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Ex-post and ex-ante estimation of market risk premium

Master's thesis within Business Administration

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Abstract

In the financial world, stocks should provide a greater return than safe investments such as Treasury bonds. This is due to a higher risk involved when obtaining stocks in comparison to treasury bonds. Thus, the higher risk involved, the higher return is expected by the investors. The return expected over the risk-free rate is a compensation for the risk. This compensation is referred to as the market risk premium (MRP).

According to financial researchers, it is not only the magnitude of the MRP discussed controversially among economists, but also the appropriate methodology to calculate meaningful estimates. The various estimation methods can be generalized as the historical approach (ex post) and the forward-looking approach (ex ante).

The purpose of this thesis is to investigate the application of the estimation methods for practical investment decisions and to observe which estimate (ex-post or/and ex-ante) the financial actors find to be optimal as an input for decision making.

Data will be gathered from a small group of respondents in order to receive an in-depth comprehension of the subject matter. Hence, the nature of the data in this research dictates the application of qualitative methods.

It can be concluded that both the ex-ante method and the ex-post method are used by the three financial actors when forecasting the MRP. Furthermore, it could be concluded that investors can apply different values of MRP as an input for models and investment decisions due to the fact that the choice of the fair MRP involves some subjective judgments from the individual analyst or investor.

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1 Introduction

1.1 Background

The fundamental assumption that investors' expectations are based on is that riskier investments should have a higher return than safer investments. In theory, stocks should provide a greater return than safe investments such as Treasury bonds (Harper, 2004). The risk averse investor can make a risk free investment such as government bonds and earn the risk-free rate of return. However, if a higher rate of return is required by the investor, investment in stocks is an alternative. Investment in stocks involves risk and therefore the investor expects to earn a return higher than the risk-free rate.

The return expected over the risk-free rate is a compensation for the risk. This compensation is called market risk premium (MRP). It is the excess return that is expected from the overall market above a risk-free return. An advantage of determining the risk premium is that it helps to set portfolio return expectations and deciding asset allocation policy (Cornell, 1999). Thus, actors in the financial market need to estimate the risk premium for the purpose of investment decisions. Nevertheless, the methods employed to estimate the risk premium vary among the different financial actors.

According to David Schröder (2004) it is not only the magnitude of the MRP discussed controversially among economists, but the appropriate methodology to calculate meaningful estimates also lies at the core of the debate. The challenge presented by the risk premium is that it is not a value which can be directly observed in the market, and must therefore be estimated. This can be done in several ways and consequently the current level of the risk premium is subject to much dispute (Saabye, 2003).

The various estimation methods can be generalized as the historical approach (ex post) and the forward-looking approach (ex ante). The historical method has attempted to derive the equity risk premium from the historical returns of stocks and bonds; whereas the forward-looking method has used fundamental information—such as earnings, dividends, or overall economic productivity—to measure the expected equity risk premium.

As mentioned previously, a benefit of identifying the risk premium is that it helps to set portfolio return expectations and determine asset allocation policy. Thus, it might be of great significance for investors in Sweden to have the knowledge about how the MRP is computed by the different actors. Also, the equity risk premium should be of particular interest to actuaries. For pensions and annuities backed by bonds and stocks, the actuary needs to have an understanding of the MRP and its variability compared to fixed horizon bonds (Derrig & Orr, 2003).

The predicted risk premiums derived from the different methods may vary. In fact, the result may even differ when utilizing the same method. This is due to the different variables employed in the calculation of the risk premium. While users of risk and return models may have developed a consensus that historical premium is, in fact, the best estimate of the risk premium looking forward, there are surprisingly large differences in the actual premiums we observe being used in practice (Damodaran, 1999). The financial actors may employ either the ex-ante approach or ex-post approach or both of them to estimate the MRP. Furthermore, the application of the risk premium, which is estimated by either of the two methods, can differ depending on the type of asset, portfolio or other subjective factors.

