not the least of which are the huge corporate scandals occurring during the last decade, have called for a tighter control of companies. One way to achieve this has been through major institutional investors as active shareholders. However, engagement also requires the necessary skills and expertise within the

[59] (Ignatova, 2010)

area of engagement. In order for the pension funds to engage properly, the funds have to obtain the relevant knowledge which enables them to carry out this task. Acquisition of expertise within the climate change topic could be one of these requirements. However, obtaining the relevant knowledge demands a lot of resources. In addition, the institutional investors can achieve higher degree of influence through collaborative action: in the U.S for instance, shareholders were able to push SEC[60] to pressure companies to reveal CO_2 emissions.[61]

III.1.6.1 Active ownership

Active ownership is at the heart of engagement for the institutional investors. Through actively engaging with the companies they invest in, the pension funds are able to raise questions and put their concerns on those companies' agenda. There are several ways the pension funds can influence the investees, one of which, the active engagement approach, has already mentioned above. In addition, as shareholders they are entitled to vote at meetings and to participate in the election of the board of directors, subsequently the board of directors are supposed to represent the shareholders when communicating with the management. The presence of socially responsible pension funds among a company's shareholders will ensure that long term values and goals are addressed at annual meetings.[62] If the pension funds believe that the investee is underperforming and that the board of directors is not sufficiently holding managers to account for the poor performance, they can try to replace the board in the next election. The board has explicit oversight responsibility for environmental affairs; hence, it is their responsibility to monitor the progress in implementing strategy. The new board will then appoint a new management team.

Still, how important are these voting rights really for the institutional investors? The foregoing mentioned procedure, which is called proxy fights, is expensive and rarely successful, thus the dissidents do not usually stand and fight, but rather sell off their shares.[63] In the era of active ownership, this is considered the last option as the institutional investors wish to solve the problem through dialog and collaborative action. On the other hand, selling can send a powerful message. If enough shareholders sell their stocks, the price of the

[60] U.S. Securities and Exchange Commission
[61] (Environmental-Finance, 2010)
[62] (Hancock, 2002)
[63] (Brealey, Myers, & Allen, 2006)

company’s shares will consequently drop. Hence, the investors obtain a lower realised return on their shares. In addition, the problem in question is not solved, just passed on to less demanding investors with lower ethical standards.

III.1.7 Summary of the Financial Perspective of Climate Change

To sum up, climate change is a key concern for pension funds as it has the potential to greatly affect the funds’ investments in the future. On the other hand, pension funds can also play an important role in the climate change challenge as they manage a vast concentration of capital. If they have the will, they can steer their means in a direction that has the possibility to moderate or lessen the carbon intensive development. The funds can achieve this by investing in new technologies that favour low-carbon development or in green initiatives such as clean development mechanism (CDM) and SRI funds. In addition, they can also invest in a variety of companies with an overall aim to execute pressure as shareholders to encourage businesses to become more environmental friendly and sustainable. By placing their assets in equity investments, in addition to obvious green targets, they are able to put pressure on the economy in several areas. Through investment in less climate friendly companies, the pension funds are able to put climate change on those companies’ agenda by pursuing active ownership.

Furthermore, investment analysis is, as mentioned previously, more than just financial forecasts. To make good investment decisions, one has to merge finance with strategy. The financial calculations may turn out as attractive business opportunities. However, a financial manager would need to use parameters beyond the financial sphere in order to fully assess the business prospect. The fund manager has to understand the context of the investment. If something changes in the market, how will that affect the investment? This calls for scenario analysis. Information is king and the pension funds can obtain useful information and a clue of direction by first and foremost looking at each investee’s basic activities.

III.2 Climate Change in the light of a Strategic Perspective

As mentioned under the foregoing financial analysis, climate change can be viewed both as a threat and an opportunity and it poses some challenges for the institutional investors. From a strategic perspective, pension funds are interested in seeking out good business opportunities in the long run. Climate change as a factor in that analysis can be crucial. As already mentioned, climate change has the probability to shift the market towards a low-carbon economy. Industries that harm society or the environment are increasingly put at a disadvantage by tightening government intervention as well as adverse publicity.[64] As a result, what constitutes an excellent business opportunity today may change in the future. Strategically, as well as financially, it is wise to take these considerations into account to be on the forefront of market trends and to anticipate where the market will be in the long run. However, what are the strategic and ethical considerations behind a socially responsible investment profile? Furthermore, can financial targets be united with strategic goals? These questions will be discussed in this section.

III.2.1 Climate Change as a Factor in Responsible Investments

Socially responsible investment (SRI) has gone from an initial protest movement initiated by ethical investors in the 1980s to become an established investment philosophy today. As ethical businesses have prospered, and some of the world's largest companies have embraced a socially responsible agenda, investors have been able to select their stocks from an ever-broadening investment universe within the SRI sphere. This has contributed to improved performance of ethical funds enabling them to exceed the performance of the general investment sector.[65] The management of the pension wealth can reap the benefits of this knowledge. However, as with every sector, SRI funds are also subject to cyclical movements, thus sometimes they will outperform the market, and at other times they will do poorer than the market.

The issue of climate change falls under the broad concept of socially responsible investment. SRI is, as mentioned above, a topic that is increasing in importance, especially due to the growing numbers of investors who are concerned with more than just profits.[66] There are a variety of issues one could elaborate on under the broad term of SRI and investors have a wide range of issues to take into consideration when designing their SRI profile. However, in my opinion, climate change is a topic that stands out. Whereas child labour and bad working conditions, among others, are areas of crucial importance within SRI, these are also cases that can be isolated and linked to certain political and cultural conditions or geographical areas. In

[64] (Ethical Investment Past Performance)
[65] (Hancock, 2002) & (Ethical Investment Past Performance)
[66] (Hancock, 2002)

that way they can easily be cut off as remote and distant for investors, thus making it easier for the investors to ignore them. Nevertheless, due to media coverage, public attention and reputation it is not recommendable to ignore these topics. Climate change, on the other hand, has the potential to affect us all, no matter what geographical region we live in. Thus, the possible effects are far-reaching and no geographic area or group of people can raise themselves above this problem and distance themselves from it. "*Climate change is global in its causes and consequences, and the response requires international collective action*."[67] However, based on experiences or lack of exposure to climatic changes, the investors can distance themselves from this topic too.

Moreover, corporate social responsibility (CSR) is a related concept. It primarily concerns companies and encourages them to take various social responsibilities into account. While CSR is a broad concept applicable to all companies, SRI represents the starting point for investors regarding social responsibility. [68] Climate change is viewed holistically both from a CSR and SRI perspective. SRI is concerned with taking social and ethical responsibilities into account in the investment policy. Thus, a SRI policy helps the pension funds design their socially responsible investment profile. Every company is a player on the market, thus each company has a responsibility to the surrounding society, including environmental matters such as climate change. According to Danish law, the largest companies in Denmark are requested to report on CSR issues in their annual reports.[69] That is, they can choose not to report, but then the companies have to explain why they do not follow a CSR strategy. The law is based on a comply or explain principle.

Furthermore, the law is a result of a gap between Danish companies' written engagement on CSR issues and their actual engagement within the field. The government's intention was to eliminate this gap and encourage companies to take a more active approach towards CSR issues. Nevertheless, CSR is a self-imposed constraint[70]: the companies themselves choose whether or not to comply with a CSR policy. This goes both for the pension funds as well as for the companies in which they invest. From an investor's point of view, it is easier to compare companies if they all follow the same reporting system. Hence, transparency is always welcome in this respect.

[67] (Stern, 2006)
[68] (Sørensen, et al., 2007)
[69] (Pressemedelelse fra Økonomi- og Erhvervsministeriet, 2008)
[70] (Bodie, Kane, & Marcus, 2010)

III.2.2 Social Responsibility as a Source for Competitive Advantage

A commitment to SRI and sustainability can be necessary when interacting with other players on the market. As a result of the greater attention given to environmental, social and governance [ESG] issues by a variety of different institutional investors and governmental institutions, engagement in this area is of increasing importance.[71] Responsible corporate behaviour has become a key element of competitiveness.[72] For instance, firms that have excellent management of climate issues will increasingly be favoured over companies with poor practices when it comes to, for example, winning new contracts and becoming attractive investment objects. By eliminating poor management standards early on, the company is on the forefront of external pressure and problems from other interesting parties, such as the institutional investors. On the other hand, through active ownership, the pension funds are able to put pressure on other players in the market to lower their CO_2 emissions. Increased pressure forces the companies to constantly strive for higher levels of efficiency and to look for new ways of improving their business. Increased efficiency and better use of the company's resources will lead to cost reductions as well as intangible benefits such as a good reputation. Through this pressure, companies become more efficient, innovative and sustainable, which again will show on their bottom line and thus result in higher returns for the institutional investors. This philosophy is referred to as the *triple bottom line* (TBL).

III.2.3 The Triple Bottom Line Concept

Triple bottom line has its origins within the concept of sustainability and seeks to expand the traditional reporting framework to include ecological and social performance in addition to financial performance. The term was first defined by the Brundtland Commission of the United Nations in 1987.[73]

The triple bottom line promotes loyalty to a company's stakeholders instead of its shareholders. According to the TBL concept, a firm's responsibility should be to anyone who is influenced either directly or indirectly by the actions of the company, thus promoting a

[71] (European Workshops on Disclosure of Environmental, Social and Governance Information. The enterprise perspective, 2009)
[72] (Ethical Investment Past Performance)
[73] (Triple Bottom Line, 2010)

stakeholder perspective rather than the shareholder view of maximising wealth for the owners. However, these two points of views are not necessarily mutually exclusive.

"*In most instances, there is little conflict between doing well (maximizing value) and doing good. Profitable firms are those with satisfied customers and loyal employees; firms with dissatisfied customers and a disgruntled workforce will probably end up with declining profits and a low stock price*."[74]

The strategy of active ownership, which an increasing number of institutional investors are pursuing, is in accordance with a "do good and do well" philosophy. Still, as we will see in the empirical analysis, it seems that the pension funds are not pursuing active engagement to be "good" institutional investors in terms of an ethical agenda. The pension funds are engaging with companies to generate results on the bottom line. They believe that in order to earn money, one have to pick the most profitable investments. In their opinion, these are the companies that are forward thinking and are taking, for instance, climate change and sustainability into consideration. Thus it is a merger between two arbitrary philosophies; do well financially on the one hand and do good ethically on the other hand, rather than an intended social good agenda.

III.2.4 ESG Disclosure of Companies

When it comes to reporting on sustainable issues, investors and other stakeholders frequently criticize the Environmental, Social, and Governance (ESG) disclosure of companies.[75] One of the main challenges faced by firms regarding ESG disclosure is quality of the reported information. There are different areas of concern here, among others arbitrary selection of data and indicators, inaccuracy of data and lack of comparable data between firms. However, one of the most vital concerns is failure to link ESG information to corporate strategy; often the firms themselves understand internally the significance of ESG factors to their overall operation and performance, but fail to communicate this to investors. Thus the intended recipients of this information may fail to understand the relevance of the reported information. Consequently, it is a need "to externalize the internalities" from the companies' point of

[74] (Brealey, Myers, & Allen, 2006)
[75] (European Workshops on Disclosure of Environmental, Social and Governance Information. The enterprise perspective, 2009)

view.[76] By having a transparent reporting system, the areas of concerns are highlighted to the outside world. Thus, the institutional investors are then be better able to have a constructive dialog with the company in question. Consequently, the advancement of ESG disclosure by companies helps improve shareholder dialog.[77]

Moreover, part of the problem concerning ESG disclosure is that various stakeholders have different requirements and expectations to the reported information, rendering it difficult for the company to meet all the demands. However, on the other hand from a company's point of view, engagement with stakeholders helps identify the significance of different ESG issues, and highlights which ones need further scrutiny. This again will lead companies to a better management of stakeholder expectations.

III.2.5 Shareholders versus Stakeholders

It is often suggested that firms should be managed on behalf of all stakeholders, not just shareholders.[78] In order to discuss this issue, I will first briefly have a look at the macro economic history then the discussion will go more into depth and focus on the socially responsible perspective of this topic. In the end, a few real life examples will be given.

