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One size doesn't fit all:

"Investor heterogeneity in Denmark"

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CHAPTER 1: Introduction, problem area and problem definition

1.1. Abstract

In this thesis I will focus on differences among the private Danish investors based on gender, age and geography when looking at the private investors behavior in relation to risk, individual papers vs. mutual funds and what they are affected by when buying and selling stocks. I will investigate what might cause differences among the private Danish investors when looking at how they traded in the period from February 2009 to January 2012 from a behavioral finance perspective. The method behind this thesis is quantitative and has its focus on trading data from VP Securities A/S and from a survey made by Nykredit on how the private investors think of investments and savings. Based on my empirical study, I will argue that there are differences among the private Danish investors and that handling them as one homogeneous mass could lead to misunderstands and unsatisfied customers. I will investigate what might cause these differences among the investors looking at both traditional neoclassical finance theory and behavioral finance theory, together with what other researchers have found when studying within the field of behavioral finance. I will argue that private investors are affected by behavioral themes such as overconfidence and representativeness when investing their money. I will also argue that male investors are more overconfident than female investors and that investors between 30-40 years of age are more overconfident than the other age groups. When looking at geography, I will argue that investors located on Sjælland in general are more overconfident than the rest of Denmark and that investors on Fyn and Bornholm are those who take on less risk and are less overconfident. Last I will argue that there are differences between those investors who buy individual stocks and those who buys stocks in mutual funds, and that male investors are more affected by changes in the OMX C20 index when buying and selling individual stocks.

1.2. Introduction

All private Danish investors have equal opportunities to find information on finance and investment theories through a wide range of easily accessible platforms and one could easily get the idea that the private investors then act like one homogeneous mass. But is it right to look at them like this?

This thesis aims to discover the differences among the private investors in Denmark and covers how the Danish private investors traded in the period from February 2009 to January 2012 from a behavioral finance perspective.

Today the Danish banks are competing to become the preferred bank when the private investors are entrusting someone else to help with or handle their investments. But if the banks treat the private investors as one homogenous mass when offering products or finding their risk profile, they run the risk losing some of the investors due to misunderstandings, since they do not cover the diversity in the investors needs. From this point of view it is interesting to investigate how the private investors inside of Denmark behave in relation to risk, in order to give the banks a more fulfilling picture of the private Danish investors. Having this knowledge, the Danish banking sector could then develop better targeted and more meaningful material and products to the private investors and thus provide a better service when understanding the private investors needs.

Inside the field of behavioral finance, there have been studies focusing on the differences among institutional investors and private investors (Nofsinger, 2000), overconfidence between private investors (Barber and Odean, 2001) and that private investors do not act rationally (Barber, 2011). Not much attention, however, has been given to the differences among the private investors when looking more specifically at gender, age and geography. The study by Brad M. Barber and Terrance Odean (Barber and Odean, 2001) does though conclude that male investors are more overconfident than female investors, but does not look at differences among the male investors according to geography and age. Furthermore, most of the studies have been done on American investors and thus the theories derived are based on those American investors. It then becomes interesting to investigate if there among the Danish private investors are differences and if they can be explained by the theory developed on American investors.

1.3. Problem area

The purpose of this thesis is to find differences among the private Danish investors when looking at their behavior in relation to risk, individual papers vs. mutual funds and what they are affected by when buying and selling stocks. Looking at the risk perspective, it is interesting to look at how the private investors perceive risk and on how they actually allocate between stocks and bonds, because it shows who take on more risk and shows differences in how the private investors

perceive risk, which is very useful knowledge for a bank in order to provide an individual service. The allocation between stocks and bonds is used as a proxy for risk, because that is what is commonly used in the Danish banking sector when looking at risk in portfolios[1].

The Danish banking sector has been criticized for the selling of mutual funds (ppp.dk, 2012), but it becomes interesting to investigate whom among the private investors who actually chooses the mutual funds above the individuals papers. Also it is interesting to look at what the private investors are affected by when buying and selling stocks and what differences there are in how they act in bad markets. The above finding should give the Danish banking sector a useful insight into the private Danish investors in order to understand them and use this in future business development.

1.3.1. Problem definition

From the above, I conclude the folowing problem definiton of this study:

> **What are the differences among the private Danish investors in gender, age and geography, when looking at their behavior related to risk, individual papers vs. mutual funds and what they are affected by when byuing and selling stocks?**

In answering this problem, I will use the following sub questions:

- What are the differences in how the private investors perceive risk and how they say they act in bad markets?
- What are the differences in how the private investors allocate between stocks and bonds and between individual papers and mutual funds?
- What are the differences in what the private investors are affected by when buying and selling stocks?

1.4 Limitations

This thesis focuses on the private Danish investors and uses data based on trading activity in Danish stocks, bonds and mutual funds. My focus is on differences that show in gender, age and

[1] Nykredit.dk and nordeainvest.dk (web2, 2012)

geography and with that not differences such as hair color, life style, what car they have and so on. Gender, age and geography are from my point of view the most interesting factors for comparison and analysis in the scope of my thesis, as this is information that the Danish banks have available on their customers, and thus they can easily use the findings in this thesis.

Through the whole thesis the phrase "asset allocation" refers to the relationship between stocks and bonds, as that is what is commonly used in the Danish banking sector.

1.5. The study's design and structure

The thesis is divided into 7 chapters. Chapter 1 is the introduction to the thesis which includes an abstract and in which the problem area and the problem are defined. In chapter 2 are the methods used for gathering empirical material reviewed. The thesis is built around the empirical data that is presented in chapter 3 and some of the theoretical perspectives used in analyzing the empirical data are shortly presented in chapter 4. Chapter 5 is the analysis in which I discuss and explain some of the findings in the empirical data and analysis. Last are the conclusion in chapter 6 and the perspectives in chapter 7.

CHAPTER 2: METHODOLOGY

2.1. Quantitative methods

In order to clarify my problem, I have used a quantitative method for analysis. The quantitative method is better than the qualitative method when analyzing data, finding patterns and explaining trends.

I have chosen to look at how the private investors perceive risk and say they do in bad markets, in order to find differences in how they think. According to the big Danish encyclopedia, then *" risk experience describes the individually perceived risk, which usually is a difference between the perceptions of people who have a benefit or advantage of the activity, and persons with genes or a minimum of utility from the activity"* (denstoredanske.dk, 2012). From this I would expect differences in how they think which Marvin Zuckerman also have found *"many studies have shown that women tend to judge risk as higher than do men for a variety of things"(*Zuckerman, 2008; 56).

I have chosen to look at the allocation between stocks and bonds as a measure of how much risk the private investors are taking. The relationship between stocks and bonds is often used in the Danish banking sector as measure of risk and there has recently been a survey investigating differences in risk among the Danish banks. The survey focused on differences in recommendations when giving advice to private investors and looked at the relationship between stocks and bonds (ppp.dk, 2010). This is why I find it natural to investigate the risk perspective looking at the relationship between stocks and bonds among the private investors.

When the private investors are investing their money, they can choose between individual papers or mutual funds. As mentioned in the problem area then there has been some critique of the Danish banks and mutual funds, which especially focuses on the cost associated with mutual funds. There has also been a recent survey that recommends private investors to buy individual stocks instead of stocks in mutual funds (ppp.dk, 2011). In the light of this critique, which has been very visible in the media, it becomes interesting to investigate who is buying mutual funds and investigating if there are any behavioral explanations in who is buying what.

In investigating the differences in the above, I have chosen to focus on gender, age and geography. Whether you look at the risk perspective, the choice between individual papers and mutual funds or what the private investors are buying and selling there are no immediate rational explanations of expecting differences among the private investors when looking at gender, age and geography inside Denmark. With this said, then when looking at risk, you would expect differences among the private investors in how much risk they take when looking at age, as they may have different horizons. A rule of thumb is that the longer your horizon is, the more risk you can take. When looking at age, I would then expect to find differences in how they allocate according to risk. Marvin Zuckerman has found that *"nearly every study that compares men and women finds that men are riskier drivers and have more accidents"* (Zuckerman, 2008; 86). Taking Marvin Zuckerman's words into consideration, it then becomes interesting to see if I find similar differences among male and female investors, both in how they allocate to risk but also how they perceive risk. Looking at geography you would from a rational perspective not expect any differences, why this is interesting to take a closer look at. It is also interesting to investigate if those who take on more risk also are those investors who prefer individual papers above mutual funds.

Decisions of buying and selling stocks should be made from a rational decision looking at the price and the expected earnings and should not be affected by individual biases such as house-money-like effects, overconfidence and representativeness. If the investors have chosen to use a top-down strategy, their aim is to keep a certain allocation between their assets, and this should be reflected as a rational choice in what they are buying and selling. A rule of thumb when following a top-down strategy is to buy what has fallen and sell what has increased in order to keep a certain allocation between assets.

When looking at the geography inside Denmark, I have decided to split Denmark up into three areas.

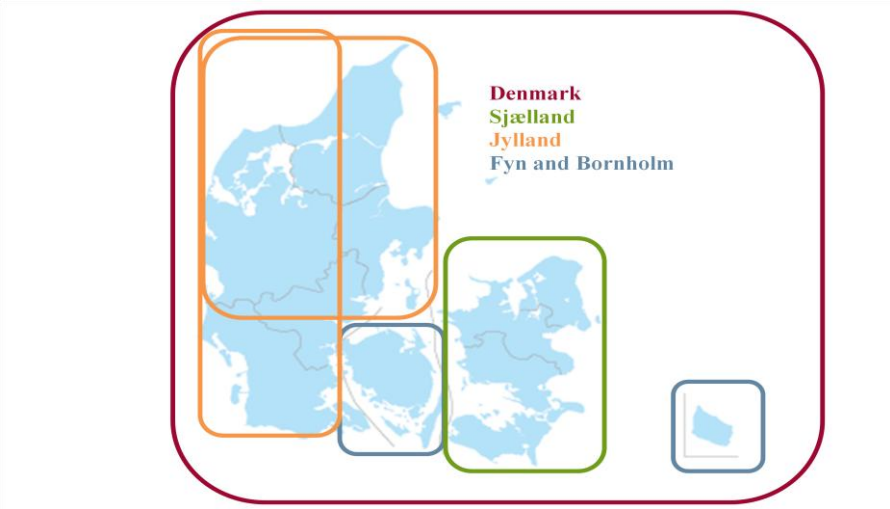

Figure 1- how I have split the data up into different locations. The map is found on http://www.politi.dk/da/servicemenu/soegkreds/ .

The three areas are chosen due to the extent of this thesis and due to a natural way of splitting Denmark up. Through the whole thesis Fyn and Bornholm also contain the smaller islands in Denmark. By splitting Denmark up into three geographical areas and not six or twenty, the results are aggregated and I do not discover differences among the investors within the three areas. If I made a finer graduation, I would expect differences within the three areas for example when looking at investors in the big cities vs. investors in small villages; especially due to my preconceptions of their education level (explained more deeply later). Despite this simplification in the geography, I find the results very usable, since the Danish people often looks at themselves as being from “Jylland”, “Sjælland” or “the Islands”.

Besides looking at gender, age and geography, I find it interesting to look at other aspects of the private investors. It is interesting to investigate whether differences among investors can be explained by education or income. I would expect investors with long term educations to be more critical and rational, but also more overconfident, when making decisions and I would expect that to be reflected in the way they invest. I believe that higher income and education makes people having stronger believes in themselves, which causes overconfidence.

From a survey I have data on education and income, but it is not directly linked to the investors that are a part of the trading data. Having data that were directly linked between incomes, education and trading, would give me a more precise picture of any correlations. Even though my data on education and income is not directly linked to the trading data, I find it useful since the survey was made on many respondents and then gives an indication of how the reality is. Mark Grinblatt, Matti Keloharju and Juhani Linnainmaa found in a recent study, that there are differences among private investors when looking at their IQ (Grinblatt, 2011) and that those with higher IQ tend to be more overconfident. I find that education level of the private investors may serve as a proxy for their IQ, and it becomes interesting to discover if I find results in my analysis that support their findings.

It would also have been interesting to have information on the private investors social status, to investigate differences among married and single investors, as mentioned by Brad M. Barber and Terrance Odean then *"married couples may influence each other's investment decisions…thus, we anticipate that observable differences in the investment activities of men and women will be greatest for single men and single women."*(Barber & Odean, 2001; 269). Since I do not have this information, my data may be affected by married couples who are influenced by the other part.

2.2. Gathering and working with data

When I started my search for data, my focus was to get as much specific and detailed information on private investors as possible. But as I started searching for data, I found that a) it is difficult to get this kind of data and b), such detailed data contains too much information when considering the scope of my problem area. I then decided that the information included in the data from VP securities A/S gives a good overall picture on differences among the private Danish investors, as is the intention with this thesis.

2.2.1. Data from VP securities A/S

I have gathered data from VP securities A/S (www.vp.dk) on how the private investors trade. The data from VP securities A/S focuses on monthly data and have certain limitations such as the fact that I cannot see if the market value on bonds changes because of coupons payments, maturities or if it is an active choice by the investors. Furthermore, I cannot see if the investors have invested by themselves or if they have got any advice through an investment advisor or if they have a discretionary product. This might affect the validity of the findings and conclusions based on the data. Despite the above inconveniences, I find the data very liable and valid in the scope of my thesis, when analyzing data in how the private Danish investors traded in a particular period to give an overall picture of the differences among the private Danish investors-

I have tried to get other data on private Danish investors, where I would know that their trading has not been affected by an investment advisor or a discretionary product. I tried to get data from internal in Nykredit but it has not been possible because of internal settlements between units. I also tried to get data from other banks, but they are not interested in giving out such sensitive data. With more detailed data, e.g. daily data, I could have analyzed more details such as how do the private investors react on specific news or events and who is more affected, which is very interesting in a behavioral finance perspective. At the same time I could get data that I would know would not be biased by investments advisors or discretionary products and thus give a more precise picture of the differences among the private investors.

To analyze how the private investors behave over time, when buying and selling assets, I started looking at the market value. But I find that market value is not useful in analyzing investor behavior over time because it is affected by market movements, coupon payments and maturities and thus makes it difficult to separate market movements from investor behavior. I then decided only to look at market value at the beginning of the period, to analyze if there at this particular time are differences in how the private investors allocate their portfolios looking at the risk perspective measured by the allocation between stocks and bonds and the choice between individual papers and mutual funds looking at gender, age and geography.

Looking at investor behavior over time, I then decided to focus on what has been bought and sold each month during the 3 year period in order to find differences in what the private investors is affected by when buying and selling assets. Due to my findings, I then chose to focus on stocks,

both individual and stocks in mutual funds, since I here found some interesting differences. The data on what has been bought and sold gives a clearer picture of the investor behavior over time than the market value, even though this data is also biased by for example changes done by an investment advisor or changes done in a discretionary product. It is however my conclusion that this data gives a good overall picture of the behavior among the Danish investors through the 3 year period, because when using data on what has been bought and sold, the net purchase is not biased by market movements.

When looking at the risk perspective measured by the allocation between stocks and bonds, I have decided to include the mutual funds to give a more fulfilling picture of the investors' total risk.

2.2.2. Complementary data

In order to analyze the differences among the private investors behavior over time when looking at what has been bought and sold, I have searched for different data that might explain some of the differences I find.

I have data on how the NASDAQ OMX C20 index moves, because a relationship between how the stocks market moves and how the private investors is acting is very interesting, since it could be both a rational act but also an act affected by emotions and it is interesting to investigate if all private investors are affected the same way. The reason why I have chosen the OMX C20 is that 60,93% of the stocks in the Danish private investors portfolios are those from OMX C20 (as of February 2012, vp.dk, 2012).

I also have data from statistics Denmark (statbank.dk). I have gathered data on the Danish consumer confidence indicator (statbank.dk/forv1, 2012) and central-government bonds with 10 years maturity (statbank.dk/dnrentd, 2012). The Danish consumer confidence index *"illustrates the populations view of the current and future economic situation"* (dst.dk, 2012 – own translation). The consumer confidence index is interesting because it tells something about how comfortable people are with the economy and the future and it is interesting to see if this affects how the investors are buying and selling stocks and if the private investors are affected the same way. The data on the 10 years government bonds is used to see if there in the buying and selling of data is any pattern related to the rate on long term bonds.

I have also searched for data outside of finance when looking at especially overconfidence. I have chosen to include data on injured and killed in road traffic accidents, as I also find that this reflects risk taking which is one of my focus areas and it is interesting to see if there is any correlation between who shows signs on overconfidence inside and outside of finance. I am aware that the percentage that are injured and killed in road traffic accidents are smaller than those who are investing and taking on risk in finance, but I do though find the data on injured and killed in road traffic accidents interesting, as it may indicate that there could be a correlation.

2.2.3. Nykredit Survey – "Når du investerer"

I have chosen to use part of a survey made by the Danish bank Nykredit[2] in July 2010. The survey is called "Når du investerer" ("When you invest") and covers the private investors opinion and habits according to investments and savings. I have chosen to use part of this survey because it has a lot of respondents which makes it reliable and representative, and because it gives me an insight into what the private investors think of investments and savings.

The survey was made in July 2010 when Danish economy was on its way up after the financial crisis in 2008. The NASDAQ OMX C20 index was going up and the consumer confidence index was at its highest in my three year analyzing period and respondents may then have been in a positive mood. If the survey was made right after the financial crisis started I believe that the answers would have been more negative because people through the financial crisis had the chance to really feel the risk which is explained by Richard H. Thaler and Cass R. Sunstein as *"if people are reminded of a bad event, they may not continue to be so optimistic" (*Thaler & Sunstein, 2008; 33). Similarly, if the survey was made before the financial crisis, I believe that the answers would have been more positive. From this point of view and from the fact that the survey was made in the middle of the period that I have data from, I believe that the answers in the survey covers the private investors opinions and habits according to investments based on what they actually have experienced themselves because they have been tested through the financial crisis and that makes the results very useful.

If I had the chance to make such a survey myself, I would have added some more questions. I find that the survey focuses on what the private investors does when markets goes down and it

[2] Nykredit is a Danish financial group with mortgage and bank as the two main activities. http://www.nykredit.dk/omnykredit/info/virksomhed/vores-virksomhed.xml

would have been interesting to see if the participants answered consistently when looking at both the up- and downside on markets. If I had both the up- and downside, I could discover more about what kind of investors that is rational and what kind of investors that are behavioral.

Another aspect is the framing of the survey. The way the questions are formed, makes people think in one way, as they are affected by the framing *"A decision frame is defined to be a decision-makers view of the problem and possible outcomes. A frame is affected by the presentation mode and the individual's perception of the questions, as well as personal characteristics"* (Ackert & Deaves, 2010; 14) This means, if the questions and the predefined answers were formed differently, then the participant maybe had answered differently or if they had no predefined answers, they maybe had come up with others answers than those predefined in the survey, which again could have given another result.

The questions I have chosen

In this thesis I have chosen to focus on two questions (all questions in appendix 1) from the survey that I find relevant in the context of this thesis:

- "What do you understand by risk in relation to investments?" (question 13)
- "What do you do when markets goes badly?" (question 15)

In answering both questions, the participants had to choose one answer from among respectively 5 and 6 predefined answers. I have chosen these two questions because they are useful in analyzing both the risk perspective and the choice between individual papers and mutual funds.

2.3. Regressions and independent variables

In making my regressions in the analysis, I have used the linest() function in Excel. I wanted to see if there was something that could explain what has been bought and sold through the three year period that my analysis runs through.

The linest() function is a function that uses simple linear regression described by $Y = \beta_0 + \beta_1 X_1 + e_i$. Y is the dependent variable that I wish to explain by using the independent variable X_1 (Overø & Gabrielsen, 2007). When analyzing my results, I have the following values:

t-value

The t-value has to be above two (absolute value) to be significant. If it is above three then it is a very good result

R^2

The R^2 measures how much of the variation in the dependent variable that can be described by the independent variable. The bigger value that R^2 has, the better is the result. A R^2 of 100 means that the independent variable totally explains how the dependent variable develops.

p-value

The p-value is the probability that the coefficient in front of the independent variable is different from zero, which is why a high p-value is good.

I started by finding the data on what has been bought and sold when looking at stocks, bonds, mutual funds, stock funds, bond funds and mixed mutual funds both overall and divided into gender. As I found interesting results when looking at stocks, I found data on what has been bought and sold in both individual stocks and stock funds by respectively male and female investors and the total of each category and divided by gender and geography. I have looked at net purchase in each category over the three year period.

In explaining these dependent variables, I have chosen to use data from statistics Denmark and Macrobonds Financial AB, which I believe might explain some of the buying and selling. I have chosen the following data as being the independent variables:

- Level of the consumer confidence index
- Level of the OMX C20 index
- Changes in the OMX C20 index
- Changes in the 10 years government-bonds

Before I started with using the independent variables on my categories, I wanted to check if there was any correlation between the four independent variables (table 1). Correlation between the four variables means that when making a multiple regression, you would not get a clean picture of what could be explained and it then would be better to make single regressions.

