Business Professionals: Differences in risk taking in personal investments

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This paper focuses on the financial risk taking of partners at accountancy and law firms in The Netherlands. These partners are responsible for building their own pension and therefore have to make several decisions on how to invest their money. Their investment decisions are related to the amount of risk partners are willing to take. This paper will try to identify the factors that influence financial risk taking and the differences between partners when it comes to financial risk taking. There are different factors that will cause differences in the amount of risk a person is willing to take, which are identified by researching previous literature. Some of these factors are age, gender, optimism and marital status. In order to identify these factors for partners in The Netherlands, a questionnaire was used. The questionnaire focused on six different factors that, based on the literature, might have an impact on the amount of financial risk taking. These factors are age, gender, marital status, optimism about the economy, having children and having a partner with income. The results show that there were two significant indicators for the amount of financial risk taking: age and gender. As expected, male partners take more financial risk on average than female partners do. When it comes to age, older people are more risk averse than younger people are. These findings are also in line with previous research on the effect of age on financial risk taking. Furthermore, when partners are positive about the future of the stock market, they take more financial risk than those who are negative about it or expect no rise in stock prices. These values are not statistically significant however.

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1. INTRODUCTION

This paper focuses on the financial risk taking of partners at accountancy and law firms in The Netherlands. These partners are responsible for building their own pension and therefore have to make several decisions on how to invest their money. Their investment decisions are related to the amount of risk partners are willing to take. This paper tries to identify the factors that influence financial risk taking and the differences between partners when it comes to financial risk taking.

When I talk about Business Professionals in this paper, I am talking about partners of international law- or accountancy firms in the Netherlands. Partners at these firms are not paid salary, but participate in the organization. They receive a part of the profit the firm makes and use this as their salary. Since the partners are no longer employed like regular employees, they no longer participate in certain collective arrangements like their pension. This means that the Business Professionals are responsible for building their own pension. Being responsible for your own pension is a big responsibility and there are several ways to create your own pension. In this thesis, the focus lies on partners who build their pension completely by themselves, in contrast to paying a monthly/annual amount to a pension manager. Building a pension requires different estimates that have to be made by the Business Professional, like life expectancy, the annual net disposable income they require once they reach retirement; annual additions to their retirement fund and, one of the most important factors, the way Business Professionals invest their pension reservation. There are different ways to do so, for example savings accounts, deposit accounts, government bonds and stocks. Most important factors are the additions a Business Professional makes and the realized return on the capital that is saved, since this will determine whether the pension fund at retirement age is sufficient or not. In this thesis, the financial risk taking of Business Professionals is analyzed. What does the profile of an average Business Professional in the Netherlands look like and what are the differences in financial risk taking? In order to answer this question, explorative research was conducted. The research question that was formulated is as follows: "How does the profile of an average Business Professional at a firm in the Netherlands affect the amount of financial risk taking?". Two sub questions were formulated in order to answer the main research question:

1. What does the profile of the average Business Professional look like?
2. What are the attributes that account for a different amount of financial risk taking?

This paper provides further insight into factors that influence financial risk taking for people, in this case specifically Business Professionals, in The Netherlands. There has been research that focusses on demographic traits and its influence on financial risk taking. Most of this research was conducted in the United States however and there were almost no papers that looked into personal financial risk taking in The Netherlands. The paper is structured as follows. In section 2, the theory will be discussed and previously done research will be analyzed. In section 3, the method and research design in order to collect the data to provide an answer on the research question will be discussed and the data will be presented. The conclusion can be found in section 4.

2. THEORY

Building a private pension requires different choices that relate to the way a Business Professional invests his or her assets. Depending on the annual deductions once pensionable age has been reached, there are certain factors that influence the minimal return on investment that has to be made in order to have sufficient capital. These factors are:

- the time until the Business Professional reaches retirement age;
- the annual saving capacity;
- tax rate;
- inflation.

While current interest rates on savings accounts are 1.65 percent[1] and 1.82 percent on deposit accounts[2] (the average interest on savings account in the period 2005-2012 was 2,075%[3]), average inflation in the Netherlands was 2.18 percent over the period 2000-2013[4]. This means that at current rates depreciation occurs on the pension reservation when Business Professionals store their money on savings- or deposit accounts. Furthermore, 1.20 percent[5] property tax has to be paid over the all financial assets over 21.139 euros (in this case the pension reservation). Average inflation and tax add up to 3.38 percent, which is the minimal return on investment that has to be made so that depreciation does not occur. In table 1, some figures regarding the return on equity are posted.

Table 1. Annual average return on stocks

	Period	Return (%)
Dichev (2007)	*1973-2004*	*10.4*
Dimson and Marsh (2001)	*1955-1999*	*15.3*
S&P500	*1928-2013*	*9.55*
Mean		***11.8***

According to Dichev (2007) the average Dollar-weighted return on 19 major international stock exchanges over the period February 1973 until February 2004 (February 1980-February 2004 for Norwegian stock exchange and February 1982-February 2004 for Swedish stock exchange) is roughly 10.4 percent. Dimson and Marsh (2001) found a nominal geometric mean return of 15.3 percent on UK equities over the period 1955-1999 with standard deviation 22.7. The S&P500 shows a geometric average of 9.55 percent over the period 1928-2013 according to data from Federal Reserve database. Although the periods of which the data has been analyzed differ, it is easy to conclude when looking at these numbers that investing in stocks offers much higher returns than savings- or deposit accounts at the moment. However, stocks are much more volatile than a savings- or a deposit account and are therefore riskier. When looking at the efficient frontier, a concept introduced by Markowitz in 1952, volatility and risk can be seen as one thing. Therefore, when volatility increases, so does the risk of the investment. The efficient frontier (see figure 1 on the next page) is a part of the Modern Portfolio Theory and identifies the relation between risk and return. Since differences exist in the amount of financial risk a person is willing to take, differences occur in the portfolio asset allocation. The asset allocation in the portfolio has much influence on the overall return.

[1] Average of 20 highest interest rates on savings accounts in the Netherlands on 4/24/2014.

[2] Average of 20 highest interest rates on deposit accounts in the Netherlands, duration 1 year, on 4/24/2014.

[3] Average interest on savings accounts over the period 2005-2012, according to CBS Statline.