Different countries take very different views on what the corporations' overall aim should be. Japan and Germany are traditionally known for having strong preferences to safeguard stakeholders' interests, whereas the UK and the U.S. firms first and foremost are in business to earn money to the stockholders. The UK and the U.S. system is called the "market-based governance system" at a macro level and "shareholder-value model" at company level.[79] Traditionally, the Danish corporate governance system has been oriented towards protecting the rights of various stakeholders and not only shareholders, similar to that of the German system.[80] However, as capital markets have become more global, there has been greater pressure for companies in all countries to adopt wealth creation for shareholders as a primary goal.

[76] Ibid
[77] Ibid
[78] (Brealey, Myers, & Allen, 2006)
[79] (Thomsen S. , 2008)
[80] Ibid

Conversely, the fundament for socially responsible investments takes a different view. With a shift from pure income-seeking investors towards active owners, institutional shareholders are themselves signalling that they are increasingly concerned with more than just profits. Naturally, a company has to be profitable in order to stay in business and investors will continue to seek out the most money-generating businesses. However, there is an increased attention towards a more holistic and sustainable view of doing business, which is also reflected in the corporate governance practice. Companies and investors are overall more concerned with and aware of their own impact on the society and the natural resources. This is partly due to increased pressure from more aware customers and interest parties such as NGOs, and media coverage of SRI issues. Hence, soft factors and the way these impact the society and stakeholders are increasingly important. As already mentioned, companies can gain from being on the forefront of conflicts with different stakeholders. Even though a business practice or investment decision is allowed in legal terms, the ethical aspect should also be taken into consideration. A judiciary court is one thing, the “people’s court” is quite another and the force and the potential impact of the public eye should never be underestimated.

There are numerous examples of this fact in real life. From the pension industry I can mention Danish pension funds’ investments in Statoil and how they were exposed to public harm when Statoil’s oil extraction from tar sands in Canada was revealed.[81] ATP also experienced harsh media criticism in relation to their investment in the Danish company, Cheminova, which is a leading producer of pesticides.[82] After pressure from the public and ATP, in particular, Cheminova dealt with the problem and started to phase out toxic pesticides from their production.[83] This example illustrates that active engagement from institutional investors work. If ATP and the other major shareholders had simply sold their shares in Cheminova, the risk that other producers of similar products had taken over the market-share of Cheminova could have occurred. Hence, instead of passing the problem on, they dealt with it. This promotes a stakeholder view of the firm.

This is real life examples from the pension industry itself. In the analysis of the empirical evidence, I will go more into depth and evaluate the results of the empirical data and elaborate

[81] (DR, 2009)
[82] (Knudsen, 1997)
[83] (Thomsen C. B., 2006) and (Sørensen, et al., 2007)

on the role institutional investors can play concerning SRI issues and climate change in particular. The main conclusion from this paragraph is that as a result of increasingly responsible investors and more aware customers, a stakeholder view of the firm is emerging at the expense of a pure shareholder perspective.

III.2.6 Summary of the Strategic Perspective of Climate Change

As we have seen in this section, the strategic considerations concerning climate change is also vital in order to make excellent investment decisions. From a strategic perspective, the investors sometimes have to forego short term profits in order to achieve a longer term goal. However, a fact that should not be ignored is that investors will not pursue active engagement and promote soft values, like for instance a certain environmental standard, unless they do believe it will have positive result on their bottom line. The triple bottom line concept seeks to merge financial values with strategic goals. Moreover, there is also an increased tendency in the market to favour socially responsible business practices. Thus, companies which have strong competencies when it comes to the management of climate issues will increasingly have an advantage over their competitors. Hence, sustainable business practices are emerging as a source of competitive advantage, in addition to which, development in accordance with socially responsibility supports a stakeholder view of the firm. However, companies must become better at communicating ESG issue to the external world. An improved link between knowledge of ESG issues and the company in question, help improve the dialog between the investor and the investee. On top of this, the progress of carbon disclosure and use of carbon data have the potential to play a larger role in this setting in the future.

IV. Empirical Analysis

The empirical analysis is divided into 4 sections. The first section addresses whether or not, the pension funds actually perceive climate change as an investment issue. Is climate change just a hype that will fade or do the institutional investors take it into account when they invest? A discussion of use of climate change data will follow next. What information do the pension funds collect and how do they use it? In the third section, the extent to which the investors engage on climate issues will be examined. That is, how do they engage with companies and what do they perceive their role to be in this setting? Last, but not least, I will look at the pension funds' own reporting practices concerning climate change. What do they request from their investees and what do they do themselves? In the end, a conclusion will sum up the main point to take away from this analysis.

In order to achieve a deeper understanding of the empirical analysis, a brief introduction of the Danish pension industry is given prior to the empirical analysis.

IV.1 Introduction to the Danish Pension System

The Danish pension system is based on three pillars that the World Bank and OECD, among others, have introduced.[84] The first pillar consists of mandatory, public pension schemes: their mission is to safeguard the population from poverty. In addition to the public pension schemes, there is a variety of private pension providers offering pensions services. These includes market life insurance companies, occupational pension funds, life insurance companies, lateral institutions, company pension funds, and financial institutions. However, in the report, no distinction between these different pension schemes will be made. Hence, the various schemes will be referred to as pension funds. The second pillar consists of private, occupational pension schemes and pension schemes for civil servants. The schemes in this pillar are mandatory as part of the employment contract. The majority of the pension funds in the empirical analysis fall under this pillar. Private, individual pension funds characterize the third pillar - these pension arrangements are voluntary and are intended as a supplement to the other pension arrangements.

While some pension funds have outsourced their capital administration to external portfolio managers; others manage their pension fund themselves. Furthermore, several pension funds have also established common administrations of their pension wealth. To complicate the industry further, in addition to the Danish pension funds, there are some foreign pension providers on the Danish market as well; that is, Danish pension takers pay their pension to foreign pension providers. However, I will not go into this area as it goes beyond the borders of this report.

[84] (Rasmussen, Kahlke, Hansen, Seiersen, & Schaarup, 2009)

When it comes to the pension funds' investment decisions, they are obliged to follow certain rules. The rules aim to secure a diversification of risk and to ensure that the pension funds meet their obligations to the pension holders.[85] They have a fiduciary responsibility. The pension funds need to allocate their assets in a way that do not create a dependency on certain asset classes, a specific market or an investment. A rough distinction is made between gilt-edged assets (mainly obligations) and non gilt-edged assets (primarily shares). While there is no restriction on how much the funds can invest in the former, the latter must not exceed 70 percent of the portfolio. In addition to this restriction, there are also constraints on the geographical location of the assets and in what currency they are denominated.[86] However, the asset mix and the composition of the portfolio will not be elaborated on in this report due to space and time constraints even though these aspects are important. For instance, if a fund is built to match liabilities (the dates and amounts when payouts are required) then asset allocation is likely to change with time. As the pension holder ages, the asset mix most likely change into steadily safer and safer assets that are more liquid and less volatile. Nonetheless, these considerations will not be discussed in this report. A related topic is the different pension products the funds offer to the pension holders. This is also an aspect that can influence the investments made by the pension funds and their risk profile. Nevertheless, this will not be further discussed in the report at hand.

In the coming sections, an empirical analysis of the Danish pension industry's perception of and reaction to climate change is provided. An in-depth analysis on the pension funds' use of climate change data and engagement with investees on climate issues is carried out.

IV.2 Assessment of Climate Change as an Investment Issue

In order to address climate change as an investment issue, I have to establish the industry's point of view on this subject. That is, what are the economic impacts of climate change in the pension funds' point of view? How important is climate change as a factor in investment analysis and what are the barriers in order to incorporate climate change in this respect? Furthermore, do the pension funds welcome regulatory requirements on the investees with the aim of reducing their GHG emissions? What about stock exchange listing rules which require companies to disclose climate change related risks on a comparable basis? Is that a good idea?

[85] Ibid
[86] Ibid

Besides, do the pension funds engage with (inter)governmental institutions regarding regulation of companies and investors concerning GHG emissions, reporting and reduction possibilities? Last, but not least, has the financial crisis compelled investors to give greater consideration to climate changes? These are questions that will be raised in the following section.

IV.2.1 Economic Impact of Climate Change

As mention in the introduction, eight out of ten pension funds participated in this study. Hence, these eight pension funds will be the basis for the analysis. To establish the relevance of climate change as an investment issue, the first question sought to reveal the pension funds' points of view concerning the economic impact of climate change. Do they perceive climate change as a real threat or simply as a hype that will fade away? All respondents recognised climate change as a real threat and as an issue to consider when making investment decisions. The majority had a holistic view of climate change, which indicates that they think climate changes have the probability to impact all businesses in all sectors to a more or less extent. Two of the Danish pension funds thought that only a few sectors would be threatened by climatic changes, such as for instance the energy, transportation and utilities industries. However, it was a consensus among the institutional investors that certain sectors would be more fragile to climatic changes than others. One pension fund said that climate changes do not affect their investments significantly in a micro economic perspective; however the macro economic consequences can be huge. It emphasized that consequences have to be seen in the light of probabilities.

All the pension funds expressed concern about the uncertainty surrounding climate change. It is hard to predict how climatic changes are going to affect the market in the future, thus about half of the pension funds prefer to remain passive in their actions. As mentioned above, they believe the macro economic consequences of climate changes will be huge on the long run, however it is difficult to predict what the consequences will be. As a result, the majority of the pension funds follow the crowd and avoid any additional risks and costs by taking the first move. In contrast however a few pension funds are proactively seeking to address this concern at the outset and strive to change their practices to be on the forefront of climate related risks. This was mainly evident in three pension funds, although, one pension fund in particular leads the way within this progress in the Danish pension sector.

IV.2.2 Climate Change as a factor in investment analysis

How important is climate change as a factor in investment research, decision making and engagement activities with companies? Six out of eight pension funds said that it is important on the whole or very important in certain sectors. One emphasised that climate change has gradually increased in importance in recent years. The last pension fund paid no specific attention to this issue. The latter screens the companies in its portfolio to make sure they live up to guidelines provided by the UN, however, beyond this point it does not have any specific targets when it comes to climate change, such as targets for carbon emissions for example. Nevertheless, the majority of the funds viewed climate change as a real threat that needs to be taken into consideration in investment decisions, but also as a matter that is difficult to handle from an operational point of view. The management of carbon is an emerging issue. A discussion on how the funds use climate change data will be carried out under the section "*Use of climate change data*".

Furthermore, one of the pension funds pointed out that the focus around the price of carbon and the cap and trade system indicates that carbon, including carbon emissions, can become an important competitive parameter in the future, especially in high emissions sectors. The management of carbon has the possibility to separate good business practices from less good and thus distinguish superior investments opportunities from poor ones. Since most of the funds consider the ability to address and handle climatic issues as one of the parameters that will define the winners and the losers on the long run, management of climate changes can become a key indicator of the companies' competitiveness. The logic here is that companies which are on the forefront of for example future regulations on carbon are companies that are most likely to be innovative in other areas as well. These companies think about the future, they think long term. Some of the pension funds also believe that it is easier for companies that operate sustainably to attract qualified employees, which again can become a competitive advantage in the long run. The funds try to incorporate these aspects into their investment research and decision making.

IV.2.3 Barriers to incorporate climate issues into investment analysis

When I asked the pension funds which factors they saw as barriers to incorporating climate change risks and opportunities into investment analysis and decision-making, two major barriers were highlighted. The first of which was lack of political clarity. A deal in Copenhagen would have created a platform for the political agenda on the prospective expectations and actions concerning climate changes. Without national and, from a European point of view, regional norms, the companies cannot see clearly what targets apply for them and where to go from here. It creates stagnation in the development towards a low carbon economy since most of the companies accordingly will wait and see instead of taking action, which can be justified from the companies' point of view since there is a lack of guidelines on this subject. It is also difficult for the pension funds to put pressure on the investees when the firms cannot see why they should put in the extra effort the institutional investors encourage them to: the market needs political norms in order to define the game they are playing. Thus, one of the greatest barriers is confusion on the political side.