1.2 Problem discussion

Different financial actors use diverse methods to calculate the risk premium. The different methods may not provide the same estimation of the risk premium. Also, the application of the MRP, subsequent to the calculated risk premiums (ex-post or/and ex-ante) may differ depending on the type of asset or portfolio. This study will focus on investigating the methods that are used to predict the risk premium and to examine how the suitable risk premium is determined for every investment decision. The following research questions are to be answered:

1. Are the two estimation methods (ex-post and ex-ante), in use for practical investment decisions?
2. How is the appropriate risk premium determined for the different equity allocation decisions?

1.3 Purpose

The purpose of this thesis is to investigate the prevailing use of the estimation methods (ex-post or/and ex-ante) for practical investment situations and to observe which estimate (ex-post or/and ex-ante) is considered to be optimal as an input for decision making.

2 Theoretical Framework

Market risk premium (MRP) has a determinant roll in finance since different models in finance are based on MRP. According to Damodaran (1999) equity risk premiums are a central component of every risk and return model in finance. Thus, this section will present theory definitions, explain different uses of MRP and methods of estimating MRP. Furthermore, earlier studies concerning the MRP, both internationally and domestically are presented

2.1 What is MRP?

In finance theory, it is recognized that every investor who takes up risky options with different degrees of uncertainties expects to receive an equitable return for a reasonable level of risk involvement. The core notion is that riskier investments are expected to have a relatively higher return than safer investments (Damodaran, 1999). A risk-free investment is defined as one for which the investor is certain of the amount and timing of the expected return. The returns from most investments do not fit this pattern. Investment can range in uncertainty from basically risk-free securities, such as T-bills, to highly speculative investments, such as the common stock of small companies engaged in a high risk enterprise. Most investors require higher rates of return on investment if they perceive that there is any uncertainty about the expected rate of return. This increase in the required rate of return over the risk-free rate is the risk premium. The ERP can simply be defined as the difference between the return on common stocks and the return on government securities (Cornell, 1999). Government securities are used as the risk-free rate of interest. The most commonly used securities, according to Cornell (1999), are short-term treasury bills and long-term treasury bonds.

The explanation above hopefully, provides an understandable definition and explanation of the MRP. The uses of MRP will be assessed subsequently.

2.2 Uses of MRP

Equity risk premiums are a central component of every risk and return model in finance. As the key to estimating long-run stock returns, the MRP plays an important role in a host of financial decisions. The most obvious use of the estimated premium is for making asset allocation decisions. A basic decision that every investor must make is how to divide his/her portfolio among stocks, fixed-income securities, and other assets. The fundamental data on which this decision is based on are estimates of the relative risk and expected returns for the competing asset classes. In the case of stock and fixed-income securities, the relative return is precisely the equity risk premium (Cornell, 1999). Thus, the knowledge of the expected future risk premium assists investors to contemplate and decide upon the degree of investments in each area, risky or risk less, with their different expected returns.

Aside from playing a central role in asset allocation, the MRP is a critical input into planning decisions for pension funds and retirees as well. Planning for retirement necessitates approximating the funds that will be available in the future. This requires estimates of the returns on investments. For fixed-income securities, the calculation is straightforward since the yields are known. For equity, however, it requires an estimate of the market risk premium. Funding requirements for fixed benefit plans depends on the assumptions made re-

garding investments returns. Those assumptions, in turn, depend on the MRP (Cornell, 1999).

On a different front, the MRP plays an important role in corporate investment decision making. Finance theory instructs that a company should undertake all projects that have a positive net present value. The calculation of present value depends on the firm's opportunity cost of capital, which serves as the discount rate. The opportunity cost of capital, in turn, is greatly influenced by the cost of equity. Modern asset pricing models, such as the capital asset pricing model (CAPM), employ a two step procedure for estimating the cost of equity. First, the cost of equity is estimated for the market as a whole. Because cost of equity of the market is a synonym for expected returns on the market, it is determined by a forecast of the equity risk premium. Second, the market wide cost of equity is adjusted to take account of the risk of the company's equity relative to the risk of stock generally. The expected return on the market is perhaps an even more important determinant of the discount rate. In this fashion, the MRP determines in part what investment projects are undertaken in the economy (Cornell, 1999).