[4] Average inflation over the period 2000-2013 according to CBS.

[5] Property tax in the Netherlands was 1.20 percent in 2014, according to De Belastingdienst.

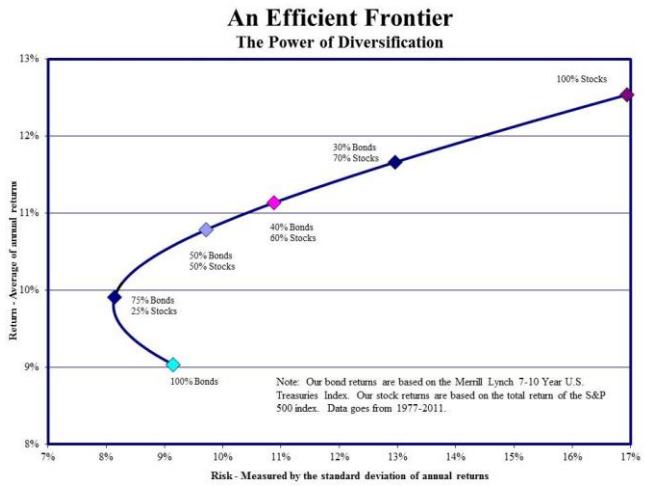

Figure 1: Efficient frontier (Source: Young Research and Publishing, 2012)

Ibbotson and Kaplan (2000) conducted research on the influence of asset allocation on fund performance. They analyzed the monthly returns of 94 balanced funds in the United States over a period of 10 years. Ibbotson and Kaplan found that about 90 percent of the variability in the return over time of a fund was attributable to their asset allocation policy. This is in line with Brinson, Hood and Beebower (1986), who found that over 90 percent of the variability in returns is attributable to the asset allocation in the portfolio.

The asset allocation of one's portfolio is dependent on the amount of risk someone is willing to take. When a person is risk averse, he or she is unwilling to build a portfolio that consists largely of stocks and more willing to include a bigger proportion of assets which are less risky like government bonds or stalling the money on a savings account, since volatility on these asset classes is much lower. Therefore, the amount of financial risk a person is willing to take indirectly leads to differences in the expected return of the portfolio. The amount of financial risk taking is something that differs per person and is influenced by several factors. Bakshi and Chen (1994) found that age is an important indicator for the amount of financial risk a person is willing to take. Some other factors that influence the amount of financial risk taking are gender (Olsen and Cox 2001, Meier-Pesti and Penz 2008), income level (Haliassos and Bertaut 1995) and amount of wealth (Cohn, Lewellen, Lease and Schlarbaum, 1975). Apart from research looking into specific personal traits or demographic characteristics, research has been conducted to look at the financial risk taking of a specific group. MacCrimmon and Wehrung (1990) looked at characteristics of risk taking for executives, where financial risk taking was one of the factors that they researched. Risk taking propensities of entrepreneurs were analyzed by Brockhaus (1980). When entrepreneurs start a new venture, the future of this venture is uncertain and so is their financial well-being. While on the one hand partners can be seen as entrepreneurs since most of them have their own ventures, there is a difference between partners and entrepreneurs. Partners mainly use their venture to participate in the law- or accountancy firm. When it comes to factors that account for differences in financial risk taking, a lot of research has already been done. Individual investors seldom act optimal when it comes to asset selection, due to emotional and psychological bias (Daniel, Hirshleifer and Teoh, 2002). According to Bakshi and Chen (1994), age is an important indicator for the amount of financial risk a person is willing to take. They analyzed data from the Bureau of Census and historical data from the S&P500. In the US, the major market participants were people who were of older age and the population of 65 years age and over received 53% on all interest, dividend and estate incomes. They also found that when age rises, the amount of financial risk a person is willing to take decreases. According to Grable and Lytton (1999), it is often assumed that older investors are less risk tolerant. This is in line with lots of other research on the relationship between age and financial risk taking (i.e. Brown (1990); Pålsson (1996)). In the recent years, an exponential growth can be seen in target date funds, also known as life-cycle funds. In the period 2006-2013, assets in target date funds in the US grew from little over 114 billion dollars in 2006 to over 600 billion dollars in 2013[6]. A target date fund is a mutual fund in which the asset allocation is adjusted as time goes by. The asset allocation is adjusted over time from a more risky (higher amount of stocks) to a more risk-averse (higher amount of bonds) allocation, which matches with the decrease of risk as age increases and people get nearer to their pensionable age.

Olsen and Cox (2001) looked at the influence of gender on risk for professional investors. They found that women found loss potential more important than men in investing. Women were generally more afraid of the possibility to lose the investment than men were and therefore were less likely to make the investment when this risk was present. Women also appeared to be more sensitive to ambiguity and uncertainty when it comes to financial assets. If women feel like they do not have sufficient information they assess the risk as being higher and therefore are less likely to invest. Meier-Pesti and Penz (2008) conducted a number of questionnaires. They found that the difference in financial risk taking is not solely attributable to gender, but is also influenced by the amount of masculinity/femininity. This research showed that a higher amount of masculinity resulted in a higher level of financial risk taking, both for men and women. As the wealth of people increases, they are willing to take more financial risk, regardless of other demographic traits (Cohn, Lewellen et al. 1975). Related to this is the income level of individuals. Haliassos and Bertaut (1995) found that when the income level rises, the percentage of households in the US holding stocks increases and the percentage of households in the US desiring no financial risk decreases.

Jacobsen, Lee, Marquering and Zhang (2014) found that men are significantly more optimistic than women are when it comes to their views on the economy and the stock market. They studied Gallup polls and the Consumer Sentiment Index by the University of Michigan and found that the average man invests 47.4 percent in stocks versus 43.0 percent for the average woman. They further state that it's more likely that the amount of optimism is an indicator for the amount of financial risk taking and not just gender traits. Bajtelsmit and Bernasek (1996) state that trends in the United States regarding private pension provisions show a shift of investment risk from the plan sponsors to the plan participants. Since they have to make their own decisions regarding to the allocation of assets, the effect of one's financial risk-taking will result in a different retirement income. Since women in general are more risk-averse, their retirement income is likely to be lower. Furthermore, marital status might be an indicator of financial risk taking. Jianakoplos and Bernasek (1998) found that single women are less willing to accept financial risk than married women are. They asked respondents to choose between four statements that asked them about risk-return tradeoff: 63 percent of the single women said that they were not willing to take any financial risk, compared

[6] According to the Target-Date Series Research Paper 2013 by Morningstar.

to 57 percent for married women. 43 percent of single men were not willing to take any financial risk, compared to 41 percent of married men.