Independent variable - consumer confidence indicator				
	t-value	coeff	p-value	R^2
OMX C20, level	4,73	9,06	0,00023%	39,66385%
Independent variable - 10 year bond				
	t-value	coeff	p-value	R^2
OMX C20, changes	2,56	0,27	1,04746%	16,15776%

Table 1 – Single linear regressions made on data from February 2009 to January 2012. First are the consumer confidence indicator the independent variable measured by the level and OMX C20 index is the dependent variable measured by the level end of each month. Next are the 10 year central-government bonds the independent variable measured by monthly changes in the rate with OMX C20 index changes as the dependent variable measured by monthly changes in the level.

The regression shows that there are some correlations between the four variables. The consumer confidence index has a significant influence on the level of the OMX C20 index and explains almost 40% of the development in the level of the OMX C20 index. The correlation between the two is positive, which means that when the consumer confidence goes up, then the level of the OMX C20 also increases and the other way around. This also makes sense from a behavioral perspective. When people are more overconfident, they buy more stocks and have a more optimistic view on the stocks prices. I also find a positive correlation between the 10 year government bond and the changes in the OMX C20 index.

Since I find correlation between the four dependent variables, I have chosen to make single regressions on the dependent variables. I also find that using the level of the OMX C20 is not useful in making regressions. Instead I have used the level of the OMX C20 index when looking more graphic at what has been bought and sold in the period.

CHAPTER 3: EMPIRICAL DATA

This thesis is built around the empirical data I have gathered and it is the data that I present in this chapter that dictates the content of this thesis. My empirical data contains different kind of raw data and a survey that I can translate into figures and graphs. The survey I have used contain only closed questions that I can use to make quantitative analysis.

3.1. Data from VP securities A/S

The data from VP securities A/S is ordered and specified by Nykredit A/S and I have data from February 2009 to January 2012. The data is at the time only made monthly (end of each month) and thus contains monthly information on how the Danish private investors traded in the given

period. The reason why I do not have data for a longer period is that Nykredit did not get the data specified into age group and gender until February 2009. From 2004 to February 2009, data is only divided into age and gender, but not gender in the age groups, which I find quite interesting when looking at behavioral tendencies, as it allows me to analyze more detailed differences among the private investors.

Everyone who has a Danish social security number and is registered through VP securities A/S is a part of this data. Private investors who only has their investments where they do not own the paper themselves, is not a part of the data, for example when people have their pension through a pension company.

If one category contains 5 or less people or if one person stands for more than 40 % of the trading in one category, then the data is not specified in that category, but marked as unknown according to gender, age and geography.

The data contains information on market value and trading volume (DKK bought/sold) distributed by gender, six age groups, geography and trading products. It only contains Danish stocks, bonds and mutual funds. The mutual funds are furthermore divided into stocks, bonds and mixed funds, with the mixed funds as the smallest group. It is the mutual fund itself that decides the category, which can disturb the picture a bit, because one fund with a 40/60 split between stocks and bonds defines itself as a bond fund, while another defines itself as a mixed fund.

I have chosen to include mixed mutual funds when looking at the allocation between stocks and bonds as if they were invested 38/62 in stocks and bonds. Looking at 3 different mutual fund homepages (appendix 2), I find that there is a big variety in the allocation to stocks in the mixed mutual funds, from 0 % to almost 80 % stocks. Out of 18 mutual funds I found that the average in the mixed funds between stocks and bonds is 38 % stocks and 62 % bonds. Looking at the sector standards (ifr.dk, 2012) I find that a mixed mutual funds should have the following characteristics (not a full list):*" The fund must have a flexible investment strategy according to invest in both bonds and stocks and the opportunity to invest less than 90% in bonds and / or less than 85% in stocks…"*(ifr.dk, 2012;17). Since the sector standards is very wide, I have decided to include the mixed funds as if they were invested 38/62 in stocks and bonds. This is shown graphical in figure 2:

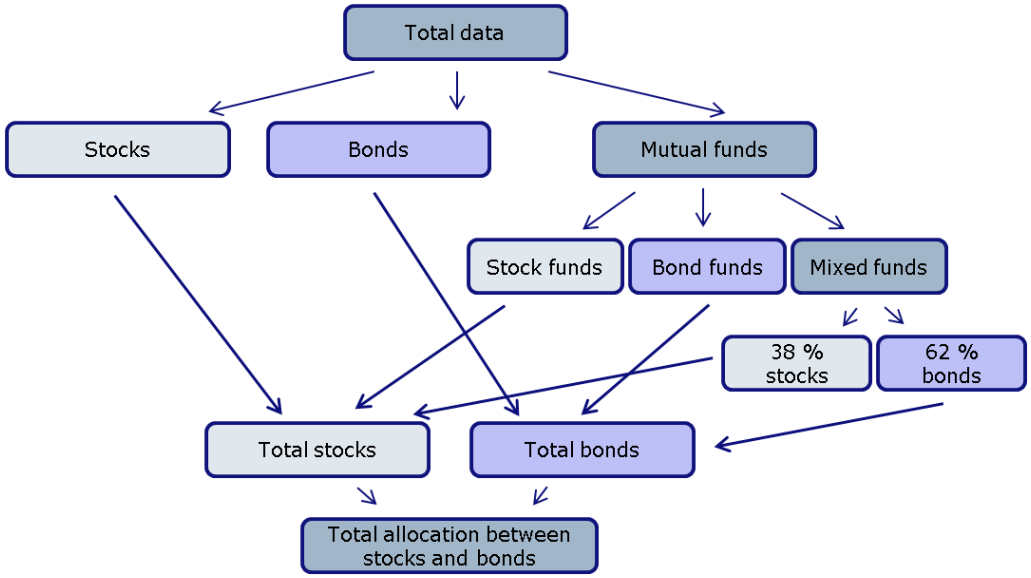

Figure 2 – how the data from mutual funds is split up and integrated in the total allocation between stocks and bonds.

3.2. Data on NASDAQ OMX COPENHAGEN 20

From Macrobonds Financial AB I have got data on NASDAQ COPENHAGEN OMX C20 (OMX C20) from the period 1989 to 2012. The data contains daily closing prices on the OMX C20 index. From the closing prices I can calculate the monthly return (monthly because that is how I have the data from VP securities). I use both the closing prices and the monthly returns to investigate if there is any relationship between the OMX C20 and how and what the private investors are buying and selling through the 3 year period and to investigate if there are differences in how the private investors are affected.

3.3. Nykredit survey

The survey, "Når du investerer"[3], was made in the period from the 8th of July to the 28th of July 2010 and 8.021 people answered 15 questions about investing (full list in appendix 1). The main finding of the survey was that *"Many seem to have savings, understanding of risk and return are good - but there is too little focus on advice and planning"* (nykreditbarometer.dk, 2010; 2). The people who participated were both people who had participated in earlier surveys and were registered in a database and people who found the survey through Nykredit newsletters, Nykredit's homepage, banner advertisements and different search

[3] The conclusion of this survey is located at http://www.nykreditbarometer.dk/img/customer/nykredit/pdf/Danskernes%20holding%20til%20investering%20og%20opsparing.pdf (25.02.2012)

engines such as Google. Those who participated had the chance to win a check of 1.000 DKK (10 checks total).

The participants represent the Danish private investors with 46,9% from Sjælland, 42,2% in Jylland and 10,6% from Fyn and Bornholm. Looking at gender and age, I find the following geographic allocation:

	Denmark	Sjælland	Jylland	Fyn and Bornholm
Male	45,2%	38,2%	54,5%	35,8%
Female	54,8%	61,8%	45,5%	64,2%
0-20	1,4%	0,9%	1,4%	0,9%
20-30	5,6%	5,0%	5,4%	5,8%
30-40	13,1%	13,3%	12,8%	13,2%
40-50	22,0%	22,4%	22,3%	20,4%
50-60	27,9%	27,3%	28,0%	31,6%
60+	29,9%	30,0%	30,2%	28,2%

Table 2 – An overview of the participants from the Nykredit survey "Når du investerer" shown by age groups and geography.

Looking at the geographical allocation (table 2), I find my three chosen geographical areas represented in all age groups. I am aware that there are few observations in the youngest age groups and that Fyn and Bornholm has the fewest observations of the three geographical areas. From the survey I also have information on education (table 3) and family income (table 4), where the overall results are below:

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Denmark	All investors	12,5%	20,0%	15,2%	37,0%	12,9%	2,4%

Table 3 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the overall answers in Denmark, full list in appendix 3.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Denmark	All investors	22,5%	38,3%	23,9%	4,2%	11,0%

Table 4 – An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the overall answers in Denmark, full list in appendix 4.

Below are the main results from the questions "what do you understand by risk in relation to investments?"(Figure 3) and "what do you do when markets goes badly?"(Figure 4) shortly presented.

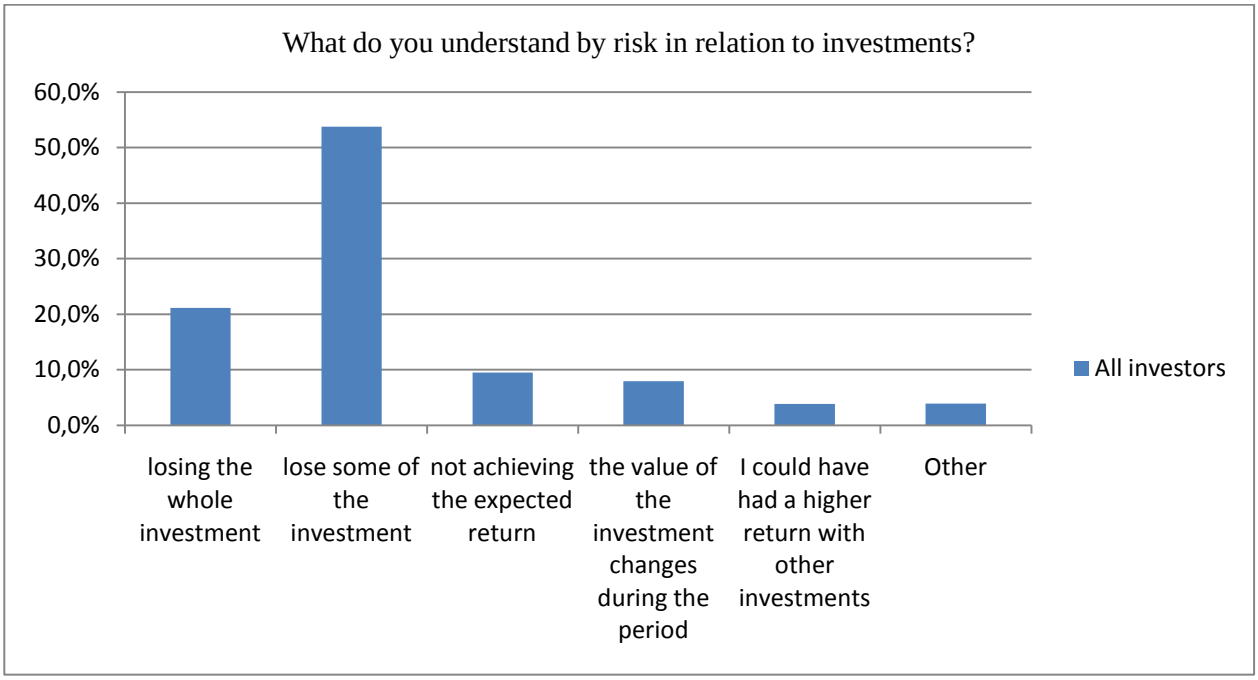

Figure 3 – An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you understand by risk in relation to investments?" Shows the overall answers in Denmark, full list in appendix 5.

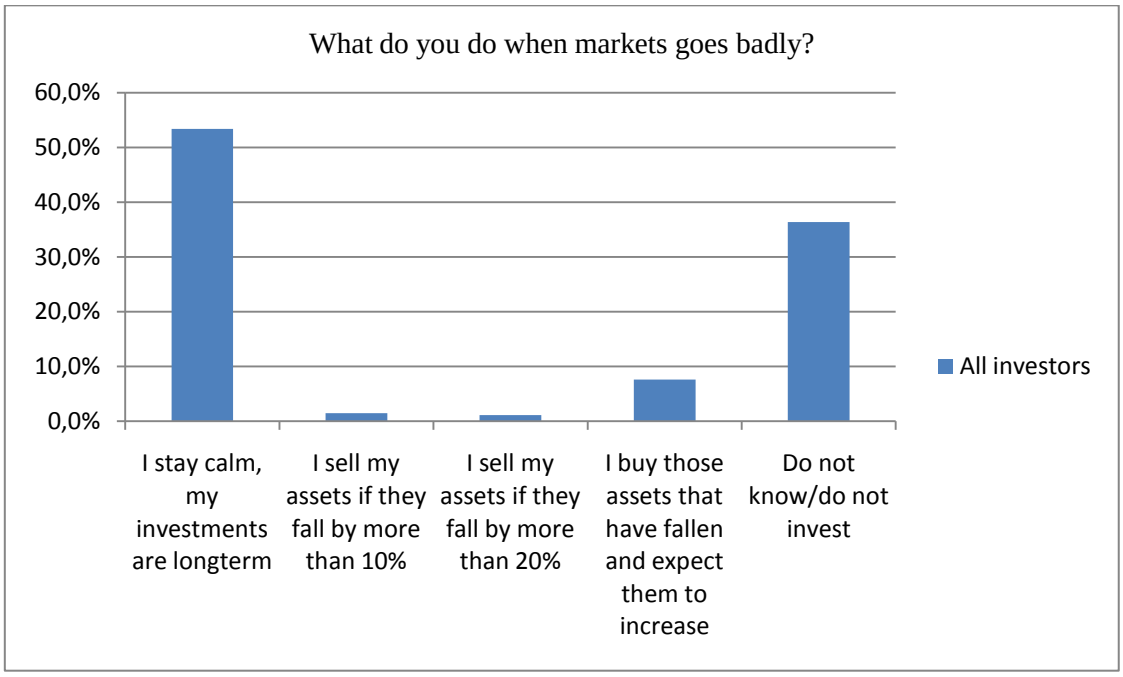

Figure 4 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you do when markets goes badly?" Shows the overall answers in Denmark, full list in appendix 6

3.4. Injured and killed in road traffic accidents

The data on injured and killed in road traffic accidents is used to see if there is any correlation between who shows signs on overconfidence inside and outside of finance. The data in table 5 contains information on who was injured or killed in road traffic accident from the period from 1998 to 2010. It does not tell the circumstances of the accidents, but only who was a part of it.

	Age	**Average 1998 – 2010**
Male	0-17	5,6%
	18-24	18,7%
	25-44	20,5%
	45-64	8,7%
	65-	4,7%
Female	0-17	5,1%
	18-24	8,3%
	25-44	14,6%
	45-64	8,8%
	65-	4,9%

Table 5 – Shows data on age and gender that were injured and killed in road traffic accidents from 1998 to 2010 (statbank.dk/uheldk1, 2012). The percentages is calculated by taking the number of person in each group divided by total number of injured and killed in road accidents each year. Last I have taken a simple average through the period.

CHAPTER 4: Theory

This chapter is a short presentation of those theories I have decided to use in the analysis and how they can be used in relation to this thesis. The theories will help to create a deeper understanding of why there might be differences among the private investors and will thus serve as a tool to understand the empirical material.

In my search for literature, I have found a lot of different material, but not much of this is focusing on differences among private investors when looking at gender, age and geography. The theoretical perspectives that are explained below are thus not theories that describe what to expect from the empirical data, but are theories that tell something about earlier findings according to behavior in finance and therefore are useful in the context of my thesis when explaining the differences I find.

4.2. Neoclassical economics

The traditional finance theory, also known as neoclassical economics, is very useful in the context of this thesis, as it allows me to find biases in the way the private investors handle their investments. Neoclassical economics is *"a set of implicit rules or understandings for constructing satisfactory economic theories"* (Weintraub, 2002; 2). It is *"based on rational decision-making"* (Ackert & Deaves, 2010; 3) described by some fundamental assumptions that are used when developing theories in finance. The fundamental assumptions are: People have rational preferences, people maximize utility and people act independently with full information. (Weintraub, 2002). By using theories based on those assumptions, I know what you would expect people to do from a rational perspective and thus I can use it to find anomalies.

In traditional finance you find the economic man who can handle all possible outcomes of a given choice (assumption three) and thus can choose the rational right decision. When looking at market movements, then *"…Econs are not followers of fashion"* (Thaler & Sunstein, 2008; 53). This means that the rational investors (economic man) make rational decisions and do not follow trends such as how the stock market moves.

Another relevant perspective from traditional finance is horizon. When deciding the amount of risk you are willing to take, then the horizon has a big influence – the longer the horizon, the more risk you can take. It becomes interesting to look at the investor behavior from this

perspective to see if there are differences among the age groups as I would expect there to be, on the premise that different age groups are with different horizons.

In traditional finance you also find expected utility theory. Expected utility theory is the traditional finance theory of how people make choices, and is *"an attempt to define rational behavior when people face uncertainty" (*Ackert & Deaves, 2010; 6). According to expected utility theory, then people want to maximize their utility in any situation given their risk aversion. Risk averse investors avoid risk and have a concave utility function, risk neutral investors has a linear utility function and is indifferent to risk while a "risk lover" has a convex utility function and loves to take on risk (Christensen, 2009).
Expected utility theory is a *"normative theory, which means that it describes how people should rationally behave"* (Ackert & Deaves, 2010; 6) and thus it is useful in analyzing differences among private investors, as it allows me to discovers anomalies.

4.2. Behavioral finance

This section gives a closer look at some of the behavioral explanations that are relevant in the context of this thesis. It is not a complete overview of the behavioral theory and the focus is on the biases that affect the decision making process.

Behavioral finance criticizes the neoclassical economics and especially the assumption of total rationality (assumption three in the above). In combining both neoclassical finance and psychology, behavioral finance tries to find and explain anomalies that cannot be rationally explained. Anomalies in the context of this thesis are differences between the private investors that cannot be explained by traditional finance.

"…behavioral finance uses insights from psychology to understand how human behavior influences the decisions of individual and professional investors, markets, and managers. We are all human, which means that our behavior is influenced by psychology." (Ackert & Deaves, 2010; XXVI). Behavioral finance looks at how our behavior affects three main areas: Asset pricing, corporate decision making and financial decisions of individuals (source is a slide from behavioral finance class). Especially the financial decisions of individuals are interesting in the context of this thesis, as it may explain the differences among the private investors that I find in the analysis.

4.2.1. Four heuristics

According to traditional finance, then to make a rational decision, you have to act like the economic man and go through all possible outcomes and think of all possible consequences of your decisions. When deciding which pair of shoes to wear or to eat the dessert before the main course, you can easily imaging the possible outcomes. When making a decision regarding finance, there are numerous possible outcomes due to all the different products you can buy and the inability to control or adequate predict the consequences of your decisions makes the decision difficult if not impossible to manage. This is especially relevant in the world today, where everyone is busy having many decisions every day *"The picture that emerges is one of busy people trying to cope in a complex world in which they cannot afford to think deeply about every choice they have to make. People adopt sensible rules of thumb that sometimes lead them astray"* (Thaler & Sunstein, 2008; 37).

Since the human brain does not have unlimited capacity and often has to make a decision within limited time, humans use shortcuts when making decisions. A cognitive bias is the human tendency to make systematic decisions in certain circumstances based on cognitive factors rather than evidence. *"Bias arises from various processes that are sometimes difficult to distinguish. These processes include information-processing shortcuts, motivational factors, and social influence"* (Wilcox, 2011; 9). Such biases can result from information-processing shortcuts called heuristics. *"A heuristic is a decision rule that utilizes a subset of the information set"* (Ackert & Deaves, 2011; 86). Three heuristics: representatives, availability and anchoring were covered by Amos Tversky and Daniel Kahneman in 1974 (Tversky & Kahneman, 1974) and gives a good explanation of why some private investors make the decisions they do. In addition to these three heuristics, is also overconfidence. Overconfidence is useful in explaining why some investors might take on more risk than others, as is the focus of this thesis.

Below are the four heuristics shortly presented in order to explain why they are useful in analyzing differences among investors:

- <u>Availability</u>

  The availability heuristic tells something about what comes first into one's mind *"…event that are called to mind easily are believed to have greater likelihood of occurring"* (Ackert & Deaves, 2010; 96) and is also referred to as regency bias. In relation to finance,

the regency bias could show when private investors are buying stocks. If the stocks recently have increased, then people might think that further increasing is more likely to happen than a decrease, even though decreasing might be more rational from a finance perspective, especially if the increasing was not rational the first way. In context of this thesis, this bias can be used in explaining irrational behavior when looking at what people has bought and sold during the three year period.

