Equity Market Risk Premium in Finland 2017

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This thesis is about Equity Market Risk Premium (EMRP) in Finland 2017 done in collaboration with PwC Finland. The main question was about the current estimate of EMRP in Finland 2017. Investigative questions were about the way respondents arrive to certain EMRP estimates and how has the EMRP changed in Finland compared to previous years. And finally, of course, recommendations.

The questions were answered mainly through primary survey conducted by the author of the thesis in collaboration with PwC Finland and the respondent companies and universities. Also, analysis and comparison to similar surveys from other countries was conducted.

The respondents' estimate of the average EMRP for Finland by the end of 2017 was 5.7%. The answer to how do the respondents arrive to a certain EMRP figure was not answered by everyone. Those who did answer, mentioned observing different academic, consulting and market research studies. Some mentioned using historical data and calculations by themselves. For risk-free rates, which is also an important component of the EMRP calculation, most of the respondents mention government bonds, which are used as risk-free rates around the world.

Finally, how has the EMRP of Finland in 2017 changed compared to previous years? Based on earlier PwC studies on EMRP in Finland, the variation has been between 4.63% and 6.40%. In 2015 the EMRP was 5.78%, which is quite the same as it is in 2017, but before that, in 2012 it was 6.00%, which is second highest EMRP recorded by PwC in Finland through 1999 to 2017.
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1 Introduction

This chapter introduces readers to the background of the thesis, explaining how it is contemporary and how it is important and useful. There is a brief introduction of the case company and the department with which the author of the thesis was collaborating, and of course the thesis topic with a research question and investigative questions (IQ) supporting it. It is followed by demarcation, international aspect, benefits, key concepts and risk management.

1.1 Background

Nowadays practically anyone can trade securities, either on one’s own or with the help of professionals. Either way, it is important to understand, if the investment is reasonable or not. And what is reasonable for one person, can be the opposite for another, but one thing is sure – nobody invests their capital with the idea to lose money.

In this thesis, we are not going to discuss the different types of investors or the reasons behind their investments. We will focus on the equity market risk premium (EMRP), which is simply a certain return that an investor is hoping to receive compared to a risk-free investment, such as a government bond.

Now how is this important for the case company PricewaterhouseCoopers Oy (PwC)? PwC has many different customers, companies and private individuals, who follow closely PwC’s news. Since PwC is thus far the only company in Finland conducting research on EMRP expectations in Finland, these researches and statements are important for different parties; these parties can use the estimates directly or by adjusting their own expectations by the results from these surveys. Ultimately, whoever use the results of these surveys, consider them reliable, because of the respondents, who are the main banks, brokerages, asset management companies, insurance companies and universities in Finland.

For the author of this thesis, this topic is important and interesting, because it is related to stock markets. Also, it is a great opportunity to work with one of the Big Four companies in Finland. It means gaining knowledge about the EMRP and things related to it, and at the same time improving resume and professional goals.
1.2 Research Question

This thesis's objective is to survey and analyse the equity market risk premium in Finland 2017. The objective serves two purposes, firstly it is in the interest of the commissioning company to have the survey results and analysis by the end of December 2017; and secondly, it is in the interest of the thesis's author, who can use this information as the empirical part of the thesis and develop the thesis accordingly.

Based on the objective, we can formulate the research question (RQ) of the thesis:

RQ: What is the current estimate of equity market risk premium in Finland 2017?

The research question can be divided into the following investigative questions (IQ):

IQ 1. What are the respondents’ estimates of the EMRP in Finland 2017?
IQ 2. How do the respondents estimate EMRP?
IQ 3. How has the EMRP in Finland 2017 changed compared to previous years?
IQ 4. Recommendations

Table 1 below is the overlay matrix, which presents the theoretical framework, research methods and results chapters for each investigative question.