Asset allocation is closely related to the willingness of a person to take financial risk. When a person is willing to take more financial risk, it is likely that he is advised by an advisor to hold a lower bond-to-stock ratio in his or her portfolio than someone who is more risk-averse (Canner, Mankiw and Weil, 1994). This is however, not in line with the Capital Asset Pricing Model (CAPM). According to the Capital Asset Pricing Model, more risk-averse investors should hold more of their portfolios in riskless assets. The composition of risky assets should be the same for all investors. Despite the fact that most investors do not act fully rational when it comes to asset allocation for their portfolios, Canner, Mankiw et al. (1994) found that the cost of a non-optimized portfolio was only slight between the CAPM portfolio and portfolios that were advised by financial advisors. They found a maximum difference of 22 basis points. According to Dominitz and Manski (2007), individuals are generally advised to reduce their amount of risky assets when age increases. When a person's age increases, their investment horizon shortens. Their findings are that risky assets in investment portfolios are reduced when age increases due to a decrease in optimism about equity returns, men are more optimistic than women about equity returns and therefore invest a greater portion of their assets in risky assets and finally that many households do not add risky assets to their portfolio because they don't believe an equity premium exists. The equity premium is the difference in return between a stock and a risk-free investment.

Van Rooij, Kool and Prast (2007) looked at financial risk taking of individuals in The Netherlands regarding their pension. They based their findings on the results of a questionnaire that was filled in by 1066 people. All the people who finished the questionnaire were 18 years or over. Of the total, 59% were men and 91% was currently employed. According to them, people are more risk averse when it comes to investing for their pension. They further state that financial sophistication is a good indicator for financial risk taking. People who are more financially sophisticated are more willing to take financial risk.

Summarizing, there is plenty of evidence that there are different factors that account for a difference in the amount of financial risk taking. First of all, on average, men tend to take more financial risk than women. When a person has a greater amount of wealth, he or she is likely to take more financial risk. This is also true for income level: as the income level rises, people are willing to take more financial risk. When age rises, people are likely to take less financial risk. Most of these studies focused mainly on financial risk taking in general and were conducted in the United States. In this paper, I sought to find out whether these factors are also true for Business Professionals in The Netherlands, since their main goal for investing is their pension. The difference between this paper and several other papers that focused on financial risk taking in pension investments is that most previous research focused on asset allocation decisions (mostly bond to stock ratio) of individuals whose pension was managed by a pension manager. Business Professionals are entirely responsible for building their pension, from asset allocation decisions to annual additions to their pension reservation.

2.1 Hypotheses

Based on the literature, the following hypotheses have been formed.

Hypothesis 1: As the age of a Business Professional increases, the amount of financial risk taking will decline.

I expected the amount of financial risk taking on average to be lower when age increases. Since when age increases, partners approach their retirement age and therefore it is likely that they already have sufficient capital for their pension. Taking more financial risk increases the chances of losses and therefore the risk of insufficient capital for their pension. This is also in line with previous research by Bakshi and Chen (1994), Brown (1990) and Pålsson (1996).

Hypothesis 2: Male Business Professionals will, on average, take more financial risk than female Business Professionals.

I expected male Business Professionals to take more financial risk than female Business Professionals. This is mainly attributable to the fact that women on average are less risk tolerant. Although knowledge and expertise may reduce the difference in financial risk taking between men and women, it cannot completely remove the difference. Since I expected the female Business Professionals, especially in the accountancy firms, to have vast financial knowledge, it may be interesting to see how much difference gender does account for. This is also in line with research by Olsen and Cox (2001).

Hypothesis 3: If a Business Professional is optimistic about the future economy, he or she is likely to take more financial risk than someone who is less optimistic

When a Business Professional is optimistic about the future economy, I expected he or she would be likely to take more financial risk, since higher risk taking may lead to higher returns and the expectations for the future are positive. Jacobsen, Lee, Marquering and Zhang (2014) found that men on average are more optimistic than women are. According to them, optimism might be a better indicator for financial risk taking and not just gender.

Hypothesis 4: If a Business Professional is married, he or she is likely to take more financial risk.

Marital status might influence the amount of financial risk a Business Professional is willing to take. According to Jianakoplos and Bernasek (1998), single men and women are more risk averse than married couples are. I also expected this to be the case for Business Professionals. Since they have to provide enough money for two persons instead of one, they are probably likely to take more financial risk in order to reach sufficient capital. I did make a difference between a Business Professional being married (or a registered partnership) and being in a relationship, since when a person is married in The Netherlands, the persons are bound to each other by law, which is not the case when someone is in a relationship.

Hypothesis 5: If a Business Professional has children, he or she is less likely to take financial risk

I expected Business Professionals who have children to be less risk taking when it comes to financial decisions. When someone has children, he or she has a role to create security for his or her children, which does not match with high risk taking.

Hypothesis 6: If a Business Professional has a partner who has an income, he or she is likely to take more financial risk.

I expected Business Professionals with a partner who has an income to take more financial risk on average than a Business Professional who has a partner without income, since two incomes lead to greater financial security. This might be in line with research by Haliassos and Bertaut (1995) who state that a higher income level leads to a higher amount of financial

risk taking. However, there are also differences in income level between the different partners, so this does not have to be the case. I was not able to find literature on the effect of a double income (income for both the partner and his or her spouse) on financial risk taking.