The other large barrier is lack of valid and reliable information. In order for the pension funds to incorporate climate changes into their investment analysis they need valid and reliable data. The industry says: what they cannot measure, they cannot manage. That also counts for the companies they invest in. Thus, nearly all the pension funds ask the investees to become members of the Carbon Disclosure Project (CDP). By becoming members, the companies contribute towards a more reliable and systematic reporting of carbon emissions. In addition, it promotes more transparency in the market. This is always good seen from an investor's point of view as it leads to better informed investment decisions. Furthermore, a few pension funds contribute more towards the climate issue than the others. ATP, for instance, has become partner with the CDP in the Nordic region. This means that ATP helps CDP reach a larger coverage of the market and contributes towards a more reliable and systematic reporting system. By partnering up with CDP, ATP commits to increasing the awareness concerning GHG emissions in the corporate market and to work towards a uniform reporting standard for all industries across a variety of countries.[87]

Other obstacles mentioned by the pension funds include public insight and transparency concerning emissions data, difficulties in measuring the financial impact of climate change, lack of investment opportunities, and low price on carbon. The fact that certain companies do not wish to disclose their carbon emission, is an obvious barrier; if the companies do not disclose, the investors cannot take it into account in a comparable manner through

[87] (ATP Koncernen årsrapport 2009, 2009)

measurement of the emissions. Nevertheless, from a company's point of view, the public insight and transparency represent a barrier in itself as it may put the company at a disadvantage. However, the pension funds are still able to take climate changes into consideration through various analyses, such as looking at the industry the company is in (high versus low emissions sectors) and so on. Furthermore, the management itself can be a barrier. The ability to adapt to environmental changes may be vital in some industries in order to gain a competitive advantage. Besides, being a first-mover can also be a barrier - the risk of taking some kind of initiative that ultimately turns out to be expensive and redundant or which should have been steered into another direction is a barrier in itself. The Danish pension funds' preferred strategy is to wait until the worst "childhood diseases" are pruned out and the road ahead is clearer.

IV.2.4 Regulatory Requirements

Concerning the question whether the funds welcome regulatory requirements on investee companies to report and reduce GHG emissions, the majority (five out of eight pension funds) were in favour of regulatory requirements regarding GHG emissions for investees. As a business, the fewer regulations the better since the company can act more freely. However, from an investor's point of view, regulation makes companies more uniform and thus easier to compare. Hence, it is easier for the investors to benchmark companies when they are regulated. The five pension funds support incorporating CO_2 emissions into the standard reporting for companies, for instance through mandatory reporting to CDP. However, as mentioned previously, the pension funds also find it extremely important that the companies report according to a uniform standard. That is, they do not think it is a good idea that various countries come up with their own reporting systems. This will complicate matters immensely as the investors will have difficulties benchmarking companies across borders as well as the costs will be higher as it requires more resources to analyze the various companies in the respective markets. In addition, separate reporting systems have the potential to create gaps between the reporting systems and requirements in different countries. As a result, companies can move their business to locations were reporting standards are favourable for them. Consequently, the majority of the Danish pension funds emphasize that the development within this area should be based on the Global Reporting Initiative (GRI) for CSR issues in general and the CDP and the Carbon Disclosure Standards Board (CDSB) for reporting on carbon emissions specifically. The CDSB has made a model on how carbon data can be included in a standard reporting system[88].

Furthermore, two of the pension funds thought that the market could take care of this itself and that the resources spent on this evaluation should be seen in comparison to the value of the investment. The last pension fund found it purely as a political question and out of the fund's responsibility. The main stance of the latter pension fund was that as a company, it was not its job to put pressure on the politicians to produce a more climate friendly legislation. In its opinion, that was up to the public and not up to it as an institutional investor. This was, however, a single case; the majority of the pension funds have a broader social responsibility agenda and welcome regulation concerning GHG emissions on companies.

The bottom line is that the general opinion of the Danish pension funds is that if one is concerned about the climate one will think it is a good idea that companies become responsible for their own emissions and are requested to reduce them. Besides, from a company's perspective, if it is able to reduce its emissions it is typically because the firm is able to become more effective in one way or another, which again leads to cost savings.

IV.2.5 Stock Exchange Listing Rules

A related question is whether or not the pension funds welcome stock exchange listing rules which require companies to disclose climate change related risks on a comparable basis. Six out of eight pension funds were positive to the idea of listing climate change related information on a stock exchange. However, again the emphasis was on a uniform reporting standard. Since we live in an economy with diverse and multinational owners of companies, it is not appropriate that companies can handle the issue of climate change according to where it is located and operates. Thus, it has to be a standard that will work across a variety of markets. Besides, it would make it easier for investors to select climate friendly companies if that were their intention.

Nonetheless, there was one pension fund that was negative to the idea and another one that was critical to it. The main argument against stock exchange listing requirements is that the companies can just refrain from being listed. The pension fund preferred that the companies

[88] (Home: CDSB Framework)

were regulated by governmental institutions rather than by a stock exchange. However, in general, a stock exchange works towards more transparency. Thus, one can argue that climate changes can affect the risks related to certain companies. Hence it could be relevant to list some of those risks on a comparable basis and thereby create more transparency in the area of concern, such as for instance carbon emissions in high emissions sectors. A counter argument is that it is not equally important for all companies. Thus it might leave certain companies at an unfair disadvantage.

This question is basically about openness and transparency from the companies' perspective, and as a fundamental stance the Danish pension funds in general support transparency across all forums.

IV.2.6 Engagement with (inter)governmental institutions

The Danish pension funds engagement concerning climate changes is most evident in the support given to intergovernmental institutions concerned with climate issues. All eight pension funds have signed up to the UN PRI. Furthermore, six of the pension funds have also signed the UN Global Compact. Even though both UN PRI and Global Compact encourage sustainable environmental development, more visible steps are needed in order to reach a low-carbon economy. CDP, for instance, represents such a step. Signing up to CDP signifies a deeper engagement to environmental concerns from the top-level management. So far, only three of the Danish pension funds, studied in this analysis, have signed up to the CDP. However, a few more are considering joining the CDP as this report is written.

In order to obtain a better and more consistent reporting system, it is vital that more institutional investors join the CDP and start exercising pressure on their investees to become members of the CDP as well. This will increase the focus on carbon emissions and it will be easier to hold companies responsible for their contamination. Hence, it will become more stringent for heavily polluting companies as they will have to face the consequences of their own actions. If companies can see changes on their bottom line, steps to improve the situation will follow: as we will see later on in the analysis, the greatest tool to encourage companies to become more sustainable is to emphasize results on their bottom line.

IV.2.7 Influence of the Financial Crisis

When the financial situation of companies is stressed, soft values are easily overlooked. Implementation of strategies to become environmentally friendly can be seen as a response to soft values. It is commonly known that when launching a new strategy, the costs will initially be higher than the benefits. Thus, it might make sense that a financially stressed company will wait until its economic situation has improved before taking steps to become more sustainable. To investigate if this logic holds, I asked the pension funds if they thought the financial crisis would compel investors and companies to give greater consideration to climate change in the future. The widespread answer from the institutional investors was no. One pension fund's response was:

"*Normally, if there was a financial crisis we would see companies put less effort into soft values, such as climate change, still this has not been the case. That is positive. It might indicate that this is a persistent issue which is not underestimated even though a financial crisis is ongoing*."[89]

The common belief of the pension funds is that the climate issue is independent of the financial crisis. The climate concern is a ball that spins and there is an increased focus on it. In 2009, CO_2 emissions in Europe decreased due to the financial crisis. However, this is probably mainly due to lower production levels rather than an actual objective to cut carbon emissions.

IV.2.8 Conclusion of climate change as an investment issue

To sum up, the overall conclusion from this section is that the Danish pension funds do see climate change as a real threat and try to incorporate it into their investment analysis and decision-making. Thus, climate change is very much an investment issue. The two largest barriers for incorporating climate changes into investment analysis and decision-making are lack of political clarity and availability of reliable data. Moreover, the Danish pension industry's largest contribution to SRI issues is signing up to the UN PRI. Whereas, signing up to the CDP shows a deeper commitment towards climate concerns, only three of the Danish pension funds have done that so far. However, more funds are expected to sign up in the years to come. Next, I will have a closer look at how the Danish pension funds collect and use climate change data.

[89] Due to anonymity of the funds, I will not state the source of this statement.

IV.3 Climate Change Data

What kind of climate change related information do Danish pension funds seek to obtain? Do they collect any at all? Furthermore, how do they use the obtained knowledge in their investment decisions? Has climate change related information affected asset allocations in the funds in recent years? These subjects will be addressed in the following section.

IV.3.1 Demand for climate data

Four of the Danish pension funds request climate change related data from their investees, while the remaining four do not. However, the applicability of this answer can be discussed. The majority of the pension funds have external asset managers, hence, they do not have absolute control over what the asset managers are taking into consideration besides the general guidelines provided by them. The external asset managers' practices can deviate from that of the pension funds. That is, the external asset managers can both require climate related information from the investees or put less effort into this matter without the awareness or explicit control of the pension funds. Nonetheless, the pension funds expect the external asset managers to follow the principles the pension funds have signed, such as for instance the UN PRI, and the guidelines provided by them. The relationship between the external asset managers and the pension funds will be discussed more in-depth later on in the analysis.

As a single case, one pension fund answered that climate concerns were not of any significant importance for the majority of the market and therefore the CDP did not have any practical purpose. The fund saw this as a pre-mature market, which they did not pay considerable attention to. Three of the other pension funds shared their opinion in respect to requesting climate change related information from their investees. Since they also saw it as an emerging issue still in development, they did not require this information from their investees. However, these latter three pension funds did encourage the investees to become members of the CDP. Thus, they send a signal to the companies that climate change is on their agenda and that they support the development of a uniform reporting standard within this area. In addition, they take climate change information indirectly into consideration through initiatives such as the UN PRI and UN Global Compact.

IV.3.2 Climate change data – what do they use it for?

The information they look at is data from CDP and other available data regarding the company. For example, the pension funds look at how a company can be affected by climatic factors and forecasts. If a regulation concerning carbon emissions is launched or other regulatory constraints are introduced, how will that affect the company in question? The pension funds can, for instance, make a SWOT analysis of the company in relation to these changes, or look at its management of climate issues or vulnerability to macro economic changes such as possible new regulations. The main focus is on the company's basic activities and how the company in question can be affected by those climate-related or initiated changes. Thus, the largest contribution in relation to climate changes is the hands-on and concrete evaluations of specific investments seen in different contexts, like for instance analysing a company through scenario planning with specific focus on climate changes.

The empirical analysis revealed that six out of the eight pension funds factor climate change related risks and opportunities into investment analysis and decision-making. The seventh pension fund does not emphasis this matter, while the last fund obtains information concerning climate indirectly through Global Compact and UN PRI, however, it does not explicitly collect and incorporate carbon emissions into its investment analysis. An interesting note in this respect is that almost all pension funds include climate change information in their investment analysis and decision-making, but only four pension funds actually ask for climate change related information from their investees. A reason for this gap may be that the information the funds employ are more related to macro economic factors, such as prospective regulations and conditions related to extreme weather and ad hoc analyses and so on, than to company-specific carbon emissions. Hence, the former information can be gained from a variety of sources, whereas the latter mostly are obtained from the companies themselves.

As mentioned previously, the majority of the funds address the climate challenges from a bottom-up perspective and not from a top-down point of view. That is, they look at a specific business to see what the company does and what its vision for the future is. Thus, it becomes a very specific and concrete exercise. Nevertheless, for some of the funds climate as an issue is not significant.

The institutional investors who actively collect climate related information use it as an integral part of their investment analysis. They apply it to value companies and to identify risks and opportunities. However, they do not use climate data equally with regard to all companies in all sectors. For instance, they do not collect climate change related data for the investments with very short time horizons, such as cherry-picking or stock-picking. The general opinion here is that climate in this respect is irrelevant and will never be taken into consideration as a separate assessment factor. In contrast, the funds find climate issues considerably more important in the investments where they buy to hold, such as investments in stocks or infrastructure. In this respect, it is of crucial importance both prior to investing in the company as well as in a dialog with the company.

IV.3.3 Asset allocation in recent years

When faced with the question of whether or not the financial crisis had an influence on investment allocations in the funds, including allocations attributable to climate change, the overwhelming answer was no. In general, it has been an overall trend within the investment world in recent years to look towards investments in alternative energy. However, the financial crisis has nothing to do with that. Climate as a factor has become an increasingly important part of the institutional investors' mindset, partly to map and hedge against risks, but also in order to harvest the fruits of the growing opportunities that exist within the environmental friendly business. Nevertheless, the main focus of the pension funds has been, and still is, to maximize profit, not strive to be good corporate citizens. For instance, most of the funds invested in forests long before this was classified as a green investment and thereby improved the environmental profile of the fund. They invested in forests because it was a golden business opportunity.