- Representativeness

  Representativeness is the philosophy that people have difficulties in understanding probabilities and is closely related to availability. One place you will find representativeness is when people think that the whole population looks like the small sample (hot hand) or the other way around, that a small sample should look like the whole population (gambler fallacy). The representativeness is useful in explaining why some private investors might keep on buying stocks as the market goes up instead of selling stocks.

- Anchoring

  Anchoring is *"…when people consider a particular value for an unknown quantity before estimating that quantity…the estimates stay close to the number that people considered – hence the image of an anchor."* (Kahneman, 2011; 119). In finance this heuristic could happen when the private investor is deciding what the price of a given stocks should be. When affected by anchoring the private investors will use the current stocks price as an anchor instead of the more correct way to price a stock where you discount the expected future cash flow. Anchoring is useful when looking at risk. If the private investors use an anchor, they maybe find the asset less risky than what it might be.

- Overconfidence

  Overconfidence is also a heuristic that makes biases in decision making. *"Overconfidence is the tendency for people to overestimate their knowledge, abilities, and the precision of their information or to be overly sanguine of the future and their ability to control it"* (Ackert & Deaves, 2010; 106). Overconfidence is affected by different things, where the most relevant in the context of this thesis is: Believing you have expertise, Learning through feedback and Gender. If people believe they have expertise, they tend to take on more risk. Learning through feedback means that people learn through their experiences. If they get slow and noisy feedback, then they do not learn, and that makes them

overconfident. On the other side, then when people get older, they learn through their experiences and then become less overconfident over time. As told earlier by Marvin Zuckerman when analyzing driving (Zuckerman, 2008), then when looking at gender, then male investors tend to be more overconfident than female investors. Overconfidence may lead to taking on more risk, but may also explain why some private investors buy individual papers while others buy mutual funds, as I consider mutual funds to be a more passive investment *"Such overconfidence may be responsible for the prevalence of active versus passive investment management"* (Bodie, Kane & Marcus, 2011; 411)

4.2.2. Risk preferences

Behavioral finance theory has more than one way of looking at risk preferences. I have chosen to focus on two contrary approaches: prospect theory and house money-like effects.

Prospect theory was described by Daniel Kahneman and Amos Tversky in 1979 (Tversky & Kahneman, 1979) and says that losses are felt more strongly than gains, which means that people are loss averse. In general people are risk averse over gains and risk seeking over losses. *"This phenomenon, in which choosers sacrifice expected value for surety, is known as risk aversion" (*Platt & Huettel, 2008; 398). Prospect theory does not tell anything about what to expect over time and is thus a static model. A bias that is consistent with prospect theory is the endowment effect which is also known as the status quo bias. The endowment effect says that people value what they have more that what they do not have, which is consistent with risk aversion (Ackert & Deaves, 2010). This may show when private investors is buying stocks. They sell when the stocks increases, but do not sell when the stocks decreases.

House money-like effects are effects that describe how people react when they have experienced risk and thus indicate what to expect over time. Opposite of the prospect theory, then the house-money effect says that people takes on more risk and becomes more risk seeking when having a gain – this is called the "house money effect" and refers to event, that the investors is buying stocks when the markets goes up. When the market goes down, then the investors are selling their stocks, which is called the "snake bit effect".

4.3. Summary

The explained theoretical behavioral perspectives deal with different themes that reflect my problem definition and some of the findings I found in my empirical data. In discovering differences among private investors it is very useful to have the traditional finance theory in mind, as it tells me when there are differences that cannot be rational explained and thus would be interesting to investigate deeper from a behavioral finance perspective, but also when I should expect differences such as that the horizon affects risk taking between age groups. The theory from behavioral finance focuses on how to explain why investors do as they do and is thus very useful in the context of this thesis.

CHAPTER 5: ANALYSIS

Findings in my empirical data will in this chapter be presented and analyzed and will at the same time form the structure of the analysis. Altogether the analysis shows how the private investors behave and what the differences are among them according to the problem of this thesis. The connection between the empirical data, the themes and the theoretical perspectives can be seen in figure 5 below that is the background of this analysis:

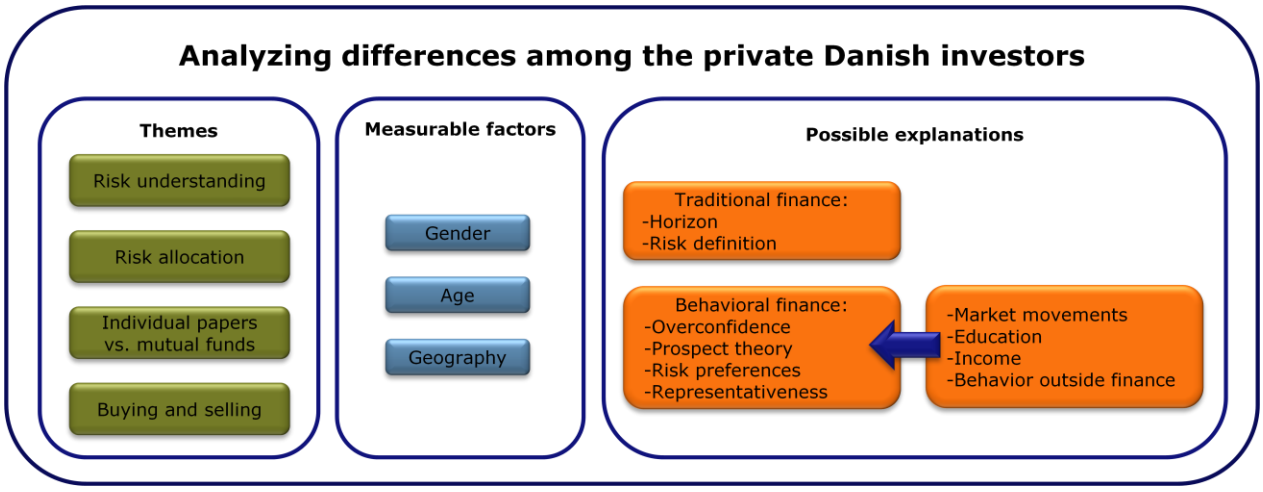

Figure 5 – The building of the analysis. Own production.

5.1. Risk and the Nykredit survey

In this chapter I will analyze what the private investors think of risk *"Risk – expression of probability and consequences of an undesirable event"* (denstoredanske.dk, 2012), and facing

bad markets, in order to see if there are any differences in what they think of these two risk perspectives.

5.1.1. "What do you understand by risk in relation to investments?" (Question 13)

Looking at how the private investors answered the question about risk, it is interesting that more than 70 % answered that risk in relation to investments is losing some or all of the investments. It is interesting because the traditional theoretical definition of risk is standard deviation which is also often used in the Danish banking sector. Standard deviation is "deviation from the middle" which is a risk measure that reflects both positive and negative deviations as risk, while the private investor only focuses on the negative deviation as risk. The result is also interesting from a behavioral finance point of view as it support prospect theory that realizing a loss feels stronger than realizing a gain. Banks and others in the Danish financial sector often refer to Morningstar[4], who is an independent supplier of investment information that has several tools private investors can use when they invest. Morningstar uses the standard deviation as a measure of risk (Morningstar.dk, 2012). Looking at how the private investors perceive risk, it would be more appropriate to use the value at risk (VaR), because this risk measure focuses on the downside. But still there is a problem with using VaR, because it puts a probability on the downside, which private investors seems to find difficult to understand, according to the representativeness heuristic.

Looking at the predefined answers the participants had to choose among, I find that two of the answers reflect the theoretical more correct standard deviation. The two answers are: "the value of the investment changes during the period" and "not achieving the expected return". I have chosen to look at differences among the investors by using the above view as correct perception of risk. I have chosen this method because that allows me find those investors who act more rational understanding risk, while those answering the less correct answers may be affected by behavioral themes.

Dividing the data into gender, age and geography, it becomes interesting to see if there are differences among the investors when looking at how they think of risk.

[4] Danskeinvest.dk, nordeainvest.dk m.fl.

Looking at the overall gender and geography in table 6, the result is almost the same. Slightly more private investors on Fyn and Bornholm choose the theoretical more correct answer. From a traditional finance perspective you would also expect, that there are no (big) differences when looking at gender and geography. That means, when looking at the overall gender and geography, then the question about risk is not what makes the private investors heterogeneous.

Location	Who	Losing some or the whole investment	Not achieving the expected return or the value changes during the period.	I could have had a higher return with other investments	Other
Fyn and Bornholm	All investors	73,6%	20,6%	3,5%	2,3%
Jylland	All investors	75,0%	17,5%	3,8%	3,7%
Sjælland	All investors	76,5%	16,9%	3,5%	3,1%
Denmark	Female	74,2%	17,6%	4,1%	4,0%
Denmark	Male	75,8%	17,1%	3,4%	3,7%

Table 6 – Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you understand by risk in relation to investments?" It shows the answers divided by geography and gender.
"Losing some or the whole investment" covers participants that answered "Loosing the whole investment" and "Loose some of the investment". "Not achieving the expected return or the value changes during the period" covers participants that answered "Not achieving the expected return" and "The value of the investment changes during the period".

Looking deeper into the data, I find the following results interesting (full list of results is in appendix 5):

Combining gender and geography in table 7, I find that there is a big variation among the private investors on Fyn and Bornholm, as 81,1% of the female investors have answered the theoretical more correct answer while only 69,4% of the male investors answered that. It seems that the female investors o Fyn and Bornholm have a more theoretical correct perception of risk than the male investors on Fyn and Bornholm. This indicates that the female investors should act more rationally than the male investors when looking at risk and it becomes interesting to see if I find the same pattern when looking at the trading data. The result also supports the description of risk from the big Danish encyclopedia, that people perceive risk differently. It is interesting that I do not find the same differences between male and female investors in other geographical areas in Denmark, as I find between male and female investors on Fyn and Bornholm.

Location	Who	Losing some or the whole investment	Not achieving the expected return or the value changes during the period.	I could have had a higher return with other investments	Other
Fyn and Bornholm	Female	69,4%	24,1%	4,1%	2,4%
Jylland	Female	73,9%	17,8%	4,4%	3,8%
Jylland	Male	75,8%	17,2%	3,4%	3,6%
Sjælland	Male	76,3%	18,0%	3,1%	2,5%
Sjælland	Female	76,6%	16,3%	3,7%	3,5%
Fyn and Bornholm	Male	81,1%	14,4%	2,5%	2,1%

Table 7 – Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you understand by risk in relation to investments?" It shows the answers when combining geography and gender. "Losing some or the whole investment" covers participants that answered "Loosing the whole investment" and "Loose some of the investment". "Not achieving the expected return or the value changes during the period" covers participants that answered "Not achieving the expected return" and "The value of the investment changes during the period".

Looking at the overall age groups in table 8, I find that there are differences in what the private investors think about risk. Looking at the other age groups, I find that the oldest group with the private investors above 60, is more focused on changes and not achieving the expected return than the younger, as 23% of the older investors answered changes, while only 10,4% of the younger investors did. This can be explained by two things. From the financial perspective, the oldest group may have adjusted their portfolios, so that they have more safe investments such as mutual funds and bonds, and thus they are not exposed to a total loss as much as the younger investors. On the other side, from the behavioral finance point of view, then the oldest investors have had many years to learn about investments, and they may have experienced, that it is not that often you lose all you have invested – they have learned through feedback.

Location	Who	Losing some or the whole investment	Not achieving the expected return or the value changes during the period.	I could have had a higher return with other investments	Other
Denmark	30-40	81,1%	12,6%	2,2%	4,2%
Denmark	40-50	78,7%	14,1%	2,7%	4,6%
Denmark	20-30	78,0%	10,4%	3,8%	7,8%
Denmark	50-60	76,1%	17,9%	3,7%	2,2%
Denmark	60+	68,7%	23,0%	5,4%	2,8%
Denmark	0-20	53,6%	10,9%	5,5%	30,0%

Table 8 - Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you understand by risk in relation to investments?" It shows the answers when looking at the overall age groups. "Losing some or the whole investment" covers participants that answered "Loosing the whole investment" and "Loose some of the investment". "Not achieving the expected return or the value changes during the period" covers participants that answered "Not achieving the expected return" and "The value of the investment changes during the period".

Looking at gender, age groups and geography in table 9, I find big differences among the gender within the age groups, even though the overall result between the male and female investors only found a big variation on Fyn and Bornholm. Within all the age groups, except from 20-30, I find that those who have the best understanding of risk, from a theoretical perspective, is the female investors. Looking at the age group from 20-30, I find that the male investors on Sjælland have the best understanding of risk. It is interesting that the differences among the investors are that big when looking at gender and geography, since you find no rational explanation of this.

Location	Who	Losing some or the whole investment	Not achieving the expected return or the value changes during the period.	I could have had a higher return with other investments	Other
Sjælland	Female 20-30	86,3%	7,7%	1,7%	4,3%
Jylland	Female 20-30	85,4%	7,3%	4,9%	2,4%
Fyn and Bornholm	Female 20-30	78,6%	21,4%	0,0%	0,0%
Sjælland	Male 20-30	79,3%	8,6%	5,2%	6,9%
Jylland	Male 20-30	75,0%	11,4%	3,4%	10,2%
Fyn and Bornholm	Male 20-30	77,8%	16,7%	5,6%	0,0%
Sjælland	Female 30-40	84,7%	10,7%	1,7%	3,0%
Jylland	Female 30-40	79,1%	13,9%	2,1%	4,8%
Fyn and Bornholm	Female 30-40	76,2%	15,9%	3,2%	4,8%
Sjælland	Male 30-40	81,0%	14,3%	3,0%	1,8%
Jylland	Male 30-40	84,9%	11,0%	1,4%	2,7%
Fyn and Bornholm	Male 30-40	83,3%	14,3%	0,0%	2,4%
Sjælland	Female 40-50	79,0%	14,3%	2,6%	4,1%
Jylland	Female 40-50	77,5%	14,1%	2,6%	5,9%
Fyn and Bornholm	Female 40-50	70,7%	28,3%	0,0%	1,0%
Sjælland	Male 40-50	79,3%	13,9%	3,7%	3,1%
Jylland	Male 40-50	80,3%	12,4%	1,7%	5,5%
Fyn and Bornholm	Male 40-50	85,7%	7,9%	3,2%	3,2%
Sjælland	Female 50-60	78,2%	15,0%	3,7%	3,2%
Jylland	Female 50-60	75,3%	17,5%	5,4%	1,7%
Fyn and Bornholm	Female 50-60	70,4%	23,3%	3,8%	2,5%
Sjælland	Male 50-60	74,9%	21,5%	2,5%	1,1%
Jylland	Male 50-60	75,5%	19,4%	3,3%	1,9%
Fyn and Bornholm	Male 50-60	87,0%	12,0%	1,1%	0,0%
Sjælland	Female 60+	68,9%	23,0%	6,0%	2,2%
Jylland	Female 60+	66,5%	24,7%	5,4%	3,4%
Fyn and Bornholm	Female 60+	63,1%	26,8%	7,6%	2,5%
Sjælland	Male 60+	73,2%	21,6%	3,1%	2,1%
Jylland	Male 60+	69,6%	22,6%	5,3%	2,5%
Fyn and Bornholm	Male 60+	68,7%	23,9%	4,5%	3,0%

Table 9 – Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you understand by risk in relation to investments?" It shows the answers when combining gender, age and geography. "Losing some or the whole investment" covers participants that answered "Loosing the whole investment" and "Loose some of the investment". "Not achieving the expected return or the value changes during the period" covers participants that answered "Not achieving the expected return" and "The value of the investment changes during the period".

Summary

When looking at the question "what do you understand by risk in relation to investments", it seems that the private investors in general agree that risk is when looking at the downside of an investment. There are no differences looking at gender and geography, but when combining gender and geography, I find big differences among the male and female investors on Fyn and Bornholm. Looking at the age groups, I find that the oldest age group focuses on deviations, while the younger age group focuses on loosing the investment. This can be explained by experience. Combining gender, age and geography, I find that there are big differences among the age groups looking at gender and geography, even though the overall picture showed no big variation between male and female investors.

5.1.2. "What do you do when markets goes badly?" (Question 15)

From the overall result of this question, I find that more than 50% of the participants answered that they "stay calm, my investments are long term". This is an interesting result, because what do they actually mean by "staying calm". On one side it is a good thing to stay calm when investing and not act hastily, but on the other side, the fact that the investors stay calm when markets goes badly, could also be a sign that they do not want to take on losses. The fact that 50% answered that they stay calm I find as a strong evidence that supports the prospect theory that realizing a loss is felt much stronger than realizing a gain.

From a traditional finance point of view, then if the private investors are following at top-down process when investing their money, they want to keep a certain asset allocation through the investment period. If you want to keep a certain asset allocation, you have to buy what decreases and to sell what increases, in order keep the same relationship between the assets. From this perspective, the answer "staying calm" is a sign of the investors not controlling their asset allocation; while the answer "I buy those assets that have fallen…" sounds more correct. At the same time this answer sounds at bit speculative, because of the last few words "…expect them to increase". If you rebalance your portfolio by buying what has fallen, the aim is to keep the same risk and not a speculative trade.

Looking deeper into the data, dividing it into gender, age and geography, it becomes interesting to see if there are differences among the investors when looking at how they act in bad markets. Looking at the overall geography (table 10) and gender (table 11), the result is almost the same,

except from the fact that Fyn and Bornholm have slightly fewer investors and fewer investors answered "I stay calm…" and slightly more female investors than male investors answered "I stay calm…" From a traditional finance perspective you would also expect, that there are no (big) differences when looking at gender and geography. That means, when looking at the overall gender and geography, then the question about bad markets is not what makes the private investors heterogeneous.

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Sjælland	All investors	54,9%	1,3%	1,2%	7,5%	35,1%
Jylland	All investors	54,3%	1,5%	1,0%	7,8%	35,4%
Fyn and Bornholm	All investors	51,9%	1,3%	1,1%	7,5%	38,1%

Table 10 - Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you do when markets goes badly?" It shows the answers when looking at geography.

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Denmark	Male	52,5%	1,5%	1,1%	7,7%	37,2%
Denmark	Female	54,1%	1,5%	1,1%	7,6%	35,7%

Table 11 - Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you do when markets goes badly?" It shows the answers when looking at gender.

Looking deeper into the data, I find the following result interesting (full list of results with all groups is in appendix 6):

From table 12 it seems that the older the private investors get, the calmer they are in their reaction to bad markets. At the same time it seems that there are more old investors who are investing or that a bigger percentage of the old investors are aware of what they are doing.

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Denmark	60+	61,9%	1,7%	1,2%	7,3%	27,9%
Denmark	50-60	56,1%	1,3%	1,0%	7,0%	34,5%
Denmark	40-50	50,0%	1,4%	0,7%	8,0%	39,9%
Denmark	30-40	43,0%	1,0%	1,2%	9,2%	45,6%
Denmark	20-30	37,8%	1,6%	2,0%	7,1%	51,6%
Denmark	0-20	30,9%	5,5%	2,7%	8,2%	52,7%

Table 12 - Shows how the participants in the Nykredit survey "Når du investerer" answered the question "What do you do when markets goes badly?" It shows the answers when looking at the overall age groups.

The fact that the older the private investors get, the calmer they are, could relate to the overconfidence bias. As the private investors get older, they learn through their experiences, and the fact that they stay calm reflect that they know what they can and what they cannot, while the younger private investors still have strong believe in their own skills. As mentioned above, the fact that people stay calm is not necessarily a good thing when you look at the asset allocation. Looking outside of finance, I also find that the older people get, the less likely they are to be injured or killed in road traffic accidents. This could be explained by the fact that they might not be that much out in the traffic. Another explanation is the fact that they have learned through feedback. The old investors had many years to learn their own limits while the younger people still have a strong belief in their own skills, not knowing their limits. Even though the number of persons that are involved in road traffic accidents are much less than those who invest and take on risk, then it indicates that there could be coincidence to behavior outside of finance, which also supports what Christian Knudsen has found: "*Overconfidence may explain why individuals undertake high risks – not only in finance – but also regarding life and health" (*Knudsen, 2011; 50 – own translation)

Summary

Looking at the question "what do you do when markets go badly", I find that there are no big differences when looking at gender and geography. Looking at the age groups, there is some interesting findings, because it seems, that the older the private investors gets, the more calm they are when facing bad markets. This may reflect that the older investors are less overconfident than the younger investors which also show outside of finance in road traffic accidents.

5.2. Risk perspective – allocation at the beginning of the period.

5.2.1. Allocation between stocks and bonds February 2009

Looking at the risk the private investors are taking, the focus is on the relationship between stocks and bonds (allocation from mutual funds included). From a theoretical financial point of view, then you should take on more risk, by having more stocks, the longer the horizon you have. In the context of this thesis, then the age is a measure of how much risk you should take. The younger the investors are the more stocks you would expect them to have. You would then, from a theoretical financial point of view, expect to see differences between the ages groups while there should be no differences looking at geography or gender. But looking at expected utility theory then there could be differences among the investors according to their risk aversion. Also from at behavioral finance point of view, you would expect differences as it has been shown that male investors take on more risk than female investors. But still there is nothing that tells me to expect differences when looking at geography.