3. METHOD AND DATA

3.1 Questionnaire design

In order to answer the research question, a questionnaire was sent to the partners of several law firms and accountancy firms. A total of 4 accountancy firms and 15 law firms were chosen. These firms were chosen because they are the biggest firms in their sector in the Netherlands and they have the highest amount of partners. Therefore I was able to obtain a large sample which was distributed over only a couple firms who are market leader. The online questionnaire was used to gain more insight in the profile of the Business Professionals and their financial risk taking. The questionnaire was held via Surveymonkey[7] and partners were invited to participate by e-mail. The online questionnaire was held anonymously in order to increase the response rate, since some of the questions could be considered to be personal. According to Asch, Jedrziewski and Christakis (1997), anonymous surveys can lead to a lower response rate, because respondents might feel more comfortable not to fill in the questionnaire, since it cannot be traced back to them. Furthermore, previous research has shown that overall the response rate for web surveys is lower (Vicente and Reis 2010). Cook, Heath and Thompson (2000) conducted a meta-analysis for different surveys and found an average response rate for web surveys of 34.6 percent with a standard deviation of 15.7 percent. However, this research was conducted in the year 2000, when the internet was far less used than it is today. Baruch and Holtom (2008) found a mean response rate for web based surveys of 38.9 percent with SD 15.1 percent. This is slightly higher than the figures from 2000. However, these response rates were all based on surveys for academic journals. Since a questionnaire sent via postal mail will be too costly and interviews are not possible due to the busy schedules and time limitations of the respondents, I chose an online survey as research method, even though this might have led to a lower response rate.

According to Schaefer and Dillman (1998) there are some groups that can be easily surveyed by email. These groups are for example company employees and members of professional organizations. Since Business Professionals fall into this category, an online questionnaire was used. During the design of the questionnaire, special attention was given to the length of the survey. According to Van Selm and Jankowski (2006) it is important to respect time constraints of respondents. Business Professionals have limited free time, and therefore it was important to keep the questionnaire as short as possible, without leaving important factors out of the survey. The goal was to design the survey so that it would take on average 5 minutes to complete it. This is also in line with Sheehan and McMillan (1999), who suggest that the length of a questionnaire is more relevant to email surveys as to postal surveys, as an average print page can take up the space of several computer screens. If these factors were not taken into consideration, it was likely to have had a big effect on the response rate, resulting in a much lower one. There are more advantages to using an online questionnaire compared to different research methods (Mehta and Sivadas (1995); Smith (1997); Medlin, Roy and Ham Chai (1999); Rae (1999)), which are an absence of interviewer bias, the fact that there is no need for data entry by the interviewer and the convenience for respondents. Furthermore, using an online questionnaire is much cheaper, since the questionnaires do not have to be printed and sent via mail with a return envelope attached. Coverage error, which is the error that exists if not all respondents are able to complete the questionnaire, did not have a big impact on this research. In the past, when using online surveys, there was a much smaller group of people that had a computer with an internet connection. The partners of the firms all have a computer with active internet, at least at work, and therefore the survey will be sent to the e-mail address at work. However, some of the questionnaires that were sent via e-mail came back because the e-mail could not be delivered. The final questionnaire is added in the appendix.

The questions of the questionnaire have been formed based on the literature review and in a brainstorm session with Private Bankers at Van Lanschot Bankiers Business Professionals. These private bankers are specialized on serving financial advice for Business Professionals and have a lot of knowledge about the current issues regarding partnership. After identifying some key themes, questions were formed. I tried to use as many closed questions as possible, since this would decrease the time for respondents to answer the questions and furthermore would reduce the time to analyze the results, since the data did not have to be coded and the output was fixed (i.e. there was a limited number of answers).

For design of the questionnaire, a screen-by-screen approach was chosen. This means that the questionnaire consists of several pages, each of which contains several questions. There are two main reasons why I chose this design. First of all, by using several screens, it is possible to create a script so the questionnaire automatically skips irrelevant questions, based on previous answers given by the respondents. This will make sure that the respondents do not fill in irrelevant questions and thereby reduce the time it takes to complete the questionnaire. Furthermore, Peytchev, Couper, McCabe and Crawford (2006) found that questionnaires with a screen-by-screen design had a slightly lower item nonresponse rate compared to a single screen designed questionnaire. There were no significant differences in nonresponse or dropout rates. Kiesler and Sproull (1986) found that respondents make fewer mistakes when filling in an electronic survey compared to a survey on paper. They found that on average 22 percent of the respondents who filled in a paper survey did not complete the survey or made an error while filling it in. For respondents who filled in the electronic survey, this was only 10 percent.

Before sending the questionnaire, a pre-test was done. In this pre-test, respondents received the questionnaire and were asked for feedback after completing the questionnaire. Following the feedback, some questions were formulated differently; answer options were added, removed or rewritten; questions were added and questions were removed.

3.2 Variables

To gain insight in the effect of different factors on the amount of financial risk taking, I first defined a couple of variables:

Table 2. Variable definitions

Variable	Description
FINRISK	The ratio of risky assets on total investable assets for the respondent.
AGE	The age of the respondent in years (1-99).

[7] Surveymonkey is an online web survey tool: www.surveymonkey.com

GENDER	Variable determines the gender of the respondent. (1 = male, 0 = female)
OPTIMISM	Variable determines the expectation of respondent i for the stock market in the coming year on a Likert 5 point scale, where 1 means a sharp fall in stock prices and 5 a strong increase.
OPTIMISM.N	Dummy variable for the values of OPTIMISM.
MARITAL	Variable indicates whether respondent i is single or in a relationship (0) or married (1).
MARITAL.N	Dummy for marital status. MARITAL0 = single, MARITAL1 = married, MARITAL2 = in a relationship.
CHILDREN	Variable determines if the respondent has no children (0), one child (1), two children (2), three children (3) or four or more children (4).
CHILDREN.N	Dummy variable for the number of children.
P.INCOME	Variable determines whether the respondent has a partner with income (1) or not (0).