Finally, the MRP is a critical determinant of the level of stock prices. Because the MRP determines the expected return on common stock generally, by definition it determines the rate at which investors discount cash payouts on the market portfolio (Cornell, 1999). Given this importance of the risk premium, it can be concluded that the prediction of the future risk premium is clearly substantial to be able to make major investment decisions

2.3 MRP estimation methods

The MRP is, as mentioned above, very important and useful in portfolio management. Thus, it is of great significance that the estimation of the MRP looking forward is as optimal as possible. However, how is the estimation of the MRP carried out? There is a vigorous debate among experts about the method employed to calculate the MRP, and of course, the resulting answers (Harper, 2004). According to Cornell (1999) the equity premium is defined in both a historical, or ex-post, sense and a forward-looking, or ex-ante, sense. The risk premium can therefore be estimated in several ways, and consequently opinions differ greatly as to the size of the risk premium (Saabye, 2003). The ex-post premium is calculated as the difference between the historical average returns on common stocks and the average return on the two treasury securities. The ex-post premium can be calculated over a variety of historical periods using a variety of observation intervals. Unfortunately, the estimate of the premium changes significantly when the sample period is altered (Cornell, 1999). The ex-ante method is complicated and is computed in many different ways such as the discounted cash flow model, earnings approach, the survey method and the demand-side model.

As observed, not only one method can be employed to compute the estimated MRP, however there is no simple model of ERP estimation that has been universally accepted (Derrig & Orr, 2003). Thus, there are no studies indicating whether the forward-looking or historical method is the best method to include in the estimation procedure.

2.3.1 Ex-ante

In contrast to the historical method, there are more direct approaches to estimate the MRP such as the ex-ante method which includes the discounted cash flow model, earnings approach, the survey method and the demand-side model. Ex-ante estimations depend on accounting fundamentals and these fundamentals are the sources of future cash flows. Thus, due to these expected future cash-flows, the ex-ante method can be considered to provide with a reasonable estimated future risk premium. Furthermore, another advantage of the different ex-ante methods over the historical approach is that it gives an estimate of the current expectation of the risk premium in the market (Saabye, 2003). For instance, the dividend approach is based on the fundamental equation, which states that the value of the market portfolio equals the present value of the expected future dividends on the market discounted at the expected return on the market (Cornell, 1999). Also, according to Siegel (1999) earnings are the sources of future cash flows. Future stock returns should not be viewed independently of current fundamentals, since the price of stocks is the present discounted value of all expected future cash flows. The drawback of the method is that it depends on the calculation models, and thus on their underlying assumptions and prerequisites (Saabye, 2003). The different approaches are briefly presented below.

1. **The discounted cash flow model (DCF):** the basic forward-looking approach is referred to as the DCF method since it is based on the definition of the long-run expected returns as the discount rate that equates the stock price with the stream of expected future dividends. In short, the expected return, k , is the solution to the equation

$$P = \frac{Div_1}{1+k} + \frac{Div_2}{1+k} + \frac{Div_3}{1+k} + \dots$$

Where Div is the expected dividend and k is the expected return, or equivalently the cost of equity capital (Cornell, 1999).