According to the various funds, there are dozens of examples of large investment decisions were climate issues have been part of the analysis in relation to the investment's risk and price considerations. However, none of the pension funds have neither bought nor sold an investment based on climatic reasons. Still, there are several examples of investments they have chosen not to invest in due to climate concerns. Thus, the climate dimension is increasing in importance. A reason for this can be the increasing transparency and tangibility emerging within this field. The climate is easier to take into consideration as it becomes more and more tangible and manageable due to targets on carbon emissions and price on carbon.

To sum up, when selecting which companies to invest in, the pension funds employ various assessment models where information regarding exposure to climate changes and other climatic issues are considered. Climate has gradually become more significant as the pension funds have started to include CO_2 emissions in their investment policy. In addition, the management of climate issues is, as mentioned before, a good indicator of the competitiveness of different businesses. Companies that are on the forefront of future regulations and challenges, tend to be innovative in other areas as well: they think long-term and are proactive. Hence, these potential investees are better risk managers than their competitors. The pension funds will continue to seek out and reap the benefits of these prospective business opportunities.

IV.3.4 Conclusion of use of climate change data

The issue of climate change is still in its infancy and the majority of the pension funds do not take concrete measure of climate change, such as carbon emission targets, into account when making investment decision. It is more an overall assessment of the sector and an evaluation of how climate changes will affect companies from a bottom up perspective. However, the climate aspect is figuring more and more in the investment picture, both with regards to existing investees as well as in the search for new investment prospects. Still, for now, it is not a significant factor for most of the funds. The next part will evaluate the pension funds' engagement on climate change issues.

IV.4 Engagement on Climate Issues (institutional investors as active shareholders)

The institutional investor world has changed during the last 10-15 years. Previously, the pension funds were only investors with certain rights, now they are to a larger degree active owners with not only rights but also some responsibilities. Hence, in this section the following questions will be addressed: What encourages the pension funds to consider climate changes in their investment strategies? Which factors promote shareholder activism in respect to ESG issues, hereunder also climate changes? Do the pension funds perceive it as their role to influence the ESG strategies of their investees? Furthermore, what are the most effective ways of motivating companies to become climate friendly and sustainable? These are questions that will be answered in this section.

IV.4.1 Engagement on climate issues

According to the pension funds, the reason for considering climate issues in their investment strategy basically rests upon two things. First of all, most of the funds have had an SRI policy for many years, therefore to include the issue of climate change is simply an update of this policy according to developments emerging within the society. Secondly, if climate changes are something that can greatly affect the economy, then it is in the pension funds' interest to incorporate that into their investment analyses. In a risk-return perspective, the management of climate change can be seen as tool for risk management. It highlights new business areas that could bring benefits to the pension funds, their members and the overall society, as well as it helps identify threats within the market. Accordingly, the pension funds can invest less in certain sectors and companies if they find them more risky from a climate perspective and put more money in other sectors that are beneficial seen from a climate point of view. In addition, the majority of the institutional investors feel they have an economic responsibility both to their pension holders as well as to the overall society. Thus, the reasons to incorporate climate considerations into their investment policy rest on financial incentives as well as a wish to act as responsible investors.

IV.4.2 Factors that encourage shareholder activism

The dominant factor that encourages shareholder activism is the overall issue of SRI. Five pension funds expressed the wish to act as responsible investors and live up to the principles of the UN PRI as the main motivation for active ownership. Engagement is one of the requirements of the UN PRI. In addition, the pension funds do not want to invest in companies that violate international laws and generally accepted norms concerning social and environmental conditions.

Other factors that encourage shareholder activism include achievement of more sustainable and reliable returns on investments and expectations from a wider stakeholder group, for instance through pressure from customers and the media. The pension funds shall provide its members with the best possible return on the investments. For this reason, the pension funds work to achieve a more effective leadership in the investees as well as on promoting the interests of shareholders. Tighter control of the investees leads to less corporate failures and hence better results. Negative public attention, on the other hand, can have unfavourable influence on both the investee and fund. The fund's reputation may be hurt and as a consequence pension holders may move their savings to another fund as well as it may be difficult for the pension fund to attract new customers. Consequences from pension holders' actions can be quite significant if these are large corporate clients. Most of the pension funds in the analysis belong to Pillar II in the Danish pension system. Thus, the funds have large corporations negotiating pension terms and conditions on behalf of their employees. If these large corporate pension holders put pressure on the funds, their point of view will be taken into consideration.

Furthermore, by pursuing active ownership and a climate agenda, the pension funds not only exercise pressure on the investees but also on the politicians to reach a deal and form an applicable political framework regarding this issue. The pressure from the institutional investors, increases the awareness concerning the risks and opportunities associated with climate change as well as they send a clear signal to politicians that climate change is on their agenda and that a common political framework on this subject is in demand.

Nevertheless, engagement is relatively new for most of the funds. Previously, they have only screened their portfolio and simply excluded or sold off companies that did not live up to their requirements or who were largely contradicting their point of views. Firms that were questionable, they kept a close eye on - though, beyond this point they did not engage. However, since engagement is one of the requirements of the UN PRI, the pension funds have started to implement this into their investment strategy. Presently, the majority of pension funds are working out their policy concerning engagement. Considerations such as what triggers engagement and how patient they should be in this respect, are being worked out.

IV.4.3 The pension funds' role as shareholders

How do the pension funds perceive their role as shareholders? Is it their task to influence the environmental, social, and governance (ESG) strategies of the companies they invest in? The overall response to this question was yes, which is not surprising given that all the pension funds (participating in this analysis) have signed up to the UN PRI where engagement is one of the requirements. What was surprising was that one of the funds transferred the responsibility of engagement to their pension holders. That is, the fund would like to realize the principles of the UN PRI and promote the standards that are internationally accepted and adopted as long as this is in their pension holders' interest. Thus, in the fund's opinion it is not it as a pension fund that drives this process. It does not see it as the fund's responsibility to engage and force investees to adopt certain strategies. The pension fund is in this world to manage the pension holders' wealth and to achieve the highest possible return to them under certain conditions, one of which could be environmental constraints. Nevertheless, this was an isolated case.

Most of the funds (six out of eight pension funds), on the other hand, were very clear on their role in relation to active ownership. They saw it as their responsibility to influence the ESG strategies of the investees. The last fund mostly agreed with the majority of the funds. However, it had completely outsourced the engagement process to an external party and had thereby distanced itself from the topic. The majority of the funds tried to influence the ESG strategies of the investees by promoting the adoption of certain policies regarding these issues. They did not wish to engage in the design process of these policies, but rather sought to put these issues on the investees' agenda and encourage them to outline their stance on ESG issues. From an investor's perspective, a clear policy regarding ESG issues makes it easier to see what a specific company's standpoint on these matters is. Clear policies on certain issues, makes this process more transparent. Nonetheless, there will always be cases where companies have a very well formulated policy, but are doing something completely different. In real life, the hardest part is to distinguish the companies with good practices from the ones with poor practices.

Furthermore, some pension funds are more committed to the engagement process than others. While a few actively pursue engagement, others are starting to come to grips with their new role as active owners. More than half of the funds have more or less outsourced the engagement process to external parties. While most of the funds engage on ESG issues with Danish companies themselves, they rely on third parties in international affairs. The main motivation for this is lack of knowledge about the foreign markets. In addition, the Scandinavian and Northern European markets are heavily regulated, thus the need for engagement in the Nordic investees is trivial compared to companies in other parts of the world. Furthermore, the pension funds that have outsourced the engagement process believe that they achieve a higher degree of influence through pooling their powers with other large investors. The third party act on the pension funds' behalf based on guidelines and exclusion lists that the pension funds have agreed with them. In order to safeguard the pension funds' views and to secure that these are promptly taken into consideration, the pension funds have a close collaboration with the external parties. Whereas the pension funds' own engagement is fragmented and performed on a case-by-case basis, the engagement by the third parties is carried out systematically. The pension funds can draw on the external parties' expertise and scale advantages. With scale advantages in this context I mean the larger pool of investors' power and pressure.

Nonetheless, most of the Danish pension funds have not yet engaged with investees on climate matters. The engagement in relation to climate has mainly been to encourage investees to become members of the CDP. However, some of the funds have excluded companies from their investment universe based on environmental reasons.

IV.4.4 How do the pension funds engage with their investees?

As mentioned above, the majority of the funds have outsourced the engagement process to third parties, either to external asset managers or to screening agencies. There are various reasons for this, among others lack of know-how and resources in-house or cost savings. In addition, some of the pension funds have a vast number of share holdings, thus following up on all these is an overwhelming task. Hence, outsourcing provides a cheaper and more efficient alternative than conducting the screening and engagement processes themselves.

Initially, the pension funds screen their portfolio in order to safeguard certain standards of their investments, for instance that their investees live up to specific environmental and ethical standards. An example of a screening process can be that the pension fund or the external party screens the portfolio and rank the companies according to three lists: a focus list, a dialog list and an exclusion list. The criteria for the screening process are usually UN Global Compact and internationally accepted laws, regulations and frameworks. Companies that need further scrutiny are listed on the focus list. The dialog list includes firms the screening agency, the pension funds, or both, engage with. Finally, some companies are excluded from the investment universe and end up on the exclusion list. Where asset managers are involved, exclusion list is distributed to them and they have to refrain from investing the pension wealth in the companies on that exclusion list. In the pension funds, the board of directors decide which companies goes from the focus list to respectively the dialog list and the exclusion list. This process is of crucial importance: if something goes wrong here, the consequences can be quite serious, especially when considering the aspect of media coverage in relation to ESG issues.

Furthermore, by letting third parties carry out the engagement process, the pension funds do not have absolute control over the dialog conducted on their behalf. However, as mentioned before, they are able to achieve a higher degree of pressure since they pool their power with other investors. In addition, the funds themselves can initiate a dialog with the company in question, in order to execute further pressure. Nevertheless, the involvement of third parties can be quite uncomfortable and risky as unfortunate results may be the outcome.

The pension funds that do engage with their investees themselves engage in dialogs with the top management on the issues of concern. They have a continuous dialog with the Danish investees in order to follow up on the companies' strategies and results. If there is a gap between the pension fund's requirements and the company's business practices, the pension fund will address the company with their concern and if the problem is not solved, the pension fund will sell their shares. The engagement is carried out on a case-by-case-basis. Hence, the pension funds do not waste their resources on companies that are highly well-functioning and have a low risk exposure to ESG issues. The pension funds also vote at the investees' annual general meetings and raise their voice if there are issues of concern. When the pension funds address issues at annual general meetings, other investors hear their concerns and may share their stance and engagement.

Furthermore, one pension fund emphasized that strategic changes within a company can be very comprehensive and time consuming. Thus, they appreciate that the investee presents an action plan over the changes it will implement. The action plan indicates the company's commitment to the issues of concern and whether or not it is ready to take the necessary steps in order to improve the situation.

Nevertheless, engagement is an emerging issue and the Danish pension funds are just beginning to interact with their investees as active owners. Hence, the engagement process is still in its infancy and there is a learning process ahead for both the pension funds and the investees. In fact, as mentioned above, the Danish pension funds have not engaged with investees on climate change issues yet. However, they have engaged on other issues related to SRI. The overall impression though is that the companies themselves greatly appreciate the engagement from the active owners. As one pension fund highlighted, the companies welcome a constructive dialog regarding issues related to their business. Obviously, the companies are quite pleased to have someone to discuss their problems with and it seems to be a need for this kind of interaction in the market. Thus, the engagement process creates value for both the institutional investors as well as the investees.

IV.4.5 Effective ways of motivating companies

There was a genuine consensus among the pension funds that financial incentives were the single most effective motivation factor to stimulate green development and reduction of greenhouse gas emissions among investees. There is nothing more effective than to highlight results on the bottom line. One can try to force companies to comply with one's requests; however, traditionally that has never been a very effective method. The companies will either terminate the relationship or start innovating to find strategies to avoid the requirements, a mentality not dissimilar to that of small children: sometimes it is more beneficial to promise an ice cream instead of threatening with punishment.

Furthermore, if climate hazardous behaviour is punished, it will have consequences for the most contaminating companies. Thus, an effective tool to make companies incorporate climate friendly business practices is to launch stricter environmental policies and regulations. If the governments in addition put a high price on carbon and limit the number of CO_2 allowances, this will also have huge impact on certain companies' bottom line.