These variables can be combined to form the following equation:

$$FINRISK_i = \alpha + \beta_1 AGE_i + \beta_2 GENDER_i + \beta_3 OPTIMISM_i + \beta_4 MARITAL_i + \beta_5 CHILDREN_i + \beta_6 P.INCOME_i$$

The questionnaire focused on demographic issues of the partners, like age, marital status, family situation and market expectations. Also, respondents were asked about the composition of their portfolio and their current asset allocation. This created insight in the actual financial risk taking of the respondents. Cohn, Lewellen et al. (1975), classified different asset classes as risky or risk-free, which can be useful. They have two classifications: one in which they consider preferred stock, government bonds and corporate bonds to be risk-free and one in which they consider them to be risky. In this thesis, I used the second classification. This because the volatility of these products, compared to cash and government bonds, is higher and therefore I thought they could better be classified as risky assets. The only downside is that they only classified an asset-class to be risky or risk-free, but not whether one is riskier than the other. Based on this model, the following classifications will be used:

Table 3. Risk classification of asset classes

Asset class	Classification
Cash	F
Bonds	F
Real Estate	R
Stocks	R
Commodities	R
Private Equity	R
Alternatives	R

Based on the model by Cohn et al. (1975). R = Risky asset class, F = Risk-free asset class

Although these risk classifications date back to research from 1975, I believe they are still actual. The structure of the products has not changed and the main difference between the two risk free asset classes and the risky asset classes is the amount of volatility. Even today, cash and bonds are far less volatile than the asset classes that are classified as risky. Therefore I used these classifications. The value of the dependent variable, the amount of financial risk a Business Professional is willing to take (FINRISK), is based on the current asset allocation of a Business Professional and is expressed in the amount of risky assets in relation to the amount of total investable assets of a Business Professional.

3.3 Data analysis

The questionnaire was sent to all the partners of four accounting firms and fifteen law firms. This adds up to a total of 1,551. E-mail addresses of the partners were found on the website of the different firms or different websites with contact information of partners from law and accountancy firms. Although the e-mail list was created with a lot of care, still 204 of the e-mails could not be delivered. This may be caused due to the fact that the contact information on the websites was incorrect or that the partner that had been sent the e-mail no longer worked at the firm. The 204 emails that could not be delivered were spread over the different firms. Therefore it will not influence the results of one firm in particular. When I deduct 204 from the initial 1,551, this results in a number of 1,347 respondents that received an e-mail inviting them to participate in the survey. 174 questionnaires were returned after a week (Response rate: 12.92%). A strong declining trend can be identified when looking at the returns of the questionnaire, which is shown below in Figure 2. These findings may confirm the assumption that the Business Professionals are very busy and have limited free time. If a Business Professional did not have time at the moment he or she received the e-mail inviting them to participate in the survey, it was likely that the e-mail would wind up on the large heap of e-mails and therefore the survey would not be filled in.

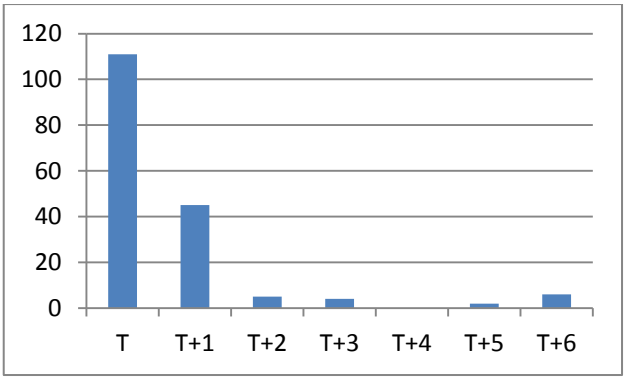

Figure 2. Distribution of the amount of responses received by date (daily), where T is the date the questionnaire was sent.

Feedback was sometimes received when a respondent did not want to participate in the survey. Main reasons for not participating were time constraints, the fact that they found some of the questions to be too personal or that they received too many requests to participate in surveys. Of the 174 received questionnaires, 20 could not be used since they were incomplete. 14 of these 20 respondents did fill in the questions on the first page (or a part of them), but stopped after that. The sample consisted of data from 91 accountants and 63 lawyers. 92.2 percent of the sample was male. The average age of the respondents was 49.4 years. Of the accountants who answered the questionnaire, 93.2 percent was male and the average age was 48.8 years. For the lawyers who answered the questionnaire, 89.4 percent was male and the average age was 50.3 years. The data of the received surveys was exported into Microsoft Excel. In Excel, the data was transformed to make analysis possible. This was done by coding the answers the

respondents had given in to numeric ratios. For example, if the respondent was asked what his or her expectations were for the stock market in the coming year, the scale reached from "A strong decrease in prices" to "A strong increase in prices", offering 5 different options. These answers were coded to a five-point Likert scale from 1 (being "Strong decrease") to 5 (being "Strong increase"). A summary of the total data, as well as split up for accounting firms and law firms, can be found in Table 4. Linear regression was used on the entire dataset in order to find the impact of the different independent variables on the dependent variable. The results of this regression analysis can be found in Table 5 under Model 1. The multiple correlation coefficient (R) yields a value of .712. This value measures the quality of the prediction of the dependent variable and can be considered good with a value of .712. R Square, or the coefficient of determination, represents the proportion of variance in the dependent variable that can be explained by the independent variables. With an R-Square value of .507, I can conclude that 50.7 percent of the variance of the dependent variable can be explained by the independent variables. Adjusted R Square shows a value of .476, which shows that when the positive bias effect is removed, 47.6 percent of the variance in the dependent variable can be expected to be explained by the independent variables in the population. The Durbin-Watson statistic yields a value of 1.756. The Durbin-Watson statistic is used to detect whether or not there is correlation between the residuals. It can range from 0 to 4 and a value of 2 means there is no correlation. Since the value is 1.756, which is close to 2, I do not expect there to be major correlation between the residuals.

When looking at the coefficients and the significance levels that arose from the linear regression analysis, some of the values (e.g. from the independent variables MARITAL and CHILDREN) appear very small. There are only two independent variables that are statistically significant: AGE and GENDER. The other variables which were included in the regression analysis appear to have a small impact on financial risk taking based on the data and are not statistically significant. The coefficient for AGE is -0.018. This negative coefficient indicates that when age increases, the amount of financial risk taking decreases. This is in line with previous research and the first hypothesis. Since the coefficient for AGE is statistically significant, I can confirm the first hypothesis. The effect of AGE on financial risk taking is, based on the data, the biggest indicator for financial risk taking. The coefficient is relatively small compared to the coefficient of GENDER, but looking at the minimum and maximum values of AGE in the data (34 and 62), the impact of AGE can range from -0.61 (age 34) to - 1.12 (age 62). The coefficient for GENDER is 0.211. This means that male Business Professionals on average take more financial risk than female Business Professionals do. Previous research shows similar results and the outcome matches with the second hypothesis I formed. The result is statistically significant, and therefore I can confirm the second hypothesis. Since the outcome of the other variables (OPTIMISM, MARITAL, CHILDREN and P.INCOME) is not statistically significant, I cannot confirm the previously stated hypotheses. Hypothesis 3 stated that when a Business Professional is more optimistic about the future, he or she is more likely to take financial risk.