There are different forms of this model. The constant growth form which assumes that dividends grow at the constant rate, g ,

Gordon Growth Model	Re-arranged to solve for the expected return (k)
$P = \frac{D}{k - g}$ <p>Where: P = stock price, D = dividend dollars k = the expected return (%) g = growth rate (%)</p>	$k = \frac{D}{P} + g$ <p>k = dividend yield + dividend growth</p>

Figure 1 Gordon model (investopedia.com)

The argument put forward by the advocates of this model (Gordon model), for forecasting the risk premium, is the following: K is the return required of the market (a diversified portfolio) and must match the return expected by the market (Fernandez, 2004). In order to calculate the market risk premium, all that is needed to be carried out

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is to estimate the dividend growth expected by the market. Note that for the calculation to make any sense we need to assume that the price of the shares coincides with their value and that dividend growth is as expected by the market (Fernandez, 2004). A drawback that arises with this method is that investors' expectations are not homogeneous. If they were, it would make sense to talk in terms of market risk premium, as all investors would have the market portfolio and the same expectations regarding the portfolio. However, since expectations are not homogenous it is obvious that investors who expect higher growth will have a higher market risk premium (Fernandez, 2004).

2. Another method employed to estimate the MRP is the **earnings-based approach**. This approach focuses on price-to-earnings (P/E) ratio and it's reciprocal: the earnings yield (earnings per share ÷ stock price). The idea is that the market's expected long-run real return is equal to the current earnings yield (Harper, 2004). The required steps to achieve the earnings-based approach is as follows:

Derivation of Earnings-Based Approach		
Step	Formula	Note
(1) Start with Gordon Growth Model	$P = \frac{D}{k - G}$	(P) = Stock price (D) = Dividend per share (k) = Expected return (G) = Growth in dividends
(2) Introduce Earnings Per Share (E) and Retention Ratio (R)	$P = \frac{E \times (1 - R)}{k - (k \times R)}$	Replace Dividends (D) with: Earnings Per Share (E) times the payout ratio (i.e., 1 - retention rate) Replace Growth (G) with: expected return (k) multiplied by retention ratio (r). The assumption that retained earnings are re-invested at the expected rate of return
(3) Solve for Stock Price (P)	$P = \frac{E \times (1 - R)}{k \times (1 - R)} = \frac{E}{k}$	
(4) Rearrange to solve for expected return (k)	$k = \frac{E}{P}$	Expected Return (k) equals earnings yield (or 1 ÷ P/E ratio)

Figure 2. Earnings based approach (investopedia.com)

Whereas the dividend-based approach explicitly adds a growth factor, growth is implicit to the earnings model. It assumes the P/E multiple already impounds future growth. For example, if a company has a 4% earnings yield but doesn't pay dividends, then the model assumes the earnings are profitably reinvested at 4% (Harper, 2004).

Even experts disagree here. Some "rev up" the earnings model on the idea that, at higher P/E multiples, companies can use high-priced equity to make progressively more profitable investments. Arnott and Bernstein - authors of perhaps the definitive study - prefer the

dividend approach precisely for the opposite reason. They show that, as companies grow, the retained earnings they often opt to reinvest result in only sub-par returns - in other words, the retained earnings should have instead been distributed as dividends (Harper, 2004).

3. A further option to estimate the MRP is to perform **a survey on experts in the field**. This is perhaps the most direct way to estimate ex-ante MRP. (Cornell, 1999). Some researchers prefer to rely on opinions of investors and financial professionals garnered from broad surveys when estimating the equity risk premium. These opinion surveys naturally produce optimistic estimates (Harper, 2004). However, this method is highly subjective and is best used as a supplement to both the ex-post and ex-ante method (Saabye, 2003).
4. A fourth option to estimate the future MRP is to carry out the **demand-side model**: The model derives expected equity returns through the payoff demanded by investors for bearing the risk of equity investments (Ibbotson & Chen, 2003). The researchers try to see how much extra return stock market investors are expecting in conjunction with the risk level involved.

