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The demand for risk-bearing instruments after a financial crisis

A study made in Helsinki

Josefin Karumaa

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International Business

2017

DEGREE THESIS	
Arcada	
Degree Programme:	Bachelor in International Business
Identification number:	
Author:	Josefin Karumaa
Title:	The demand for risk-bearing instruments after a financial crisis – a study made in Helsinki
Supervisor (Arcada):	Andreas Stenius
Commissioned by:	

The study involves finding out the risk-profile of Finnish people. The goal is to show that people who have lived through a financial crisis are more risk-averse than people who have not. The results are gathered by asking three research questions. This was done by examining the risk-profile of people through a questionnaire and analyze the data with the help of literature sources about behavioral economics such as Malmendier and Nagel, Kahneman and Tversky, Dr Grable and Dr Lytton. The research questions asked were the following:

1. Are people over 30 more risk-averse than people under 30?
2. Are people with no experience in investing more risk-averse than people with experience?
3. Are people who have suffered in the 2008 financial crisis more risk-averse than people who have not?

The study was made by handing out 120 copies of a questionnaire, based on a prior similar study, to people in Helsinki. Upon the examination of the results, it becomes clear that people who have lived through a financial crisis are not more risk-averse. On the contrary, people who had experienced suffering got higher average scores in the questionnaire than people who did not have.

The factor of prior experience was the most clear, the result showed that the more experience you have, the more you are willing to take economic risk. This phenomenon was the most clear among young people.

Older people were only a little less risk-seeking than younger people.

Through showing that people who have suffered in the 2008 financial crisis are as risk-seeking (if not more) than people who have not, this research found that the 2008 financial crisis does not have an impact on people´s risk-tolerance 10 years after the crisis.

Keywords:	Financial crisis, risk-profile, age, experience, suffering, Malmender and Nagel, questionnaire, risk-bearing instrument, risk-tolerance, behavioral economics
Number of pages:	54
Language:	English
Date of acceptance:	

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1. MOTIVATION FOR CHOICE OF RESEARCH TOPIC

There are many different factors determining the risk-tolerance of people. There have been many studies studying the difference between genders, occupation, education-levels and so on. What has not yet been studied in Finland is whether a financial crisis affect the risk-profile of people. Studying this is very important for economists, bankers and non-professional investors, in order to know the psychological reasons behind the behavioral of different people. The study is also important since if (when) a financial crisis happens again, we know whether it will affect the demand for risk-bearing instruments or not.

The financial market today is made up by high inflation and low interest rates. This means that the only way get economic profit, or even to break even, is to invest money in risk-bearing instruments.

When the economy is bad you can see it everywhere. Even if you don´t lose money personally, the crisis affected people. People tell their stories and their neighbor´s stories, cynical economists doom the whole banking system and big, well-known companies are forced to let people go, blaming it all on the crisis. This study examines whether experiencing a financial crisis impacts on people´s risk-tolerance.

2. BACKGROUND

There have been multiple financial crises during the years of human living, and there are most likely many to come. A financial crisis is not necessarily bad in the long run – it does have negative impacts on many things but also positive.

Behavioral economics is the study of how people behave on the money-market due to social and psychological factors. (Phung, 2017). This study discusses whether we can explain the change of accepting risk with behavioral economics.

Many financial crises have taken place during modern time. There are different opinions on them, sometimes it seems like every economist has their own unique opinion. A financial crisis is a phenomena when the value of financial institutions and/or assets decrease rapidly. A financial crisis can also be a situation of panic with banks as the victim, if lots of people sell their investments and withdraws their money (Investopedia, 2017).

This situation leads to banks losing cash and companies´ shares losing value. If everyone wants their liquid money withdrawn at the same time, chances are the bank might get bankrupt if it does not have enough cash to pay the customers as well as handing out loans.

3. AIM OF THE STUDY

The aim of the study is to examine what happens with the demand for products that have some sort of risk after a financial crisis.
Other aims are:

- study if the demand changes if people learn about fluctuations on the market in the tough way
- study if people behave differently if they have lived through a financially difficult time

In the current market situation, the interest rates in Europe are low. The Euribor-rates are still on minus (-0.158% 18.08.2017) even after almost 2 years. (Euriborrates.eu, 2017). This means that regular bank accounts, normally investing in short-time rates, are a bad choice if you want the value of your money to remain. When the inflation exceeds the interest rate you could even talk about "minus"-interest rates offered on regular bank accounts. The inflation in Finland in rather high at the moment. The inflation was 0,8% in January 2017, 1,2% in February 2017 and 0,8% in March 2017. (Tilastokeskus, 2017). The inflation in Finland could be steadily rising is forecasted to be 2% in 2020 according to for example tradingeconomics.com (Tradingeconomics, 2017). If the inflation is 2%, your money should be held someplace where the annual return exceeds 2% in order for the value of your money not to decrease. Simplified, if your savings account has an interest rate below 0,8% in March 2017 you continuously lose money. Getting plus/minus zero is one thing, but being so scared of risk that you rather lose money in a regular account is another.

The only thing keeping your money safe from inflation, and the only possibility to get you a nice money pot is investing them. There are plenty of investment-alternatives; funds, listed shares, obligations and bonds to name a few. But if you have lived through financially bad times, when rates are low, unemployment rates increase and companies are going bankrupt – would you trust banks with you money? Would you trust the market enough to invest, although you know how bad it can go? The aim is to study exactly this: how does the demand change if people learn about fluctuations on the market in the tough way.

4. STRUCTURE OF THESIS

The introduction of the thesis contains all information needed in order for the reader to understand the idea of the thesis and the study. The theoretical part gives knowledge about the 2008 financial crises. All limitations are also listed in the introduction.

With the knowledge of the theoretical part the reader will take part of the questionnaire. All necessary information gained from the questionnaire is provided.

The final part of the thesis is a discussion of findings related to findings of prior studies. Will the findings collide or crash?

5. RESEARCH QUESTIONS

The research questions are all focusing on the risk-profile of different categories and their demand for risk-bearing instruments.

The three research questions are:

1. Are people over 30 years old more risk-averse than people under 30 years old?
2. Are people who have no experience in investing more risk-averse than people who does have?
3. Are people who have suffered economically more risk averse than people who have not?

By answering these research questions, the thesis will find out if a financial crisis affects the risk-tolerance of Finnish individuals.

The first research question will answer if people who lived through the 2008 financial crisis are more or less risk averse than people who did not. If they are more risk-averse, it means that young people (people who have not lived through an economic crisis) indeed are willing to take more risk.

The second research question will answer whether prior experience affects the way people make economic decisions. This research question will also answer whether people with no experience are risk averse or not.

The main research question, the third, will address the question whether people who have suffered economically are more risk averse than people who have not. If this is true, it means that bad economic experiences, for example from an economic crisis, affect the way you look at economic risk later on.

The reason why the first question drew the age-line at 30 is that if someone is 30 years old today, he or she was no older than 21 years old when the crisis started.
The average age a Finnish person is when he or she moves out is 20 years (Tilastokeskus, 2009). When you move in to your own apartment you form somewhat of an individual economy on your own, normally people who live alone or with someone are not depending on someone else´s economy anymore. If you have an individual economy of your own, you will most likely get affected is something as big as an economic crisis happens. This is why the age limit was drawn at 21 years; in order to get people who did not have an independent economy versus people who did. With this dividing the study focuses on studying similar people and their behavioral. People who had an independent economy when the 2008 crisis started are people who are likely to have got affected by the crisis as well, if not economically at least psychologically. The people who did not have an independent economy before were most likely children or young adults. Children and teenagers usually do not follow markets that much and they can even be kept in the dark by their parents.

6. LIMITATIONS

In this study, the personal wealth of people was not taken into consideration. This is because in the study, the focus will not be on how people behave depending on if they are wealthy or less wealthy. The amount of money in the individual people´s bank account is not of importance since the risk-level is a psychological factor. There is, obviously, a difference in how wealthy people behave on the money market versus less wealthy people. This has been studied before and therefore this thesis will not study that. This thesis will only study the individual thoughts of each person; their economic behavior. The questions in the questionnaire will be asked to random people, some of will be less wealthy and some will be more. In this way the study takes answers both from "richer" people and "poorer" people into consideration, without knowing who is who. The study will be written on an overall basis and therefore it will not study the possible losings or gains of the people answering the questionnaire.

The questionnaire will also not address whether someone has lost money in financial instruments. This limitation had to be done in order to follow the red line and get the rawest material possible considering the risk-profile. This field might require more studying in the future since it would be very interesting to investigate this as well. Instead of asking straight up if someone has lost money in risk-bearing instruments, research question three addresses the matter of suffering from a financial crisis. It is then up to everyone to decide for themselves if they have suffered in the crisis. This is a better way than making the statement "if you lost money in risk-bearing instruments, you suffered" since suffering is individual. Therefore it is up to everyone who answers the questionnaire to, on their own, define suffering and whether they suffered or not.

The data was not analyzed using SPSS or any other statistical analysis- program, since the data was able to be analyzed with regular mathematics.

7. THEORETICAL FRAMEWORK

Financial crises come and go, and the humanity have lived through (and survived) many depressions. During depressions, people tend to behave differently.

The thesis focuses on the 2008 financial crisis, leading to for example the collapse the United States housing system and the Greek government. This recession can also be referred to as the “Lehmann Brothers crisis” since the crisis is thought to have started there. The reason why this recession was chosen was that it is the most recent one and some might argue that we are still living it.