Table 4. Data from the survey

Variable definition	$\bar{x}$	x_{median}	σ	Minimum	Maximum	N
Total						
FINRISK	0.43	0.34	0.21	0	0.87	154
AGE	49.40	49	6.12	34	62	152
GENDER	0.92	1	0.28	0	1	153
OPTIMISM	3.76	4	0.75	1	5	154
MARITAL	0.88	1	0.28	0	1	153
CHILDREN	2.18	2	1.07	0	4	154
P.INCOME	0.56	1	.50	0	1	149
Accounting firms						
FINRISK	0.46	0.44	0.19	0	0.87	91
AGE	48.75	48	5.87	34	60	89
GENDER	0.93	1	0.25	0	1	90
OPTIMISM	3.81	4	0.74	1	5	91
MARITAL	0.90	1	0.29	0	1	90
CHILDREN	2.07	2	1.11	0	4	91
P.INCOME	0.53	1	0.50	0	1	86
Law firms						
FINRISK	0.40	0.34	0.22	0	0.83	63
AGE	50.32	49	6.40	39	62	63
GENDER	0.89	1	0.32	0	1	63
OPTIMISM	3.69	4	0.78	1	5	63
MARITAL	0.86	1	0.28	0	1	63
CHILDREN	2.33	2	0.98	0	4	63
P.INCOME	0.60	1	0.49	0	1	63

Data from the survey, alyzed for total and both accounting- and law firms. See Table 2 for variable definitions.

Table 5. The relationship between financial risk taking (dependent variable) and different characteristics of Business Professionals.

	Predicted sign	Model (1)		Model (2)		Model (3)		Model (4)	
Constant		1.152	(6.92)*	1.244	(7.21)*	1.192	(5.65)*	1.085	(3.66)*
AGE	-	-0.018	(-8.22)*	-0.018	(-8.30)*	-0.019	(-6.28)*	-0.017	(-4.69)*
GENDER	+	0.211	(4.57)*	0.201	(4.46)*	0.251	(3.56)*	0.181	(2.72)*
OPTIMISM2		-0.113	(-0.99)	-0.135	(-1.15)	-0.130	(-0.79)	-0.076	(-0.43)
OPTIMISM3		-0.066	(-0.62)	-0.080	(-0.73)	-0.059	(-0.38)	-0.056	(-0.34)
OPTIMISM4		0.045	(0.42)	0.023	(0.21)	0.030	(0.20)	0.105	(0.63)
OPTIMISM5		0.126	(1.12)	0.106	(0.94)	0.110	(0.70)	0.170	(0.96)
MARITAL	+	-0.001	(-0.02)			-0.002	(-0.03)	-0.001	(-0.01)
CHILDREN	-	-0.020	(-0.48)			-0.015	(-0.28)	-0.022	(-0.28)
P.INCOME	+	-0.021	(-0.80)	-0.020	(-0.75)	-0.027	(-0.79)	-0.032	(-0.70)
CHILDREN1				-0.054	(-0.84)				
CHILDREN2				-0.007	(-0.15)				
CHILDREN3				-0.035	(-0.76)				
CHILDREN4				0.031	(0.52)				
MARITAL1				-0.056	(-0.36)				
MARITAL2				-0.051	(-0.33)				
N		149		149		86		63	
Adj. R2		0.476		0.472		0.422		0.489	

This table shows the results of a multiple regression analysis with financial risk taking as dependent variable. All variables are defined in Table 2. Dummy variables are created for the variables OPTIMISM, CHILDREN and MARITAL. See Table 2 for variable definitions. All t-values are in parentheses. Significance level: $p < 0.01$, based on a one-tailed test.

Since the result of the linear regression for OPTIMISIM is not statistically significant, I cannot confirm that there is a statistically significant link between optimism and financial risk taking. I therefore reject the hypothesis. However, when looking at the values of the dummy variables for OPTIMISM, some remarks have to be made. First of all, the coefficients for OPTIMISM 4 (0.045) and OPTIMISM 5 (0.126) indicate that when someone is positive about the future stock market, he or she is likely to take more financial risk. The amount of risky assets they hold increases respectively 4.5 and 12.6 percent. Comparing this to the other dummy variables, it shows that people who are more optimistic do include more risky assets in their portfolio compared to people who expect no change or a decline in the stock market. Hypothesis 4 stated that when a Business Professional is married, he or she is likely to take more financial risk. The coefficient for MARITAL in the first model shows a value of -0.001, which is not significant. I cannot conclude that the marital status of a Business Professional has an effect on financial risk taking. I therefore reject the hypothesis. The fifth hypothesis focused on the influence of a Business Professional having children on financial risk taking. The prediction was, that if a Business Professional had children, he or she would take less financial risk. The outcome of the linear regression shows a coefficient of -0.020 for the variable CHILDREN. This means that if a Business Professional has children, he or she is likely to take less financial risk. However, the value is not significant and therefore I cannot confirm the hypothesis. This means that based on the data, there is no evidence that having children has a significant effect on financial risk taking. The final hypothesis stated that when a Business Professional has a partner with income, he or she is likely to take more financial risk. The variable P.INCOME yields a coefficient of -0.021. This means that when a Business Professional has a partner with income, he or she on average is willing to take less financial risk than a Business Professional who does not have a partner. However, the outcome is not significant. Therefore I have to reject the null hypothesis, which means that there is no evidence that having a partner with income influences the amount of financial risk taking for a Business Professional. The output of the Pearson Correlation between the variables shows no values that are greater than 0.7 (or smaller than -0.7) I can conclude that there is no significant correlation between the independent variables. When this would be the case, there would be a problem with understanding which variable influences the amount of financial risk taking. The histogram of the standardized residuals looks approximately normally distributed. To check if the information in the histogram is correct, I also formed a P-P Plot. A P-P Plot (or probability-probability plot), plots the two cumulative distribution functions against each other to check to what degree two datasets match. The points are close to the diagonal line and therefore it can be concluded that the residuals are approximately normally distributed. ANOVA shows that the model statistically significantly predicts the amount of financial risk taking, $F(9,139) = 15.908$, $p < 0.0005$. This means that the regression analysis is a good fit for the data. The independent variables AGE and GENDER are statistically significant, since they have a value of $p < 0.05$. The p values of the other independent variables are > 0.05. The analysis shows a positive relationship between GENDER and FINRISK. This means that if a Business Professional is MALE (dummy value = 1), he is likely to take more financial risk than a female (dummy value = 0). Furthermore, there is a negative relationship between AGE and FINRISK, meaning that when the age of a Business Professional increases, the amount of financial risk they are willing to take decreases. In the first model, the results from the questionnaire on the questions about marital status and number of children were coded into binary variables. This means that, instead of using the number of children, the variable was 1 if the respondent has children or 0 if the respondent does not have children. For marital status, the value was 1 if the respondent was married or 0 if the respondent was not married. Because the data is available, I created dummy variables for the number of children a Business Professional has and dummy variables for the marital status, indicating whether a respondent is married, has a relationship but is not married, or is single. This creates the opportunity the check whether the number of children has an influence on financial risk taking and if there is a difference in financial risk taking if a person is married instead of having a relationship but not being married. There might be a difference, because when persons are married, they are much more bound to each other. K-1 dummy variables were created: four dummy variables were created for the number of children (one, two, three, four or more) and two dummy variables were created for the relationship status (relationship, married). I did a multiple linear regression analysis. In this analysis, I included the dummy variables. The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met. The results of the analysis can be found in Model 2. None of the dummy variables are statistically significant. When looking at the values of the dummy variables of MARITAL, it appears that people who are in a relationship or are married might take slightly less financial risk compared to people who are single. However, the values are not statistically significant. There is almost no difference between people who are married or people who are in a relationship but are not married. Also for the dummy variables of CHILDREN there is no trend that can be identified. The coefficients for the first three dummy variables (one child, two children or three children) are all negative, meaning that people with one, two are three children take on average less financial risk than people without children. However, the coefficient for the fourth dummy variable is positive (0.031). None of the values are statistically significant.