<table>
<thead>
<tr>
<th>Investigative Question</th>
<th>Theoretical Framework</th>
<th>Research Methods</th>
<th>Results in Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>IQ 1. What are the respondents’ estimates of the EMRP in Finland 2017?</td>
<td>Secondary research data from similar surveys from Europe and the US</td>
<td>Primary research, questionnaire to the biggest and most relevant companies and universities in Finland.</td>
<td>3.1</td>
</tr>
<tr>
<td>IQ 2. How do the respondents estimate EMRP?</td>
<td>Fundamentals of Corporate Finance course book, Professor Aswath Damodaran, JPMorgan, Investopedia, and other sources found useful</td>
<td>Primary research, questionnaire to the biggest and most relevant companies and universities in Finland.</td>
<td>3.2</td>
</tr>
<tr>
<td>IQ 3. How has the EMRP in Finland 2017 changed compared to previous years</td>
<td>Secondary research data to show, how has the EMRP of other surveys in other countries developed, and what are the figures of EMRP of those surveys for Finland</td>
<td>Primary research, questionnaire to the biggest and most relevant companies and universities in Finland.</td>
<td>3.3</td>
</tr>
<tr>
<td>IQ 4. Recommendations</td>
<td></td>
<td></td>
<td>4.3</td>
</tr>
</tbody>
</table>
The idea behind the overlay matrix is to give the reader an overview of how a certain investigative question is related to the theory, what kind of research methods are used in this certain question, and finally, where to find the results.

1.3 Demarkation

The primary research location is Finland, more specifically Helsinki Metropolitan area, including but not limited to, Helsinki, Espoo and Vantaa. The respondents are from different investment banks, commercial banks, asset management and finance companies, insurance companies and universities. The departments, where the respondents work, are mainly finance and asset management and thus the respondents themselves are analysts, investment managers, directors and partners. The focus of the primary research is narrowed also due to the interest of the commissioning company. The research was conducted via email and consists of three main questions and two extra questions, both qualitative and quantitative. The survey’s questions can be seen in the appendix section. The secondary research consists of mainly academic theory and analysis of other similar EMRP researches in the world found through different databases, therefore can be considered rather valid and reliable.

1.4 International Aspect

There is no doubt that PwC, headquartered in London, is an international company – it has more than 236,000 employees around the world (PwC 2017c). It is worth mentioning that PwC belongs to the Big Four, who offer professional services, e.g. audit, taxation, advisory etc. and consist of Deloitte, PwC, EY and KPMG.

1.5 Benefits

The company wanted to have this kind of a survey and report, because the last survey was conducted in 2015, and other parties related to PwC were also interested in the current figures. Also, Swedish PwC does this survey every year, so that is also one of the reasons they wanted it done by the end of 2017. Therefore, the author of this thesis conducted the survey and wrote the report for the company.
PwC’s clients and partners, and of course the public, can use this information from the report to e.g. adjust their own EMRP estimates and for instance have an idea of what to expect in the future.

As for the author of the thesis, this was a great opportunity to work with PwC Finland and will benefit the resume and future career.

1.6 Key Concepts

A security is a financial instrument that has monetary value; it can give ownership in a publicly-traded company, or represent a creditor relationship with a governmental entity or a company; or can give ownership rights as represented by an option (Investopedia 2017a).

A loan given by an investor to an entity, usually corporate or governmental, is called a bond; it is a debt security with an expiration date and has a fixed or variable interest rate (Investopedia 2017b). According to Fundamentals of Corporate Finance course book (Berk, DeMarzo & Harford 2015, 38) bond is a security sold by governments and corporations to raise money from investors today for a promised payment in the future.

The market risk premium displays the extra value the investors demand, compared to a risk-free asset like U.S. Treasury bonds, when investing in the various international markets (JPMorgan 2008). It is the historical average excess return on the market portfolio (Berk & al. 2015, 411).

1.7 Case Company

PwC, being one of the dominant professional services organizations in the world, employs more than 236,000 people in 158 countries in 2017. In 2017, PwC’s global net earnings were USD37.7 billion.

PwC Finland is one of the member firms of PricewaterhouseCoopers International Limited, and is a separate and independent legal entity, like all the other member firms. There are more than 1000 advisers at PwC Finland, who offer audit, legal, tax, deals, consulting and other assurance services, to different companies starting with a growing business and ending with a listed company or a public organisation. (PwC 2017a.)