With the theoretical part of the thesis the reader is provided an understanding for what happened before and during the 2008 financial crisis, and what effect it had in Finland.

7.1. The 2008 financial crisis, or the Global Financial Crisis

The 2008 financial crisis affected the world globally; almost all countries were under some sort of economic distress. In some ways, this crisis has not ended yet. Many economists consider this crisis to be the worst one yet. According to Jean-Pierre Mustier, this crisis taught people that we shouldn´t only rely on financial models and ratios when making decisions, but rather on common sense (Anderson, 2013).

The one thing that most economists seem to agree on is that there is no single reason behind the crisis and how it happened, but rather a string of things that happened after one another.

Some more or less direct reasons for the crisis can be observed, although some might argue that the crisis had been in its starting phase for many years. Others argue that the crisis was just a continuation of another crisis.

The reason most can agree on is that the crisis started in 2008 in the United States due to the housing bubble in the the U.S real estate market, leading to Lehmann Brother´s bankruptcy. Lehmann Brothers had been using trash-loans and when they went bankrupt, people without any sort of possibility to pay back their loans were forced to sell their houses. But, since the situation was as it was, there was no one able to buy the houses. The collapse of the real estate market in the U.S caused problems among financial institutions operating in the mortgage market (Szyszka, 2011).

The crisis that started in the United States lead to many macroeconomic things dooming the global economy. The Euro Crisis was born after the collapse of the housing market in the United States. The Euro Crisis affected Finland very badly.

7.2. Effects in Finland

Finland has had a hard time recovering from the 2008 financial crisis and the Euro crisis that followed. One reason for this is thought to be the failure of export from Finland. The decline in export could originate from the fact that the former leading export company in Finland, Nokia, has been declining rapidly since year 2000 (Hirst, 2015).

Since Finland lack a free-floating currency that would help boost the competiveness with other euro states, the devaluation-process origin from internal devaluation. Internal devaluation is when either lower wages or higher unemployment are used in order for a country to lower costs. (Hirst, 2015). Finland chose to address this problem by increasing the total working hours by 24 hours per year (Accountor, 2016).

7.3 Behavioral economics

During financially bad times, people tend to make fast moves which are not always based on rational decisions.

Behavioral economics is the study of the effect of different factors on economic decisions of people and institutions. Behavioral economics also studies the consequences these decisions have on for example prices and returns. The different factors are psychological, social and emotional (Hartley, 2015).

Modern economic literature argue that the environment where people grow up affect their personal preferences, beliefs and trust in financial institutions and in the stock market. (Alesina and Fuchs-Schundeln, 2005). This would mean that if you have grown up in financially unstable times, it will affect you a lot during your choices and judgments.

Basu (1997) found evidence for the conservatism principle. The conservatism principle is a theory showing that earnings reflect bad news more quickly than good news. (Basu, 1997). Practically this means that even if someone would have good experiences of investing, the bad experiences weigh more.

7.3.1 Main theories in behavioral economics

Daniel Kahneman and Amos Tversky have studied the situation when people are making decisions under uncertainty. (Kahneman and Tversky, 1974). Their book, "Judgment under Uncertainty: Heuristics and Biases" will be of value to this study since it explains the psychology behind people´s choices and judgements under uncertainty. Financial crises can be referred to as uncertainties, and in this case judgement would mean the situation when a person decides what to do with her/his money – keep it in regular bank accounts and lose some to inflation or invest some (or all) of it.

All economic decisions are based on the individual person´s beliefs concerning the likelihood of uncertain events (such as a stock-crash) and pre-knowledge. A simple example for this is that someone describes the personality of a person A and person B has to guess the occupation of person A. This was tested by experiments and questionnaires and showed that people tend not to make rational decisions based on facts. (Kahneman and Tversky, 1974).

Kahneman and Tversky also found evidence of the theory called "illusion of validity". Illusion of validity shows that people make choices by selecting the outcome that they think is the most representing of the input. (Kahneman and Tversky, 1974). An example of this would be the case in which person B has to guess the occupation of person A based on person A´s personality. The outcome is the guessed occupation and the input is the described personality.

Another interesting experiment conducted by Kahneman and Tversky was made in flight training. It showed that when the soon-to-be pilots landed nicely and got good feedback for it, they landed poorly the next time. On the other hand, harsh feedback after a landing led to a better landing the next time. The conclusion is that punishment is more effective than reward. I find this interesting because if punishment is more effective than reward, could that mean that the "punishment" for bad investments (losing money) is more effective than the "award" for good investments (getting profit)?

Kahneman and Tversky also found an interesting point showing that people take the easier decision when having the choice. This was done by an experiment in which people were to choose if there are more words that starts with an A or more words which 3rd letter is a B. People take the easier decision and choose the first alternative since it is easier to come up with words starting with an A than words with a B as the 3rd letter. (Kahnemand and Tvesrky, 1974). If we take this theory to taking economic decisions, people would rather choose to keep their money in a regular savings account than investing them since it is easier to keep them in an account.

Another thing that is interesting in this particular study is people´s judgment of two events happening after one another. This would be case right now; what are the odds that another financial crises would happen right now – not even 10 years after the former one?

Chapman and Chapman studied the judgment of how likely people find it that two events would happen after one another. The illusory correlation effect studied that people do think two things can happen after one another at any time. Chapman and Chapman also found that people remember some things that they pair with the event. (Chapman, L and Chapman, J, 1969).

A similar study to this thesis was made in the University of California Berkeley by economics professor Ulrike Malmendier and Stefan Nagel examined the likeliness to invest in shares of individuals that lived through the Great Depression. (Malmendier and Nagel, 2010).

The study found that The Great Depression, referred to as an "economic shock", has had a long-lasting effect on people´s risk attitude. (Malmendier and Nagel, 2010). Some standard economic models assume that all individuals are endowed with stable risk preferences, which are unaltered by economic experiences. Psychology literature, on the other hand, argue that all personal experiences have a great impact on personal decisions (Malmendier and Nagel, 2010).

Malmendier and Nagel made empirical studies, examining if people´s willingness to take risk in the financial market correlates with the macroeconomic history they have experimented.

Malmendier and Nagel tested if individuals who have experienced low stock-market returns have a lower willingness to take financial risk and are less likely to invest in stocks. The study examined the same things within the bond-market as well, if individuals who has experienced low bond-market returns are less likely to invest in stocks. (Malmendier and Nagel, 2010).

Malmendier and Nagel found that individuals that have experienced high stock market returns have a higher tolerance for financial risk and are more likely to invest in stocks. The study also found that people who have good experiences from the bond market are more likely to accept more risk and more willing to invest in bonds. Malmendier and Nagel found that recent events in the financial market weights more than former events. The authors also concluded that there are evidence that experience influences risk-taking by affecting a person´s beliefs rather than preferences. An important factor is also that the differences in the level of risk-tolerance between people is correlating with their environmental differences. (Malmendier and Nagel, 2010)

If the differences in the level of risk-tolerance between people is correlating with their environmental differences, it means that the generation that experienced the 2008 financial crisis will always be skeptical towards taking risk.

The study conducted by Malmendier and Nagel was made by investigating the relationship between risk-tolerance and return experiences. (Malmendier and Nagel, 2010).

The methodology was taking and analyzing information from Survey of Consumer Finances (SCF) and asking participants about their preferences in taking financial risk. The survey also divided households into three different categories depending on how many stocks or long-term bonds the household owned. Answers were analyzed and discussed and the authors used mathematic formulas to analyze the answers. (Malmenider and Nagel, 2010). The study showed that the people that lived during the Great Depression were less likely to invest their money in the stock market compared to the generation thereafter).

7.3.2 The prospect theory

The prospect theory describes the phenomenon when people make irrational decisions on the money market. The prospect theory states that losses have more emotional impact on people than the same amount of gains (Phung, 2017).

A study made by Nobel-winner Daniel Kahneman and mathematical psychologist Amos Tversky studied the irrational behavior when people take risk. Kahneman and Tversky made studies where people answered questions regarding risk, losses and gains. The following two questions were asked:

1. You have $1,000 and you must pick one of the following choices:
   Choice A: You have a 50% chance of gaining $1,000, and a 50% chance of gaining $0.
   Choice B: You have a 100% chance of gaining $500.

2. You have $2,000 and you must pick one of the following choices:
   Choice A: You have a 50% chance of losing $1,000, and 50% of losing $0.
   Choice B: You have a 100% chance of losing $500

If people would behave logically and rationally, they would pick A or B in both situations. However, the result of the experiment showed the irrationality of people since a majority of people chose B in the first question and A in the second. This means that people are willing to accept lower gains but they are also willing to engage in risk-bearing instruments if they could limit their losses. The study showed that losses are weighted more heavily than the same amount of gains (Phung, 2017).

This study shows that people behave irrationally. This is important in my study since in this market situation, the only way to get profit is by investing in shares, funds or bonds. People still choose not to. The prospect theory also implements that some people might choose not to invest their money because they have to pay taxes on the return. Even though the net return on investments is higher than the return on having the money in a regular savings account (or at home), the feeling of paying tax is important for feeling and makes them choose not to make the investment. This experiment is similar to the questionnaire I will have in order to find the risk-profile of people.

7.3.3 Grable´s and Lytton´s online test

Dr Grable and Dr Lytton, finance professors in the US, conducted an online risk-tolerance test in an article published in 2006.