3.3.1 Accountancy versus law

The data discussed before is all based on the total sample for Business Professionals. But is there a difference between Business Professionals? Do lawyers, for example, take more risk in their financial decisions than accountants do? In order to find out, an independent-samples t-test was used. Using this test, I can determine whether or not there is a significant difference between the means of the two independent groups (lawyers and accountants) on the amount of financial risk they are willing to take. The null hypothesis is that there is no difference between accountants and lawyers in financial risk taking; the alternative hypothesis is that there is a difference between accountants and lawyers in financial risk taking. Data consists of 91 accountants and 63 lawyers. Analyzing a boxplot of the data shows 5 outliers, all for accountants. Four of them were on the upper side of the boxplot, one on the lower side. These outliers are not the result of a measurement or a data entry error and therefore will be left in the dataset. I will, to gain insight in the effect of the outliers on the outcome, do two different t-tests: one with the outliers included and one where I remove the outliers from the dataset. First, I analyzed the data which included outliers. Data are mean ± standard deviation, unless otherwise stated. The data consists of 91 accountants and 63 lawyers. The amount of financial risk taking is higher for accountants (0.46 ± 0.19) than it is for lawyers (0.40 ± 0.22). There is homogeneity of variances for engagement scores for accountants and lawyers, as assessed by Levene's test for equality of variances ($p = .174$). Financial risk taking for

accountants was 0.058 higher than the financial risk taking of lawyers (95% confidence interval, -0.009 to 0.125). However, there was no statistical significant difference in mean financial risk taking between accountants and lawyers. T-test shows $t(152) = 1.711$, $p = 0.089$. Since $p = 0.089$ is greater than 0.05, there is no statistical significant difference and I cannot reject the null hypothesis. Cohen's d shows a value of 0.06, which means there is a small effect. Cohen's d is a measure used to provide the practical significance. Secondly, I removed the five outliers from the data and performed a second series of t-tests to see whether this would lead to a different conclusion and maybe a difference between lawyers and accountants when it comes to financial risk taking. The five outliers (case no. 20, 21, 22, 47 and 62) were removed from the data. After removing the outliers, the data consists of 86 accountants and 63 lawyers. The amount of financial risk taking is higher for accountants (0.45 ± 0.18) than it is for lawyers (0.40 ± 0.22). There is homogeneity of variances for engagement scores for accountants and lawyers, as assessed by Levene's test for equality of variances ($p = .051$). Financial risk taking for accountants was 0.049 higher than the financial risk taking of lawyers (95% confidence interval, -0.016 to 0.115). However, there was no statistical significant difference in mean financial risk taking between accountants and lawyers. T-test shows $t(147) = 1.499$, $p = 0.136$. Since $p = 0.136$ is greater than 0.05, there is no statistical significant difference and I cannot reject the null hypothesis. Cohen's d, the effect size, shows a value of 0.28. This means that there is small effect. To see if there were any differences in the predictors for financial risk taking between lawyers and accountants, a multiple linear regression analysis was used for the group of lawyers and the group of accountants. The assumptions of linearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met. The results of these regression analyses can be found in Model 3 (accountants) and Model 4 (lawyers) in Table 5. In the linear regression analysis of the accountants, two variables were found to be the statistically significant predictors: AGE and GENDER. All combined show an adjusted R Square of .422 and the respective coefficients were -.019 and .251, with 1.192 constant. Multiple linear regression analysis was also used for the group of lawyers. Here, the same independent variables were found to be statistically significant predictors for financial risk taking. For the group of lawyers, the adjusted R Square was higher (.489 compared to the .422 for the accountants). Coefficients for the independent variables AGE and GENDER were respectively -.017 and .181 with 1.085 constant. The coefficients for AGE for both lawyers and accountants are nearly equal. The coefficient for GENDER is higher for accountants than it is for lawyers (.251 for accountants, .181 for lawyers). The constant value for accountants (1.192) is slightly higher than the constant value for lawyers (1.085). When looking at the t-tests for both the data that included outliers and the data in which the outliers were removed, no statistically significant difference can be seen. This means that the null hypothesis, as phrased earlier, cannot be rejected. I conclude that there is no statistically significant difference between the amount of financial risk taking for accountants and lawyers. When looking at the values from Cohen´s d, the effect size, there is a small practical difference between lawyers and accountants, meaning that accountants take slightly more financial risk than lawyers do. After conducting the linear regression for the entire sample, the sample of accountants and the sample of lawyers, a small difference can be seen between the two groups. First of all, the constant value for accountants is higher than it is for lawyers, meaning that accountants on average take more financial risk, regardless of age, gender and/or other independent variables. Besides the constant factor, the coefficient for gender was higher for accountants (.251) than it was for lawyers (.181). This means that the influence of gender on financial risk taking is higher for accountants than it is for lawyers.