PwC’s goal is to be the number one professional services provider in their market and helping their clients succeed; they believe collaboration is the key (PwC 2017b).
The author of this thesis contacted PwC Finland to offer collaboration, granted it suits the requirements of Haaga-Helia BBA programme, is finance-related and finally, is interesting to the author. PwC offered the possibility make a survey on equity market risk premium in Finland, last of which was done in 2015. Ideally, they would make a similar survey every year, but often it is the lack of time that hinders the process. So eventually, after the survey is done and all the answers analysed, a statement will be written and published on PwC’s website. There are many parties interested in these results, so that is also a reason, why this survey is conducted.

The first step of the thesis process is to prepare the statement, ideally by the end of November 2017 and after that finalize the thesis, using the findings of the survey and adding relevant theory.

1.8 Risk Management

One of the biggest risks was related to the survey - how to make sure every single one of the contacted companies would answer the questionnaire? Altogether, there were 60 companies contacted preliminarily, of which about half reported being not suitable or not interested in participating. Of the remaining half, eventually, 22 companies had answered the questionnaire, even though in the preliminary inquiry more companies were willing to participate. Five of the responses were collected by the associate at PwC, with whom the author of the thesis collaborated with. Thus, the response rate was slightly better compared to the previous study.

The solution in getting the answers was rather simple – contacting the companies more than once, persistently contacting different relevant employees/departments and doing so by telephone, text messages and emails. The other important factor here was sending the questionnaires directly in the emails, not as attachments, but in the email’s text itself; the logic behind that was the ability to simply reply to the email without opening and filling any extra documents, thus being as convenient as possible.

PwC wanted the survey, analysis and reports done by the end of the year 2017 at the latest, which was the priority of the thesis’s author. It was done and sent for further processing by 11 December 2017, which means it took two months to complete. The parties at PwC with whom the author of the thesis collaborated were very pleased with the results.

As for completing the thesis itself, for the author of the thesis the ideal time would be as soon as possible. It all comes down to the risks of time management mostly, because the
author of the thesis is working and studying, and spare time is very limited. This problem is managed by writing the thesis mainly on weekends.
2 Theoretical framework

First, author of the thesis is going to explain what equity market risk premium is. After that, we can look at the different methods of estimating the EMRP. And finally, the author of the thesis will show results from the surveys and reports of EMRP from other countries. The following figure 1 illustrates the theory framework.

The following figure 1 illustrates the theory framework.

Figure 1. Theory framework

The EMRP estimation methods and data from other countries will be also used to compare to the EMRP results of Finland 2017 in the fourth chapter.

2.1 EMRP and how to estimate it

So, what is the equity market risk premium? Equity market risk premium is the average compensation investors demand for assuming higher uncertainty in returns that are associated with equity investments compared to risk-free rate (KPMG 2018). The market risk premium (MRP) indicates the additional premium investors ask relative to safe(r) financial instruments like U.S. Treasury bonds, when making investments in the world financial markets (JPMorgan 2008).

We can say, that the risk-free rate is like a benchmark, and an investor compares all the other possible, non-risk-free investments to this benchmark, to determine whether to invest in these riskier financial instruments or not. We can see all this summed up in the equation in the following figure 2.
In the equation, there is a coefficient beta, which according to Faure (2013, 57) shows the volatility of a stock’s return compared to volatility of the market portfolio. To be more exact, it shows the percentage change in a stock’s return for each 1% change in the market’s return (Berk & al. 2015, 405). A beta of 1.0 tells us that the price of a share is as volatile as the market the share is traded in. Values higher or lower than 1.0 indicate that the share fluctuates accordingly more or less compared to the underlying market. When we are looking at the overall market, the beta will be 1.0, because gains and losses from all the individual stocks cancel each other out and match the overall return of the market (KPMG 2018).

If we were to look at a specific asset, we might have to account for the alpha coefficient. Alpha may be used in case a financial outlook does not include some relevant risks. (KPMG 2018.) It would be simply added to the equation shown in figure 2.