The article is based on answers conducted from an online-test. This article found that some factors are more associated with risk-taking than others. The results can be seen in the following table:

Table 2.1 Factors associated with financial risk tolerance

Individual characteristic	Assumed to be more risk tolerant	Level of support in the literature[a]
Gender	Male	High
Age	Younger	Moderate
Marital status	Single	Moderate
Marital/Gender interaction	Single male	High
Ethnicity	Non-Hispanic white	Moderate
Income	High	Moderate
Net worth	High	High
Financial satisfaction	High	High
Financial knowledge	High	High
Education	Bachelor's degree or higher	Moderate
Employment status	Employed full-time	Moderate
Occupation	Professional	Moderate
Income source	Business owner	High
Income variability	Stable and predictable	High
Household size	Large	Moderate
Homeownership	Owner	Low
Religiosity	Less religious	Moderate
Self-esteem	High	High
Locus of control	Internal	Low
Personality	Type A	High
Sensation seeking	High	High
Mood	Happy	High

Table 1, The Grable and Lytton risk-tolerance scale: A 15-year retroperspective by Kuzniak, S, Rabbani, A, Heo, W, Ruiz-Menjivar. J, Grable, J 2015.

Three factors in the table are corresponding to the three hypotheses of this thesis: age, financial satisfaction and financial knowledge.

Age is directly related to the first hypothesis. The article found that younger people are less risk averse.

Financial knowledge is related to hypothesis number two; having experience in investing. Also this factor was found to affect the risk-taking.

Financial satisfaction is related to hypothesis number three; the level of financial suffering. The article found that the more satisfied with your economy you are the more you are willing to take risk.

8 METHODOLOGY

The method for the study is a questionnaire. Malmender and Nagel also asked people about their willingness to invest in risk-bearing instruments via a questionnaire, so this method was adopted in the study.

The questionnaire contains 11 questions all in all. The first three questions are background questions that are directly related to the research questions. The three research questions formed the three background questions of the questionnaire. The research questions can in this way be easily answered later on. The eight other questions are addressing the risk-profile of people. These were all taken from an online-quiz by Dr Grable and Dr Lytton, examining the risk-profile, which was later made into an article.

In every question there is one risk-averse option and one risk-seeking. For the risk-seeking option, respondents got 1 point and for the risk-averse option, respondents got 0 points. Calculating the points together gets a total score for all respondents. The maximum score was 8 points and the minimum 0 points.

The questionnaire is on the next page.

Background questions

1. Age

   - Under 30 years

   - Over 30 years

2. Do you have experience in investing?

   - No

   -Some

   -Yes

3. How much did you suffer in the 2008 financial crisis?

   - I did not suffer at all / I was not aware of the crisis

   - I suffered some

   - I suffered more than average/I suffered a lot

1. You have a two week holiday. Would you pay 100 € if that would secure you a good weather during those weeks (if you had the money)?

   ☐ Yes

   ☐ No

2. Would you rather keep all your savings

   ☐ In a zero-interest bank account

   ☐ In risk-bearing instruments

3. What do you associate risk with

   ☐ Loss

   ☐ Opportunity

4. Taking your prior experience in consideration, would you be willing to invest in risk-bearing instruments?

   ☐ Yes

   ☐ No

5. You are in the "Who wants to become a millionaire" TV-program. You have already won 1 000€ and you now have a 50% chance of winning 5 000€ or a

50% chance of losing all. What do you do?

☐ Leave the program with 1 000€

☐ Continue playing with a 50% chance of losing everything or winning 5 000€

6. If you would lose your job 3 weeks before your dream holiday, would you cancel the trip (if you would get your money back)?

   ☐ Yes

   ☐ No

7. The inflation in Finland was 0,7% in September. That means that your money loses 0,7% of its value. Knowing this, what would you rather do:

   ☐ I do not care about inflation, I keep my money in a regular bank account

   ☐ I care about this and would be interested in other options

8. You would suddenly get 20 000€. What would you do:

   ☐ Invest 50% of the money in risk-bearing instruments

   ☐ Invest none of it

The questionnaire was translated into Finnish and printed out. The reason why it was translated into Finnish was that Finnish people might find it easier to answer the questionnaire in their first language and the questionnaire needed to be as simple as possible so it would not take too long to fill in. The questionnaire was handed to 120 people in order to get interpretable data. The questionnaire was handed to people in Kamppi´s bus station. Kamppi is a shopping center in the center of Helsinki, which has an indoor bus-station on the lowest level. Kamppi is a good choice because you don´t know what kind of people will be in Kamppi waiting for the bus on any given day. The collecting of the data took 2 days all in all, so the answers are random. There are also many different people in Kamppi and this will make the answers diversified. The only possible limitation in this method is that you can speculate that wealthy people do not take the bus, they own a car of their own and will therefore not be found waiting for a bus. Again, since the environment is becoming more important, more people take the bus for environmental reasons. Another possible limitation is that the people who take the bus from Kamppi could be people that are not living in the center of the city. But there are also many people that live in the center that went shopping, and therefore walked past the bus station.

The questionnaire contained eight simple questions that all relate to financial risk and the acceptance of it. In the questionnaire there was no questions regarding whether the person has lost money before in risk-bearing instruments, nor any questions about how much money the person could afford to invest. The questions will focus only on getting the risk-profile of the people.

Four questions in the questionnaire was directly regarding whether the person would invest money in risk-bearing instruments or not. These questions were number 2, 4, 7 and 8.

Choosing 2A in question number 2 means than the person would not consider investing any money. Choosing 2B means that the person would be willing to put all their savings in risk-bearing instruments, so choosing B equals a very high tolerance for risk.

Question number 4 does not clarify a specific sum or part of savings that would be invested; it simply asks if someone would be willing to invest in risk-bearing instruments. Choosing 4B would be the risk-seeking option.

Question number 7 is about inflation and whether the person answering cares about the fact that their money loses its value. This question does not ask the answerer to make a decision right there and then, it simply asks is the person would be interested to know about other options. If someone answers A it means that they are so risk-averse that they do not even care if their money loses its value.

Question number 8 concerns “extra money” (money toy did not earn and money you do not need since it would just be given) and they would not be willing to invest even half of it in risk-bearing instruments that person is very risk-aversive. Choosing 8B means that the person would not invest “extra money”.

Later in the thesis these four questions will be called the “investment-questions”.

The reliability of the thesis lies on three grounds; sample, the questionnaire and the simplicity.

120 people answered the questionnaire in total. The results are reliable since the sample is big. The questionnaire contained questions from another thesis, written almost 20 years ago in the US and could still be easily interpreted in Finland. This means that the same questions can be used over again and in different countries.

The simplicity of the study comes from the fact that it is very easy for anyone to print out 120 copies of a questionnaire and ask people to answer to the questions. The results were analyzed using simple mathematics, which will be explained in the "Analyzing the data"-section. Anyone could re-do the experiment and it is also therefore reliable.

The findings are valid since the sample is as random as it gets. The sample was chosen in one of biggest malls in Helsinki on two completely random days and random hours.

The findings might have some casual relationships, which are explained in the "bias in data collection" – sector.

9. ANALYZING THE DATA

All data was analyzed with simple calculations and excel. The data was analyzed with calculating the average of different groups and comparing the data. The average was calculated for all questions and for the investing-questions.

All questions in the questionnaire had one option that was risk-averse and one that was risky. For the risk-averse choice you got 0 points and for the risky answer you got 1 point. The points were calculated and written on the questionnaire sheet. The maximum amount of points is 8, since you do not get points for the background questions.
The questionnaires were divided into different categories, such as all people under 30 years old. All points from the category were added together and divided by the amount of people in that specific category.
Calculating how much bigger in percentage the average of e certain group is than the group it is compared with was gotten by calculating the average score in the specific group divided by the maximum score one person could have got (8 points in all questions, 4 points in the investing questions). The answer X is multiplied by 100 in order to get the precentral score for the certain sub-group. Then the same formula was

calculated for the other sub-group and the difference between the answers is how much bigger or lesser the average scores of the first sub-group got.

10. BIAS IN THE QUESTIONNAIRE

The possible limitation of the questionnaire is that we don´t know if people answered the questions truthfully. This aspect is impossible to affect – in every survey there is always the possibility that people decide not to answer truthfully, or that they do not pay enough attention to the questions in order to answer them rightly. These aspects we cannot erase, the only thing that can be done is to advise people to take their time and answer as truthfully as possible. Having respondents answer truthfully might mean that the answers were answered as truthfully as possible.

Another limitation that should be taken into consideration is that although the study is about Finnish people, only people from Helsinki were taking part of the questionnaire. All answers are from people that are, if not born, living in the capital city of Finland. The results are not taking into consideration if people are behaving differently in other cities, for example on the countryside.

11. DEFINITIONS

Risk-bearing instrument: A risk-bearing instrument as any financial instrument containing risk. The higher the risk of the instrument, the higher the possible return. Risk-bearing instrument are for example shares and funds whereas normal savings accounts are not.

2008 financial crisis: The latest global financial crisis.

Behavioral economics: Behavioral economics, or behavioral finance, is the study of how different things affects the decision made by a person. The different things can be psychological or cultural and the decision could be to save the money in a 10-year old company loan or spend the money on travelling.

Fund: A fund is an economical instrument coordinated by the financial institution that started it. There are three sorts of funds; rate-funds, share-funds and mixed funds. Interest-funds contain different kind of interest-instruments, such as debenture loans and government bonds. Share-funds contain different shares, usually sorted by operation area or geographical areas. Mixed funds contain both interest-instruments and shares.