The last effective method mentioned by the pension funds to stimulate investees to take climate change into consideration is pressure from investors. As mentioned previously, if the pension funds raise issues of concern at a company's annual general meeting, other investors will be aware of the problems and demand answers and solutions to these problems from the investee's management. According to Thomsen (2008) the central governance problem is the so-called "agency-problem", which occurs because of the separation between ownership and management.[90] The managers are the agents of the shareholders, and are supposed to work in their interests. Hence, the investor (principal) pressure will be strengthened by raising issues

[90] (Thomsen S. , 2008)

at annual general meetings and the management (agents) will have to deal with this increased pressure. Joining shareholder coalitions on climate change has similar effects as it also pool investors' power and contributes to increasing the pressure on the investees - thus pressure arises from several levels, making it hard for the investee to ignore the issue in question.

IV.4.6 What should shareholders do in the event of a redundancy plan?

If the investees do not live up to the expectations of the pension funds, engagement and dialog with the companies is the preferred approach to this problem. It is a common view within the pension funds that engagement is favoured over exclusion. When the pension funds exclude companies from their investment universe, they put themselves outside the influential sphere, thus the problem is not solved, only passed on to the next investor - hence, exclusion is the last resort.

However, it is important to note that there is a distinction here between a potential investment and already existing investees. If a potential investee is not initially willing to reveal the information the pension fund requests, the investors simply consider not investing in it as that is easier for them than to start an engagement process with this particular company, both with regards to time and resources.

One pension fund pointed towards the reason for the breach and how great the violation was. If there was a company that the pension fund had a dialog with, they would quickly figure out if it was a minor detail that did not go according to the plan or if they were being deceived. If the former was the case, they would continue the dialog and expect the situation to improve over time. However, if the latter was the case they would sell their shares. Thus, the preferred approach by the pension funds in this matter is to engage. If the situation does not improve, they sell their shares.

The engagement has so far primarily related to other concerns within SRI. Nevertheless, one pension fund does not incorporate climate under its SRI policies, but rather sees climate change as more tangible and more financial comprehensive than other issues within SRI. Thus climate change is a matter that stands alone within this fund. The fund therefore requests their investees to sign up to CDP. If they do not sign up to CDP, they continue to write to the investees and ask them about the progress within this area until they do sign up.

IV.4.7 What inhibit investors from engagement with investees?

What is holding investors back from actively engaging with companies? One prominent reason is resources seen in relation to the value of an investment. If the share holding in a company is rather small and negligible and the influence from the institutional investor is minimal, then the efforts paid to engagement may not be worth the while. In this case it is preferred to sell rather than waste resources.

A related issue is if a fund has too large share holdings. Engagement will then require too many resources to engage with all the investees. Too great spread can thus be a barrier as well as the engagement process becomes too complex and diverse to manage. Hence, it has to be a link between the efforts one put into an investment (resources assigned to it) and the value that investment brings to the fund.

Many funds have outsourced their asset management. In this situation new issues of concern and agency problems arise. For instance, it can be difficult to follow up and safeguard compliance between the pension fund's strategy and the different asset managers' strategies. First of all, one has to convince the external asset manager to take the issues of concern into consideration. Then the pension fund has to make sure that the asset manager has understood what they demand from him/her. Next, they have to safeguard that the asset manager has the necessary skills and is capable of carrying out the given task. Last, but not least, the pension fund has to ensure that the asset manager actually executes the agreed strategy. In real life, this is a more complicated task than one would initially think.

Furthermore, within SRI it is an ocean of topics the pension funds can potentially engage in, thus it may come off as an overwhelming task to engage in all of them. It is a daunting task as the issues of concern simply increases as the time goes by, which may consequently, hold investors back from engaging in SRI issues. In addition, in order to put pressure on others, the pension funds themselves have to have a clean conscience. That is, they have to have the necessary standards in place and be willing to put their money where their mouths are. If not, there is a danger that the efforts paid to SRI issues will be misused and held against them.

As a single case again, one fund answered that the engagement process should be driven based on wishes from the clients. If the pension holders do not express concern about this issue, the pension fund should not use resources on engaging with the investees. This stance contradicts the principles of the UN PRI that the fund has signed up to. However, support can be given to this argument if the pension holders are large corporate clients with the necessary skills and knowledge about the best way to invest their money. On the other hand, the majority of the population presumably do not have the skills nor the will to influence investment strategies of a pension fund.

The last factor mentioned by the pension funds, which can prevent institutional investors from actively engaging with investees, is lack of information on climate issues. The pension funds cannot highlight areas of concern and encourage investees to become better at this, if they do not have sufficient knowledge on the subjects themselves. This argument supports engagement through qualified external parties.

IV.4.8 Engagement at home versus abroad

In order to establish the extent to which the pension funds engage, they were asked whether they engage more with Danish companies than with international businesses. In this question, the pension funds were split. Half of the funds engage more in Danish companies than in foreign companies, whereas the opposite is true for the other half of the pension funds.

The main argument for larger engagement within Denmark is that the pension funds find their responsibility to be stronger domestically than internationally. The Danish pension funds know the Danish market, the Danish law, and the Danish companies. Therefore they find their responsibility greater in relation to the Danish investees than the foreign investees. As mentioned previously, engagement with companies in the foreign markets is mostly carried out by external providers. It is easier to carry out the tasks of an active owner in familiar contexts and terms, such as engage with a Danish company in the Danish market, than a company in an underdeveloped market for instance. In foreign markets the pension funds are dependent on third parties to obtain the relevant knowledge in order to execute this task properly.

An argument that supports increased engagement in foreign investees is that the need for engagement is larger in foreign markets than in the Danish market. The Nordic companies are rarely the companies of concern in respect to SRI issues. Thus, the engagement effort should increasingly be directed towards foreign investees. Accordingly, this is also one of the reasons why the majority of the pension funds have outsourced the corporate governance dialog to qualified third parties. Nevertheless, the pension funds make a point out of the fact that they do not discriminate between domestic and foreign investees. If an investee is acting irresponsible or has issues of concern, the pension funds will address these issues irrespectively of the nationality of the investee.

A conclusion that can be drawn from this is that the pension funds that engage more in the Danish market than internationally, overall engage less than the ones that interact most with investees in foreign markets. However, note that engagement carried out abroad is mostly done by third parties. Consequently, this engagement process is out of the Danish pension funds' control. It is also pertinent to ask; how does the engagement process work for companies listed on a stock exchange versus unlisted companies? Do the pension funds engage with unlisted companies as well as companies listed on a stock exchange?

IV.4.9 Engagement with listed versus unlisted companies

Five out of eight pension funds engage with unlisted as well as listed companies, whereas one does not engage with unlisted companies. Two of the pension funds did not respond to this question. Hence, the majority of the pension funds engage with both listed as well as unlisted companies.

However, the engagement process is not comparable for the two different types of companies: the listed companies are initially more transparent than the unlisted ones, thus some of the funds pay closer attention to the unlisted companies. Furthermore, the listed companies are usually screened by an external screening agency, whereas this is not possible for the unlisted companies. Nonetheless, some of the pension funds have started to request the same information from unlisted companies as from listed companies prior to deciding whether or not to invest in them. As this has not historically been the case, it highlights the increasing importance of ESG issues.

In addition, most of the funds do not invest directly in unlisted companies, but rather through a fund that invests in unlisted companies. Today, it is possible to green a portfolio by investing in various sustainability funds. However, I will not elaborate on the different socially and ethically responsible funds as that goes beyond the parameters of my thesis.

IV.4.10 Sector specific engagement

As have been seen previously in the analysis, the majority of the pension funds engage more in certain sectors than in others. Only one of the pension funds answered that it did not engage more in some sectors. Hence, the probability that this pension fund does not engage at all, is quite large.

However, the majority of the funds held the view that climate changes affect certain sectors more than others. Thus the engagement on climate issues is larger in certain industries. Most of the pension funds focus on the sectors that have huge liabilities concerning climate changes. Hence, the pension funds steer their resources in the direction where they are most valuable and where their efforts can make a difference. If the risks concerning climate change are highest in the energy sector, the efforts concerning this issue will be largest in this sector. Remember that the overall reason for the pension funds to engage in SRI issues is based on financial incentives. Thus, engagement is based on improving business perspectives.

IV.4.11 Summary of the pension funds' engagement on climate issues

According to the pension funds, there are two main reasons to consider climate issues in their investment strategies. Climate changes represent non-financial risks that the pension funds should take into consideration due to the possible effects these risks may have on their portfolios. The second reason is that climate is increasing in importance in relation to their SRI policy. When it comes to shareholder activism, the principal motivations rest upon the overall issue of SRI and financial objectives. The pension funds want to act as responsible investors and at the same time generate the best possible result to their pension holders.

Furthermore, it is almost a consensus among the pension funds that it is their role as active owners to influence the ESG strategies of their investees. Nevertheless, more than half of the pension funds have outsourced the corporate governance dialog to external parties. Equally, the Danish pension funds are yet to engage directly with investees on climate matters yet. The engagement in relation to climate has mainly been to encourage investees to become members of the CDP. However, some of the funds have excluded companies from their investment universe based on environmental reasons. Nevertheless, engagement is an emerging issue and the pension funds are just starting to interact with their investees. Among the pension funds it is favoured to engage with the investees rather than simply sell the shares.

Some barriers that are holding the institutional investors back from engaging with investees include too large share holdings, constrained resources in relation to the value of the investment, lack of information and knowledge concerning climate issues, and the simple fact that there is an endless list of topics one can engage on in relation to SRI, thus engagement may be perceived as a overwhelming task.

Furthermore, half of the pension funds engage more with Danish companies than international investees as they find their responsibility greater at home. When it comes to engagement in foreign markets, the pension funds are mostly dependent on third parties in order to obtain the relevant knowledge to execute this task properly. However, concerning engagement with listed versus unlisted companies, the majority of the pension funds engage with both. Though, on different terms since the listed companies are more transparent and are usually screened by a screening agency whereas this is not the case for unlisted companies. Last, but not least, the majority of the pension funds engage more in some industries than others.

At this point, I have established the level of engagement from the pension funds towards companies. Even though the level of engagement varies greatly among the different pension funds, do the requirements they impose on others mirror the pension funds' own behaviour? That is, do they practice what they preach? This is where a scrutiny of the pension funds' reporting practices comes into account.

IV.5 Reporting

So far, I have analysed the relationship between the pension funds and their investees and looked at what the institutional investors require from the companies they invest in. However, do the pension funds report on their own action taken (including engagement with companies) in order to reduce portfolio risks and enhance opportunities arising from climate changes? The answers obtained here is quite diverse, ranging from no reporting at all to the publication of a climate report. Six out of eight pension funds did report directly or indirectly on climate issues, whereas two did not. However, very few pension funds actually reported specifically on their own action taken in respect to climate changes. This can be defended from a corporate governance point of view. The argument is as follows: if they have a dialog with a company, they wish to safeguard the confidentiality of that dialog rather than to go public with information that can hurt the investee. Nevertheless, if a dialog fails, a strong incentive could be to publish the fact that the dialog failed as a mean to strengthen the whole process of engagement and draw attention to the consequences of non-compliance. This is a classical example of principle-agent problems. Informal mechanisms like reputation and trust are basic control factors in this respect. However, disclosure of this kind of information has not been the general practice of the pension funds so far. Nevertheless, many of the funds publish an exclusion list on their website based on the screening processes. Besides, some pension funds are reluctant to publish their practices in this respect as it will draw media attention to the subject, which can be both good and bad. Good because it highlights fine corporate behaviour, however, bad because it opens the fund up to criticism from the media and other interest organisations (like NGOs for instance) if the conduct is not good enough, even though the pension fund has all the best intentions behind their decisions.

Furthermore, most of the reporting conducted is in relation to general standpoints concerning CSR issues, which also recently has become a requirement according to Danish legislation. In addition, one of the requirements of the UN PRI is to report on activities taken and on the fund’s progress towards implementation of the principles. While some of the funds report on their UN PRI engagement for the first time this year, one of the pension funds has reported on climate issues since 2008. For this fund, climate represents a subject that will develop and become further detailed during the years to come. Hence, the spectrum of reporting practices is quite wide. Besides, some of the funds report on their own energy consumption as well: waste of energy adds to the increased levels of carbon in the atmosphere, thus the funds’ reporting on their own energy use is a good practice as it contributes towards more transparency and awareness of energy utilization. A reason for reporting on these issues is to set a good example to motivate others.