Since this thesis is about the market risk premium, we do not have to account for alpha, so alpha equals zero. Furthermore, we are looking at the market and so beta equals one. Thus, the final equation is $\text{rrr} = rfr + \text{MRP}$, which can be summed up in the following figure 3.

$$\text{rrr} = rfr + (\beta \times (\text{mr} - rfr))$$

where

- $rfr$ = risk-free rate
- $\beta$ = beta
- mr = market rate of return, i.e. the return observed over the period chosen
- $\text{mr} - rfr$ = the premium over the risk-free rate.

Figure 2. Required rate of return (rrr) according to Capital Asset Pricing Model (CAPM) (Faure 2013, 57; Berk & al. 2015, 412)

Figure 3. Required return for an individual company vs overall market (KPMG 2018)
Moving on to estimating the equity market risk premium, we are not going to go in too much detail in the different methods, and we will only cover the ones that are used the most.

Historical mean/average realized returns is the first method and probably the simplest. As the name suggests, it is based on historical data. The equation for this method can be expressed as $\text{MRP} = \text{average annual equity index return} - \text{average return on Treasury bonds}$ (JPMorgan 2008). For the average annual equity index return we can use data for example for the S&P 500 index (Investopedia 2018a) and as the risk-free average return U.S. Treasury bonds. The drawback of this model is that it tries to use data of the past, depending on the time interval and the market, and uses it in the current market conditions (Duarte & Rosa 2015, 42). Of course, we can choose between shorter and longer time intervals, but it will not change the fact that the data is based on what already has happened. The data is averaged, meaning there could (must) have been ups and downs in the returns, which in turn means MRP should have been adjusted accordingly. The author of the thesis believes, that this method could have been more reliable in the past, mainly because of the technological differences; for instance, if something happens today in the U.S. markets, it will probably spread to other markets during the same day or the next day. But, let us say 50 years ago, it would take more time for the other markets to react. Another issue is that to be confident in such estimates we have to have data of hundreds and thousands of years and stocks, even stock markets, have not existed for that long yet (Berk & al. 2015, 412).

The next method of calculating MRP is using Dividend Discount Model (DDM), where we first calculate the current market cost of equity. The cost of equity here is oftentimes based on the S&P 500 index, where price and expected dividend streams are the key items. Dividend projections can be calculated using forecast earnings and expected payout ratios; forecasted earnings themselves are projected when short-term market estimates are combined with perpetuity growth rate, which is equivalent to long-term nominal GDP growth. The dividend pay-out ratio is based on the average of recent historical payout ratios, but it increases in the long period towards 80% in the terminal period, assumed reinvestment opportunities subside. (JPMorgan 2008.) The formula is shown in the following figure 4.

$$\text{Price}_0 = \sum_{t=1}^{\infty} \frac{\text{Dividend}_t}{(1 + \text{Cost of Equity})^t}$$

Figure 4. Market cost of equity (JPMorgan 2008)
To calculate the MRP using DDM, we subtract the 10-year government bond yield from the market cost of equity, which looks as MRP = Cost of equity implied by DDM – 10-year government bond yield. This method is better, because it is forward-looking and it responds to the current market environment. At the same time, it relies on the estimates of future dividends and prices that change every day, and this must be taken into consideration. (JPMorgan 2008; Duarte & Rosa 2015, 42.)

Another method to estimate the MRP is using the constant Sharpe ratio. The Sharpe ratio originally is calculated by subtracting a risk-free rate from an average return of a portfolio, and divided by the standard deviation of the portfolio return, i.e. Sharpe ratio = (Mean portfolio return – risk-free rate)/Standard deviation of portfolio return (Investopedia 2018b). For the market Sharpe ratio, we divide the Portfolio MRP with the Volatility of MRP, as shown in the following figure 5.

$$Market\ Sharpe\ ratio = S_M = \frac{Portfolio\ MRP}{Volatility\ of\ MRP}$$

Figure 5. Market Sharpe ratio (JPMorgan 2008)

For the market Sharpe ratio, S&P 500 index can be used once again, and by JPMorgan (2008) the constant for 50 years was 0.3; and for the volatility VIX index is used, which is implied volatilities of the S&P 500 index options, is forward looking and is used widely as a market risk benchmark (Investopedia 2018c). Thus, the MRP can be calculated as MRP = Market Sharpe ratio * Market implied volatility. If one is to use more recent Sharpe ratios to calculate the constant, they can be also found online, as in the article of Seeking Alpha (2018), where data of 84 years is used, and Sharpe ratio for every one of these years calculated and ready to use. The good part of this method is that the VIX index is forward looking and senses the investors’ moods rather quickly, and the constant of 0.3 is backed by historical data and academic research.