Bond: A bond is a loan issued by a state or company. Bonds have fixed rates and the loan time is also fixed and cannot be sold in beforehand.

Share: A share is a unit of ownership in a stock-listed company.

Bad experience: "Bad experience" is not only referring to if someone has lost money. A bad experience could be if someone lived during the 2008 financial crisis and was aware of what happened.

Risk-averse: A person with a low tolerance for economic risk, someone who does not want fluctuations

Risk-seeking: A person with a high tolerance for risk, someone who tolerates fluctuations

12. DATA ANALYSIS

The raw data from both age groups is presented below:

A	B	C	D	E	F
	Amount of people	Total points (all questions)	Average (all questions)	Total points (investing questions)	Average (investing questions)
Over 30 years old	60	282	4,7	144	2,4
Under 30 years old	60	291	4,85	149	2,48
No experience in investing	63	247	4,33	111	1,94
Experience in investing	57	339	5,38	180	2,85
Did not suffer	98	468	4,77	236	2,4
Did suffer	22	53	5,09	53	2,4

Table 2

12.1. Age

60 respondents were over 30 years old. The total average of this age group was 4,7 points. The average of the investing questions for this group was 2,4 points.

60 respondents were under 30 years old. The average for the younger age group is 4,85, and the average of the investing for under 30 year olds was 2,48.

The younger age group had a 1,87% higher average in all questions and 2% in the investing questions. The difference is not considerable but the results showed that the younger age groups was a little more risk-seeking than the older age-group.

12.2. Prior experience

People with some experience and people with a lot of experience were classified as one group; people that have experience in investing. 52,5% (63 people) of all who answered the questionnaire had experience in investing. The total average of the people with experience in investing is 5,38 and the average of the investing questions for people with experience is 2,85.

The 57 people that answered to have no experience in investing got a total average of 4,33 points. The total average of the investing questions for people with no investing-experience is 1,94.

The average for all questions and for the investing-questions is considerably higher for people with experience. The average of all questions for people with experience is 13,13% higher than the average for people with no experience. The difference in the average of the investing-questions is 22,75% higher for people with prior experience in investing.

12.3. Suffering

18,3% of all people answered to have experienced some or a lot of suffering in the 2008 financial crisis. These two categories are also classified as one; people who have suffered in the 2008 financial crisis. The average of all questions for those who have suffered is 5,09 and the average of the investing questions is 2,40.

The average for the majority, the people that did not suffer in the 2008 financial crisis, is 4,7 in all questions and 2,4 in the investing-questions.

The total average is 4,88% higher for the people that suffered some or a lot of suffering in the 2008 financial crisis. The average for the investing-questions is exactly the same for people that did suffer and people that did not.

12.4. Data interpretation

12.4.1. Research question 1: The factor of age

People over 30 years old are more risk-averse than people under 30. The difference is not big, especially not in the average of all questions, but it should still be considered since the data was gathered from such a large group of people. If the sample would have been even bigger, the difference could have been bigger as well.
This means that people over 30 are more risk-averse in general and are less willing to invest in risk-bearing instruments than people under 30 years.

12.4.2 Research question 2: The factor of prior experience

People with no prior experience in investing got a remarkable lower total average score than people with some or a lot of experience. The difference in the score from the investing questions were bigger than the average score from all questions, but both results are considerable. People with no experience are more risk-averse in general than people with experience, and are less willing to invest in risk-bearing instruments.

Research question 3: The factor of suffering from an economic crisis

The people that had suffered in the 2008 financial crisis got an average score of 5,09 in all questions and 2,4 in the investing questions. People who had not suffered got an average score of 4,77 in all questions and 2,4 in the investing questions. People who did not experience suffering got a 4,88% lower score in average from all questions than people who had experienced some or a lot of suffering. Both groups were as likely to invest in risk-bearing instruments.

The total risk-profile of people who suffered in the 2008 financial crisis was more risk seeking than for people who did not suffer, but both sub-groups were as willing to invest in risk-bearing instruments.

Below is a chart showing the average scores of all sub-categories. The chart on the left shows the total average score for all questions, got by 6 different categories; under 30, over 30, no experience in investing, experience in investing, did not suffer in the 2008 financial crisis, did suffer in the 2008 financial crisis.

The chart on the right is addressing the same categories and the score they got, but only for the investing questions. In other words, this chart ranks categories in how they are willing to invest in risk-bearing instruments while the left chart ranks them on their total risk-profile.

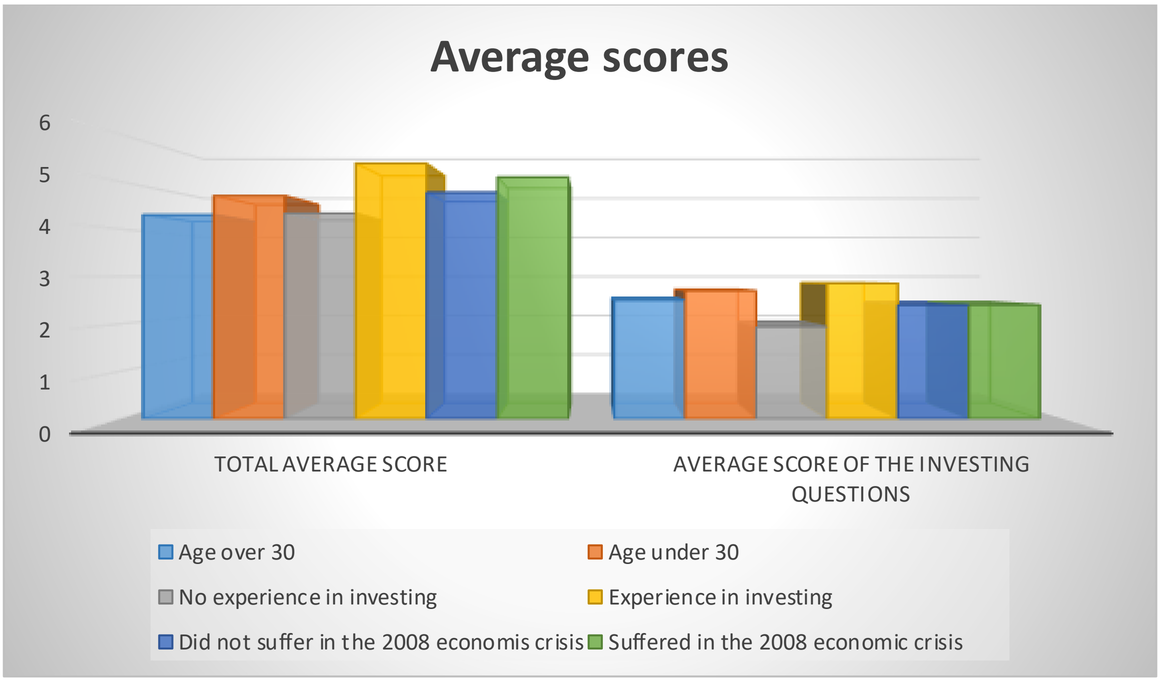


Table 3

The highest average score in all questions and the investing-questions got people with experience in investing. The second highest score in all questions was by people who experienced suffering in the 2008 financial crisis, and on third place comes under 30 year-olds.

The second highest score in the investing questions was by age under 30, followed by age over 30 and then people who did suffer and did not suffer on the same exact score.

12.5 Own savings vs extra money - Question 8 versus question 2

Question 2 in the questionnaire was about money that the responder has earned on their own; whether the person answering the question would want to invest their savings, or rather have them in a normal account

Question 8 asked the responder to imagine simply being handed 20.000€; would they invest a part of it or not? When analyzing the answers, it was clear to be seen that some people tend to behave differently if they are handling their own money or "extra" money. This insight required another question36 to be analyzed - are people more risk-aversive with their own money?

20 people in the older age-group answered inconsistently on questions 2 and 8.
12 people answered to keep their own savings in a regular account, but given extra money they would invest some of it.
8 people answered to keep their own savings in risk-bearing instruments whereas given extra money they would not invest it.

16 people in the younger age group answered inconsistently on questions 2 and 8.
14 people would keep their own money in a regular account whereas given extra money, they would invest at least half of it.
2 people would keep their own money in risk-bearing instruments but would not invest given extra money.

12.6. Splitting the data, over 30 year olds

The next paragraphs will focus on the differences between both age groups, and the data gathered from both.

The raw data of the older age group is presented below:

	A	B	C	D
1		Nr of answers	Average all questions	Average investing questions
2	No experience	18	3,3	1,6
3	Some experience	28	5,1	2,7
4	A lot of experience	14	5,3	2,7
5				
6	Did not suffer	46	4,7	2,77
7	Suffered some	13	5,1	2,23
8	Suffered a lot	1	1	0
9				
10	High points	7	7,2	4
11	Low points	4	1,5	0,6
12				
13				

Table 4

The average total score of over 30 year olds was 4,7 points.

The majority of over 30 year olds in the study did not suffer in the 2008 financial crisis. The average score of the people over 30 years that did not suffer was 4,7 points, which is 0,7 points less than the average from all people who experienced some suffering. People over 30 years with no experience in investing got an average score of 3,3 points and people with some experience got an average of 5,1 points.

The average score of the older age group in the investing questions was 2,4 points. 31 people got a high score of 3 or 4 points in these.

12.6.1 Over 30 years, experienced no suffering

76,6% (46 people) of the older age group said to have experienced no suffering in the 2008 financial crisis.