Looking at end of February 2009, the private investor's market value between stocks and bonds is as the following when looking at age groups (full list in appendix 7:

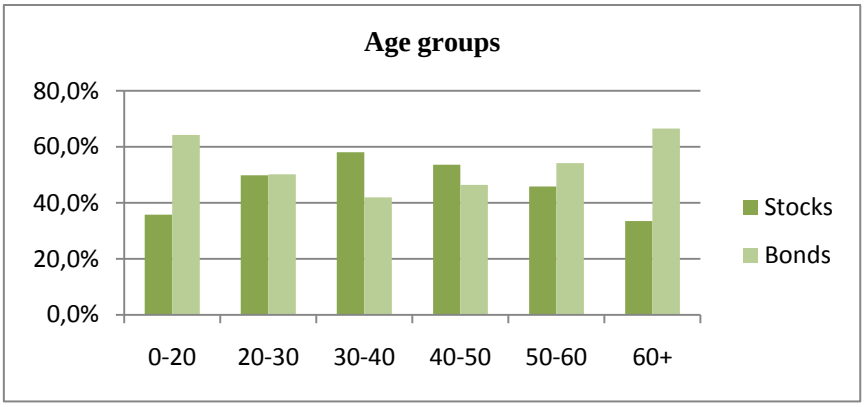

Figure 6 – Shows the total allocation between stocks and bonds as of end February 2009 measured by the market values, divided into age groups. Investment funds are also included by stocks and bonds. Mixed funds are included by 62 % in bonds and 38% in stocks.

As expected, there are differences among the age groups, which rationally can be explained by the horizon. Looking across the age groups, it seems that the youngest investors have the same amount of stocks as the oldest investors. According to portfolio theory the younger investors should have more stocks than the older investors, because they have much longer time until they

retire. The rational explanation of why they do not could be that the younger group has more than one big horizon. Not everyone is saving for pension and perhaps some of the youngest investors are saving for their first apartment or payment on a car, while those who are elderly and established are saving for pension. From a behavioral finance point of view, then it seems that the older the private investors get, the less overconfident they are, shown by the amount of risk they take.

Looking at the overall allocation for male and female investors in figure 7 and 8, it seems that men in general are more risk seeking than women when looking at their allocation to stocks. Michael A. Platt and Scott A. Huettel write that male investors in general are more risk seeking than female investors, which this result supports. The male investors have 9% more invested in stocks than female investors. Brad M. Barber and Terrance Odean found in a study, that *"that women tend to hold less risky positions than men within their common stock portfolios" (*Barber & Odean, 2001; 281) which this result supports.

Figure 7 and 8 – Shows the total allocation between stocks and bonds as of end February 2009 measured by the market values, divided into gender. Investment funds are also included by stocks and bonds. Mixed funds are included by 62 % in bonds and 38% in stocks.

Combining gender and geography in table 13, the differences are bigger among the female investors than among the male investors. When looking at education level, then there are also bigger differences between the female investors than between the male investors. Looking at long term education there is a difference between the female investors on almost 10% while between the male the difference is only 3%. 10% more female investors on Sjælland has a long term education than those on Fyn and Bornholm, which might cause that the female investors on Sjælland believe that they have expertise due to their knowledge and thus makes them more overconfident and then take on more risk.

In general, the private investors on Sjælland take on more risk than average when looking at both male and female investors. It is interesting that the private investors on Sjælland take on more risk than the rest of Denmark because there is no immediate reason why the private investors on Sjælland should be more risk seeking than the rest of Denmark. One explanation could be that Sjælland has more educated people, and more educated people are more overconfident. They believe they have expertise.

Location	Who	Stocks	Bonds
Fyn and Bornholm	female	29,1%	70,9%
Jylland	female	32,1%	67,9%
Sjælland	female	35,4%	64,6%
Fyn and Bornholm	male	39,9%	60,1%
Jylland	Male	42,5%	57,5%
Sjælland	Male	43,3%	56,7%

Table 13 - Shows the total allocation between stocks and bonds as of end February 2009 measured by the market values, when combining gender and geography. Investment funds are also included by stocks and bonds. Mixed funds are included by 62 % in bonds and 38% in stocks.

As table 14 below shows, then according to the Nykredit survey more people on Sjælland has a long term education than the rest of Denmark. At the same time, Sjælland has the capital city which has a lot of high payed job (table 15), with the employees living on Sjælland. Maybe the investors with high income also are more overconfident and thus take on more risk.

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Sjælland	All investors	9,8%	17,8%	14,3%	39,0%	16,9%	2,1%
Jylland	All investors	13,5%	22,4%	16,6%	35,3%	10,2%	1,9%
Fyn and Bornholm	All investors	13,5%	20,1%	15,1%	38,1%	9,9%	3,3%

Table 14 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the overall answers when looking at geography.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Sjælland	All investors	19,6%	36,7%	27,0%	6,5%	10,2%
Jylland	All investors	24,0%	39,3%	23,0%	2,6%	11,2%
Fyn and Bornholm	All investors	25,3%	41,8%	20,8%	2,6%	9,6%

Table 15 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the overall answers when looking at geography.

Looking at gender and age groups in table 16, you would expect to see differences among the age groups due to the horizon, but not among gender within the age groups from a traditional finance point of view. From the results above and from what has previously been documented within behavioral finance, then I would expect differences within the age group between genders. As the table below shows, then there are big differences among the male and female investors within the age groups. The male investors between 30 and 40 have the overall highest risk profile when looking at the allocation to stocks. There is actually a difference on 20% between the male and female investors in the group from 30-40 years of age. Looking at the younger group from 20-30 years of age, there is also a big difference between the male and female investors at 16%. It is interesting that the biggest differences within the age groups between genders are in the youngest age groups. This can be explained by the overconfidence. It seems that in general male investors are more overconfident than female investors and that it is most visible among the younger investors. Because the younger male investors are more risk seeking than the younger female investors, this indicates that younger male investors are those who are most overconfident.

Location	Who	Stocks	Bonds
Denmark	male 30-40	71,1%	28,9%
Denmark	male 20-30	56,4%	43,6%
Denmark	male 40-50	56,2%	43,8%
Denmark	female 30-40	51,1%	48,9%
Denmark	female 40-50	49,0%	51,0%
Denmark	male 50-60	48,9%	51,1%
Denmark	female 50-60	40,9%	59,1%
Denmark	female 20-30	40,4%	59,6%
Denmark	male 60+	38,1%	61,9%
Denmark	male 0-20	36,5%	63,5%
Denmark	female 0-20	35,5%	64,5%
Denmark	female 60+	29,5%	70,5%

Table 16 - Shows the total allocation between stocks and bonds as of end February 2009 measured by the market values, when combining gender and age. Investment funds are also included by stocks and bonds. Mixed funds are included by 62 % in bonds and 38% in stocks.

Table 16 above is the overall picture of gender and age in Denmark and you would expect the picture to be the same when combining the above with geography (table 17), since there is no rational explanation that there should be differences across Denmark. Looking at the group that had the highest amount of stocks when divided into gender and age, I find that the male investors on Fyn and Bornholm in the group from 30-40 years of age have less stocks than the average male investors in that group. When looking at geography in general, I found that the male investors on Fyn and Bornholm had around 4 % fewer stocks than Sjælland, but within the age group from 30-40, the difference is almost 7,5%. This might indicates that the younger male investors on Fyn and Bornholm are less overconfident than especially the male investors on Sjælland.

Location	Who	Stocks	Bonds
Sjælland	male 30-40	64,0%	36,0%
Jylland	male 30-40	61,6%	38,4%
Fyn and Bornholm	male 30-40	57,4%	42,6%

Table 17 – Shows the total allocation between stocks and bonds as of end February 2009 measured by the market values, when combining male investors, geography and age groups 30-40. Investment funds are also included by stocks and bonds. Mixed funds are included by 62 % in bonds and 38% in stocks.

From the Nykredit survey I have information on education in table 18. Between male investors in the group from 30-40 years of age, the male investors on Fyn are the group with fewest people with a long term education and most with a vocational education while those on Sjælland are

those with the largest group with long term education. When looking at overconfidence then when believing you have expertise, you may become more overconfident. I find that those with high education have stronger believes in their own skills, making them more overconfident. This supports the study made by Mark Grinblatt, Matti Keloharju and Juhani Linnaimaa (Grinblatt, 2011) that those with high IQ are more overconfident since I find education level may serve as proxy of IQ.

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Sjælland	Male 30-40	7,1%	17,9%	22,0%	33,9%	16,7%	2,4%
Jylland	Male 30-40	6,8%	22,4%	19,6%	38,4%	11,4%	1,4%
Fyn and Bornholm	Male 30-40	7,1%	26,2%	21,4%	33,3%	7,1%	4,8%

Table 18 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers when combining male investors, geography and age group 30-40.

Summary

When looking at the allocation to stocks and bonds, I find that there are differences between the age groups as I expected, which I find can be explained by horizon. I also found, that the male investors have more stocks than the female investors, which indicate that the male investors are more risk seeking than female investors. It also supports that male investors are more overconfident than female investors, as found by Brad M. Barber and Terrance Odean. When looking at gender across Denmark, I find that there are bigger differences between the female investors than the male investors, which I find can be explained by education, as more female investors on Sjælland has a long term education and thus more prone to being overconfident. In general when looking at gender across Denmark, I find that the private investors on Sjælland take on more risk than the rest of Denmark. This can be explained by educational level and income, as I believe that higher income and higher education makes people have more believes in themselves, which causes overconfidence, as shown by Mark Grinblatt, Matti Keloharju and Juhani Linnaimaa's (Grinblatt, 2011) study on IQ.

I find that the male investors from 30-40 years of age, has 20% more stocks than the female investors in the same group, and that it is the group with the overall highest allocation to stocks. The male investors of 20-30 years of age have 16% more stocks than the female investors in the

same age group. These two findings do indeed indicate that younger male investors are more overconfident. Looking at the group with the highest allocation to stocks, I find that there are differences across Denmark. The male investors between 30-40 years of age on Sjælland have more stocks than average, which again supports that investors on Sjælland are more overconfident than the rest of Denmark.

5.2.2 Individual papers and mutual funds February 2009

Investing in individual papers such as bonds or stocks, can be seen as a sign of overconfidence, "I invest my own money, because I can do better or as good as the professionals" while investing in mutual funds can be seen as being less overconfident or maybe a more realistic investor, who believe that others has expertise.

Looking at the allocation between stocks, bonds and mutual funds in Denmark as of February 2009 in figure 9, there is an overweight of individual papers in the portfolios, with only 45% is invested in mutual funds (full list in appendix 8). I find it interesting to investigate if the same allocation holds when looking at gender, age and geography.

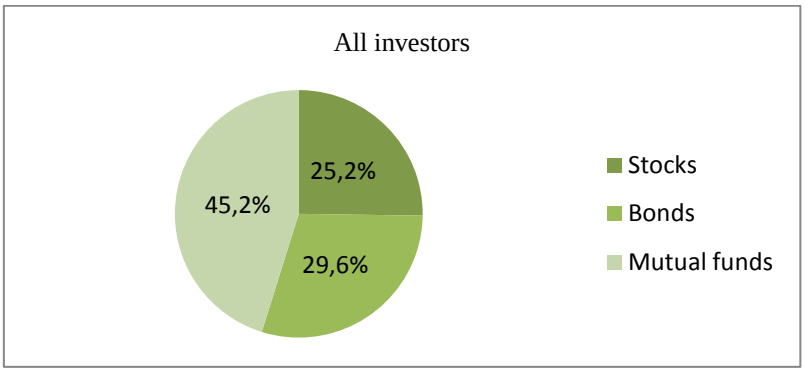

Figure 9 – Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the overall result in Denmark.

In general, private investors at Sjælland have more stocks than bonds than the average private investor in Denmark and they also have more invested in individual papers than they do in mutual funds (table 19). It seems that those who has the most invested in stocks, also is those who has most invested in individual papers. As shown in the table below, then the private investors on Fyn and Bornholm have 51,2 % invested into mutual fund, which is slightly more than those in Jylland with 49,9 % invested in mutual funds and it is significant more than the investors on Sjælland who has only 40,8% invested in mutual funds. This indicates, as found when looking at

stocks and bonds, than the private investors on Fyn and Bornholm are less overconfident than especially private investors at Sjælland. The result may be explained by education level, as the private investors on Sjælland have the highest educational level and the highest income, which I believe pushes to people being overconfident.

Location	Who	Stocks	Bonds	Mutual funds
Fyn and Bornholm	All	20,5%	28,3%	51,2%
Jylland	All	23,1%	27,0%	49,9%
Sjælland	All	27,6%	31,6%	40,8%

Table 19- Shows the allocation between individual papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the overall results by geography.

When looking at differences between the male and female investor regarding individual papers vs. mutual funds, then for my results to be consistent, showing that male investors are more overconfident than female investors, then I should see the male investor have more individual papers than the female investors. As figure 10 and 11 below clearly illustrates, then the male investors have more individual papers than female investors.

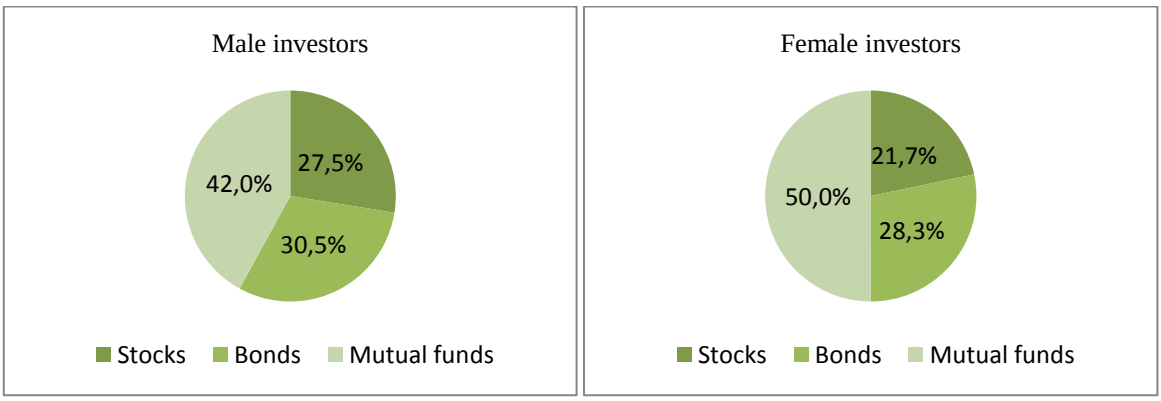

Figure 10 and 11 – Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the overall result when looking at gender.

Looking at both income (table 20) and education level (table 21), I do not find anything that could explain this difference, but the result indicates that the male investors are more overconfident than the female investors, believing in their own skills.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Denmark	Female	22,2%	38,3%	23,7%	4,7%	11,1%
Denmark	Male	22,8%	38,4%	24,1%	3,7%	10,9%

Table 20 – An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the overall answers when looking at gender.

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Denmark	Female	11,9%	19,7%	14,8%	37,1%	14,1%	2,3%
Denmark	Male	13,1%	20,4%	15,7%	36,9%	11,5%	2,4%

Table 21 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers when looking at gender.

When combining geography and gender in table 22 I find the overall geographical result also holds when looking at gender. Both male and female investors on Sjælland have more individual papers than male and female investors in the rest of Denmark. I also find that female investors on Sjælland have more individual papers than male investors on Fyn and Bornholm. It is interesting that geography in such a small country as Denmark shows these differences among the private investors.

Location	Who	Stocks	Bonds	Mutual funds
Fyn and Bornholm	Female	15,1%	26,0%	58,9%
Jylland	Female	18,6%	25,6%	55,9%
Fyn and Bornholm	Male	23,6%	29,7%	46,7%
Sjælland	Female	24,6%	30,3%	45,1%
Jylland	Male	25,6%	27,9%	46,5%
Sjælland	Male	29,8%	32,6%	37,6%

Table 22 - Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the results when combining gender and geography.

Looking at the educational level from the Nykredit survey in table 23, I find that the female investors on Sjælland have a higher educational level than the male investors on Fyn and Bornholm. This could cause the female investors on Sjælland to be more overconfident and thus hold more individual papers than the male investors on Fyn and Bornholm:

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Sjælland	Female	9,4%	17,2%	13,6%	38,7%	18,7%	2,3%
Fyn and Bornholm	Male	11,2%	18,9%	17,2%	35,4%	12,6%	4,6%

Table 23 – An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers when looking at female investors on Sjælland and male investors on Fyn and Bornholm.

Also when looking at the income in table 24, I find that female investors from Sjælland have higher income levels, which also can indicate that they are willing to take on more risk which is shown by the bigger allocation to individual papers.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Sjælland	Female	19,4%	36,6%	26,6%	7,1%	10,3%
Fyn and Bornholm	Male	26,3%	42,8%	18,9%	2,8%	9,1%

Table 24 – An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the answers when looking at female investors on Sjælland and male investors on Fyn and Bornholm.

It seems that education and income level between the female investors on Sjælland are stronger that the general overconfidence level between male investors on Fyn and Bornholm.

Looking at the overall age groups in table 25, the picture seems a lot like when looking at risk. The investors from 30-40 years of age who is taking on most risk is also the group that has the most individual papers. They have 62,6 % invested in individual papers and only 37,4% invested in mutual funds, which is a clear indication of overconfidence. This supports what Hersh Shefrin found *"…that people in this age group systematically think that they are less likely to experience bad outcomes, and more likely to experience good outcomes…I have found that the same phenomenon holds true for people between the ages of 25 and 45…"(*Shefrin, 2002; 132).

Location	Who	Stocks	Bonds	Mutual funds
Denmark	0-20	20,9%	20,8%	58,3%
Denmark	60+	22,0%	32,3%	45,7%
Denmark	50-60	27,4%	26,9%	45,7%
Denmark	20-30	36,3%	20,4%	43,2%
Denmark	40-50	34,4%	23,8%	41,8%
Denmark	30-40	41,5%	21,2%	37,4%

Table 25 – Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the results when looking at the age groups.

Combining both gender, age and geography in table 26, I find that the most overconfident group, as measured by having most individual papers, is the male investor on Sjælland between 20-30 years of age while the least overconfident group is the female investors on Fyn and Bornholm between 50-60 years of age.

Location	Who	Stocks	Bonds	Mutual funds
Sjælland	male 20-30	47,6%	20,5%	31,9%
Fyn and Bornholm	female 50-60	17,8%	21,9%	60,2%

Table 26 – Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the result when looking at male investors between 20-30 on Sjælland and female investors between 50-60 on Fyn and Bornholm.

It is interesting that the male investors on Sjælland between 20 and 30 years old are the group with the most individual papers, since when looking at the overall age groups it is the 30-40 year olds that have the most individual papers. Looking at education level in table 27, the male investors on Sjælland between 30 and 40 years of age are more educated than the group from 20 to 30 years of age:

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Sjælland	Male 20-30	13,8%	13,8%	20,7%	37,9%	10,3%	3,4%
Sjælland	Male 30-40	7,1%	17,9%	22,0%	33,9%	16,7%	2,4%

Table 27 – An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers when looking at male investors between 20-30 and between 30-40 on Sjælland.

It seems then that it is not education that explains why the male investors between 20-30 years of age are the most overconfident, believing in their own skills and want to invest by themselves.

That it is the male investors between 20 and 30 years of age that seem to be most overconfident also shows in a totally different context outside of finance when looking at traffic road accidents. It shows, that 18,7% of the injured and killed in road traffic accidents in the years from 1998 to 2010 were younger males (18-24 years). While 18,7% may not be an overwhelming percentage, looking at the age groups, 18-24 years is the smallest and yet they account for almost 20% of the injured and killed. This could be an indication of the younger males in the traffic being more overconfident having great beliefs in their own skills, which in finance shows when they are buying more individual papers than mutual funds. *"In fact, excessive optimism is a well-studied phenomenon, especially among people in their teens and early twenties."* (Shefrin, 2002; 132). I find it interesting that this indicates that the overconfidence the private investors shows outside of finance may indicate how they act inside of finance.

Below in table 28 I have two interesting findings when combining gender, age and geography. First, the male investors in the age group from 20-30 on Fyn and Bornholm have less individual papers than the female investors in the same age group from Sjælland. I have previously found that the private investors on Sjælland are more overconfident that the private investors on Fyn and Bornholm and that female investors on Sjælland has more individual papers than male investors on Fyn and Bornholm, but I have also found that the especially between the youngest investors then male investors are more overconfident that female investors. Second, I find that the male investors on Fyn and Bornholm in the age group from 50-60 have more individual papers than both the female investors between 20-30 years of age from Sjælland and the male investors between 20-30 years of age from Fyn and Bornholm. This is interesting from more than one perspective. First I have previously shown that male investors are more overconfident than female and that especially younger male investors are the most overconfident. Second I find that it is the younger private investors who have more individual papers than mutual funds.