The next method is dividend yield method, where the assumption is that the dividend will continue to grow at a constant rate forever. The cost of equity can be expressed as follows:

$$Cost\ of\ Equity = \frac{Div}{Price} + GrowthRate$$

Figure 6. Cost of equity implied by dividend yield method (JPMorgan 2008)
Using the cost of equity from figure 6, we can calculate the MRP, which is \( MRP = \frac{\text{Cost of equity implied by Dividend Yield Method} - 10\text{-year government bond}}{\beta} \). Although the method might seem simple, it relies on assumptions of the perpetuity growth rate and dividend growth rate, and can be applied only in dividend-heavy sectors. (JPMorgan 2008.)

And finally, the survey method, which has been also applied by the author of this thesis for the MRP in Finland. As the names suggests, the idea is to survey market participants for their views on the MRP. The advantage of this method is that for instance in case of academics, they are unbiased in their MRP estimates, they study the subject for long periods of time and have significant influence on how market participants look at the MRP. The disadvantage with the same academics might be that because they might estimate MRP with historical realized returns, they might not account for the current market environment; in this case a surveyed CFO of a company might give a better estimate of the MRP as he includes factors related to the current market situation. (JPMorgan 2008.)

2.2 EMRP data from other countries

This subchapter gives an overview of similar surveys conducted in other countries and the focus here is on the methods of acquiring the information and specifically what has been the EMRP for Finland in these surveys.

According to KPMG’s EMRP research summary (KPMG 2018), they suggest the EMRP as per 31. December 2017 to be 5.5%. KPMG assume that the implied (DDM) EMRP methodology is the most appropriate methodology, because it accounts for recent market developments, expectations, and can be calculated using observable market data. They also mention it is difficult to determine an estimate of EMRP that would be universal for every developed market because of the daily fluctuations and differences between different regions. The following figure 7 gives an overview in the development of EMRP in the American and European stock markets.
We can see that in the latest developments since 2016, the EMRP has been in a down-trend for the US market, which KPMG also mention in their research summary, and more stable for the European markets compared to the previous quarter.

In 2017, Fernandez, Pershin and Acin (2017) conducted a study on MRP with more than 4000 answers gathered from 41 countries from finance and economy professors, analysts and managers. The average MRP figure for Finland was 5.9% with 78 answers. From the small part of given answers in the study one can conclude, that different interviewees use different methods to calculate the MRP, some of which use 10-year government bond as risk-free rate. If all the answers were shown, the prevailing common line would probably be the usage of the 10-year or longer government bond as the risk-free rate.

In 2015, the same Fernandez, Pershin and Acin (2015) conducted the same study and gathered more than 4000 answers also, with Finland’s average MRP being 5.7% from the received 64 answers. From the few answers of the respondents’ given, it is again difficult to see a common way the respondents calculate MRP, but the use of government bonds is mentioned.

In 2012, Fernandez, Aguirreamalloa, and Corres (2012) conducted the MRP study and they received over 6000 answers for 82 countries. In this survey the number of answers from Finland was 37, which is quite low compared to the 2015 and 2017, and the average MRP was 6.0%. As an interesting side comment related to the surveys, Pablo Fernandez has been working at PwC Spain since 1996. In this survey the authors asked respondents to indicate, what kind of sources they use to arrive at the MRP figure that they provided. The following table 2 shows what were the top five sources out of 1653 given answers.
The sources given in the table provide slightly over 50% of all the answers for the source question. There were also other sources with less answers mentioned, and “Others” as the researchers of the study categorized, which had 273 answers or 16.5% of the total 1653.