2.3.2 Ex-post

According to Damodaran 1999, the standard approach to estimating the risk premium is the historical method. A vast majority of financial analysts preferably employ this method worldwide. This approach functions in a manner that the actual returns earned on risky stocks over a long time period are estimated, and subsequently compared to the actual returns earned on a risk-free investment, generally government securities. The difference, on an annual basis, between the two returns is computed and represents the historical risk premium (Damodaran, 1999). Hence, the historical equity risk premium equals the difference between the average return on risky stocks and the average return on treasury securities calculated over a specified period (Cornell 1999).

A statement completed by Derrig & Orr (2003) regarding MRP indicates that over the long horizon the equity premium is likely to be similar to what it has been in the past and the returns to investment in equity will continue to substantially dominate those in bonds for investors with a long planning horizon. Researchers may thus possibly have developed a consensus that the historical approach is the best method to estimate the risk premium looking forward. However, the historical method assumes that the required return to equity in the past was equal to the return actually received and that the market is all investors' efficient portfolio but it is important to note that this method provides inconsistent results, and at present, exaggerates the required market risk premium (Fernandez, 2004). A general problem in relation to the historical risk premium is that it does not necessarily give a good picture of the expected future scenario, unless history repeats itself (Saabye, 2003). *Other* limitations of this approach are that there are markets all over the world that do not have long periods of historical data available. Furthermore, the historical approach is a complete failure in emerging markets where the historical data have a tendency to be limited and noisy (Damodaran, 1999). Thus, it can be concluded that the estimation of the risk premium, utilizing the historical approach can possibly contribute with difficulties in certain markets. This regards mainly European equity markets where the history is rather short and volatile. The focus in literature, and of international analysis, has been mainly on US markets, since it has the most developed capital market, it represents a large proportion of the interna-

tional capital markets, and it has long time series of available data (Siegel, 1992). Nevertheless, in spite of these problems related to the method, the historical approach is widely used (Saabye, 2003). Furthermore, given that the actors on the market has access and utilizes the same database of historical returns, provided by Ibbotson Associates, there are unforeseen differences in the estimation of the risk premium. The historical risk premium predictions diverge across the diverse financial actors due to three causes, the use of arithmetic as opposed to geometric averages, the differences in time periods used, the choice of treasury bills or bonds as the risk free rate (Damodaran, 1999).

When considering historical investment performance it is often of interest to convey the observed returns on an average annual basis. There are two ways of computing the historical average, arithmetically or geometrically. An arithmetic mean return is a simple average of a series of returns whereas the geometric mean return is the compound rate of return; it is a measure of the actual average performance of a portfolio over a given time period. Although both methods are employed by financial analysts, it is not appropriate to make a direct comparison between an arithmetic estimate and a geometric estimate. The two returns may however be transformed one to the other (Derrig & Orr, 2003).

The different time periods used by the actors is another factor contributing to the deviations of the computed risk premium from the other historical estimates. While some analysts gather information from as early as 1926 in history, there are almost as many using data over shorter time periods, such as fifty, twenty or even ten years to calculate historical risk premiums. As the risk aversion of the average investor is likely to change over time, using a shorter time period provides a more updated estimate (Damodaran, 1999).

Since the Ibbotson database reports returns on treasury bills as well as treasury bonds, the risk premium can be estimated and calculated relative to each of them. Nevertheless, the stipulation is that the risk free rate chosen in computing the premium has to be consistent with the risk free rate used to compute expected returns. Some analysts select the Treasury bond as the risk free rate while others tend to employ treasury bills (Damodaran, 1999)

2.4 International earlier Studies

Numerous writers are directing their efforts toward estimating expected returns on stocks relative to risk free bonds, the equity risk premium. Yet, there are no earlier studies that have been acknowledged to provide the best means to estimate the future equity risk premium, nor how the determination process of a selected ERP functions. As stated by Saabye (2003). No simple model of the MRP estimation has been universally accepted. However, earlier studies have demonstrated the existence of a difference in the equity risk premium estimations when utilizing the different methods; the two estimation methods do not provide the same results (Ibbotson & Chen, 2003).