Location	Who	Stocks	Bonds	Mutual funds
Fyn and Bornholm	male 50-60	25,1%	26,1%	48,8%
Sjælland	female 20-30	28,5%	22,5%	48,9%
Fyn and Bornholm	male 20-30	33,6%	16,2%	50,2%

Table 28 – Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values. Shows the results when looking at male investors between 50-60 on Fyn and Bornholm, female investors between 20-30 on Sjælland and male investors between 20-30 on Fyn and Bornholm.

Summary

When looking at who chooses individual papers and who chooses mutual funds, I find that there are big geographical differences. The private investors on Sjælland have 10% more individual papers than the investors on Fyn and Bornholm, which may be explained by overconfidence due to education and income. As with risk, I also find that male investors are more overconfident having more individual papers than the female investors when looking at gender overall. The choice between individual papers and mutual funds also supports that the female investors on Sjælland are more overconfident than the male investors on Fyn and Bornholm as the female investors on Sjælland has more individual papers than the male investors on Fyn and Bornholm. As I found with risk, the age group from 30-40 are the most overconfident, but I find that the group who overall has most individual papers is the male investors from 20-30 years of age. This may be explained by general overconfidence in this age group by looking at road traffic accidents. I also find that and that the male investors from 50-60 years of age on Fyn and Bornholm has more individual papers tan the female investors between 20-30 years of age on Sjælland.

5.3. Investor behavior during the three year period

In this chapter I will use regressions to analyze the data from VP securities, statistics Denmark and Macrobond in order to see if there are any explanations, rational or irrational, on how the private investors behave when they are buying and selling stocks.

5.3.1. What explains what have been bought and sold

I started looking at what has been bought and sold among stocks, bonds and mutual funds as a total, not looking at gender in table 29. Looking at the overall buying and selling of stocks, bonds and mutual funds, it seems that it is only the mutual funds that can be explained by the independent variables. It seems that the net purchase of mutual funds is positive correlated to all three variables. That means when the 10 years bond or the consumer confidence indicator increases or the changes in the OMX C20 increases then the net purchase of mutual funds is increasing. This also makes sense, since the independent variables is positively correlated.

	Independent variable - consumer confidence indicator			
Dependent variable	t-value	Coeff	p-value	R^2
Bonds total	0,52	33,2	60,6%	0,8%
Stocks total	-1,62	-57,5	10,5%	7,2%
Mutual funds total	3,48	135,9	0,1%	26,2%
	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
Bonds total	0,59	2.813,3	55,8%	1,0%
Stocks total	-1,90	-4.978,6	5,7%	9,6%
Mutual funds total	2,01	6.447,3	4,5%	10,6%
	Independent variable - 10 year bond			
Dependent variable	t-value	Coeff	p-value	R^2
Bonds total	1,39	4.394,0	16,5%	5,4%
Stocks total	-0,86	-1.580,4	38,9%	2,1%
Mutual funds total	2,35	5.001,5	1,9%	14,0%

Table 29 – Single linear regressions made on data from February 2009 to January 2012.
First are the consumer confidence indicator the independent variable measured by the level and bonds, stocks and mutual funds are the dependent variables measured by the monthly net purchase I DKK.
Next are the OMX C20 level changes the independent variable measured by the monthly changes in the level and bonds, stocks and mutual funds are the dependent variables measured by the monthly net purchase I DKK.
Last are the 10 year central-government bonds the independent variable measured by monthly changes in the rate with bonds, stocks and mutual funds are the dependent variables measured by the monthly net purchase I DKK.

When focusing on the independent variable OMX C20 index, then the investors is positive correlated with changes in the OMX C20 index, which means, that they are buying mutual funds when the OMX C20 index increases. Looking at what behavior this reflects then when everything is going up, then the mutual funds show good performance and then the private investors buy mutual funds. This indicates that those private investors who are buying mutual funds are biased by representativeness as they are following a trend *"Psychologists have found that, when judging possible future outcomes, individuals tend to look back at what happened in a few similar situations."*(Brealey, Myers & Allen, 2008; 371). If the private investors who buy stocks in mutual funds are affected by representativeness, then they look at how the mutual funds have performed recently and then they decide to buy. *"The investor may not stop to reflect on how little one can learn about expected returns from three years experience" (*Brealey, Myers & Allen, 2008; 371). It seems that the investors who are buying stocks in mutual funds are followers. According to Richard R. Thaler and Cass R. Sunstein (Thaler & Sunstein, 2008) then they are not acting like "Econs", which are the rational investors. When buying mutual funds today, you get a lot of information, and one of the newest initiatives is the Key Investor Information Document. This document contains information about the fund, and it also has the following statement: *"historical performance is not a guarantee for future performance"* (ifr.dk, 2011). This actually tells the investors not to be followers. The effect that the investors is buying

when the market the market goes up and selling when the market is going down is also referred to as “house money effect”. They are affect by the “house money effect” when the market goes up, as they buy stocks and by the “snake bit effect” when the market goes down, as they sell their stocks.

From the above simple linear regressions in table 29, I find that the OMX C20 does not explain individual stocks when looking at the total. Then I made regressions when looking at male and female investor’s net purchase of stocks, bonds, stock funds, bond funds and mixed funds (full list in appendix 9). When making these more detailed regressions, I find some interesting, but also surprising, results. I find that the OMX C20 index and male investors net purchases of individual stocks are negative correlated. Looking deeper into the data of what has been bought and sold, my focus has been on stocks as the dependent variable, both looking at individual stocks and stock funds, with changes in the OMX C20 as the independent variable.

When focusing on stocks and stocks in mutual funds, I find that both male and female investors net purchase of stocks in mutual funds are positively correlated to changes in the OMX C20 index as found when looking at mutual funds overall. But when looking at individual stocks in table 30, it seems that it is only the male investors who are affected by changes in the OMX C20 index.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
female total stocks	-0,99	-746,5	32,1%	2,8%
female total stock fund	3,43	3.782,5	0,1%	25,7%
male total stocks	-2,20	-4.223,6	2,8%	12,5%
male total stock fund	3,79	5.493,0	0,0%	29,7%

Table 30 - Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and male and female investors net purchase of individual stocks and stocks in mutual funds are the dependent variables measured by the monthly net purchase I DKK

Those male investors who buy individual stocks are negatively correlated with the changes in the OMX C20 index, which means, that when the OMX C20 index increases, they are selling their stocks. At first, this seems to be rational if they are rebalancing their portfolios, buying what has fallen and selling what has increased. Looking at what I have found when looking at individual papers vs. mutual funds, then it seems that it is those investors who are most overconfident that

tend to hold individual papers. With this in mind, the negative correlation between individual stocks and the OMX C20 index could also be explained from a behavioral finance point of view when looking at prospect theory. Even though prospect theory is a static model, it seems that the investors are risk averse over their gains and risk seeking over looses, as they buy when the stocks market decreases. If those investors also are overconfident, they boost their self-esteem when realizing (small) gains. The above does to some extend support what John. R. Nofsinger found in his study in 2000. John R. Nofsinger finds that private investors sell on good news but not on bad news (Nofsinger, 2000), which is known as the "disposition effect". Looking at what I have found, then some of the investors are selling when stocks markets goes up, which I find equal to good news, but I do not find that the same investors are not selling when the stock market goes down. The difference may appear due to differences in how the analysis is made and the details include in the analysis. Terrance Odean finds that overconfident investors *"sell securities that have, on average, risen rapidly in recent weeks. And they sell far more previous winners than losers" (*Odean, 1999; 1296) which supports my findings.

When looking at the female investor's net purchase of individual stocks, I do not find this behavior. It is interesting, that the private male investor net purchase of stocks is affected by the changes in the OMX C20 index and that there are differences between the male investors that buy individual stocks and those who buy stocks in mutual funds. While male investors that are buying individual stocks are either acting rationally or being overconfident, I cannot tell anything about the female investors who are buying individual stocks.

Next I have looked at whether there are differences when looking at geography in table 31. When looking at the male investors net purchase of individual stocks, I find that there are differences when splitting up into geography.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
male stocks Sjælland	-1,48	-1.507,8	13,9%	6,1%
male stocks Jylland	-2,97	-2.377,7	0,3%	20,6%
male stocks Fyn and Bornholm	-2,16	-338,1	3,1%	12,0%

Table 31 - Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and male investors net purchase of individual stocks divided into geography are the dependent variables measured by the monthly net purchase I DKK

I find that the OMX C20 index does not explain the net purchase of individual stocks of the male investors on Sjælland, while the male investors in Jylland are those who are most affected by the changes. Looking at this together with what I found when looking at allocation in the beginning of the period, it could indicate that those who are less overconfident actually acts more rational. It is interesting to see these differences across Denmark. When looking at the female investor's net purchase of individual stocks across Denmark in table 32, I still find that changes in the OMX C20 do not explain what happens with the net purchase.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
female stocks Sjælland	-0,70	-341,0	48,3%	1,4%
female stocks Jylland	-1,47	-375,7	14,1%	6,0%
female stocks Fyn and Bornholm	-0,56	-29,8	57,4%	0,9%

Table 32 – Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and female investors net purchase of individual stocks divided by geography are the dependent variables measured by the monthly net purchase I DKK

When looking at both male and female investors net purchase of stocks in mutual funds in table 33, I find that both male and female investors net purchase is explained very well by changes in the OMX C20 index when looking at both the t-value and the R^2 values. This indicates, that geography does not make a difference in who is buying stock in mutual funds

	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
female stock fund Sjælland	3,41	2.103,8	0,1%	25,5%
female stock fund Jylland	3,51	1.303,9	0,0%	26,6%
female stock fund Fyn and Bornholm	3,02	374,7	0,3%	21,2%
male stock fund Sjælland	3,58	2.488,0	0,0%	27,4%
male stock fund Jylland	3,96	2.502,7	0,0%	31,5%
male stock fund Fyn and Bornholm	3,26	502,4	0,1%	23,8%

Table 33 - Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and male and female investors net purchase of stocks in mutual funds divided by geography are the dependent variables measured by the monthly net purchase I DKK

At last I have looked at the age group, to see if I find any differences. Looking at the age groups among the male investors in table 34, I find some interesting things. I find that the net purchase by male investors between 30 and 40 years of age and between 40 and 50 years of age are very

well explained by changes in the OMX C20 when looking at t-values and R^2. It is also interesting that the oldest age group above 60 between the male investors is not affected by changes in the OMX C20. Based on what I have previously found in relation to overconfidence, it could indicate that those male investors who are negatively correlated with the OMX C20 index are not acting rationally, but are affected by their overconfidence, and selling and buying too much. The table below shows the differences when looking at the male age groups. It seems that those who are more affected by the OMX C20 index when looking at net purchase of stocks is those between 30-40 years of age and 40-50 years of age. The changes in the OMX C20 explain 40% of the net purchase in these two groups.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	coeff	p-value	R^2
male stocks 0-20	-3,91	-56,1	0,0%	31,0%
male stocks 20-30	-1,12	-101,2	26,4%	3,5%
male stocks 30-40	-4,79	-632,5	0,0%	40,3%
male stocks 40-50	-4,86	-1.510,7	0,0%	41,0%
male stocks 50-60	-2,71	-1.241,2	0,7%	17,8%
male stocks 60+	-0,63	-712,0	53,0%	1,1%

Table 34 - Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and male investors net purchase of individual stocks divided by age groups are the dependent variables measured by the monthly net purchase I DKK

When looking at the female investors in the same age groups in table 35, I also find something interesting. So far, changes in the OMX C20 index have not explained anything regarding the female investors buying and selling of individual stocks, but when looking at the age groups, I find that changes in the OMX C20 index actually explains the net purchase done by female investors between 30 and 40 years of age and between 40 and 50 years of age. These are the same two groups that were most affected between the male investors.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	coeff	p-value	R^2
female stocks 0-20	-3,71	-46,4	0,0%	28,8%
female stocks 20-30	-1,19	-18,2	23,3%	4,0%
female stocks 30-40	-2,96	-156,6	0,3%	20,5%
female stocks 40-50	-2,03	-194,7	4,2%	10,8%
female stocks 50-60	-1,33	-195,3	18,3%	5,0%
female stocks 60+	-0,21	-113,7	83,6%	0,1%

Table 35 - Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and female investors net purchase of individual stocks divided by age groups are the dependent variables measured by the monthly net purchase I DKK

Looking at both male (table 36) and female (table 37) investors net purchase of stocks in mutual funds when splitting up into age groups, I find no big differences in how they are explained by changes in the OMX C20 index. Looking at who is most affected by the OMX C20 when buying stock funds, I find the old male investors. It is actually quite interesting, that the old male investors are more irrational. When looking at the oldest group among the male investors, the investors above 60, it seems that they are buying stock funds when the OMX C20 is increasing, while the OMX C20 does not tell anything about how they handle individual stocks.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
male stock fund 0-20	2,87	52,4	0,4%	19,4%
male stock fund 20-30	2,62	88,4	0,9%	16,8%
male stock fund 30-40	2,71	209,2	0,7%	17,8%
male stock fund 40-50	2,86	599,6	0,4%	19,4%
male stock fund 50-60	3,50	1.098,3	0,0%	26,4%
male stock fund 60+	3,84	3.445,1	0,0%	30,3%

Table 36 - Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and male investors net purchase of stocks in mutual funds divided into age groups are the dependent variables measured by the monthly net purchase I DKK

	Independent variable - OMX C20, changes			
Dependent variable	t-value	Coeff	p-value	R^2
female stock fund 0-20	2,79	36,8	0,5%	18,6%
female stock fund 20-30	3,10	41,0	0,2%	22,0%
female stock fund 30-40	3,71	208,3	0,0%	28,8%
female stock fund 40-50	3,38	240,1	0,1%	25,2%
female stock fund 50-60	3,70	584,3	0,0%	28,7%
female stock fund 60+	3,21	2.671,9	0,1%	23,3%

Table 37 – Single linear regressions made on data from February 2009 to January 2012.
OMX C20 level changes is the independent variable measured by the monthly changes in the level and female investors net purchase of stocks in mutual funds divided into age groups are the dependent variables measured by the monthly net purchase I DKK

When looking at what I found and combining this with my own experiences within the Danish banking sector the last four years, then especially mutual funds are affected by performance, which in this thesis is shown by positive correlation to the OMX C20 index when buying stocks in mutual funds. Also when looking at the negative correlation some investors have to the OMX C20 index when buying individual stocks, I find that they are not acting rational. My experience is that the private investors sell when they see a gain and that they take on more risk when the stocks market goes down, especially those who invest by themselves.

It seems that the male investors in general are more affected by changes in the OMX C20 index, both when buying individual stocks and stocks in mutual funds. Together with what I have previously found, it is to me an indication of the male investors not acting rational as what could be ones first impression, but more that they act based on their overconfidence, buying and selling when there are changes in the OMX C20 index. Nor are those who buy stocks in mutual funds acting rationally, as they are following a trend.

Put into a graph:

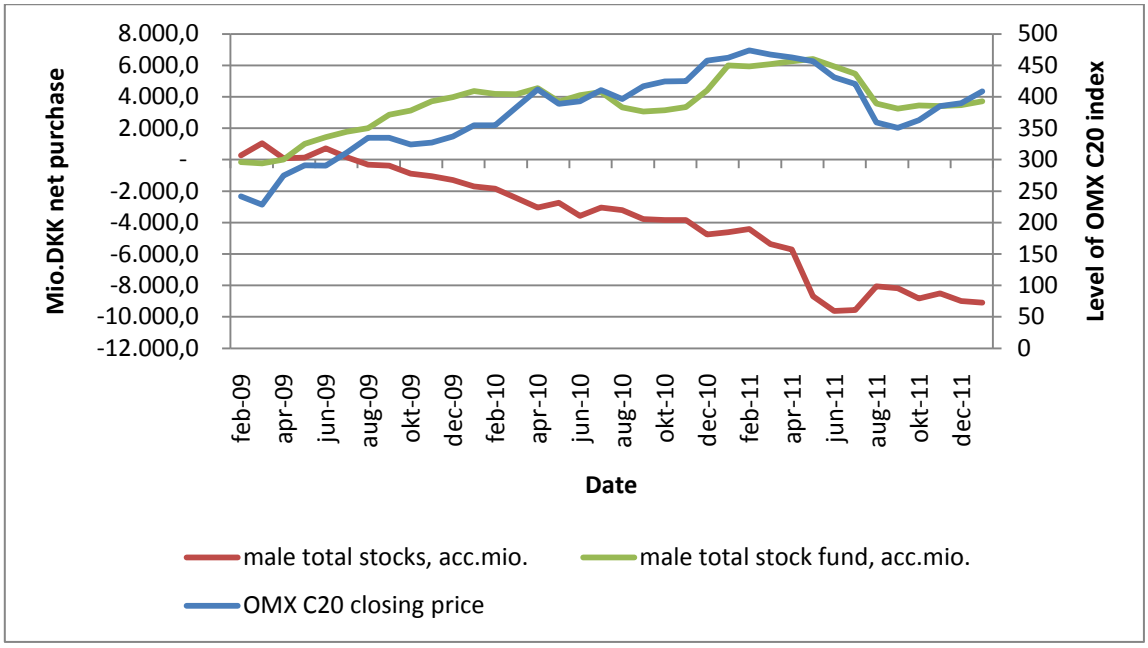

Figure 12 – Shows the level of the OMX C20 index and male investors accumulated net purchase of individual stocks and stocks in mutual funds in the period from February 2009 to January 2012.

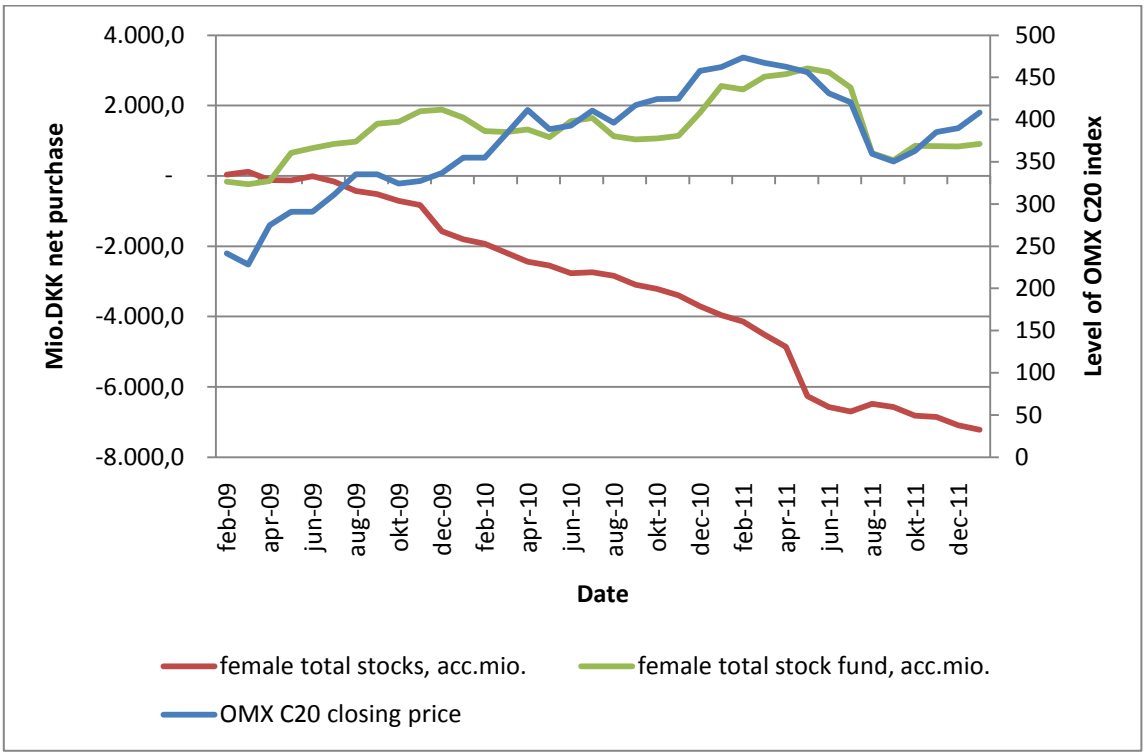

Figure 13 - Shows the level of the OMX C20 index and female investors accumulated net purchase of individual stocks and stocks in mutual funds in the period from February 2009 to January 2012.

As the graphs shows, then it seems that it is not the same investors that buy individual stocks and stocks in mutual funds.

In my analysis I have chosen not to focus so much on the youngest age group from 0-20, as I find that they are not investing by themselves or are affected much buy their parents due to their young age. Also this age group is very small in the data. I also find that there in general are very low p-values which may indicate that there could be difficulties with my results. The low p-values can be due to the number of observations I have, as I only have monthly data from a three year period. Despite this, then I find results that to some extend support findings made by other within the field of behavioral finance.

Even though I cannot separate single men and women, I find big differences when looking at gender.