<table>
<thead>
<tr>
<th>Source</th>
<th>Number of Answers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Damodaran</td>
<td>253</td>
<td>15.3</td>
</tr>
<tr>
<td>Ibbotson/Morningstar</td>
<td>249</td>
<td>15.1</td>
</tr>
<tr>
<td>Internal (own) estimate</td>
<td>157</td>
<td>9.5</td>
</tr>
<tr>
<td>Historical data</td>
<td>102</td>
<td>6.2</td>
</tr>
<tr>
<td>Bloomberg</td>
<td>90</td>
<td>5.4</td>
</tr>
</tbody>
</table>
3 Research Methods

For this survey and the eventual statement, the author of the thesis contacted different banks, asset management, private equity, insurance companies and universities. The respondents were chosen with the logic that they are the biggest and most important parties in the mentioned fields. Also, the respondents from the last PwC EMRP survey were considered to some extent. Then they were contacted one by one, by email, phone calls and text messages. The idea behind this is obvious – the biggest and most important parties have the necessary expertise and have more influence on e.g. smaller companies or private investors; more influence can also be described as more power over the market due to larger amounts of money to be invested into stocks or other securities. The following Figure 8 helps to visualize the relationship of the data collection and investigative questions.

![Figure 8. Research methods](image)

From the figure 8 we can see, how certain parts of the research are interconnected. It starts with the choice of respondents, after which the ones that agree to answer, are being sent an email with the questionnaire containing of five questions. After the questions have been answered and organized to an excel file, they are analysed, numbers statistically and the open questions qualitatively. The results are also compared to the results of previous years’ questionnaires. Finally, with the help of the answers and analysis, we can answer the investigative questions.
3.1 The estimate of EMRP in Finland

The equity market risk premium can be estimated using real data, meaning stock market long-term current return is compared to a risk-free investment’s current return, which is the ex post basis. The other way, which has been used in this case, is to use the anticipated returns of the stock market of the market participants, or ex ante. (PwC 2018.)

It is the forward-looking EMRP that in most cases interests all types of institutions and private investors, because it gives an idea what to expect soon, for instance, should some of the investments be sold, or new ones made. In case of ex ante, human psychology and collective behaviour is also important, because, after all, these ex ante values are only expectations and not solid facts. But in this thesis, we are not going to discuss the topics of psychology and behaviour on the stock market, perhaps it could be a topic for another thesis.

The average market risk premium expectation of the study participants was 5.7 percent, with the answers ranging from 4.0 to 12.0 percent (PwC 2018). In the following figure 9 we can see all the answers for the market risk premium expectation.

![Figure 9. Equity market risk premium expectations (PwC 2018)](image)

It is easy to see that most of the answers fall between 4.0 and 6.0 percent, so the discrepancy is rather small and there is only one extreme answer of 12.0 percent.

According to professor Aswath Damodaran from the Stern School of Business, whose studies are well-known in the business world, the EMRP in the United States in January 2017 was 5.69 percent and his estimate for Finland was 6.01 percent (Damodaran 2018).
In relation to the question of EMRP expectations, respondents were also asked to estimate in which direction the EMRP in Finland has changed during the last two years. 11 percent of the respondents answered that the EMRP has risen, 39 percent that it has not changed, and half of the respondents that the EMRP has fallen. (PwC 2018.)

One way to interpret the answers of the EMRP staying the same/falling is that the riskiness of the stock market has stayed the same or fallen, which signals that the stock markets might have been more stable. Another reason might be the low interest rates, because logically the higher the interest rates the higher EMRP demand and vice versa.

3.2 How did the respondents estimate EMRP?

This was an optional question of the survey and only half of the total respondents answered it. The reason behind the lower answers might be simply lack of time and/or the complexity of the explanation. Either way, the ones who answered had provided rather short explanations of their EMRP estimating techniques.

The most common answer was observation of the different academic studies, studies published by consulting and market research companies, where Damodaran database was also mentioned.

Some of the participants look at the data of previous researches, historical data and the market sentiment (market bullish – lower EMRP, market bearish – higher EMRP). A couple of respondents mentioned calculating the EMRP, for instance stock market and bond index yield spread YTD, arithmetic average return on the stock market, effective average dividend yields and value weighted inverse of corporate P/E ratios.