The total average score of the ones who experienced no suffering was 4,7 points, which is exactly the same average as the whole age group. The average of the investing questions for people over 30 years who did not suffer was 2,77 points out of a possible 4 points.

12.6.2 Over 30 years, experienced some suffering

21,6% (13 people) of the older age group had experienced some suffering in the 2008 financial crisis. The average total score of them was 5,1. This average is higher than the average score of the whole age group, and also higher than the people from the same age group that experienced no suffering.

The average of the investing questions for people over 30 who suffered some during the 2008 financial crisis was 2,23. This result is 13,5% lower than the same result for over 30 year olds that did not suffer in the 2008 financial crisis.

Out of the 13 people over 30 years that have experienced some suffering, 30% (4 people) have no experience in investing. 2 people out of the 9 people who suffered some had a lot of experience.

4 people out of the total 13 people (30,77%) that experienced some suffering got maximum points in the investing-questions.

12.6.3 Over 30 years, suffered a lot in the 2008 financial crisis

One person in the whole study answered to have suffered a lot in the 2008 financial crisis. This person got 1 point in all questions which was the lowest in her/his age group since everyone else in the older age group got at least 2 points.

The person having suffered a lot had no experience of investing, so his or her suffering must come from another source than losing her money in risk-bearing instruments.

12.6.4 Over 30, no experience in investing

30% (18 people) over 30 years old answered to have no experience in investing at all. Out of these 18 people, 13 people (72%) did not experienced any suffering in the 2008 financial crisis. Four people had experienced some suffering and one person had experienced a lot of suffering.
The average score of the ones with no experience in the older age group is 3,3 points, which is about 1 point lower than the average from the whole age group.
The average point of the older age group with no experience in the investing-questions was 1,6, which also is a little lower than the average for the whole age group.

12.6.5 Over 30, some experience in investing

46% (28 people) of the older age group had some experience in investing. The total average of these is 5,1 points, which is 22,5% higher than the average of the people with no experience in investing.

The people with some experience in investing got an average of 2,7 points from the investing-questions. This is 33,25% higher than the average of the people from the same age group with no experience in investing.

75% of the people over 30 years with some experience in investing answered not to have suffered in the 2008 financial crisis.

12.6.6. Over 30, a lot of experience in investing

23% (14 people) of over 30-year olds had a lot of experience in investing. The average score of the people with a lot of experience was 5,3 points, which is 7,5% higher than the people with no experience. The difference between the people with some experience and a lot of experience was not that much. People with a lot of experience got a 2,5% higher average score in all questions and the exact same score in the investment questions.
Out of the people with a lot of experience, 12 people did not suffer at all during the financial crisis and 2 people suffered some.

11,6% of the older age group (7 people) got the highest scores in all questions, 7 or 8 points. Out of these 7 people, 5 people answered to have some or a lot of experience in investing and 2 people said to have no experience in investing.
The majority of the people with the highest score did not suffer at all during the 2008 financial crisis, but 2 people suffered some.

6,6% (4 people) of the whole age group of over 30 year olds got the lowest scores. Since no one got 0 points, 1 and 2 total points are counted as low. One person in the older age group got 1 point. This was the same person that answered to have suffered a lot from the 2008 financial crisis.
A common pattern among the people with the lowest score was that 75% chose that they would not cancel a trip if they would lose their job.

In the older age group, the most common scores were

1. 6 points
2. 4 points

And the least common scores were

1. 1 point
2. 8 points

12.6.7 Over 30 year olds, the factor of having suffered in the 2008 financial crisis

76% of all over 30 years old did not suffer in the 2008 financial crisis and they had the exact same average as the whole age group. This makes sense since people who did not suffer makes up for 76% of all. This also means that out of all people from the older age group, only 24% experienced suffering in the 2008 financial crisis. This means that only every fifth people over 30 suffered, so suffering was not very common among the people who answered the questionnaire.

The average score of people who experienced some suffering in the 2008 financial crisis is 5,1, which is higher than the total average for the people that did not experience any suffering. This could correlate with the fact that almost 70% of those who suffered some in the 2008 financial crisis also answered to have some or a lot of experience in investing. As stated before, people over 30 years old with prior experience in investing were more risk-seeking than people over 30 with no experience in investing. Since the majority of people over 30 who suffered in the 2008 financial crisis also had experience in investing, and the result show that those who answered to have experience in investing have a higher tolerance for risk, this means that experience in investing weights more than having suffered in a financial crisis when making decisions on investing later on for over 30 year old.

The average score of the investing questions for over 30 year olds who experienced some suffering in the 2008 financial crisis was 2,23 points. This is lower than the average of the group who did not suffer (2,77 points). This means that although people over 30 who suffered some in the 2008 financial crisis have a higher overall risk-profile they are less willing to take risk than people who did not suffer.

1 person reported to have suffered a lot in the 2008 financial crisis. This person also reported to have no experience in investing and got 0 points in the investing questions. Since he or she did not have any experience in investing it means that the suffering he/she experienced in the financial crisis came from another source than losing money in risk-bearing instruments. Even though he or she has not lost any money in risk-bearing instruments, he or she is the most risk-aversive in the older age group. So suffering a lot from a financial crisis made him or her very risk-aversive even if he or she did not lose any money in risk-bearing instruments. This person has also not wanted to invest in risk-bearing instruments even 10 years after the crisis, and got zero points in the investment questions. The only point the person got was that he or she would not cancel a trip if he or she would lose his or her job.

12.6.8. Over 30 year olds, the factor of prior experience in investing

30% of all over 30 years old answered that they did not have any experience in investing. The people with no experience in investing had an average of 3,3 points in all questions, which is considerably less than the average score of the whole group, which was 4,7. The same people also got an average score of 1,6 points in the investing question. The average of the whole age group was 2,7 so also this result is a lot less.

46% of the older age group answered to have some experience in investing. Their total average score was 5,1 which is higher than the average of the whole group and a lot higher than people from the same age group with no experience. This sub-group got an average of 2,7 points in the investing questions which is 13,75% more than the average of the people from the same age group with no experience. The difference is remarkable and it means that people with some experience in investing are less risk-averse and more willing to invest in risk-bearing instruments than people with no experience.

23% of over 30 year olds have a lot of experience. This is 50% of the amount of people with some experience. People with a lot of experience in investing got only a little higher score in all questions than the people with some experience, and the same average score in the investing questions. This means that having some experience in investing or having a lot does not have a big difference in the overall risk profile nor in the willingness to invest in risk-bearing instruments.

7 people in the older age group got 7 or 8 points. This means than only 11,6% of over 30 year olds are very risk-seeking. Out of these 7 people, 2 reported not to have experience in investing and 2 people answered to have experienced some suffering in the 2008 financial crisis. These were not the same people.

So, 28.57% of the very risk-seeking over 30 year olds have no experience and as many have experienced suffering in the 2008 financial crisis. Even though the majority were people with prior experience that did not suffer, there are exceptions.

An interesting result is that everyone who got 7 points in the older age class chose the same question that was worth 0 points, they all chose 1A. Question 1 is about whether you would pay 100 for a secured good weather during a holiday and all over 30 year olds that got 7 points chose that they would pay 100€ for this. This means that even if they were willing to take economic risk, they were not willing to take overall risk.

4 people in the older age group got 1 or 2 points from the questionnaire. None of them had prior experience in investing and only one of them suffered a lot in the 2008 financial crisis. There was no clear pattern in this sub-group but half of them chose that they associate risk with opportunity rather than with loss. The reason why 50% of the most risk-averse people associate risk with opportunity could be that they did not think of risk as economic risk but rather overall risk because none of them chose that they would be willing to invest in the investing questions.

12.7. Under 30 years old

The raw data of the younger age group is presented below.

	A	B	C	D
1		Nr of answers	Average score (all questions)	Average score (investing questions)
2	No experience	39	4,5	2,1
3	Some experience	16	5,12	2,81
4	A lot of experience	5	6,6	3,6
5				
6	Did not suffer	52	4,7	2,38
7	Suffered some	8	5,8	2,5
8	Suffered a lot			
9				
10	High points	11	7,36	4
11	Low points	6	1,3	0,33
12				
13				

Table 5

The average score of under 30 year-olds was 4,85. This is very little higher than the older age class´ average score.

The average for the investing questions of under 30 year olds is 2,48.

12.7.1 Under 30, experienced no suffering in the 2008 financial crisis

A clear majority of people under 30 did not suffer at all in the 2008 financial crisis, 86,6%. The average score for the older 30 year olds who did not suffer at all was 4,7 points in all question and 2,38 in the investing questions.

12.7.2 Under 30, experienced some suffering in the 2008 financial crisis

8 people under 30 (13,3%) answered to have experienced some suffering in the 2008 financial crisis, and they got an average score of 5,2 points in all questions. This average is 6,25% higher than the average of the people under 30 years that experienced no suffering and 4,6% higher than the average score of the whole age group. This sub-group got an average of 2,5 points in the investing questions, which is 3,3% higher than the ones who experienced no suffering. 5 people out of the 8 had no experience in investing.

All but one answered 4B; that based on their experience they would be willing to invest in risk-bearing instruments. This means that almost 90% of everyone under 30 who suffered in the 2008 financial crisis would invest in risk-bearing instrument although they had suffered some during the 2008 financial crisis. All who answered 4B had no experience in investing.

No one under 30 years experienced a lot of suffering in the 2008 financial crisis.

12.7.3 Under 30, no experience in investing

39 people under 30 had no experience in investing at all. Their average score in all questions was 4,5 points and 2,1 in the investing questions.