Summary

When looking at differences in what the private investors are affected by when buying and selling assets, I find that especially the male investors, who are buying stocks and stocks in mutual funds, are affected by changes in the OMX C20 index. It seems, that those who are buying individual stocks are acting rationally, selling when the stocks market increases, while those who are buying mutual funds are followers, buying when the stock markets increases. Looking at geography, I find that there are differences among the male investors. It seems that the male investors in Jylland are more affected by OMX C20, being more irrational. Looking at the male investors on Sjælland I find that changes in OMX C20 index do not explain their net purchase of individual stocks. This may be explained by their higher level of education. Looking at age groups among the male investors, I find that those in the age groups 30-40 and 40-50 are those who are most affected by changes in the OMX C20 index.

Looking at the female investors, then when looking at stocks in mutual funds, then the picture is almost the same as with the male investors. But when looking at individual stocks, then I only find differences between the female investors when looking at age groups. As with the male investors, it is the age group from 30-40 and 40-50 that are affected by changes in the OMX C20 index when buying and selling individual stocks. In this chapter I will discuss my results from the analysis and the method that I have used.

CHAPTER 6: CONCLUSION

Through this thesis differences among the private Danish investors have been discovered looking at gender, age and geography. I find that there are several differences between the private Danish investors, but also that there is a variation in the differences.

Looking at the Nykredit survey and how the private investors think of the risk perspectives, I find differences in how the private investors perceive risk. I find that the oldest investors focus on deviations while the younger investors focus on loosing the investment. I also find that the older the private investors are, the calmer they are in relation to their investments, which supports that it is especially the younger investors who are overconfident.

Looking at how the private investors allocate between stocks and bonds and between individual papers and mutual funds, I find that male investors are more overconfident than female investors. This shows in the male investors having more stocks than female investors as well as having more individual papers than female investors. Looking at age I also find differences that support overconfidence, and that the younger investors takes on more risk than the older investors. I find differences across Denmark, as it seems that the private investors on Sjælland takes on more risk than the rest of Denmark, which may be explained by education and income. I also find that those who take on most risk are the younger male investors.

When buying and selling stocks, I find that especially the male investors are affected by changes in the OMX C20 index when buying and selling individual stocks and stocks in mutual funds. I find that the male investors in Jylland are more affected, which may be explained by a lower level of education. I also find that the OMX C20 index does not explain the purchase of individual stocks among the male investors on Sjælland, which also may be explained by education. Looking at the female investors, I find differences when looking at age groups, it seems that the only female investors that are correlated with the OMX C20 index are those in age group 30-40 and 40-50. Looking at the male investors, it is the same age groups from 30-40 and 40-50 that are most affected by changes in the OMX C20 index.

Overall the conclusion is that there are big differences among the private Danish investors and looking at them like one homogenous mass is misleading. There are big geographical differences, which shows in what kind of assets they are buying and how affected they are by changes in the

leading stock index in Denmark. Also between genders I find big differences, in particular are the male investors more overconfident.

When having the results found in this thesis, it would as a bank be interesting to look at how this can be used when giving advices to the customers.

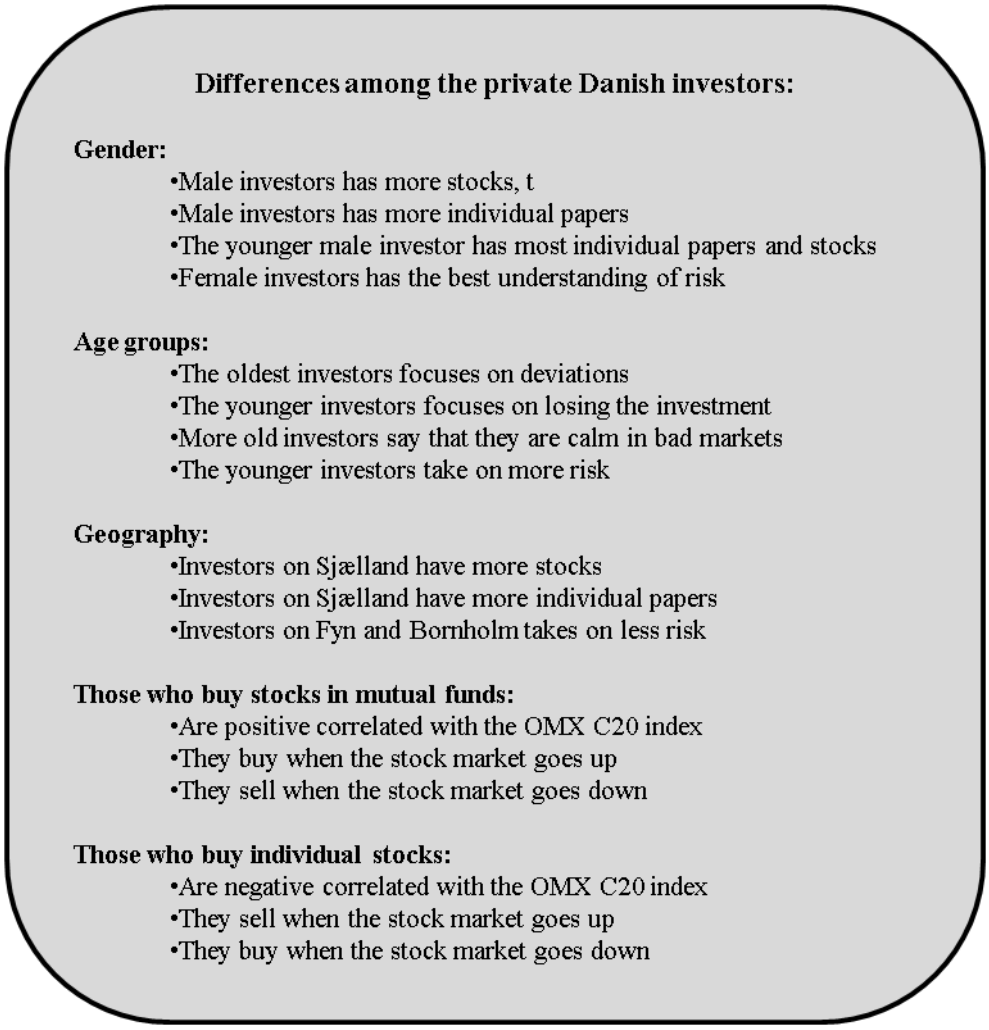

Figure 14 – The differences between private Danish investors I have found in when working with this thesis.

CHAPTER 7: PERSPECTIVES

With the result of this thesis, it would be interesting to look at how the Danish banking sector are doing today when finding the risk profiles of private investors and analyze that from a behavioral finance perspective. It is clear that there are some variations in how people perceive risk and it would be my hypothesis, that the banks today are using a very simple model when finding the risk profile. This could lead to unsatisfied customers and/or customers who take on more risk

than they actually intended to do. Together with the risk profile, it would also be interesting to take a closer look at the often used terms “low”, “medium” and “high” risk, which has shown to be very different in the Danish banking sector (ppp.dk, 2010). The differences among the banks and the fact that the private investors perceive risk differently, means that it is not enough to ask “what are your current risk profile”. Also it would be interesting to look at differences in trading activity among the private investors.

Combining information from this thesis with trading activity and how the banks do today when finding risk profiles, could be useful in developing a system that not only takes the investors risk profiles into consideration when offering products, but also looks at what type the investor is and how the investor should get feedback on the investments in order to be a satisfied customer. Looking forward and looking at how we all like to feel that we get something individual, banks that understand how to combine both behavior and theory could be the winners when private investors are entrusting someone else to help with or handle their investments.

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Appendix 1 – Questions from Nykredit survey "Når du investerer"

In the Nykredit survey the participants were asked to following 15 questions (own translation):

1. Which of the following types of savings/investments do you have?
   (Bank account, commodities, stocks, bonds, mutual funds, real estate, no savings, other)
2. What is the purpose of your savings/investments?
   (I have no savings/investments besides my mandatory pension, I saving extra for my pension, I am saving to bigger event such as birthday or travelling, I am saving because I fear unemployment, I have no particular purpose)
3. Where would you seek advice on your savings/investments?
   (my personal bank advisor, my pension or investment advisor, my accountant, my family / friends, company information such as annual reports, expert comments in the news, my own gut feeling)
4. What is the plan and goal with your savings/investments?
   (I have no savings / investment, I have no plan for my savings/investments, risk diversification through various types of investments, timetable for the different types of savings, a measure of the return on my savings/investment, a predefined strategy in relation to when to sell and buy
5. What expected return on your savings/investment would satisfy your expectations?
   (0-2%/2-4%/4-6%/6-8%/8-10%/more than 10% on average pro anno, do not know)
6. -12. How risky do you find the following investments?
   (very high, high, medium, low, very low, do not know)
   6. Bank accounts
   7. Commodities
   8. Stocks
   9. Bonds
   10. Mutual funds
   11. Real estate
   12. Currency
13. What do you understand by risk in relation to investments?
   (The probability of losing the entire investment, he probability of experiencing the loss of part of the investment, the probability of not achieving the expected return, the probability

that the value of the investment changes during the investment period, the likelihood that I could have gotten a higher return on another investment, other)

14. If you were to invest 100.000 DKK what would you prioritize the most?
    (That the investment gives the highest possible return and then has a similar high risk, that you have the lowest possible risk and also has a low expected return, that you have sympathy for what you invest in, that there is a connection between your risk and your horizon)
15. What do you do when markets go badly?
    (I stay calm my investments are long term, I sell my assets if they fall by more than 10 %, I sell my assets if they fall by more than 20%, I buy the assets that have fallen and expect them to increase, do not know/do not invest)

Appendix 2: Three Danish Mixed mutual funds

Nordea Invest	Stocks	Bonds
Nordea Inv Aktiv Portefølje 1	76%	24%
Nordea Inv Aktiv Portefølje 2	60%	40%
Nordea Inv Aktiv Portefølje 3	40%	60%
Nordea Inv Aktiv Portefølje 4	20%	80%
Nordea Inv Basis 1	21%	79%
Nordea Inv Basis 2	40%	60%
Nordea Inv Basis 3	62%	38%
Nordea Inv Erhv Stab Bal	50%	50%
Nordea Inv Stabil Balanceret	50%	50%

Table 38 – Allocation between stocks and bonds in mixed funds in Nordea Invest: http://www.nordeainvest.dk/sitemod/nordea_all/modules/ReverseProxy/Default.aspx?pid=1390262&rw=1&url=/fundsnow/ListMain.aspx?segment=CustomerDKNI&Domains=NordeaFundsNow,NordeaDanmark&lang=da-DK&buyBtn=off&mode=on&search=on

Nykredit invest	Stocks	Bonds
Balance Lang	55%	45%
Balance Mellem	28%	72%
Formuesikring Akk.	10%	90%
Taktisk Allokering	49%	51%

Table 39 – Allocation between stocks and bonds in mixed funds in Nykredit invest: http://www.nykreditinvest.dk/nykreditinvestdk/info/produkter/produktoversigt.xml

Danske Invest	Stocks	Bonds
DI Mix	20%	80%
DI Mix - med Sikring	0%	100%
DI Mix Defensiv	7%	93%
DI Mix Offensiv	41%	59%
DI Mix Offensiv Plus	53%	47%

Table 40 – Allocation between stocks and bonds in mixed funds in Danske Invest: http://www.danskeinvest.dk/

Appendix 3 – Nykredit survey education

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Denmark	All investors	12,5%	20,0%	15,2%	37,0%	12,9%	2,4%
Denmark	Female	11,9%	19,7%	14,8%	37,1%	14,1%	2,3%
Denmark	Male	13,1%	20,4%	15,7%	36,9%	11,5%	2,4%
Denmark	0-20	56,4%	10,0%	9,1%	7,3%	0,9%	16,4%
Denmark	20-30	14,2%	14,7%	14,0%	32,4%	15,6%	9,1%
Denmark	30-40	8,6%	18,6%	16,7%	36,3%	17,2%	2,6%
Denmark	40-50	11,2%	17,7%	22,5%	34,6%	11,9%	2,2%
Denmark	50-60	12,7%	21,3%	16,5%	38,2%	9,5%	1,8%
Denmark	60+	12,5%	22,6%	8,5%	40,3%	15,0%	1,1%
Denmark	Female 0-20	60,7%	9,8%	9,8%	4,9%	0,0%	14,8%
Denmark	Female 20-30	17,0%	15,0%	12,6%	31,6%	18,2%	5,5%
Denmark	Female 30-40	9,4%	16,3%	14,0%	36,6%	20,9%	2,7%
Denmark	Female 40-50	11,3%	17,8%	23,1%	33,2%	12,2%	2,4%
Denmark	Female 50-60	11,4%	21,4%	16,1%	38,7%	10,2%	2,1%
Denmark	Female 60+	10,8%	22,3%	8,9%	41,0%	15,8%	1,2%
Denmark	Male 0-20	51,0%	10,2%	8,2%	10,2%	2,0%	18,4%
Denmark	Male 20-30	10,7%	14,2%	15,7%	33,5%	12,2%	13,7%
Denmark	Male 30-40	7,5%	21,6%	20,1%	35,8%	12,6%	2,4%
Denmark	Male 40-50	11,1%	17,5%	21,9%	36,1%	11,6%	1,9%
Denmark	Male 50-60	14,3%	21,1%	17,0%	37,5%	8,6%	1,5%
Denmark	Male 60+	14,7%	23,0%	7,9%	39,4%	14,1%	0,9%

Table 41 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the overall answers in Denmark.

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Sjælland	All investors	9,8%	17,8%	14,3%	39,0%	16,9%	2,1%
Sjælland	Female	9,4%	17,2%	13,6%	38,7%	18,7%	2,3%
Sjælland	Male	10,4%	18,8%	15,5%	39,5%	13,8%	1,9%
Sjælland	0-20	46,7%	10,0%	13,3%	16,7%	0,0%	13,3%
Sjælland	20-30	14,3%	11,4%	15,4%	36,0%	19,4%	3,4%
Sjælland	30-40	6,4%	14,5%	16,5%	35,7%	24,4%	2,6%
Sjælland	40-50	9,4%	15,9%	22,1%	34,1%	16,6%	1,9%
Sjælland	50-60	10,2%	20,1%	14,6%	40,6%	11,7%	2,7%
Sjælland	60+	9,4%	19,9%	7,2%	43,9%	18,6%	1,0%
Sjælland	Female 0-20	50,0%	15,0%	10,0%	10,0%	0,0%	15,0%
Sjælland	Female 20-30	14,5%	10,3%	12,8%	35,0%	23,9%	3,4%
Sjælland	Female 30-40	6,0%	12,7%	13,3%	36,7%	28,7%	2,7%
Sjælland	Female 40-50	9,7%	15,8%	23,3%	31,3%	17,5%	2,4%
Sjælland	Female 50-60	9,3%	19,8%	13,3%	41,2%	13,7%	2,7%
Sjælland	Female 60+	8,6%	19,2%	7,6%	44,1%	19,4%	1,0%
Sjælland	Male 0-20	40,0%	0,0%	20,0%	30,0%	0,0%	10,0%
Sjælland	Male 20-30	13,8%	13,8%	20,7%	37,9%	10,3%	3,4%
Sjælland	Male 30-40	7,1%	17,9%	22,0%	33,9%	16,7%	2,4%
Sjælland	Male 40-50	9,0%	16,0%	20,4%	38,0%	15,4%	1,2%
Sjælland	Male 50-60	11,7%	20,7%	16,8%	39,7%	8,4%	2,8%
Sjælland	Male 60+	10,7%	21,1%	6,5%	43,5%	17,2%	1,0%

Table 42 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers from investors on Sjælland.

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Jylland	All investors	13,5%	22,4%	16,6%	35,3%	10,2%	1,9%
Jylland	Female	12,7%	22,8%	16,9%	35,2%	10,5%	2,0%
Jylland	Male	14,3%	22,2%	16,4%	35,4%	10,0%	1,8%
Jylland	0-20	48,8%	14,0%	11,6%	2,3%	2,3%	20,9%
Jylland	20-30	12,9%	18,2%	14,7%	31,2%	14,1%	8,8%
Jylland	30-40	8,9%	20,9%	17,7%	37,7%	12,8%	2,0%
Jylland	40-50	11,6%	19,6%	24,7%	33,9%	8,2%	2,0%
Jylland	50-60	13,3%	23,0%	19,0%	36,3%	7,6%	0,8%
Jylland	60+	15,8%	25,7%	8,5%	36,6%	12,7%	0,7%
Jylland	Female 0-20	57,1%	9,5%	19,0%	0,0%	0,0%	14,3%
Jylland	Female 20-30	15,9%	20,7%	12,2%	30,5%	13,4%	7,3%
Jylland	Female 30-40	11,2%	19,3%	15,5%	36,9%	14,4%	2,7%
Jylland	Female 40-50	11,1%	20,6%	24,8%	34,3%	7,5%	1,6%
Jylland	Female 50-60	11,4%	23,5%	21,0%	36,3%	6,7%	1,2%
Jylland	Female 60+	12,8%	26,1%	9,0%	36,6%	14,4%	1,1%
Jylland	Male 0-20	40,9%	18,2%	4,5%	4,5%	4,5%	27,3%
Jylland	Male 20-30	10,2%	15,9%	17,0%	31,8%	14,8%	10,2%
Jylland	Male 30-40	6,8%	22,4%	19,6%	38,4%	11,4%	1,4%
Jylland	Male 40-50	11,9%	18,9%	24,6%	33,6%	8,7%	2,2%
Jylland	Male 50-60	14,8%	22,7%	17,3%	36,3%	8,5%	0,4%
Jylland	Male 60+	18,3%	25,3%	8,0%	36,6%	11,3%	0,4%

Table 43 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers from investors in Jylland

Location	Who	Ground school	Vocational education	Short term education (less than 3 years)	Medium term education (3 - 5 years)	Long term education (5 years or more)	Do not know/do not want to answer
Fyn and Bornholm	All investors	13,5%	20,1%	15,1%	38,1%	9,9%	3,3%
Fyn and Bornholm	Female	14,7%	20,8%	13,9%	39,6%	8,4%	2,5%
Fyn and Bornholm	Male	11,2%	18,9%	17,2%	35,4%	12,6%	4,6%
Fyn and Bornholm	0-20	0,0%	28,6%	0,0%	28,6%	100,0%	57,1%
Fyn and Bornholm	20-30	8,7%	8,7%	8,7%	37,0%	17,4%	19,6%
Fyn and Bornholm	30-40	9,5%	21,0%	18,1%	37,1%	10,5%	3,8%
Fyn and Bornholm	40-50	15,4%	19,8%	19,1%	38,3%	6,2%	1,2%
Fyn and Bornholm	50-60	18,7%	17,1%	16,3%	36,3%	10,0%	1,6%
Fyn and Bornholm	60+	8,5%	25,9%	11,2%	41,1%	11,2%	2,2%
Fyn and Bornholm	Female 0-20	50,0%	25,0%	0,0%	25,0%	0,0%	0,0%
Fyn and Bornholm	Female 20-30	14,3%	10,7%	7,1%	42,9%	17,9%	7,1%
Fyn and Bornholm	Female 30-40	11,1%	17,5%	15,9%	39,7%	12,7%	3,2%
Fyn and Bornholm	Female 40-50	16,2%	19,2%	19,2%	39,4%	4,0%	2,0%
Fyn and Bornholm	Female 50-60	18,2%	20,1%	13,8%	36,5%	8,8%	2,5%
Fyn and Bornholm	Female 60+	10,8%	25,5%	11,5%	42,7%	7,6%	1,9%
Fyn and Bornholm	Male 0-20	0,0%	0,0%	0,0%	33,3%	0,0%	66,7%
Fyn and Bornholm	Male 20-30	0,0%	5,6%	11,1%	27,8%	16,7%	38,9%
Fyn and Bornholm	Male 30-40	7,1%	26,2%	21,4%	33,3%	7,1%	4,8%
Fyn and Bornholm	Male 40-50	14,3%	20,6%	19,0%	36,5%	9,5%	0,0%
Fyn and Bornholm	Male 50-60	19,6%	12,0%	20,7%	35,9%	12,0%	0,0%
Fyn and Bornholm	Male 60+	3,0%	26,9%	10,4%	37,3%	19,4%	3,0%

Table 44 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their education level. Shows the answers from investors on Fyn and Bornholm.