When estimating the EMRP, different respondents use different risk-free rates. Over half of the respondents use 10y Finnish government bond, followed by ECB bond rates and the bond yields from Bloomberg.

All in all, there is no one method to estimate the EMRP and never will be, so different institutions and other investors use the data available and their own knowledge and judgement, which is in some cases adjusted by different variables.
3.3 Comparison of the results to the previous years

Let us have a look at the changes in EMRP in Finland. The following figure 10 shows the development of EMRP through the years, when PwC Finland has conducted these researches.

![Figure 10](image)

Figure 10. The development of EMRP in Finland (PwC 2018)

We can see, that EMRP was at its highest level so far in 1999 with 6.40 percent. On the other hand, the lowest level thus far has been measured in 2005 with 4.63 percent. In 2012 the EMRP was also quite high and one explanation could be the financial crisis of 2007-2008; the stock market returns fell and the ones still investing into it would demand higher risk premium for the higher risk. If there was a study conducted by PwC Finland between 2009 and 2012, the EMRP would have probably been as high as it was in 2012 or even higher.

At PwC Sweden, similar surveys have been conducted since 1998 every year, except for 2002. In the following figure 11 we can see the comparison of EMRP survey results of PwC Finland and Sweden.
In Sweden, the lowest EMRP has been 3.5 percent and the highest 6.8 percent (so far), which compared to Finland’s figures is at the one end lower and at the other end higher. It is also interesting that in the year 1999 Finland had its highest EMRP so far, while Sweden the lowest. In the latest studies both Finland’s and Sweden’s EMRP development has remained rather the same, as can be noticed in the figure 11. Based on the expectations of Finland and Sweden EMRP estimates it can be suggested that investors in both countries perceive risk in the stock markets in a similar manner. (PwC 2018.) One of the reasons for similarity could be the closeness of both countries and both being Nordic countries.
4 Results

In this chapter we are going to have a look at the differences and similarities in the study of EMRP in Finland and studies of EMRP of other countries, where Finland has also participated. Unfortunately, the data is rather limited due to small amount of such studies and due to Finland not being represented in every study.

4.1 Comparison of EMRP estimates from different studies

Firstly, let us have a look at the EMRP percent of Finland gathered by PwC studies and compare it to similar studies of other countries. The following table sums up the different EMRP percent of different studies. It should be noted that KPMG did not study EMRP specifically for Finland but for the developed markets as a whole; and is in this comparison due to the scarcity of EMRP data for Finland. PwC Sweden's data is provided also due to the lack of data and because of its closeness to Finland and its market.

Table 3. Comparison of EMRP between different studies

<table>
<thead>
<tr>
<th>Source / Year</th>
<th>2017</th>
<th>2015</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>PwC Finland</td>
<td>5.74%</td>
<td>5.78%</td>
<td>6.00%</td>
</tr>
<tr>
<td>PwC Sweden</td>
<td>6.5%</td>
<td>6.8%</td>
<td>5.8%</td>
</tr>
<tr>
<td>KPMG (2018)</td>
<td>5.5%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Damodaran (2018)</td>
<td>6.01%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fernandez &amp; al. (2017)</td>
<td>5.9%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fernandez &amp; al. (2015)</td>
<td>-</td>
<td>5.7%</td>
<td>-</td>
</tr>
<tr>
<td>Fernandez &amp; al. (2012)</td>
<td>-</td>
<td>-</td>
<td>6.00%</td>
</tr>
</tbody>
</table>

From the table we can see, that in the studies of 2017, the EMRP of Finland provided by PwC is almost the same as in the study of Fernandez & al. (2017) and really close to the result of KPMG (2018). Damodaran’s (2018) result is 6.01% being highest of the four. The EMRP of PwC Sweden 2017 at the same time is almost one percent higher than the Finland’s figure.

In 2015, the results of PwC Finland and Fernandez & al. (2015) are practically identical, whereas PwC Sweden’s figure is higher by one percent.