IV.6 Conclusion of the empirical analysis

The empirical analysis revealed that climate changes are considered both as a threat and an opportunity within the Danish pension funds. Climate changes such as increased temperature, rising sea levels and more extreme weather conditions may have large impact on how business is carried out in the future. Furthermore, macro economic factors such as new laws and regulations may also come into being as a result of climate changes. Thus it is crucial for the institutional investors to understand the potential impact these changes have on their investments. Consequently, the majority of the Danish pension funds have a factual approach to climate issues in their investment analysis. That is, the funds emphasize concrete knowledge of climate changes on a case-by-case basis to reveal the effect it can have on the investee's earnings capacity and risk picture. This is the preferred approach since it is a common belief that certain sectors will be more vulnerable to climatic changes than others. It is also a widely held view within the pension funds that social responsibility is a prerequisite for sustainable cash flow and thus for the preservation of the real value of their equity investment. Nevertheless, only a minority of the pension funds is currently members of CDP. However, the majority is committed to environmental issues through other initiatives such as the UN PRI and general reporting on CSR issues through the Danish legislation and GRI, although not on climate changes in particular.

Since it is hard to predict what the exact consequences of climate changes will be, approximately half of the funds remain passive in the engagement concerning climate issues. All eight pension funds have signed up for the UN PRI. Hence, the Danish pension funds engagement concerning climate changes is mainly evident in the support given to intergovernmental institutions, which are concerned with these issues. However, active ownership is an emerging issue and climate is increasing in importance across a variety of spectres, thus the attention given to climate changes in the pension funds is expected to increase.

The two major barriers for engagement from the pension funds' point of view is lack of valid and reliable information and political clarity, whereas financial incentives are the main stimulation for engagement. Financial objectives are also the major motivation factor for the investees to include climate considerations in their business practices.

Moreover, nearly all the pension funds see it as their responsibility to influence the ESG strategies of the companies they invest in. However, the active ownership aspect has to be seen in relation to the investee's contribution to the value of the fund's portfolio. Engagement is not carried out if the investee is trivial to the result of the portfolio. Nevertheless, most of the pension funds strive to be responsible investors in addition to generate the best possible result to their pension holders.

Even though climate changes are reaching higher levels of importance in the investment picture, both with regards to dialog with existing investees as well as in the search for new investment prospects, the integration of climate changes is currently not a significant factor in most of the pension funds.

V. Europe at a glance: Danish investors compared to British and French investors

In order to put my research into perspective, I will benchmark my findings with surveys conducted by Novethics and FairPensions. Since the different studies cannot be benchmarked point-by-point, I will draw on the main conclusions from the surveys. Novethics has carried out an investigation of the French and British asset owners to establish their attitudes towards and motivation behind ESG policies.[91] Even though this survey concerns overall ESG policies, it is possible to draw a number of conclusions from it. On the other hand, FairPensions has conducted a survey of British fund managers on their attitudes, actions, and reporting on the risks and opportunities of climate change.[92] Together, these two studies give a good indication of the British and French investors' attitudes towards climate changes as an investment issue, their use of climate change data, engagement on climate matters, and on the various funds' own reporting procedures. The mission of this chapter is thus to compare the findings from the Danish pension industry with that of the British and French asset owners.

[91] (novethics, 2009)
[92] (FairPensions, 2009)

V.1 Assessment of climate as an investment issue

The majority of the Danish pension funds had a holistic view of climate change. The same was true for the British and French asset owners.[93] Most of the British investors found climate change as an important or very important factor in investment research, decision-making and engagement activities. Approximately a third of the respondents in FairPensions' survey highlighted that climate change had become more important in recent years, indicating increased awareness among the British fund managers. This is also supported by the Danes.

While the most commonly cited barriers to incorporate climate change risks and opportunities into investment analysis and decision making, were lack of political clarity along with valid and reliable data among the Danish pension funds, the British saw the current low price on carbon and the difficulty in determining the material financial impact of climate change as the most important barriers. A point made by British fund managers in this respect was that the low price of carbon is a result of pressure to generate short-term returns, instead of focusing on anticipating the longer-term impacts and costs of climate changes. A British fund manager stated that "*the most significant barrier is the imbalance between the relatively short term horizons of mainstream investment analysis and the relatively long term nature of the material business impacts of climate change*"[94]. Hence, they seem to focus more on short term profits rather than preserving the environment and long term goals. Which can be defended as no investment are completely risk free. Thus, even though the funds invest sustainably, they are not guaranteed a good return on the investment in the future.

Other barriers emphasized by the British investors were lack of demand from clients and lack of regulatory requirements on investees. This was also the result found in one of the Danish pension funds. In addition, uncertainty about future regulation and lack of political clarity were seen as a disincentive for a full integration of climate changes into investment analysis and decision-making among all the investors. Furthermore, all the Danish pension funds underlined the financial motives in this respect. That is, the investors stress the climate issue due to underlying financial incentives.

There was a consensus among the majority of both the British and Danish investors that investees should be regulated and required to reduce and report on their GHG emissions. It is

[93] (novethic, 2009)
[94] (FairPensions, 2009)

not possible to include the French investors' stance on this question as it was not a part of their survey. While the Danish engagement on climate issues is most evident in their commitment to intergovernmental organisations, such as the UN PRI, 56 percent of the British investors asserted that they have some level of engagement with government. In fact, the British investors appear to be more dedicated to the climate issue as a larger number of investors are members of the CDP rather than the UN PRI, whereas the opposite is true for the Danish investors. Remember, it is argued that members of CDP have a more hands-on engagement towards climate change than those dedicated to UN PRI, since a commitment to UN PRI includes an obligation to a broader sphere of SRI issues. As a result, less effort can be given to environmental concerns at the expense of other issues.

In addition, nine of the British funds are members of the Institutional Investors Group on Climate Change (IIGCC), while only one of the Danish pension funds is member of this group. However, a number of the external fund managers that the Danish pension funds use in the outsourcing of their asset management and/or the engagement process, are members of this group. IIGCC is a very important and influential group in relation to climate change. It is a forum for collaboration on climate change for European institutional investors.[95] The overall aim of the IIGCC is to "…*ensure that the risks and opportunities from climate change are addressed in investment practices and decisions and to engage with policymakers, companies and investors to accelerate the shift to a low carbon economy*"[96]. In Appendix III, one can see an in-depth list of elements that the members of the IIGCC are encouraged to follow. A membership of this group entails a deeper commitment to the issue of climate change. Consequently, the British fund managers seem overall more dedicated to this issue than the Danish investors.

When it comes to listing climate change related information on a stock exchange, the majority of both the Danish and the British investors favour this. The main incentive for introducing stock exchange listing rules is that it improves transparency.

When it comes to the financial crisis, it has not compelled the majority of the Danish and British investors to give greater consideration to climate changes in relation to ESG issues, whereas the opposite is true for the French investors. However, the majority of the British

[95] (IIGCC: Home)
[96] (IIGCC: Join Us)

investors have altered investment allocations in recent years due to climate changes. This indicates that the British investors are starting to favour businesses that incorporate climate changes into their business practices and are taking steps in order to decrease their exposure to climate changes.

V.2 Use of climate change data

When it comes to the use of climate change data, the answers obtained in the Danish pension sector is similar to the results of the British study. The French results are not available in this section. Approximately half of the institutional investors request climate change related data from their investees. However, the institutional investors also agree that some sectors are more fragile to climatic changes than others. Hence, most of the funds are highly selective and mainly steer their efforts to the companies that are predominantly exposed to climate change risks. In addition, whereas only a minority of the British investors never ask investees for climate change data, this is true for approximately half of the Danish pension funds. Nevertheless, the majority (six out of eight) of the Danish pension funds use climate change related information in their investment analysis and decision making process.

In the Danish pension sector, the primary approach to incorporate climate changes in their investment analysis and decision-making is concrete assessment of individual investees or investment prospects. This bottom-up perspective is also preferred by the British investors (approximately 60 % of the fund managers). The British fund managers are split between those who incorporate climate changes into investment analysis and decision making in all or a majority of the sectors they invest in, whereas those who restrict their efforts only to particular sectors.

Even though, a significant proportion of investors stated that they focus mainly on high intensity sectors, a number of the asset managers believe that all sectors of the economy will be affected in the future as a result of tightened regulation of climate change as well as the physical impacts of climate change will become more apparent. Materiality is a key issue in this respect: an increasing number of investors will take climate considerations into account when the consequences related to these concerns are more tangible.

V.3 Engagement on climate issues

When it comes to what encourages the institutional investors to consider ESG issues, including climate concerns, in their investment strategy, reducing the risk of their portfolio and preserving their reputation were two of the main factors both in France and the UK. While one of the key motivation factors for the Danish pension funds was also to hedge against potential economic impact of climate change on their portfolio, another one was the overall issue of SRI. In the Danish pension funds, SRI and financial sustainability are closely linked. Danish investors believe that sustainable cash flows come from good corporate behaviour and thereby that the effect of ESG involvement reduces long-term financial risk. This is also the common belief among the British investors. The French asset managers, on the other hand, are more reserved when it comes to the contribution of extra-financial criteria in improving financial performance.

Concerning the investors' role as shareholders all the French investors and the majority of the Danish pension funds and British asset managers said they were concerned with the ESG practices of their investees. Whereas, the role of active ownership is quite new and an emerging issue for the Danish pension funds, the willingness to influence corporate ESG strategies among the British and French investors fell sharply between 2008 and 2009.[97] However, this is mainly a result of the financial crisis. Novethics' survey was conducted in October 2008 during the most critical point in the financial crisis. Thus, the need for supervision at that point in 2008 was stronger than in 2009. Engagement requires a great deal of resources, and thus as a result, it is expensive for the funds to carry out their task as active owners. Consequently, the funds will not engage if there is not a need for involvement.

Where engagement occurs, the main approach is to raise the issue of concerns to the investee's top management. In addition, voting at annual general meetings is a frequently used tool. However, the degree of engagement and the underlying objectives for active involvement are quite diverse. Whereas the majority of the British investors undertake some kind of engagement with investees, most of the Danish pension funds have not engaged on climate matters yet. A similarity between Denmark and the UK though is that a few fund managers prioritise this issue more than others.

[97] (novethic, 2009)

Concerning the reasons for engagement, these range from fiduciary duties to responsible investors to pure information gathering. Engagement is valued as a fact-finding tool among all the investors as it facilitates better evaluation of a company's risks and long-term value. This is interlinked with the aim of long term sustainability of investment performance. Enhanced information leads to improved investment decisions and thus more sustainable earnings. Another common reason for engagement is to safeguard that the investee is well positioned to respond to future regulatory changes. Even though the investors within the different markets had various preferences on which factor they valued highest, both the Danish and the British market mentioned the same reasons for engagement. However, as mentioned above, the commitment of the various investors within the two markets varied.

Financial incentives and activism of institutional investors were again mentioned as the most effective ways of motivating investees to reduce GHG emissions and become more environmentally friendly. Investors in all countries favour collective action, even in France where they historically have been relatively inactive in major international coalitions.[98] In addition, activism both through dialog and exercise of voting rights at shareholder meetings to raise awareness is preferred to compel the companies to comply with the investors' demands, which again highlights the importance of corporate governance. This is further supported by Labatt & White (2002) who also argues that shareholder activism by institutional investors has had some effect on changing strategies of targeted companies.[99] Furthermore, while only a minority of the British and Danish investors are likely to resort to scare tactics and threaten to sell their shares, almost a third of the French investors are likely to do this in order to achieve the desired outcome from the investees.

In the event of a redundancy plan, investors in all three countries wish to engage with the investee instead of simply excluding the company from their investment universe. However, there are variances within this matter as well. French investors are more active when it comes to redundancy plans, whereas the majority of the British investors would prefer not to get involved. The Danish pension funds are somewhere in between: as mentioned previously, if the pension funds sell their shares they put themselves outside the influential sphere. Thus the most active Danish pension funds try to influence the investee, like the French do, while the more passive Danish pension funds would favour non-engagement as the British investors.

[98] Ibid
[99] (Labatt & White, 2002)

There are national differences when it comes to the reasons that constrain engagement with companies. For the French investors, the major obstacle is delegated management mandates that hinder the rise of practices influencing corporate ESG strategies. The British investors on the other hand, give equal importance to three factors, namely lack of knowledge on ESG issues and prudential requirements in addition to the belief that they have too little influence to make any significant changes. The Danish pension funds support the first factor; lack of information concerning climate issues. Other aspects that hamper shareholder engagement in the Danish pension industry include constrained resources, too large share holdings, and an ocean of possible areas where the funds can engage.