Appendix 4 – Nykredit survey income

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Denmark	All investors	22,5%	38,3%	23,9%	4,2%	11,0%
Denmark	Female	22,2%	38,3%	23,7%	4,7%	11,1%
Denmark	Male	22,8%	38,4%	24,1%	3,7%	10,9%
Denmark	0-20	19,1%	20,0%	10,0%	4,5%	46,4%
Denmark	20-30	42,0%	28,7%	11,6%	0,9%	16,9%
Denmark	30-40	19,5%	37,0%	29,1%	4,3%	10,1%
Denmark	40-50	17,9%	35,8%	30,3%	6,7%	9,3%
Denmark	50-60	15,4%	39,8%	29,9%	5,4%	9,5%
Denmark	60+	30,3%	42,0%	14,3%	2,0%	11,3%
Denmark	Female 0-20	14,8%	21,3%	9,8%	3,3%	50,8%
Denmark	Female 20-30	43,1%	26,9%	13,4%	1,6%	15,0%
Denmark	Female 30-40	17,8%	37,2%	28,6%	5,1%	11,3%
Denmark	Female 40-50	18,6%	35,2%	29,6%	6,8%	9,8%
Denmark	Female 50-60	14,9%	39,8%	29,5%	6,3%	9,5%
Denmark	Female 60+	29,7%	42,3%	14,9%	2,2%	10,8%
Denmark	Male 0-20	24,5%	18,4%	10,2%	6,1%	40,8%
Denmark	Male 20-30	40,6%	31,0%	9,1%	0,0%	19,3%
Denmark	Male 30-40	21,6%	36,8%	29,8%	3,2%	8,6%
Denmark	Male 40-50	17,1%	36,4%	31,1%	6,5%	8,9%
Denmark	Male 50-60	15,9%	39,9%	30,4%	4,3%	9,5%
Denmark	Male 60+	31,2%	41,6%	13,5%	1,8%	11,9%

Table 45 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the overall answers in Denmark.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Sjælland	All investors	19,6%	36,7%	27,0%	6,5%	10,2%
Sjælland	Female	19,4%	36,6%	26,6%	7,1%	10,3%
Sjælland	Male	20,0%	36,9%	27,6%	5,5%	10,1%
Sjælland	0-20	23,3%	26,7%	13,3%	3,3%	33,3%
Sjælland	20-30	47,4%	31,4%	12,0%	1,1%	8,0%
Sjælland	30-40	14,1%	35,7%	33,3%	6,6%	10,3%
Sjælland	40-50	15,5%	33,2%	31,0%	10,0%	10,3%
Sjælland	50-60	13,0%	36,5%	33,4%	8,1%	8,9%
Sjælland	60+	26,4%	41,0%	18,2%	3,3%	11,1%
Sjælland	Female 0-20	15,0%	30,0%	10,0%	5,0%	40,0%
Sjælland	Female 20-30	47,0%	32,5%	12,0%	1,7%	6,8%
Sjælland	Female 30-40	12,7%	36,0%	32,7%	7,7%	11,0%
Sjælland	Female 40-50	15,8%	32,2%	30,5%	10,6%	11,0%
Sjælland	Female 50-60	13,7%	34,8%	33,0%	9,2%	9,3%
Sjælland	Female 60+	25,3%	42,3%	18,6%	3,7%	10,0%
Sjælland	Male 0-20	40,0%	20,0%	20,0%	0,0%	20,0%
Sjælland	Male 20-30	48,3%	29,3%	12,1%	0,0%	10,3%
Sjælland	Male 30-40	16,7%	35,1%	34,5%	4,8%	8,9%
Sjælland	Male 40-50	15,1%	34,6%	31,8%	9,3%	9,3%
Sjælland	Male 50-60	12,0%	39,4%	34,1%	6,4%	8,1%
Sjælland	Male 60+	28,1%	38,8%	17,4%	2,6%	13,0%

Table 46 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the overall answers in Denmark.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Jylland	All investors	24,0%	39,3%	23,0%	2,6%	11,2%
Jylland	Female	24,6%	39,5%	22,2%	2,2%	11,5%
Jylland	Male	23,5%	39,1%	23,6%	2,9%	10,9%
Jylland	0-20	18,6%	14,0%	7,0%	4,7%	55,8%
Jylland	20-30	41,2%	28,8%	10,6%	0,0%	19,4%
Jylland	30-40	23,2%	36,2%	27,6%	2,5%	10,6%
Jylland	40-50	18,1%	36,7%	31,9%	4,4%	8,9%
Jylland	50-60	15,8%	42,1%	29,2%	3,3%	9,6%
Jylland	60+	33,5%	42,8%	11,5%	1,0%	11,2%
Jylland	Female 0-20	19,0%	14,3%	4,8%	0,0%	61,9%
Jylland	Female 20-30	46,3%	23,2%	12,2%	0,0%	18,3%
Jylland	Female 30-40	26,2%	34,8%	24,6%	2,7%	11,8%
Jylland	Female 40-50	17,0%	39,5%	30,7%	3,6%	9,2%
Jylland	Female 50-60	14,3%	45,2%	28,4%	3,2%	8,9%
Jylland	Female 60+	34,8%	40,4%	12,4%	0,7%	11,7%
Jylland	Male 0-20	18,2%	13,6%	9,1%	9,1%	50,0%
Jylland	Male 20-30	36,4%	34,1%	9,1%	0,0%	20,5%
Jylland	Male 30-40	20,5%	37,4%	30,1%	2,3%	9,6%
Jylland	Male 40-50	18,9%	34,6%	32,8%	5,0%	8,7%
Jylland	Male 50-60	17,1%	39,6%	29,9%	3,3%	10,1%
Jylland	Male 60+	32,4%	44,8%	10,7%	1,4%	10,7%

Table 47 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the answers from investors in Jylland.

Location	Who	299.999 DKK or less	300.000 DKK - 599.999 DKK	600.000 DKK - 999.999 DKK	More than 1.000.000 DKK	Do not know/do not want to answer
Fyn and Bornholm	All investors	25,3%	41,8%	20,8%	2,6%	9,6%
Fyn and Bornholm	Female	24,7%	41,2%	21,8%	2,5%	9,8%
Fyn and Bornholm	Male	26,3%	42,8%	18,9%	2,8%	9,1%
Fyn and Bornholm	0-20	14,3%	14,3%	14,3%	0,0%	57,1%
Fyn and Bornholm	20-30	43,5%	15,2%	13,0%	4,3%	23,9%
Fyn and Bornholm	30-40	21,0%	43,8%	26,7%	1,0%	7,6%
Fyn and Bornholm	40-50	23,5%	41,4%	25,9%	2,5%	6,8%
Fyn and Bornholm	50-60	21,5%	43,0%	24,3%	4,4%	6,8%
Fyn and Bornholm	60+	29,5%	46,0%	12,1%	1,3%	11,2%
Fyn and Bornholm	Female 0-20	25,0%	25,0%	25,0%	0,0%	25,0%
Fyn and Bornholm	Female 20-30	32,1%	14,3%	21,4%	7,1%	25,0%
Fyn and Bornholm	Female 30-40	12,7%	46,0%	28,6%	1,6%	11,1%
Fyn and Bornholm	Female 40-50	26,3%	35,4%	30,3%	2,0%	6,1%
Fyn and Bornholm	Female 50-60	20,1%	42,1%	25,2%	4,4%	8,2%
Fyn and Bornholm	Female 60+	31,8%	47,1%	10,2%	0,6%	10,2%
Fyn and Bornholm	Male 0-20	0,0%	0,0%	0,0%	0,0%	100,0%
Fyn and Bornholm	Male 20-30	61,1%	16,7%	0,0%	0,0%	22,2%
Fyn and Bornholm	Male 30-40	33,3%	40,5%	23,8%	0,0%	2,4%
Fyn and Bornholm	Male 40-50	19,0%	50,8%	19,0%	3,2%	7,9%
Fyn and Bornholm	Male 50-60	23,9%	44,6%	22,8%	4,3%	4,3%
Fyn and Bornholm	Male 60+	23,9%	43,3%	16,4%	3,0%	13,4%

Table 48 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked about their family income level. Shows the answers from investors on Fyn and Bornholm.

Appendix 5 - What do you understand by risk in relation to investments?

Location	Who	losing the whole investment	lose some of the investment	not achieving the expected return	the value of the investment changes during the period	I could have had a higher return with other investments	Other
Denmark	All investors	21,1%	53,8%	9,5%	7,9%	3,8%	3,9%
Denmark	Female	20,8%	53,4%	9,5%	8,1%	4,1%	4,0%
Denmark	Male	21,5%	54,2%	9,5%	7,6%	3,4%	3,7%
Denmark	0-20	22,7%	30,9%	5,5%	5,5%	5,5%	30,0%
Denmark	20-30	26,9%	51,1%	4,4%	6,0%	3,8%	7,8%
Denmark	30-40	25,0%	56,0%	6,1%	6,5%	2,2%	4,2%
Denmark	40-50	25,6%	53,1%	7,0%	7,1%	2,7%	4,6%
Denmark	50-60	20,6%	55,5%	10,0%	8,0%	3,7%	2,2%
Denmark	60+	15,5%	53,2%	13,5%	9,5%	5,4%	2,8%
Denmark	Female 0-20	24,6%	27,9%	3,3%	4,9%	6,6%	32,8%
Denmark	Female 20-30	28,1%	52,6%	4,0%	5,9%	3,2%	6,3%
Denmark	Female 30-40	25,7%	55,0%	6,5%	6,0%	2,2%	4,6%
Denmark	Female 40-50	24,8%	52,8%	7,6%	7,8%	2,3%	4,8%
Denmark	Female 50-60	20,6%	55,6%	9,3%	7,6%	4,4%	2,7%
Denmark	Female 60+	14,6%	52,5%	13,6%	10,3%	6,1%	2,8%
Denmark	Male 0-20	20,4%	34,7%	8,2%	6,1%	4,1%	26,5%
Denmark	Male 20-30	25,4%	49,2%	5,1%	6,1%	4,6%	9,6%
Denmark	Male 30-40	24,2%	57,4%	5,6%	7,1%	2,1%	3,6%
Denmark	Male 40-50	26,5%	53,4%	6,4%	6,3%	3,1%	4,4%
Denmark	Male 50-60	20,6%	55,4%	10,8%	8,5%	3,0%	1,7%
Denmark	Male 60+	16,7%	54,1%	13,4%	8,5%	4,5%	2,8%

Table 49 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you understand by risk in relation to investments?" Shows the overall answers in Denmark.

Location	Who	losing the whole investment	lose some of the investment	not achieving the expected return	the value of the investment changes during the period	I could have had a higher return with other investments	Other
Sjælland	All investors	20,6%	55,8%	9,4%	7,6%	3,5%	3,1%
Sjælland	Female	21,5%	55,0%	9,0%	7,2%	3,7%	3,5%
Sjælland	Male	19,2%	57,1%	9,9%	8,1%	3,1%	2,5%
Sjælland	0-20	6,7%	46,7%	0,0%	10,0%	0,0%	36,7%
Sjælland	20-30	24,6%	59,4%	3,4%	4,6%	2,9%	5,1%
Sjælland	30-40	23,3%	60,0%	5,6%	6,4%	2,1%	2,6%
Sjælland	40-50	24,9%	54,3%	7,2%	6,9%	3,0%	3,7%
Sjælland	50-60	19,3%	57,6%	9,4%	8,0%	3,2%	2,4%
Sjælland	60+	17,3%	53,2%	13,8%	8,6%	4,9%	2,2%
Sjælland	Female 0-20	10,0%	40,0%	0,0%	10,0%	0,0%	40,0%
Sjælland	Female 20-30	26,5%	59,8%	3,4%	4,3%	1,7%	4,3%
Sjælland	Female 30-40	24,3%	60,3%	4,7%	6,0%	1,7%	3,0%
Sjælland	Female 40-50	26,6%	52,5%	7,8%	6,5%	2,6%	4,1%
Sjælland	Female 50-60	20,7%	57,5%	8,2%	6,8%	3,7%	3,2%
Sjælland	Female 60+	17,0%	51,9%	13,9%	9,1%	6,0%	2,2%
Sjælland	Male 0-20	0,0%	60,0%	0,0%	10,0%	0,0%	30,0%
Sjælland	Male 20-30	20,7%	58,6%	3,4%	5,2%	5,2%	6,9%
Sjælland	Male 30-40	21,4%	59,5%	7,1%	7,1%	3,0%	1,8%
Sjælland	Male 40-50	22,5%	56,8%	6,5%	7,4%	3,7%	3,1%
Sjælland	Male 50-60	17,0%	57,8%	11,5%	10,1%	2,5%	1,1%
Sjælland	Male 60+	17,7%	55,5%	13,8%	7,8%	3,1%	2,1%

Table 50 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you understand by risk in relation to investments?" Shows the answers from investors on Sjælland.

Location	Who	losing the whole investment	lose some of the investment	not achieving the expected return	the value of the investment changes during the period	I could have had a higher return with other investments	Other
Jylland	All investors	20,9%	54,1%	9,3%	8,2%	3,8%	3,7%
Jylland	Female	19,4%	54,6%	9,1%	8,7%	4,4%	3,8%
Jylland	Male	22,2%	53,7%	9,4%	7,8%	3,4%	3,6%
Jylland	0-20	30,2%	30,2%	7,0%	4,7%	9,3%	18,6%
Jylland	20-30	29,4%	50,6%	4,1%	5,3%	4,1%	6,5%
Jylland	30-40	27,3%	54,9%	6,4%	5,9%	1,7%	3,7%
Jylland	40-50	25,3%	53,8%	5,6%	7,5%	2,1%	5,6%
Jylland	50-60	20,6%	54,8%	10,7%	7,9%	4,3%	1,8%
Jylland	60+	13,3%	54,9%	12,9%	10,6%	5,3%	2,9%
Jylland	Female 0-20	28,6%	33,3%	4,8%	4,8%	9,5%	19,0%
Jylland	Female 20-30	31,7%	53,7%	2,4%	4,9%	4,9%	2,4%
Jylland	Female 30-40	28,9%	50,3%	8,6%	5,3%	2,1%	4,8%
Jylland	Female 40-50	22,9%	54,6%	4,9%	9,2%	2,6%	5,9%
Jylland	Female 50-60	18,0%	57,3%	9,9%	7,7%	5,4%	1,7%
Jylland	Female 60+	11,5%	55,1%	13,0%	11,7%	5,4%	3,4%
Jylland	Male 0-20	31,8%	27,3%	9,1%	4,5%	9,1%	18,2%
Jylland	Male 20-30	27,3%	47,7%	5,7%	5,7%	3,4%	10,2%
Jylland	Male 30-40	26,0%	58,9%	4,6%	6,4%	1,4%	2,7%
Jylland	Male 40-50	27,1%	53,2%	6,2%	6,2%	1,7%	5,5%
Jylland	Male 50-60	22,7%	52,8%	11,3%	8,0%	3,3%	1,9%
Jylland	Male 60+	14,8%	54,8%	12,9%	9,7%	5,3%	2,5%

Table 51 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you understand by risk in relation to investments?" Shows the answers from investors in Jylland.

Location	Who	losing the whole investment	lose some of the investment	not achieving the expected return	the value of the investment changes during the period	I could have had a higher return with other investments	Other
Fyn and Bornholm	All investors	22,9%	50,7%	11,8%	8,8%	3,5%	2,3%
Fyn and Bornholm	Female	20,2%	49,2%	13,5%	10,6%	4,1%	2,4%
Fyn and Bornholm	Male	27,7%	53,3%	8,8%	5,6%	2,5%	2,1%
Fyn and Bornholm	0-20	28,6%	42,9%	0,0%	0,0%	14,3%	14,3%
Fyn and Bornholm	20-30	28,3%	50,0%	8,7%	10,9%	2,2%	0,0%
Fyn and Bornholm	30-40	21,9%	57,1%	6,7%	8,6%	1,9%	3,8%
Fyn and Bornholm	40-50	28,4%	48,1%	13,0%	7,4%	1,2%	1,9%
Fyn and Bornholm	50-60	26,7%	49,8%	11,2%	8,0%	2,8%	1,6%
Fyn and Bornholm	60+	13,8%	50,9%	15,2%	10,7%	6,7%	2,7%
Fyn and Bornholm	Female 0-20	50,0%	25,0%	0,0%	0,0%	25,0%	0,0%
Fyn and Bornholm	Female 20-30	28,6%	50,0%	7,1%	14,3%	0,0%	0,0%
Fyn and Bornholm	Female 30-40	22,2%	54,0%	7,9%	7,9%	3,2%	4,8%
Fyn and Bornholm	Female 40-50	24,2%	46,5%	16,2%	12,1%	0,0%	1,0%
Fyn and Bornholm	Female 50-60	24,5%	45,9%	13,2%	10,1%	3,8%	2,5%
Fyn and Bornholm	Female 60+	10,2%	52,9%	15,9%	10,8%	7,6%	2,5%
Fyn and Bornholm	Male 0-20	0,0%	66,7%	0,0%	0,0%	0,0%	33,3%
Fyn and Bornholm	Male 20-30	27,8%	50,0%	11,1%	5,6%	5,6%	0,0%
Fyn and Bornholm	Male 30-40	21,4%	61,9%	4,8%	9,5%	0,0%	2,4%
Fyn and Bornholm	Male 40-50	34,9%	50,8%	7,9%	0,0%	3,2%	3,2%
Fyn and Bornholm	Male 50-60	30,4%	56,5%	7,6%	4,3%	1,1%	0,0%
Fyn and Bornholm	Male 60+	22,4%	46,3%	13,4%	10,4%	4,5%	3,0%

Table 52 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you understand by risk in relation to investments?" Shows the answers from investors on Fyn and Bornholm.

Appendix 6 - What do you do when markets go badly?

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Denmark	All investors	53,4%	1,5%	1,1%	7,6%	36,4%
Denmark	Female	54,1%	1,5%	1,1%	7,6%	35,7%
Denmark	Male	52,5%	1,5%	1,1%	7,7%	37,2%
Denmark	0-20	30,9%	5,5%	2,7%	8,2%	52,7%
Denmark	20-30	37,8%	1,6%	2,0%	7,1%	51,6%
Denmark	30-40	43,0%	1,0%	1,2%	9,2%	45,6%
Denmark	40-50	50,0%	1,4%	0,7%	8,0%	39,9%
Denmark	50-60	56,1%	1,3%	1,0%	7,0%	34,5%
Denmark	60+	61,9%	1,7%	1,2%	7,3%	27,9%
Denmark	Female 0-20	36,1%	1,6%	1,6%	4,9%	55,7%
Denmark	Female 20-30	41,1%	1,6%	1,2%	7,9%	48,2%
Denmark	Female 30-40	43,3%	1,5%	1,4%	10,3%	43,5%
Denmark	Female 40-50	50,2%	1,4%	1,0%	6,8%	40,6%
Denmark	Female 50-60	56,7%	1,6%	1,1%	6,9%	33,7%
Denmark	Female 60+	62,5%	1,5%	1,0%	7,5%	27,5%
Denmark	Male 0-20	24,5%	10,2%	4,1%	12,2%	49,0%
Denmark	Male 20-30	33,5%	1,5%	3,0%	6,1%	55,8%
Denmark	Male 30-40	42,6%	0,2%	1,1%	7,9%	48,2%
Denmark	Male 40-50	49,8%	1,4%	0,5%	9,2%	39,1%
Denmark	Male 50-60	55,4%	1,0%	0,9%	7,1%	35,5%
Denmark	Male 60+	61,1%	2,1%	1,3%	7,1%	28,4%

Table 53 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you do when markets goes badly?" Shows the overall answers in Denmark.

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Sjælland	All investors	54,9%	1,3%	1,2%	7,5%	35,1%
Sjælland	Female	55,5%	1,5%	1,3%	7,2%	34,5%
Sjælland	Male	53,9%	0,8%	1,0%	8,1%	36,1%
Sjælland	0-20	30,0%	3,3%	0,0%	10,0%	56,7%
Sjælland	20-30	38,9%	0,6%	1,1%	5,7%	53,7%
Sjælland	30-40	46,4%	0,4%	1,7%	9,6%	41,9%
Sjælland	40-50	51,6%	1,1%	0,6%	7,8%	38,9%
Sjælland	50-60	57,2%	1,7%	0,9%	7,3%	32,9%
Sjælland	60+	62,4%	1,4%	1,7%	6,9%	27,6%
Sjælland	Female 0-20	30,0%	0,0%	0,0%	10,0%	60,0%
Sjælland	Female 20-30	39,3%	0,9%	1,7%	7,7%	50,4%
Sjælland	Female 30-40	49,0%	0,7%	2,0%	9,7%	38,7%
Sjælland	Female 40-50	51,6%	1,5%	1,1%	6,7%	39,1%
Sjælland	Female 50-60	57,2%	2,2%	1,3%	7,0%	32,3%
Sjælland	Female 60+	63,0%	1,5%	1,2%	6,4%	27,9%
Sjælland	Male 0-20	30,0%	10,0%	0,0%	10,0%	50,0%
Sjælland	Male 20-30	37,9%	0,0%	0,0%	1,7%	60,3%
Sjælland	Male 30-40	41,7%	0,0%	1,2%	9,5%	47,6%
Sjælland	Male 40-50	51,5%	0,6%	0,0%	9,3%	38,6%
Sjælland	Male 50-60	57,3%	0,8%	0,3%	7,8%	33,8%
Sjælland	Male 60+	61,2%	1,3%	2,6%	7,8%	27,1%

Table 54 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you do when markets goes badly?" Shows the answers from investors on Sjælland.