In 2012, the figures of PwC Finland and Fernandez & al. (2012) are identical, and the gap between PwC Sweden is only 0.2%.
4.2 Methods of EMRP estimation used in different studies

First, the study conducted by the author for PwC Finland and the similar studies found - most of them are based on surveys. But, of course, behind the surveys there are respondents, who using their knowledge and/or other resources available to them, estimate the EMRP figures. Not every respondent provides how he/she calculates the EMRP and with the surveys with thousands of answers, the answer of every respondent will not be given, if given at all. So, in terms of comparability, the author of the thesis compared the methods provided by the respondents of PwC Finland survey to the few answers given in other surveys.

The studies of KPMG (2018) and professor Damodaran (2018) are both using implied EMRP estimation method and Damodaran provides the data for almost 150 countries. As for the studies of Fernandez & al. (2017, 2015) and Fernandez & al. (2012), there were answers ranging from using a certain constant as the premium; but the common answers in all the studies were the use of 10-year government bond (or shorter/longer) followed by using data from academic studies, Damodaran, Ibbotson, Bloomberg, using historical data etc. So, as we can conclude, there are similarities in the methods or the places where data is taken from, but there is no one method, that could be generalized.

The same goes for the study of PwC, even though there were slightly over 20 answers altogether, and not everyone answered the question of EMRP estimation, the 10-year government bond, Bloomberg and Damodaran, as well as historical and arithmetic average methods were mentioned.

4.3 Conclusions and Recommendations

Let us now conclude on the findings of the survey and sum it all up according to the IQ’s that have been set in the beginning of the thesis.

First, the respondents’ estimate of the EMRP for Finland by the end of 2017 was 5.7% as an average. The answer to how do the respondents arrive to a certain EMRP figure was not answered by every respondent. Those who did answer, mentioned observing different academic, consulting and market research studies. Some mentioned using historical data and calculations by themselves. Though, for risk-free rates, which is also an important component of the EMRP calculation, most of the respondents mention government bonds, which are used as risk-free rates around the world.

Finally, how has the EMRP of Finland in 2017 changed compared to previous years? Based on earlier PwC studies on EMRP in Finland, the variation has been between 4.63%
and 6.40%. In 2015 the EMRP was 5.78%, which is quite the same as it is in 2017, but before that, in 2012 it was 6.00%, which is second highest EMRP recorded by PwC in Finland through 1999 to 2017.

As in probably every thesis written, things could always be done differently and/or better. Same goes for this thesis. Firstly, the author of this thesis believes, that to improve the number of respondents participating in a study, the survey period should be longer. The reason behind that is the respondents, who are often in leading positions of companies and/or being e.g. CFO’s, might not have time to answer any surveys promptly or they forget about it altogether. So, if the period is longer, reminders can be sent, and this provides a better chance of higher answer rate.

Secondly, it might be beneficial to focus on a bigger region rather than focusing on one country. This will probably increase the number of answers and improve comparability, because there is a bigger chance that a similar study has been made concerning one of the countries in the chosen region, rather than only one certain country.

An interesting topic for a EMRP related thesis would be one, where the relations of EMRP and human psychology and collective behaviour are studied, which would probably suit more a master’s thesis.

Also, a thesis where the different EMRP estimating methods are studied more in-depth, with more examples, would be a thought-provoking idea, because it is quite difficult to understand, how a certain method calculates EMRP, especially when seeing the methods first time.
References


Appendices

Appendix 1. Questionnaire

Questionnaire to PwC’s Equity Market Risk Premium Survey 2017

The Equity Market Risk Premium (EMRP) in Finland can be defined as the difference between the expected annual (total) return on the Finnish stock market and the annual return on a risk-free asset. Here, the (total) return on the Finnish stock market is measured by the performance of the OMX Helsinki Cap GI Index.

Please answer the following questions according to your estimates:

1. Our current estimate of the EMRP in Finland is
   _______ %

2. Our estimate of the EMRP in Finland has
   - clearly fallen
   - slightly fallen
   - not changed
   - slightly risen
   - clearly risen

   in the last two years.

3. What is your source for the risk-free rate?

EXTRA

4. How do you estimate the EMRP?

5. What is your estimate regarding how many years the IPO window will stay open?
   In other words, how long do you think that the stock market in Finland will continue to thrive and attract new IPO’s?
   - 1 year
   - 1-3 years
   - More than 3 years