12.7.4 Under 30, some experience in investing

16 people under 30 have some experience in investing. The average of everyone with experience is 5,12 points which is higher than the average of the group. The average of the investing questions for the younger age group with some experience in investing was 2,81. The average of all questions was 7,75% higher than the people with no experience, and the average for the investing questions was 17,75% higher than the people with no experience.

Out of the 16 people having some experience, 6 people (37,5%) answered to have experienced some suffering during the 2008 financial crisis. The average score of the ones with some experience in investing and who experienced some suffering was 5,5, so it is about 7% higher than the average of everyone with some experience.
The 10 people that had some experience in investing and did not suffer at all had an average score of 4,9 which is 7,5% lower than the people with the same amount of experience who did suffer in the 2008 financial crisis. So people under 30 years with some experience who suffered some were more risk-seeking than people under 30 with some experience who did not suffer at all.

12.7.5 Under 30, a lot of experience in investing

5 people out of 60 answered to have experience in investing. All of these people answered to have not had experienced any suffering in the 2008 financial crisis. The average of these people is 6,6 points. This is remarkably higher than the whole age group, and 18,5% higher than people with only some experience in investing. The average score of the investing questions for this sub-group was 3,6, which is 19,75% higher than the average of investing questions for people with some experience.

In the younger age group, 11 people or 18,3% got the highest scores 7 or 8. Out of the 11 people, 8 people did not suffer at all during the 2008 financial crisis and 3 people experienced some suffering.

Out of these 11 people, 6 people (54,5%) answered to have no experience in investing. So over half of the most risk-seeking young people had no experience in investing but

still got the highest scores. 3 people (27,2%) had some experience in investing and 2 people (18,1%) have experience in investing.
The 54,5% that had no experience in investing got an average score of 7,3 points, whereas the people with experience had an average of 7,5 points. Although the difference is small, the average score is higher of people with more experience.

9 people of 11 got full points (4) in the investing questions.

The 2 people that did not get full points chose 7A; that they do not care about inflation, they would keep their money in a regular bank account. This result is curious since the people chose the risk-seeking alternative in all other questions.

No one in the whole study got 0 points, so the lowest points is 1-2 points. In the younger age group, 6 people got the lowest points.

All 6 people that got a low score had no prior experience in investing and also did not suffer at all in the 2008 financial crisis.

No clear pattern could be found among the people that got the lowest points but 2 people chose 7B; that they care about inflation and they would be open to hear about other options.
The most common scores in the younger age group was

1. 5 points
2. 6 points

And the least common scores were

1. 2 points
2. 1, 4 and 8 points

As many people in the younger age group got the lowest possible score as got the highest possible score.

12.7.6 Under 30 year olds, the factor of having suffered in the 2008 financial crisis

8 people under 30 years answered that they have experienced some suffering in the 2008 financial crisis got higher average points than the people that had experienced no suffering, both in all questions and the investing questions. This means that people under 30 who experienced some suffering in the 2008 financial crisis have a higher overall risk tolerance than people who did not suffer, and they were also more willing to invest in risk-bearing instruments. 80% of the people who suffered in the younger age group got full points in the investing questions

62,5% of the people who experienced suffering, answered to have no experience in investing. This means that the majority of people under 30 that suffered, experienced the suffering through another channel than losing money in risk-bearing instruments.

65% of under 30 year olds answered that they had no experience in investing. The total average of people with no experience is 4,5 which is less than the average for the whole group. The average of people with no experience in the investing questions was 1,6. This too is considerably less than the whole average. This means that under 30 year olds that have no experience in investing have a lower overall risk profile and are less willing to invest in risk-bearing instruments than the average of the whole age group.

26% of the younger age group answered that they had some experience in investing. The average of those with some experience in investing was 7,81 points higher than those with no experience in all questions and 27,5 points higher in the investing questions.

12.7.7 Under 30, The factor of prior experience

5 people under 30 answered to have a lot of experience in investing. They got 6,6 points on average in all questions and 3,6 points in the investing questions. The average points are remarkably higher than the average for people under 30 with no experience in investing and also higher than the people who answered that they had some experience.

No one under 30 that answered to have a lot of experience in investing had suffered in the 2008 financial crisis.

The results show that the more experience under 30 year olds had, the more risk-seeking they were and the more willing to invest in risk-bearing instruments.

12.7.8 Under 30, High points

18,3% of all young people got 7 or 8 points in total.
The majority of the younger age group that got the highest points had no experience in investing. So young people can be very risk-seeking without experience in investing. But results showed that among all under 30 that got the highest points, the ones with experience got a higher total average from all questions than the ones with no experience. 62,5% of the younger age group who got a high score did not suffer in the 2008 economic crisis.

What is interesting is that out of the most risk-taking people from the younger age group, 18% answered 7A; that they are not bothered by the fact that inflation is eating their money and that they keep their money in regular accounts instead of in risk-bearing instruments, although they chose the more risk-taking choice in all other questions. How come almost 20% of the risk-taking people are not bothered by inflation? Does young people not fully understand inflation and the effect of it?
From the younger people that got 7 points, some answered 1A; they would pay for good weather during their holiday. Since the people answering were under 30 you could argue that most of them are currently working or studying. If you are working and you go on a holiday you might want the weather to be really nice so that you can enjoy it to full extend.
Some answered that they would cancel a trip if they lost their job. Since these people are young some might not have enough savings to live without a job. If you are unsure how to pay the next rent you might not be able to enjoy a vacation, or you might not have enough money to go.
Some reported to associate risk with loss rather than with opportunity. This is very

weird since he/she chose that they would invest in risk-bearing instruments, but they associate risk with loss rather than opportunity. Since the person chose all other questions to be very willing to take risk maybe he or she did not think the word “risk” is regarding investing.

Concluding, 11 people from the younger age group got the highest points in all questions. There was no clear pattern in the answers as there was in the older age group.

6 people in the younger age group got 1 or 2 points. They all answered that they had no experience in investing and that they did not suffer in the 2008 financial crisis.

No one under 30 years that was very risk-averse had experience in investing nor had they suffered in the 2008 financial crisis. This means that no one who either have experience in investing, or have suffered in the 2008 financial crisis, got the lowest points.

13. DISCUSSION AND ANALYSIS

The results will be discussed with the help from the main sources of literature, and some other sources. The main sources are “Depression babies” by Malmendier and Nagel (2010), the online quiz made by Dr Grable and Dr Lytton in 2006 and the theories by Kahneman and Tversky.
Some results will also be discussed with the help from secondary sources.

30% of over 30 year olds did not have any experience in investing, and 65% of under 30 year olds did not have any experience in investing. Over double as many over 30 year olds have experience in investing. You could draw the conclusion that most people get experience in investing after turning 30 years.

Only 24% of the older age group experienced suffering. This number seems a little low. It would mean that the 2008 financial crisis did not hit people that hard in Helsinki, although it is said to be the most severe Finland has ever experienced. 14% of under 30 year olds to have experienced suffering seems a little high on the other hand. Maybe the question of the amount of suffering, question number 2 in the background questions, should have been asked in another way. Perhaps it should have been divided into more choices, for example people who were unaware of the crisis, people who suffered personally, people who suffered due to losing money in risk-bearing instruments and people who suffered through someone else. This would maybe need to be studied more. 11,6% of over 30 year olds got the highest points and 6,6% of over 30 got the lowest. 18,3% of under 30 got highest points 10% got low points. As can be seen, the younger age group had more radical answers than the older age group. The reason behind this is most likely that the people under 30 years old could have been anything between 15 and 28 years old. The difference in the economic mentality seems to be bigger in the different ages of the younger age group than those of the higher. In order to get more reliable data the groups could have been divided into more age-groups, for example people under 20, 20-30, 30-40, 40-50 and 50+.

The highest average in the older age group was by people with a lot of experience (5,3 points), people who suffered some (5,1 points) and people with some experience (5,1 points).
The highest average in all questions for under 30 was people with a lot of experience (6,6 points) and people who had suffered some in the 2008 financial crisis (5,8 points). The highest average in all questions was the same groups in both age-categories; people who have a lot of experience and people who have suffered some from the 2008 financial crisis are the most risk-seeking. This results corresponds with the results from Dr Grable´s and Dr Lytton´s study and result that the more experience someone has, the more risk-seeking they are.

The lowest average in all questions for over 30 years was people who suffered a lot (1 point) and people with no experience in investing (3,3 points).
The lowest average for under 30 in all questions was people who did not suffer (4,7 points) and people with no experience in investing (4,5 points). No experience in investing is a factor that made both age groups more risk-averse.

Shefrin and Statman found that due to psychological reasons people tend to keep some of their money “safe”. This is driven by fear of losing all or part of their money and dropping their living standard. This would explain the irrational answers of some who got high points but chose 7A, they do not care about inflation (Shefrin & Statman, 2000).

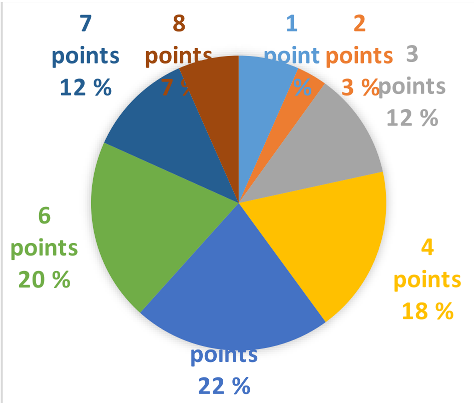
13.1 The factor of age

Over 30 year olds were only a little more risk-averse than younger people. The younger age group got a 1,87% percent higher average score in all questions and 2% higher in the investing questions. It is not a lot, but it is corresponding with the literature by Dr Grable and Dr Lytton. Dr Grable and Dr Lytton found that younger people are less risk averse than older people.