4. CONCLUSION

At the beginning of this thesis, I stated the following research question: "How does the profile of an average Business Professional at a firm in the Netherlands affect the amount of financial risk taking?". Business Professionals are responsible for building their own pension and this requires decisions when it comes to investing their pension. These decisions are all dependent on the amount of risk they are willing to take. There are different factors will cause differences in the amount of risk a person is willing to take, which I identified by researching previous literature. Some of these factors are age, gender, optimism and marital status. In order to identify these factors for Business Professionals in The Netherlands, a questionnaire was used. The questionnaire focused on six different factors that, based on the literature, might have an impact on the amount of financial risk taking. These factors are age, gender, marital status, optimism about the economy, having children and having a partner with income. The results show that there were two significant indicators for the amount of financial risk taking: age and gender. As expected, male Business Professionals take more financial risk on average than female Business Professionals do. When it comes to age, older people are more risk averse than younger people are. These findings are also in line with previous research on the effect of age on financial risk taking. The effect of marital status is very small and not significant. It shows however, that people who are married or in a relationship tend to take a slightly lower amount of financial risk compared to people who are single. When it comes to the amount of children, there is no clear line that can be identified. The data shows that Business Professionals with children are on average more risk averse, but the results are insignificant. The amount of optimism for the stock market for the coming year has an impact on financial risk taking. People who expect the stock prices to go up (a small increase or a major increase) tend to take more financial risk than people who expect the prices to stay the same or go down. Again, these differences are not significant however. Finally, having a partner who has an income, does not lead to a higher amount of financial risk taking as I expected earlier, but a slightly lower amount of financial risk taking. Summarizing, there are different factors that account for differences in the amount of financial risk a Business Professional is willing to take. Based on this research, the only two significant predictors for financial risk taking are age and gender. Male Business Professionals take on average more financial risk and as age increases, the amount of risk a Business Professional is willing to take decreases.

4.1 Limitations

This brings me to the limitations of my research. First of all, the response rate was not very high (12.92 percent). Due to time limitations, I was not able to send a pre-notification of the questionnaire and/or a reminder. Using one or two of these may lead to a higher response rate, as mentioned in previous literature. The questions about optimism (1 year expectation and 5 year expectation) differ in answering options: the first question has 5 answering options, while the second only has 3. Therefore it was hard to combine and compare these results. It would have been better to use the same scale for both questions. Besides this, adding a question asking about market confidence over an even longer time (say 15 years) might have been a good addition, since investing for a pension is a long-term investment. However, this might have been difficult for people

to answer since it is difficult to say what the market is going to do in the next 15 years or so. Furthermore, in this paper I looked at the influence of having a partner with income on financial risk taking. Since I created the questionnaire in a way to make sure that questions would not get too personal, I only asked whether or not a respondent had a partner who had an income. However, the amount of income of the respondent itself and its partner could provide much more information. Research shows that the amount of income has an effect on financial risk taking. Therefore, it would be better to focus on the total combined income, since the income of a Business Professional without a partner with income could be higher than the combined income of another Business Professional with a partner with income. The final limitation is the model is used to determine whether an asset class was risky or risk free. The model from Cohn et al. (1975) makes a difference between asset classes that are risky or risk free, but it doesn't specify a degree of risk. For example, common stocks and private equity are both classified as risky assets. There might be a difference in the volatility of both asset classes though, which will lead to a difference in the amount of risk related to the asset class. I was unable to find a model that differentiated the amount of risk for different asset classes. However, when such a model will become available, it might be valuable to use, since this will further differentiate the differences in financial risk taking, the dependent variable in this research.

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6. APPENDIX

6.1 Survey

1. What firm do you work for?
2. What forms of wealth creation do you currently use? (More answers are possible)
    - Savings account
    - Stocks/Bonds/Mutual funds
    - Real estate
    - Debt repayment
    - Other:
3. Could you give an indication of the current distribution of your assets? You can give the percentage per asset classes of your total investable assets.
    - Stocks
    - Bonds
    - Commodities
    - Private equity
    - Alternatives
    - Real estate
    - Others:
4. Do you have, in private and/or in one of your enterprises, an investment portfolio?
    - Yes
    - No
    - No answer
5. How would you describe the risk profile of your current investment portfolio?
    - Very defensive
    - Defensive
    - Neutral
    - Offensive
    - Very offensive
6. On a scale from 1 to 5, how would you typify your attitude towards taking risk on everyday financial decisions, with 1 being “Not willing to take any risk” and 5 “Willing to take a lot of risk”?
    - 1
    - 2
    - 3
    - 4
    - 5
7. On a scale from 1 to 5, how would you typify your attitude towards taking risk when it comes to your pension, with 1 being “Not willing to take any risk” and 5 “Willing to take a lot of risk”?
    - 1
    - 2
    - 3
    - 4
    - 5
8. Do you think that, in the next year, the stock market will go up, go down or will stay on the same level?
    - Sharp fall
    - Light fall
    - Stay the same
    - Light increase
    - Strong increase
9. Do you think that, over the next 5 years, stocks will be worth more, less or the same value as they are now?
    - Worth less
    - Worth the same value as now
    - Worth more
10. What is your gender?
    - Male
    - Female
    - No answer
11. In what year were you born?

12. How many children do you have?
    - No children
    - 1 child
    - 2 children
    - 3 children
    - 4 or more children
13. What is your current marital status?
    - Single, never married
    - Relationship/Living together
    - Married or registered partnership
    - Divorced
    - Widow/widower
14. Do you have a partner who has an income?
    - Yes
    - No
    - No answer