V.4 Reporting

In the Danish pension funds the reporting on climate issues range from no reporting at all to the publication of a climate report. The findings are similar for the British funds managers. 31 % of the respondents in the British survey reports publicly on climate change related issues, whereas 15 % do not report at all. In addition, 44 % of the fund managers report on these issues upon request from clients. Thus, in this respect, the findings from the two surveys are similar. The result of the French market was not available as it was not evaluated in this respect.

V.5 Summary of the comparison of the Danish, British and French investors

In summary, the investors in the three countries are not that different. In fact they only diverge in a few areas of the study. While the British fund managers see the low price on carbon and difficulty in determining the financial impact of climate change as the main barriers for incorporating climate risks and opportunities into investment analysis and decision-making, the equivalent Danish responds are lack of political clarity and valid data. Whereas the financial crisis has compelled French investors to give greater consideration to ESG issues, this is not the case for Danish and British investors. Nevertheless, it has been an increased focus on climate in the overall investor world in recent years. The major motivations for engaging on climate matters for the Danish investors include financial incentives as well as a wish to act as responsible investors. While reducing the risk of the portfolio and maintaining a good reputation are key objectives for the French and British asset managers. Even though, the French investors are critical toward the idea that ESG involvement can improve the financial results of the funds. Although, the British and French investors appear to have more experience with active engagement than the Danish pension funds, they all agree that engagement should be seen in relation to the potential value it creates for the funds. Hence, the investors should only engage when it is financially beneficial. In addition, approximately a third of the French investors would make use of scare tactics in order to force investees to comply with their requirements, whereas only a minority of the British and Danish investors would do so. French investors are also more involved when it comes to redundancy plans, whereas Danish and British investors tend to be passive. When it comes to reasons that prevent engagement with investees, there are also a few national differences. However, there is a belief in the general investor world that climate considerations will be of increasing importance in the future as climate change becomes more material and the consequences more tangible.

Nevertheless, the British fund managers seem to be more committed to the climate issue as many of them are members of the IIGCC, whereas only one pension fund in Denmark is a member of this network. Unfortunately, the French results were only available in a few sections of the evaluation. However, there was possible to draw a few main conclusions from the French study.

VI. Conclusion

The aim of this report was to map the Danish pension funds perception of and reaction to climate change and how they manage risks and opportunities linked to climate changes in their investment analysis and decision making. As one can see from the report, climate matters. However, in the Danish pension industry the management of climate change is still in its infancy when it comes to active ownership and engagement on climate issues, thus, great unrealized potential exist here. Currently, over half of the funds have outsourced the engagement process to external parties; additionally most of them have chosen to remain passive when it comes to engagement on climate change. This demonstrates that the pension funds are new to active engagement and do not fully grasp the potential of it.

Nonetheless, the institutional investors highlight that the global context for business is changing. Thus, the transition from a carbon intensive economy to a low-carbon economy will be one of the primary drivers of economic development in the future. Hence, the management of climate change, for instance, will become a competitive advantage in the coming decades. Management of climate change is therefore not only a question of being good corporate citizens in relation to CSR and SRI, but also a question of economic self-interest.

Pension funds can play a key role in the development towards a low-carbon economy. Through investing their assets consequently in green initiatives, the demand for less environmental friendly companies and products will decrease over time. Thus, in the end, the companies that do not follow a green strategy will have difficulties obtaining capital from the institutional investors in the long run. However, for now, the world is still quite dependent on heavy CO_2 industries such as the fossil fuel industry; hence a shift to a low carbon economy is probably not feasible within the foreseeable future. Nevertheless, the increased pressure and attention given to climate change from large institutional investors, is a place to start and a step in the right direction.

The progress of carbon disclosure and use of carbon data will play a vital role in putting climate change on every investor's agenda in the future. A launch of climate related data on a stock exchange, for instance, would speed up this process. Stock exchange listing rules makes the climate issue more tangible as well as it enables the investors to benchmark companies on a comparable basis, which again will lead to better informed investment decisions. However, a precondition for stock exchange listing requirements is that a uniform standard is applied in all markets. If not, it can have a potentially anti-competitive impact as it may leave certain companies or markets at a disadvantage. Nevertheless, in the light of the last decade's corporate scandals and in the context of the recent financial crisis, greater disclosure and transparency is essential to improving risk management. On the other hand, poor disclosure can lead to bad risk management. Enabling an increasingly material approach to climate change will, however, compel further investors and companies to include climate considerations into their business practices.

VII. Future Perspective

In this chapter a few alternative approaches to investment and climate change will be highlighted as well as some future areas of research will be recommended.

In the Danish pension industry, there is a great discrepancy over how far the different funds have come in order to combat climate change. If climate change is so important and great business opportunities exist within this area, why are investors then hesitant to embrace sustainable development? Despite the seriousness of the probable impacts of climate change, it has been very difficult to bring it about as a business issue as many establish interests feel threatened by the adaptive and mitigative actions that appear to be required. However, I believe the business world will fundamentally change during the years to come. Hence, new methods and ways of thinking are needed. It has become increasingly recognized that the world is strained, as the environment and the Earth's resources are under increased pressure from pollution and exhaustion. Actions from a variety of actors on the market are therefore needed.

In the thesis I have focused on climate change and how Danish pension funds' can fight it through investments in companies. However, this is only one way to steer environmental friendly development. A variety of other options exist, such as investments in water, forest, green bonds issued by the World Bank and ethical and sustainable funds. Consequently, an investigation of the pension funds overall asset allocation in relation to climate change would have been very interesting, especially due to current trends in the market. In February for instance, the Nikko Asset Management announced the launch of its *Nikko AM World Bank Green Fund* for European and Middle Eastern investors.[100] The Nikko AM World Bank Green Fund is first of its kind and can invest up to 100% of its portfolio in green bonds issued by the World Bank (International Bank for Reconstruction and Development).[101] The fund seeks to bridge the gap between funding and sustainable development in emerging countries. These countries represent the growth markets of the future and there is a need for both public and private investment in order to fuel sustainable growth in these countries. The profits from the green bonds and the green fund will support projects that are designed to tackle the causes

[100] (The World Bank Treasury, 2010)
[101] Ibid

and consequences of climate change in the developing world.[102] The World Bank is thus taking a leading role towards tackling climate change.

ATP is also a pioneer in this respect. ATP has set up a similar fund; *Institutional Investor Climate Change Action Fund* for Emerging Economies.[103] The intention of the fund is to become a joint initiative involving several like-minded institutional investors, which seeks to fuel larger flows of private finance into climate-relevant investments in emerging economies.[104] Hence, again investors are pooling powers to be able to reach a higher goal. These new trends in the market represent very interesting and not least emerging areas of research.

In addition, it would have enriched the analysis to have a closer look at the relationship between the pension funds and the respective asset managers and screening agencies, both in relation to outsourcing of the wealth management as well as the responsibilities as active owners. Even though the largest pension funds in Denmark participated in the analysis, the Danish pension industry is very fragmented and a more in-depth and thorough analysis is recommended. Future research is therefore encouraged to look at these relationships, as well as investigate the pooling of the institutional investors' power through collaborative action and the role NGOs can play when it comes to climate change and investment. Both the industry itself and the academics would benefit from future research within this field.

[102] Ibid
[103] (Liinanki, 2010)
[104] (Rohde & Larsen, 2009)

VIII References/bibliography

Books:

Baron, R., and Philibert, C., (2005), *Act Locally, Trade Globally. Emissions Trading for Climate Policy*, France: International Energy Agency

Bodie, Z., Kane, A., and Marcus, A.J., (2008), *Investments*, 7th Edition, International Edition, New York: McGraw-Hill/Irwin

Bodie, Z., Kane, A., & Marcus, A. (2010). *Essentials of Investments.* New York: McGraw-Hill / Irwin.

Bragdon, J. (2006). *Profit for life. How capitalism excels.* Cambridge: Society for Organizational Learning Inc.

Brealey, Myers, & Allen. (2006). *Corporate Finance.* New York: McGraw-Hill/Irwin.

Burningham, D., and Davies, J., (1999) *Green Economics*, 2nd Edition, Oxford: Heinemann Educational Publishers

Davis, E.P., and Steil, B., (2001), *Institutional Investors*, Cambridge, Massachusetts: The MIT Press

Elton, E., Gruber, M., Brown, S., & Goetzmann, W. (2007). *Modern Portfolio Theory and Investment Analysis.* USA: John Wiley & Sons, inc.

Esty, D.C., and Winston, A.S., (2009), *Green to Gold: How smart companies is environmental strategy to innovate, create value, and build competitive advantage*, 2nd Edition, New Jersey: John Wiley & Sons, Inc.

Hancock, J. (2002). *Ethical Money: How to invest in sustainable Enterprises and avoid polluters and exploiters.* London: Kogan Page Limited.

Jespersen, J., (1998), *Miljøøkonomi*, Denmark, Jurist- og Økonomforbundets Forlag

Jones, V., (2008), *The Green Collar Economy. How one solution can fix two of our biggest problems*, USA: HarperCollins Publisher

Labatt, S., & White, R. R. (2002). *environmental finance. A Guide to Environmental Risk Assessment and Financial Products.* Hoboken, New Jersey: John Wiley & Sons, Inc.

Makower, J., (2009), *Strategies for the Green Economy: Opportunities and Challenges in the New World of Business*, USA: McGraw-Hill

Pernick, R., and Wilder, C., (2007), *The Clean Tech Revolution. The Next Big Growth and Investment Opportunity*, USA: Harper-Collins Publishers

Rubino, J., (2009), *Clean money: picking winners in the green tech boom*, New Jersey: John Wiley & Sons, Inc.

Schaltegger, S., Bennet, R., Burrit, R., (2006), *Sustainability Accounting and Reporting*, The Netherlands: Springer

Tang, K., (2005), *The Finance of Climate Change. A guide for Governments, Corporations and Investors*, Risk Books, a Division of Incisive Financial Publishing Ltd

Thomsen, S. (2008). *An Introduction to Corporate Governance. Mechanisms and Systems,* Copenhagen: DJØF Publishing Copenhagen.

Winston, A., (2009), *Green Recovery. Get lean, get smart, and emerge from the downturn on top*, Boston, Massachusetts: Harvard Business Press

Articles:

Dannenberg, B. (October 1st, 2008), *Save your money and save your planet: Bruce Dannenberg breaks down how you can green your investment portfolio*. New Life Journal .

Harvey, F. (2009, October 26). *Companies seek climate certainty*. Financial Times .