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Jylland	All investors	54,3%	1,5%	1,0%	7,8%	35,4%
Jylland	Female	55,3%	1,7%	0,8%	8,0%	34,2%
Jylland	Male	53,5%	1,4%	1,2%	7,6%	36,3%
Jylland	0-20	34,9%	7,0%	2,3%	7,0%	48,8%
Jylland	20-30	39,4%	1,8%	2,4%	8,2%	48,2%
Jylland	30-40	39,4%	1,2%	1,0%	8,6%	49,8%
Jylland	40-50	51,1%	1,3%	0,6%	8,3%	38,7%
Jylland	50-60	57,0%	0,9%	1,3%	7,3%	33,5%
Jylland	60+	64,0%	2,1%	0,7%	7,5%	25,7%
Jylland	Female 0-20	42,9%	4,8%	0,0%	4,8%	47,6%
Jylland	Female 20-30	46,3%	3,7%	0,0%	7,3%	42,7%
Jylland	Female 30-40	33,7%	2,7%	0,5%	11,8%	51,3%
Jylland	Female 40-50	52,0%	1,0%	0,3%	6,9%	39,9%
Jylland	Female 50-60	59,8%	1,0%	1,2%	6,9%	31,1%
Jylland	Female 60+	64,7%	1,8%	1,1%	8,5%	23,8%
Jylland	Male 0-20	27,3%	9,1%	4,5%	9,1%	50,0%
Jylland	Male 20-30	33,0%	0,0%	4,5%	9,1%	53,4%
Jylland	Male 30-40	44,3%	0,0%	1,4%	5,9%	48,4%
Jylland	Male 40-50	50,5%	1,5%	0,7%	9,5%	37,8%
Jylland	Male 50-60	54,6%	0,8%	1,4%	7,6%	35,5%
Jylland	Male 60+	63,4%	2,3%	0,4%	6,6%	27,3%

Table 55 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you do when markets goes badly?" Shows the answers from investors in Jylland.

Location	Who	I stay calm, my investments are long term	I sell my assets if they fall by more than 10%	I sell my assets if they fall by more than 20%	I buy those assets that have fallen and expect them to increase	Do not know/do not invest
Fyn and Bornholm	All investors	51,9%	1,3%	1,1%	7,5%	38,1%
Fyn and Bornholm	Female	53,1%	1,0%	1,4%	7,1%	37,5%
Fyn and Bornholm	Male	49,8%	1,8%	0,7%	8,4%	39,3%
Fyn and Bornholm	0-20	0,0%	0,0%	14,3%	0,0%	85,7%
Fyn and Bornholm	20-30	30,4%	0,0%	2,2%	8,7%	58,7%
Fyn and Bornholm	30-40	49,5%	0,0%	1,0%	9,5%	40,0%
Fyn and Bornholm	40-50	46,3%	2,5%	1,9%	6,2%	43,2%
Fyn and Bornholm	50-60	55,0%	1,2%	0,0%	6,4%	37,5%
Fyn and Bornholm	60+	59,8%	1,3%	1,3%	8,9%	28,6%
Fyn and Bornholm	Female 0-20	0,0%	0,0%	25,0%	0,0%	75,0%
Fyn and Bornholm	Female 20-30	39,3%	0,0%	3,6%	10,7%	46,4%
Fyn and Bornholm	Female 30-40	50,8%	0,0%	1,6%	7,9%	39,7%
Fyn and Bornholm	Female 40-50	48,5%	2,0%	3,0%	3,0%	43,4%
Fyn and Bornholm	Female 50-60	54,7%	1,3%	0,0%	6,9%	37,1%
Fyn and Bornholm	Female 60+	59,2%	0,6%	0,6%	8,9%	30,6%
Fyn and Bornholm	Male 0-20	0,0%	0,0%	0,0%	0,0%	100,0%
Fyn and Bornholm	Male 20-30	16,7%	0,0%	0,0%	5,6%	77,8%
Fyn and Bornholm	Male 30-40	47,6%	0,0%	0,0%	11,9%	40,5%
Fyn and Bornholm	Male 40-50	42,9%	3,2%	0,0%	11,1%	42,9%
Fyn and Bornholm	Male 50-60	55,4%	1,1%	0,0%	5,4%	38,0%
Fyn and Bornholm	Male 60+	61,2%	3,0%	3,0%	9,0%	23,9%

Table 56 - An overview of how the participants from the Nykredit survey "Når du investerer" answered when they were asked the question "What do you do when markets goes badly?" Shows the answers from investors on Fyn and Bornholm.

Appendix 7 – Stocks and bonds

Location	Who	Stocks	Bonds
Denmark	All	39,1%	60,9%
Denmark	Male	42,6%	57,4%
Denmark	Female	33,7%	66,3%
Denmark	0-20	35,8%	64,2%
Denmark	20-30	49,9%	50,1%
Denmark	30-40	58,0%	42,0%
Denmark	40-50	53,6%	46,4%
Denmark	50-60	45,8%	54,2%
Denmark	60+	33,5%	66,5%
Denmark	male 0-20	36,5%	63,5%
Denmark	male 20-30	56,4%	43,6%
Denmark	male 30-40	71,1%	28,9%
Denmark	male 40-50	56,2%	43,8%
Denmark	male 50-60	48,9%	51,1%
Denmark	male 60+	38,1%	61,9%
Denmark	female 0-20	35,5%	64,5%
Denmark	female 20-30	40,4%	59,6%
Denmark	female 30-40	51,1%	48,9%
Denmark	female 40-50	49,0%	51,0%
Denmark	female 50-60	40,9%	59,1%
Denmark	female 60+	29,5%	70,5%

Location	Who	Stocks	Bonds
Jylland	All	38,7%	61,3%
Jylland	male	42,5%	57,5%
Jylland	female	32,1%	67,9%
Jylland	0-20	33,7%	66,3%
Jylland	20-30	48,1%	51,9%
Jylland	30-40	58,9%	41,1%
Jylland	40-50	55,6%	44,4%
Jylland	50-60	46,8%	53,2%
Jylland	60+	32,0%	68,0%
Jylland	male 0-20	34,5%	65,5%
Jylland	male 20-30	54,0%	46,0%
Jylland	male 30-40	61,6%	38,4%
Jylland	male 40-50	58,7%	41,3%
Jylland	male 50-60	50,5%	49,5%
Jylland	male 60+	35,2%	64,8%
Jylland	female 0-20	33,0%	67,0%
Jylland	female 20-30	39,5%	60,5%
Jylland	female 30-40	52,0%	48,0%
Jylland	female 40-50	48,2%	51,8%
Jylland	female 50-60	39,4%	60,6%
Jylland	female 60+	26,9%	73,1%

Location	Who	Stocks	Bonds
Sjælland	All	39,9%	60,1%
Sjælland	Male	43,3%	56,7%
Sjælland	Female	35,4%	64,6%
Sjælland	0-20	38,5%	61,5%
Sjælland	20-30	52,4%	47,6%
Sjælland	30-40	58,1%	41,9%
Sjælland	40-50	52,9%	47,1%
Sjælland	50-60	45,3%	54,7%
Sjælland	60+	35,0%	65,0%
Sjælland	male 0-20	39,0%	61,0%
Sjælland	male 20-30	59,0%	41,0%
Sjælland	male 30-40	64,0%	36,0%
Sjælland	male 40-50	55,2%	44,8%
Sjælland	male 50-60	47,8%	52,2%
Sjælland	male 60+	37,9%	62,1%
Sjælland	female 0-20	37,9%	62,1%
Sjælland	female 20-30	41,6%	58,4%
Sjælland	female 30-40	50,2%	49,8%
Sjælland	female 40-50	48,3%	51,7%
Sjælland	female 50-60	41,3%	58,7%
Sjælland	female 60+	31,4%	68,6%

Location	Who	Stocks	Bonds
Fyn and Bornholm	All	35,8%	64,2%
Fyn and Bornholm	male	39,9%	60,1%
Fyn and Bornholm	female	29,1%	70,9%
Fyn and Bornholm	0-20	30,7%	69,3%
Fyn and Bornholm	20-30	42,5%	57,5%
Fyn and Bornholm	30-40	53,2%	46,8%
Fyn and Bornholm	40-50	53,8%	46,2%
Fyn and Bornholm	50-60	43,3%	56,7%
Fyn and Bornholm	60+	30,5%	69,5%
Fyn and Bornholm	male 0-20	32,0%	68,0%
Fyn and Bornholm	male 20-30	49,7%	50,3%
Fyn and Bornholm	male 30-40	57,4%	42,6%
Fyn and Bornholm	male 40-50	56,9%	43,1%
Fyn and Bornholm	male 50-60	46,3%	53,7%
Fyn and Bornholm	male 60+	34,5%	65,5%
Fyn and Bornholm	female 0-20	29,3%	70,7%
Fyn and Bornholm	female 20-30	32,7%	67,3%
Fyn and Bornholm	female 30-40	45,1%	54,9%
Fyn and Bornholm	female 40-50	47,6%	52,4%
Fyn and Bornholm	female 50-60	37,7%	62,3%
Fyn and Bornholm	female 60+	24,0%	76,0%

Table 57 - Shows the total allocation between stocks and bonds as of end February 2009 measured by the market values. Investment funds are also included by stocks and bonds. Mixed funds are included by 62 % in bonds and 38% in stocks.

Appendix 8 – Individual papers and mutual funds

Location	Who	Stocks	Bonds	Mutual funds
Denmark	All	25,2%	29,6%	45,2%
Denmark	Male	27,5%	30,5%	42,0%
Denmark	Female	21,7%	28,3%	50,0%
Denmark	0-20	20,9%	20,8%	58,3%
Denmark	20-30	36,3%	20,4%	43,2%
Denmark	30-40	41,5%	21,2%	37,4%
Denmark	40-50	34,4%	23,8%	41,8%
Denmark	50-60	27,4%	26,9%	45,7%
Denmark	60+	22,0%	32,3%	45,7%
Denmark	male 0-20	21,5%	20,7%	57,8%
Denmark	male 20-30	42,9%	18,6%	38,6%
Denmark	male 30-40	45,0%	18,8%	36,2%
Denmark	male 40-50	36,5%	24,5%	39,0%
Denmark	male 50-60	29,8%	27,5%	42,7%
Denmark	male 60+	23,7%	33,8%	42,4%
Denmark	female 0-20	20,2%	20,9%	58,9%
Denmark	female 20-30	26,4%	23,3%	50,3%
Denmark	female 30-40	35,4%	25,2%	39,4%
Denmark	female 40-50	30,0%	22,2%	47,8%
Denmark	female 50-60	23,0%	26,0%	51,1%
Denmark	female 60+	19,6%	30,1%	50,3%

Location	Who	Stocks	Bonds	Mutual funds
Jylland	All	23,1%	27,0%	49,9%
Jylland	male	25,6%	27,9%	46,5%
Jylland	female	18,6%	25,6%	55,9%
Jylland	0-20	18,3%	20,1%	61,7%
Jylland	20-30	32,0%	18,5%	49,5%
Jylland	30-40	39,6%	18,6%	41,7%
Jylland	40-50	33,6%	20,4%	46,0%
Jylland	50-60	26,6%	24,9%	48,4%
Jylland	60+	19,1%	29,7%	51,2%
Jylland	male 0-20	18,7%	18,7%	62,6%
Jylland	male 20-30	36,6%	15,6%	47,7%
Jylland	male 30-40	42,3%	18,7%	39,0%
Jylland	male 40-50	36,3%	20,8%	42,9%
Jylland	male 50-60	29,8%	24,8%	45,4%
Jylland	male 60+	20,9%	31,4%	47,7%
Jylland	female 0-20	17,8%	21,5%	60,7%
Jylland	female 20-30	25,3%	22,7%	52,0%
Jylland	female 30-40	32,8%	18,4%	48,8%
Jylland	female 40-50	27,3%	19,3%	53,4%
Jylland	female 50-60	20,3%	25,2%	54,5%
Jylland	female 60+	16,2%	26,9%	56,9%

Location	Who	Stocks	Bonds	Mutual funds
Sjælland	All	27,6%	31,6%	40,8%
Sjælland	male	29,8%	32,6%	37,6%
Sjælland	female	24,6%	30,3%	45,1%
Sjælland	0-20	23,9%	20,7%	55,4%
Sjælland	20-30	40,3%	21,3%	38,4%
Sjælland	30-40	43,4%	23,2%	33,4%
Sjælland	40-50	35,9%	26,2%	37,9%
Sjælland	50-60	28,7%	29,1%	42,3%
Sjælland	60+	24,7%	34,3%	41,0%
Sjælland	male 0-20	24,6%	21,7%	53,7%
Sjælland	male 20-30	47,6%	20,5%	31,9%
Sjælland	male 30-40	47,9%	19,1%	32,9%
Sjælland	male 40-50	37,6%	27,0%	35,4%
Sjælland	male 50-60	30,4%	30,2%	39,3%
Sjælland	male 60+	26,5%	36,0%	37,6%
Sjælland	female 0-20	23,1%	19,6%	57,3%
Sjælland	female 20-30	28,5%	22,5%	48,9%
Sjælland	female 30-40	37,2%	28,6%	34,1%
Sjælland	female 40-50	32,5%	24,7%	42,8%
Sjælland	female 50-60	25,8%	27,2%	47,1%
Sjælland	female 60+	22,6%	32,2%	45,2%

Location	Who	Stocks	Bonds	Mutual funds
Fyn and Bornholm	All	20,5%	28,3%	51,2%
Fyn and Bornholm	male	23,6%	29,7%	46,7%
Fyn and Bornholm	female	15,1%	26,0%	58,9%
Fyn and Bornholm	0-20	16,1%	20,8%	63,1%
Fyn and Bornholm	20-30	26,4%	20,0%	53,6%
Fyn and Bornholm	30-40	34,1%	17,6%	48,2%
Fyn and Bornholm	40-50	31,2%	17,2%	51,6%
Fyn and Bornholm	50-60	22,6%	24,6%	52,8%
Fyn and Bornholm	60+	17,8%	31,6%	50,6%
Fyn and Bornholm	male 0-20	16,4%	18,6%	65,0%
Fyn and Bornholm	male 20-30	33,6%	16,2%	50,2%
Fyn and Bornholm	male 30-40	38,3%	16,8%	44,9%
Fyn and Bornholm	male 40-50	34,0%	17,7%	48,3%
Fyn and Bornholm	male 50-60	25,1%	26,1%	48,8%
Fyn and Bornholm	male 60+	20,9%	33,6%	45,5%
Fyn and Bornholm	female 0-20	15,7%	23,1%	61,2%
Fyn and Bornholm	female 20-30	16,6%	25,2%	58,2%
Fyn and Bornholm	female 30-40	26,0%	19,2%	54,8%
Fyn and Bornholm	female 40-50	25,6%	16,0%	58,3%
Fyn and Bornholm	female 50-60	17,8%	21,9%	60,2%
Fyn and Bornholm	female 60+	12,8%	28,5%	58,7%

Table 58 - Shows the allocation between individuals papers, measured by stocks and bonds, and mutual funds as of end February 2009, measured by the markets values.

Appendix 9 – Regressions

	Independent variable - consumer confidence index			
Dependent variable	t-value	coeff	p-value	R^2
OMX C20, changes	-0,09	-0,0	92,6%	0,0%
OMX C20, level	4,73	9,1	0,0%	39,7%
10 years bonds, changes	0,44	0,0	66,2%	0,6%
Bonds total	0,52	33,2	60,6%	0,8%
bonds, female	0,65	13,2	51,5%	1,2%
bonds, male	0,44	20,0	65,7%	0,6%
Stocks total	-1,62	-57,5	10,5%	7,2%
stocks, female	-1,76	-17,4	7,8%	8,4%
stocks, male	-1,50	-40,1	13,4%	6,2%
Mutual funds total	3,48	135,9	0,1%	26,2%
Mutual funds, female	4,04	58,8	0,0%	32,5%
Mutual funds, male	2,97	77,1	0,3%	20,6%
Bond fund total	5,36	135,2	0,0%	45,8%
bond fund, female	4,36	58,6	0,0%	35,9%
bond fund, male	5,80	76,6	0,0%	49,7%
Stock fund total	-0,20	-8,1	83,8%	0,1%
stock fund, female	-0,20	-3,5	84,0%	0,1%
stock fund, male	-0,20	-4,6	84,3%	0,1%
Mixed fund total	0,40	8,7	68,7%	0,5%
Mixed fund, female	0,51	3,6	60,9%	0,8%
Mixed fund, male	0,35	5,1	72,8%	0,4%

Table 59 - Shows single linear regressions made on data from February 2009 to January 2012.
The consumer confidence indicator is the independent variable measured by the level. The dependent variables:
OMX C20 index changes is measured by the monthly changes in the OMX C20 index
OMX C20 level is measured by the level end of each month
10 years bonds changes is measured by the monthly changes in the rate on the 10 year central-government bonds.
All others are measured by monthly net purchase in mio.DKK.

	Independent variable - OMX C20, changes			
Dependent variable	t-value	coeff	p-value	R^2
consumer confidence indicator	-0,09	-1,2	92,6%	0,0%
OMX C2, level	-0,10	-17,5	92,4%	0,0%
10 years bonds	2,56	0,6	1,0%	16,2%
Bonds total	0,59	2.813,3	55,8%	1,0%
bonds, female	0,47	715,3	63,8%	0,6%
bonds, male	0,62	2.098,0	53,2%	1,1%
Stocks total	-1,90	-4.978,6	5,7%	9,6%
stocks, female	-0,96	-724,9	33,9%	2,6%
stocks, male	-2,20	-4.253,7	2,8%	12,4%
Mutual funds total	2,01	6.447,3	4,5%	10,6%
Mutual funds, female	1,42	1.819,0	15,6%	5,6%
Mutual funds, male	2,28	4.628,3	2,3%	13,3%
Bond fund total	-0,44	-1.111,3	66,3%	0,6%
bond fund, female	-1,19	-1.467,4	23,2%	4,0%
bond fund, male	0,26	356,1	79,8%	0,2%
Stock fund total	3,76	9.303,9	0,0%	29,3%
stock fund, female	3,43	3.796,7	0,1%	25,7%
stock fund, male	3,79	5.507,2	0,0%	29,7%
Mixed fund total	-1,09	-1.745,3	27,4%	3,4%
Mixed fund, female	-0,96	-503,3	33,7%	2,6%
Mixed fund, male	-1,15	-1.242,1	24,8%	3,8%

Table 60 - Shows single linear regressions made on data from February 2009 to January 2012.
The OMX C20 changes are the independent variable measured by monthly changes in the level of the OMX C20 index.
The dependent variables:
Consumer confidence indicator is measured by the monthly changes
OMX C20 level is measured by the level end of each month
10 years bonds changes is measured by the monthly changes in the rate on the 10 year central-government bonds.
All others are measured by monthly net purchase in mio.DKK.

	Independent variable - 10 year bond			
Dependent variable	t-value	coeff	p-value	R^2
consumer confidence indicator	0,44	3,8	66,2%	0,6%
OMX C20, changes	2,56	0,3	1,0%	16,2%
OMX C20, level	0,57	70,3	57,0%	0,9%
Bonds total	1,39	4.394,0	16,5%	5,4%
bonds, female	1,40	1.398,9	16,3%	5,4%
bonds, male	1,35	2.995,1	17,7%	5,1%
Stocks total	-0,86	-1.580,4	38,9%	2,1%
stocks, female	-0,54	-280,7	58,6%	0,9%
stocks, male	-0,94	-1.299,7	34,5%	2,6%
Mutual funds total	2,35	5.001,5	1,9%	14,0%
Mutual funds, female	1,86	1.579,7	6,3%	9,2%
Mutual funds, male	2,54	3.421,9	1,1%	15,9%
Bond fund total	-0,45	-777,8	65,2%	0,6%
bond fund, female	-1,08	-897,4	28,1%	3,3%
bond fund, male	0,13	119,6	89,9%	0,0%
Stock fund total	4,10	6.666,0	0,0%	33,1%
stock fund, female	3,89	2.805,6	0,0%	30,8%
stock fund, male	4,01	3.860,4	0,0%	32,1%
Mixed fund total	-0,82	-886,7	41,3%	1,9%
Mixed fund, female	-0,90	-319,5	36,8%	2,3%
Mixed fund, male	-0,77	-567,2	43,9%	1,7%

Table 61 - Shows single linear regressions made on data from February 2009 to January 2012.
The 10 year bond is the independent variable measured by the monthly changes in the rate on the 10 year central-government bonds. The dependent variables:
Consumer confidence indicator is measured by the monthly changes
OMX C20 changes is measured by monthly changes in the level of the OMX C20 index
OMX C20 level is measured by the level end of each month
All others are measured by monthly net purchase in mio.DKK.