One reason why people over 30 years old are not that more risk-averse than younger people could be because of the theory by Chapman and Chapman (1969); the illusory correlation effect. This effect found that people are not likely to assume the same events would happen after one another. So people who are over 30 years old have lived through the 2008 financial crisis and might therefore not assume that another crisis would happen soon again, therefore they are willing to take risk.

Another reason why over 39 year olds are almost as risk-seeking as under 30 year olds is a result by Malmendier and Nagel. They found that people who have experienced high stock markets are more willing to take financial. After the 2008 financial market, the Finnish stock market grew a lot and the over 30-year olds that lived through the financial crisis might also have experienced or been aware of the stock market growth. Since Malmender and Nagel also found that recent events in the financial market weights more than former event, it could be a reason why people over 30 years old are rather risk-seeking; the growth in the stock market is more recent than the depression.

Below are two charts showing the frequency of different scores; how many percent of a group got a certain amount of points in all questions.



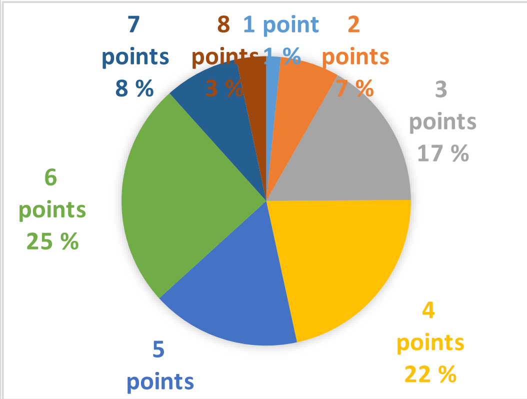
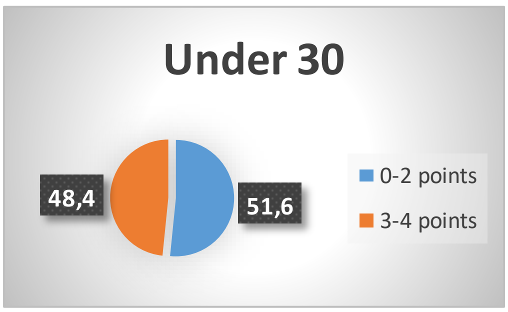


Table 6 and 7

The highest average for people over 30 in the investing questions were people with some or a lot of experience (both 2,7 points) and people who did not suffer (2,77). The highest average for under 30 in investing questions were by people with a lot of experience (3,6 points) and people with some experience (2,81 points). In both age group, people with prior experience in investing were one of the most willing to invest in risk-bearing instruments. In the older age group, people who suffered some in the 2008 financial crisis and people with prior experience in investing were the most willing to invest in risk-bearing instruments now.

The charts below show the difference between low and high points in the investing questions for both age groups. The majority got 0-2 points in both groups but the difference is smaller in the younger age group. Since the average points for the younger age group is higher, it means that people under 30 years that answered to the questionnaire were more willing to invest in risk-bearing instruments in average.



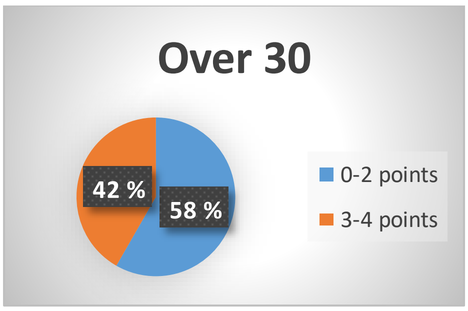


Table 8 and 9

13.2 The factor of prior experience

People with experience got a 13,12% higher average in all questions and 22,75% higher average in the investing questions, so the phenomenon of people with more experience taking more risk is clearer when it comes to deciding whether to invest in risk-bearing instruments. Dr Grable and Dr Lytton also found that people with prior experience are the most risk-seeking, so the results from the study and the literature corresponds very well. Dr Grable and Dr Lytton explains this phenomenon with the fact that financial knowledge of people effects the risk-averseness. In the study this showed as the fact that it was clear that people with some or a lot of experience in investing are a lot less risk-averse than people with no experience.
This phenomenon was clearer in all questions for the younger age group and in the investing questions for the older age group. So young people are less effected by prior experience when it comes to deciding whether to invest in risk-bearing instruments than over 30 year olds, but prior experience is important when it comes to the total risk-profile. For the older age group, prior experience plays a big role when deciding whether to invest in risk-bearing instruments or not.

In both age groups, people with no prior experience in investing are the most risk-averse. This result also corresponds with Dr Grable´s and Dr Lytton´s study based on the online risk-quiz. The younger age group with no experience in investing got a higher score than the older group with no experience. This could mean that even though under 30 year olds do not have experience in investing they understand the importance of investing and inflation.

Kahneman and Tversky also found that pre-knowledge is very important when making decisions. This evidence was also found in the study since people with prior experience were more risk-seeking than people with no prior experience.

13.3 The factor of suffering in the 2008 financial crisis

People who suffered in the 2008 economic crisis got a 4% higher average score in all questions and the same score in the investing questions. So people who suffered in the 2008 financial crisis are in fact a little more risk-seeking than the people who did not.

The phenomenon of being more risk-seeking if you have experienced the 2008 financial crisis was clearer among people under 30 years, where the difference was around 14%, but also in the older age group could this bee seen.

Dr Grable and Dr Lytton found that the financial satisfaction affect the risk-taking of people. The more financially satisfied people are the more they are willing to take risk. This factor was combined with suffering in the study. But people that suffered in the 2008 financial crisis were more risk-taking than people that did not. So this factor is not corresponding with online quiz by Dr Grable and Dr Lytton since if you suffered in a financial crisis, you were not financially satisfied. Another theory is that Dr Grable and Dr Lytton´s theory about financial satisfaction is correct and the people who suffered in the 2008 financial crisis has grew financially satisfied after the crisis and are therefore willing to take risk now.

The theory by Malmendier and Nagel that people who have experienced high stock market returns have a higher tolerance for financial risk and are more likely to invest in stocks might be the reason why people who suffered in the 2008 financial crisis were more risk-seeking than people who did not suffer at all as well as the theory could explain why age is of very little importance. This theory would mean that people who suffered in the 2008 financial crisis have been aware of the growth that happened afterwards. Since this was not asked, this theory is mostly speculations and something that might be interesting to study in the future.

The people that had experience in investing could have had their experience before the crisis or after. After the crisis, the index of Finnish funds and shares have increased in value. Some people might have started investing right after the crisis and have therefore not lost any money in risk-bearing instruments.

Table 10, index on Finnish shares January 1st 2008 – January 1st 2016 (OMX Helsinki, 2017).

Another reason why having suffered makes people less risk-aversive could be that having experienced some suffering means that the person lost their job. Being unemployed does not correlate with how you feel about investing in risk-bearing instruments. If you suffered in the matter of losing your job, you could still have good experience in investing.

Another theory that might explain why people who suffered in the 2008 financial crisis are risk-seeking now is the flight training-experiment conducted by Kahneman and Tversky. It showed that bad feedback from something equals better presentation the next time. The conclusion made by Kahnemans and Tverksy is that punishment is more effective than reward. This could be the effect that would explain why people who suffered in the 2008 financial crisis are less risk-averse than people who did not; they got bad feedback (=punishment) and are therefore presenting better this time; investing in better funds, more allocated investment portfolio, they know about the fluctuations on the market and their money is growing which means they are satisfied.

Kahneman and Tversky found evidence that my study did not find. Kahneman and Tversky found that losses are weighted more heavily than the same amount of gains. This evidence is not true in my study since people who experienced suffering in the 2008 financial crisis and have experience in investing are very risk-taking. The evidence of the study is the exact opposite than what Kahneman and Tversky found, so their theory of losses and gains are not true in this study.

The final theory of Malmendier´s and Nagel that could explain why people who suffered some in the 2008 financial crisis are risk-seekers is that the risk-profile is affected by a person´s beliefs rather than his/her preferences. The preference of someone who suffered might be to keep all savings in regular no-interest and no-risk accounts while their beliefs tell them that it is not the best thing to do because of factors such as inflation.

Evidence from Basu´s theory was also not found in the study. Basu showed that bad experience weigh more than good experiences. This study found the opposite Basu´s result. (Basu, 1997).

What is important to keep in mind is that the only person out of 120 people who answered to have suffered a lot in the 2008 financial crisis got 1 point in the whole questionnaire. Since no one else answered to have suffered a lot in the 2008 financial crisis this result is very hard to interpret since it could be a coincidence or it could mean that people who suffered a lot in the 2008 financial crisis are really risk-averse. This can only be speculated since there is no data to compare this finding with. But, the one person who had no experience in investing before the crisis has not wanted to invest ever again afterwards. The person who suffered a lot in the 2008 financial crisis had no experience of investing, so his or her suffering must come from another source than losing her money in risk-bearing instruments

When analyzing the results, it was also concluded that people are more risk-aversive with their own savings rather than with “extra” money. The effect is more noticeable in the younger age group.