Articles from Websites:

DR. (2009, June 22). *Olje smadrer natur og dyr i Canada*. Retrieved March 3, 2010, from DR: http://www.dr.dk/DR1/soendag/Artikler/2008/Olie+smadrer+natur+og+dyr+i+Canada.htm

Environmental-Finance. (2010, January 28). *SEC tells US firms to disclose climate risks.* Retrieved February 8, 2010, from Environmental Finance.com: http://www.environmental-finance.com/news/view/937

Ethical Investment Past Performance. (n.d.). Retrieved April 22, 2010, from Ethical Investments Web site: http://www.ethicalinvestment.co.uk/Ethical_Funds_Past_performance.htm

Euopean Commission. (n.d.). *European Commission: Enterprise and Industry: Sustainable and Responsible Business: Corporate Social Responsibility*. Retrieved May 6, 2010, from European Commission: http://ec.europa.eu/enterprise/policies/sustainable-business/corporate-social-responsibility/index_en.htm

Ignatova, I. (2010, April). *What is Green Investing*. Retrieved April 14, 2010, from Tropical-Rainforest-Animals.com: http://www.tropical-rainforest-animals.com/green-investing-defined.html

Investopedia (2010), *Is there a difference between socially responsible investing and green investing* (2010). Retrieved February 20, 2010, from Investopedia: http://www.investopedia.com/ask/answers/07/socially-responsible-green-investing.asp

Investopedia, *What are green investments*. (n.d.). Retrieved January 20, 2010, from Investopedia.com: http://www.investopedia.com/ask/answers/07/green-investments.asp

Kahlenborn, W. (September 22, 1999), *Transparency and the Green Investment Market*, Greener Management International. http://www.highbeam.com/doc/1G1-62111358.html

Knudsen, J. (1997, May 1). *Cheminova: stop pesticid-eksport til usikre lande!* Retrieved March 25, 2010, from Ibis: http://www.ibis.dk/presse/showarticle.php?id=3126

Lee, L. (2010, February 17). *CDP drives forward carbon management globally*. Retrieved March 7, 2010, from Carbon Disclosure Project: https://www.cdproject.net/en-US/WhatWeDo/CDPNewsArticlePages/CDP-drives-carbon-management-globally.aspx

Liinanki, C. (2010, April 12). *Changing with the climate.* Retrieved June 4, 2010, from Nordic Region Pensions and Investment News: http://www.nrpn-online.com/news/fullstory.php/aid/723/Changing_with_the_climate.html

NBIM. (2010, May 7). *NBIM; Investeringer; sammensetning; aksjeinvesteringene*. Retrieved May 10, 2010, from Norges Bank Investment Management: http://www.nbim.no/no/Investeringer/sammensetning/aksjeinvesteringene/

Olje- og Energidepartementet: Aktuelt: Nyheter, (2009, December 16), *Obligatorisk energimerking av bygninger innføres fra 1. juli 2010*.). Retrieved April 7, 2010, from regjeringen.no: http://www.regjeringen.no/nb/dep/oed/aktuelt/nyheter/2009/obligatorisk-energimerking-av-bygninger-.html?id=588645

Rohde, L., & Larsen, B. (2009, December 4). *ATP to set up an Institutional Investor Climate Change Action Fund for Emerging Economies.* Retrieved June 16, 2010, from ATP: http://www.atp.dk/wps/wcm/connect/8e3f4400408c5629ae35af5509fd5a27/Climate+Change+Action+Fund-m-en_03.12.2009_KORR_renset+for+track+changes.pdf?MOD=AJPERES&CACHEID=8e3f4400408c5629ae35af5509fd5a27

Thomsen, C. B. (2006, November 27). *ATP truer Cheminova: Slut med flere skandalesager*. Retrieved March 25, 2010, from politikken.dk: http://politiken.dk/indland/article205101.ece

The World Bank Treasury. (2010, February 22). *About World Bank Treasury: Press Release*. Retrieved June 16, 2010, from The World Bank Treasury: http://treasury.worldbank.org/cmd/htm/NikkoAM_WB_GreenBond.html

WBCSD (2009, October 2). *Energizing Development in a Changing Climate.* Retrieved December 10, 2009, from WBCSD: http://www.wbcsd.org/Plugins/DocSearch/details.asp?DocTypeId=251&ObjectId=MzU4Mzg

WBCSD (October, 2009). *Copenhagen and the "AFT" of the solution*. *Sustain* , 4-5. http://www.slideshare.net/fveglio/wbcsd-sustain-magazine-october-2009-energizing-development-in-a-changing-climate

Økonomi- og Erhvervsministeriet. (2008, December 16). *Ny lov bringer Danmark forrest med samfundsansvar*. Retrieved February 20, 2010, from Samfundsansvar.dk: http://www.samfundsansvar.dk/graphics/Samfundsansvar.dk/Dokumenter/Pressemeddelelse_L5_DA.pdf

Websites:

ATP: www.atp.dk

Climate Disclosure Standards Board: http://www.cdsb-global.org

Danica Pension: http://www.danicapension.dk/da-dk/Pages/default.aspx

ENCYCLO Online Encyclopedia: http://www.encyclo.co.uk/define/investee
European Commission: http://ec.europa.eu
Institutional Investors Group on Climate Change(IIGCC): http://www.iigcc.org/home

Investopedia: http://www.investopedia.com

InvestorWords.com: http://www.investorwords.com/1932/fiduciary.html

Nordea Liv & Pension: http://www.nordealivogpension.dk/

Norges Bank Investment Management: http://www.nbim.no

Pension Danmark: http://www.pension.dk/

PFA: http://pfa.dk

PKA: http://www.pka.dk/pka/public/forside.htm

Sampension: http://www.sampension.dk/Forside.aspx

The dictionary of sustainable managment: http://www.sustainabilitydictionary.com

The Green Investment Guide.Com: http://www.thegreeninvestmentguide.com/

Unipension: http://www.unipension.dk/Unipension.aspx

United Nations Global Compact: http://www.unglobalcompact.org/

UN PRI: http://www.unpri.org

Wikipedia: http://en.wikipedia.org

World Business Council for Sustainable Development: http://www.wbcsd.org/

Reports:

ATP Koncernen Klima Rapport 2008. (n.d.). Retrieved November 24, 2009, from ATP corporate web site: http://www.atp.dk/X5/wps/wcm/connect/3d15f3804f52e174b057ff9a2b100d8b/ATP_Klimarapport_2008_Endelig.pdf?MOD=AJPERES&CACHEID=3d15f3804f52e174b057ff9a2b100d8b

ATP Koncernen årsrapport 2009. (2009). Retrieved February 25, 2010, from ATP: http://www.atp.dk/X5/wps/wcm/connect/05b6d9804143f7b2bfadff6cbb4d3bb8/ATP_aarsrapport2009.pdf?MOD=AJPERES&CACHEID=05b6d9804143f7b2bfadff6cbb4d3bb8

Danica Pension Annual Report 2009. (n.d.). Retrieved May 14, 2010, from danica pension corporate website: http://www.danicapension.dk/da-dk/Om-Danica-Pension/Regnskaber/Documents/2009/AarsrapportDP2009.pdf

European Workshops on Disclosure of Environmental, Social and Governance Information. The enterprise perspective. (2009, September 18). Retrieved February 20, 2010, from European Commission Web site:

http://ec.europa.eu/enterprise/policies/sustainable-business/corporate-social-responsibility/reporting-disclosure/swedish-presidency/files/workshop_1/1_-_enterprises_-_summary_-_final_en.pdf

European Workshops on Disclosure of Environmental, Social and Governance Information. The investor perspective. (2009, October 30). Retrieved February 20, 2010, from European Comission Web Site: http://ec.europa.eu/enterprise/policies/sustainable-business/corporate-social-responsibility/reporting-disclosure/swedish-presidency/files/workshop_2/2-investors-summary_final_en.pdf

FairPensions. (2009, October). *FairPensions: What we do: Preparing for the Storm?* Retrieved January 18, 2010, from Preparing for the Storm: UK fund managers and the risks and opportunities of climate change: http://www.fairpensions.org.uk/sites/default/files/uploaded_files/PreparingStorm2009.pdf

Nordea CSR Report 2009. (2009). Retrieved May 6, 2010, from Om Nordea Samfundsmæssigt Ansvar: http://www.nordea.com/sitemod/upload/Root/www.nordea.com%20-%20uk/AboutNordea/CSR/csr_2009_uk.pdf

novethic. (2009, November). *novethic: SRI Studies.* Retrieved December 15, 2009, from Asset owners as active shareholders: attitudes towards and motivation behind ESG policies: http://www.novethic.com/novethic/v3_uk/upload/ESG_Survey_2009.pdf

Rasmussen, A., Kahlke, J., Hansen, J., Seiersen, A., & Schaarup, J. (2009). *Konkurrencen om Pensioner 2009.* København: Forsikring og Pension.

Stephanie Maier, H. o. (2008). *The state we're in: Global corporate response to climate change and the implications for investors.* Retrieved November 17, 2009, from EIRIS: http://www.eiris.org/files/research%20publications/climatechange08.pdf

Stern, S. N. (2006, October 30). *Stern Review on the economics of climate change*. Retrieved December 2, 2009, from The National Archives.gov.uk: http://webarchive.nationalarchives.gov.uk/+/http:/www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/stern_review_report.cfm

Summary of UN PRI Reporting and Assessment Survey 2010. (n.d.). Retrieved May 14, 2010, from Pension Danmark corporate website: http://www.pension.dk/Documents/Om%20PensionDanmark/Investering/Summary%20UN%20PRI%202010.pdf

Sørensen, Jørgensen, Mark, Bhatti, Buck, Skjødt, et al. (2007, November). *Pensionsmarkedsrådets Rapport om Etiske Investeringer.* Retrieved April 14, 2010, from Finanstilsynet.dk: http://www.finanstilsynet.dk/da/Om-os/Historie/Pensionsmarkedsraadets%20rapporter/~/media/Finanstilsynet/Mediafiles/newd oc/fondsraad_pensionsmarkedsraad/Pensraad-info/Rapport_om_etiske_investeringer281107%20pdf.ashx

UN Global Compact: Corporate Citizenship in the World Economy. (n.d.). Retrieved April 10, 2010, from UN Global Compact: http://www.unglobalcompact.org/docs/news_events/8.1/GC_brochure_FINAL.pdf

Verfaillie, H. A., & Bidwell, R. (2000, June). *measuring eco-efficiency: a guide to reporting company performance.* Retrieved May 23, 2010, from WBCSD: http://www.wbcsd.org/web/publications/measuring_eco_efficiency.pdf

Appendix I: Pension funds ranked according to pension wealth

Pension funds ranked by total assets	Total assets in DKK million						Source:
	2008	2007	2006	2005	2004		
ATP	563.769	389.291	371.681	365.084	n.a.		The ATP Group Annual Report 2009
Danica Pension Koncernen	242.851	246.475	244.519	233.309	209.546	*	Danica Koncernen Årsrapport 2008
PFA	219.478	215.410	213.434	206.435	181.364		Årsrapport 2008 PFA Pension
Sampension KP Koncernen	147.751	111.128	94.665	91.556	78.989	*	Sampension KP Livsforsikring A/S Årsrapport 2008
Nordea Liv og Pension	125.424	119.408	117.674	105.360	92.478		Årsrapport 2008 Nordea Liv & Pension, livsforsikringsselskab A/S
Pension Danmark	81.659	74.813	62.641	n.a.	n.a.	*	Årsrapport 2008 Pension Danmark Holding A/S
Industriens Pension	61.783	48.318	42.960	36.499	28.474		Årsrapport 2008 Industriens Pension
SEB Pension	61.250	n.a.	n.a.	n.a.	n.a.		Finanstilsynet [1]
MP Pension, Pensionskassen for magistre og psykologer	59.051	52.373	51.136	50.836	44.003	**	Årsrapport 2008 MP Pension - Pensionskassen for magistre og psykologer
Lønmodtagernes Dyrtidsfond (LD)	58.944	62.844	64.156	63.553	58.044	***	Årsrapport 2008 LD
Pensionskassen for Sygeplejersker	49.500	52.862	52.978	49.278	41.901	****	Årsrapport 2008 for Pensionskassen for Sygeplejersker

* Hovedtall for koncernen

** Managed by UNIPension

*** LD is excluded from the analysis due to termination of the fund

**** Managed by PKA

[1] http://www.ftnet.dk/da/Tal-og-fakta/Statistik-noegletal-analyser/Statistik-om-sektoren/2008/~/media/Tal-og-fakta/2009/LIV_4_1_2_LIV_p.ashx

Appendix II: UN Global Compact[105]

The UN Global Compact asks companies to embrace, support and enact, within their sphere of influence, a set of core values in the areas of human rights, labour standards, the environment and anti-corruption:

Human Rights

- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
- Principle 2: make sure that they are not complicit in human rights abuses.

Labour Standards

- Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
- Principle 4: the elimination of all forms of forced and compulsory labour;
- Principle 5: the effective abolition of child labour; and
- Principle 6: the elimination of discrimination in respect of employment and occupation.

Environment

- Principle 7: Businesses should support a precautionary approach to environmental challenges;
- Principle 8: undertake initiatives to promote greater environmental responsibility; and
- Principle 9: encourage the development and diffusion of environmentally friendly technologies.

Anti-Corruption

- Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

[105] (UN Global Compact: About us: The Ten Principles)

Appendix III: Institutional Investors Group on Climate Change

The members of IIGCC are encouraged to increase:

1. "***Awareness:*** *To raise awareness of the financial risks and investment opportunities as a result of climate change and climate policy*
2. ***Understanding:*** *To gain a better understanding of how to assess and manage risks and integrate opportunities associated with climate change into investment practices and decision-making*
3. ***Collective Influence:*** *Send common messages to policymakers to provide policy frameworks that meet investor needs and strengthen the role of private finance in solving the climate challenge*
4. ***Disclosure:*** *Collaborate on improved and standardised corporate disclosure and encouraging improved performance on climate change for different assets*
5. ***Action:*** *Demonstrate commitment on climate change and participate in networking and information sharing*".[106]

[106] (IIGCC: Join Us)