Below is some charts that show how many people answered question number 2 and 8 inconsistably; chose that they would do one think with their own savings and another thing given extra money.

The younger age group

Not invest own savings but invest extra money

- 23,3%

Invest own savings but not invest extra money

- 3,3%

The older age group

Not invest own savings but invest extra money

- 20%

Invest own savings but not invest extra money

- 13,3%

Table 11 and 12

This could be because younger people might have less savings than older people. If you only have some savings you might want to keep them liquid since you might need them. Given extra money, the majority of young people would invest it.

Almost as many of the older age group would to the opposite – keep their own savings in risk-bearing instruments but not invest “extra” money. This could be that older people might not have a lot of money to live with, they might want to save money for their children or for their retirement. Therefore they keep their own money invested. But given a large sum of “extra” money they would consume it, for example use it to travel or give it to their children or grand-children.

It would have been interesting to interview some of the people who asked inconsistably and find out why they answered in that way. This was not made in the study since all questionnaires were anonymous and the methodology did not comprehend an interview. Also, inconsist results were found on accident and therefore analyzed.

This could be because not all people who want to invest have the opportunity to, or are able to. If your savings are very little you might want to keep them in an account from where you can withdraw them anytime, or if you have is a bigger purchase coming up soon (for example an apartment) you might not be able to invest all or some of your own savings in risk-bearing instruments but given extra money, someone would.

13.4. Critical analysis of the study

The biggest bias that was discovered when conducting the thesis are the following:

The questionnaire did not ask if the experience in investing is personal, so someone could have interpreted the question as if someone else have invested for them. But still, even if this is the case, they would most likely know something about their investments. If someone works with investments, for example in a bank, but does not have personal experience, that means they probably know a lot about risk-bearing instruments. Experience can be personal or via a job, for example. Either one gives you an insight in investing and in risk-bearing instruments. Since the questionnaire had three levels of experience, the third one might have seemed a little high. Maybe the third one was interpreted as to have a lot of experience, or to be a professional investor. If this is the case it is not peculiar that only 8% of the younger age group answered to have experience.

Out of all people that had experienced some or a lot of suffering in the 2008 financial crisis, some answered to have no experience in investing. This means that the suffering must have come from another source than losing money in risk-bearing instruments. The suffering could be losing their job, their own company losing profit or having someone close suffer.since the questionnaire did not ask what kind of suffering the person possibly experienced, this is speculations and would need to be studied more. Especially interesting would be to analyze what kind of suffering the younger age group experienced since under 30 year olds were rather young in 2008, so a majority should not have experienced money losses, unemployment eg.

Question number 3 asks whether the person associates risk with loss or opportunity. This question might be misleading since the question does not state that we are talking about economic risk. A “risk” could also be quitting a job you do not like and going back to school, studying to be something you have always dreamed of. The question should have made clear that it was about economic risk rather than overall risk.

Had the data been analyzed using SPSS, the results would have been more statistically correct. Further research in the area should be analyzed with SPSS for the results to be as reliable and impretable as possible.

19. CONCLUSION

It was clear that the more experience the respondents had, the more risk-seeking they were. Table 13 shows the three levels of experience people who answered the questionnaire could choose from; no experience, some experience and a lot of experience. The blue graph is the younger age group and the orange graph is the older group.

As can be seen in both age groups, the more experience, the higher the average score. Under 30 year olds were more risk-seeking, the difference was the most clear with people with a lot of experience where the younger age group had a 16,25% higher average then the other group. People with some experience from both age groups had the exact same average score.

Young people with experience are the most risk-seeking.

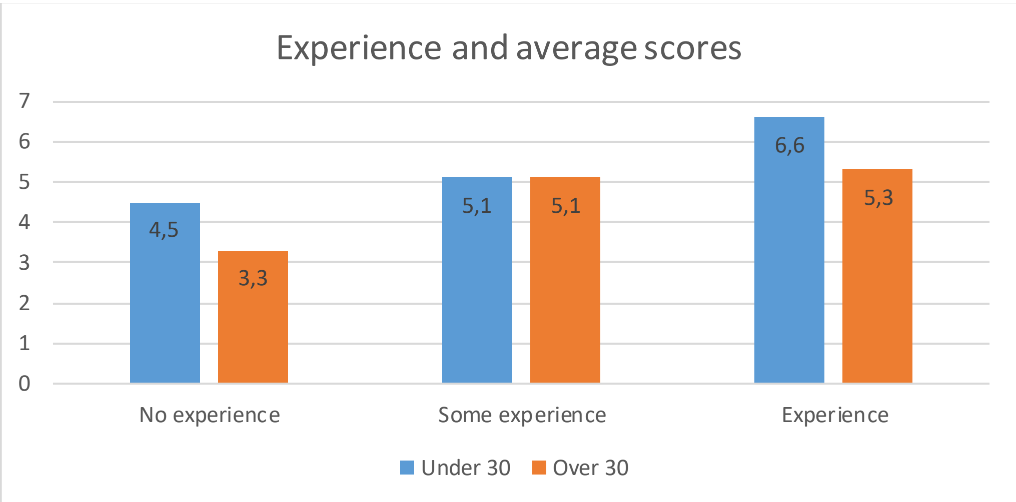


Table 13

The blue charts are representing people under 30 and the orange chart is representing people over 30. The amount of experience increases from left to right.

As can be seen, charts grow to the right, so the more experience people in both age groups had, the more risk-seeking they were.

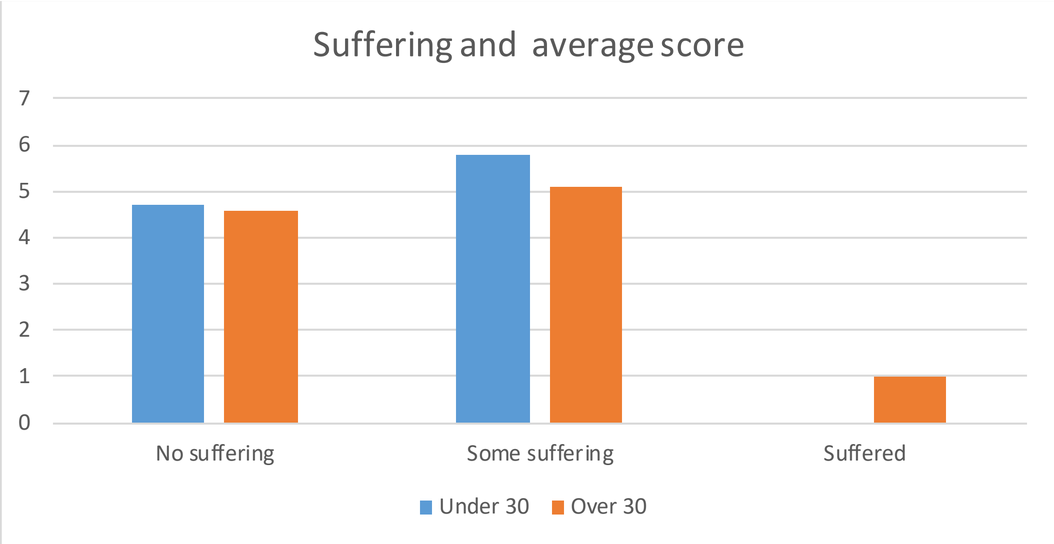


Table 14

This graph shows the average of people in both age groups with different amounts of suffering. People who experienced some suffering are clearly more risk-seeking than people who did not experience any suffering and the person who suffered a lot.

If the "illusion of validity" theory by Kahneman and Tverksy is true, it would mean that Finnish people trust the economy and banks in Finland and are not concerned to lose their money.

1. Are people over 30 more risk-averse than people under 30?

Yes. The difference is not that big, but the results from the study shows that people under 30 years old were more risk-averse in general and more likely to invest in risk-bearing instruments.

2. Are people who have no experience in investing more risk-averse than people who have some or a lot of experience?

Yes. The results showed clearly that the more experience people had in investing, the more risk-seeking they were.

3. Are people who have suffered in the 2008 financial crisis more risk-averse than people who have not?

No. The results showed the opposite; people who had experienced some suffering were more risk-seeking and more likely to invest in risk-bearing instruments than people who did not suffer. But, the one person that reported to have suffered a lot was much more risk-averse than average.

The results also show that people who have lived through the 2008 financial crisis have not grew more risk-averse, although Alesina and Fuchs-Schundeln (2005) found evidence that the economic environment where one grows up determines the risk-tolerance.

There was only one in the study who had suffered a lot in the 2008 financial crisis and she or he was very risk-averse but the results cannot be compared or analyzed properly since no one else answered to have suffered a lot in the 2008 financial crisis. The people who had answered to have suffered some in the 2008 financial crisis were more risk-seeking in average than people who had not suffered.

Over 30 year olds were only a little more risk-averse than under 30 year olds, and the majority of over 30 year olds answered that they did not suffer in the 2008 financial crisis so this result cannot be analyzed as people who have lived through a financial crisis is more risk-averse.

Prior experience showed to be the factor that determines the risk-profile the most out of the three research questions. Since the questionnaire did not ask if people´s experience in investing was before or after the financial crisis, this is also no evidence that a financial crisis affects the risk-profile of people.

Concluding, the result of the thesis show that a financial crisis does not make people more risk-averse. The only person who suffered a lot in the 2008 financial crisis was very risk-averse but all other than suffered some were in average more risk-seeking than those who did not suffer at all.

There is no evidence that the 2008 financial crisis affects the Finnish demand for risk-bearing instruments 10 years afterwards.

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