A study was conducted by Ibbotson and Chen (2003) where the emphasis was on calculating the risk premium by using the supply-side method (forward-looking method) and to in turn comparing it to the historical risk premium estimation. Contrary to several other recent studies declaring the forward-looking premium to be close to zero or negative, Ibbotson and Chen (2003) found the long-term supply-side of the equity risk premium to be only slightly lower than the straight historical estimate. Thus, the stated conclusion was that the forward-looking approach provided different estimations of the risk premium, with an estimation of 3.97 pps in geometric terms and 5.90 pps on an arithmetic basis, 1,25 pps lower than the historical estimates (Ibbotson & Chen, 2003)

As mentioned earlier, the survey results generally support somewhat higher equity risk premiums. This can be seen in the survey conducted by Welch (2000) which demonstrated a forecasted geometric long-horizon equity risk premium of almost 4 pps. These high results were also supported by the multiyear survey made by Graham and Harvey (2001) of chief financial officers of U.S. corporations where they found their expected 10-year geometric average equity risk premium to range from 3.9 pps to 4.7 pps. These results were seen clearly as a higher estimation of the risk premium than the other approaches (Ibbotson & Chen, 2003).

In order to explain how the past market situation has affected the estimation of the risk premium the authors quote Arnott and Bernstein (2002) "We are in an industry that thrives on the expedient of forecasting the future by extrapolating the past. As a consequence, investors have grown accustomed to the idea that stocks "normally" produce an 8% real return and a 5% risk premium over bonds, compounded annually over many decades. Why? Because long-term historical returns have been in this range, with impressive consistency. Because investors see these same long-term historical numbers, year after year, these expectations are now embedded into the collective psyche of the investment community.

Both figures are unrealistic from current market levels. Few have acknowledged that an important part of the lofty real returns of the past has stemmed from rising valuation levels and from high dividend yields which have since diminished".

2.5 Earlier studies in Sweden

Contrary to international studies, referring mainly to the US market, no studies have yet been made concerning the differences in the results of the equity risk premium by employing the diverse methods. Furthermore, no studies have been made regarding how the selection of application of the ERP is conducted. Nonetheless, researches on the subject of the historical estimation method have been made, providing different result although utilizing the same method. As mentioned earlier, the historical method may endow with different outcomes of the historical risk premium due to different components, variables included in the calculation process. A study completed by Ridder & Vinell for the time period of 1937 until 1987 illustrated a historical equity risk premium of 8,9% whereas a similar research made by Frennberg & Hansson for the time period 1919 until 1990 provided an equity risk premium of 5,5%. (Öhrlings PricewaterhouseCoopers, 2005)

This significant difference was given as a result of different variables employed in the computation; in this case, the main cause was the different risk-free rates (Öhrlings PricewaterhouseCoopers, 2005)

Although studies have neither been conducted regarding the difference in the results of the risk premium in the Swedish market, and thus nor studies of which estimation method provides the optimal result and is thus chosen as the final ERP, ex-ante risk premium studies are regularly made by PricewaterhouseCoopers in numerous countries, including Sweden. Nonetheless, these researches are made in order to observe development and changes of the ex-ante risk premium from the previous year (Öhrlings PricewaterhouseCoopers, 2005)

3 Method

3.1 Qualitative vs. Quantitative method

When gathering data, there are two methods of data collection to consider- qualitative and quantitative (Riley, Wood & Clark, 2000). According to Riley et al.(2000), the distinguishing factors between the two data gathering processes are that qualitative techniques relies on the skills of the researcher as an interviewer or observer in gathering data whereas quantitative techniques place reliance upon the research instrument employed to gather data and analyze/measure it.

Furthermore, the size of the respondent and the personal involvement determine the method of data collection. For instance, the higher the level of personal involvement of the researcher, the better data is gathered by participant observation, thus using the qualitative method. The lower the involvement, the more likely it will be better to gather data by survey (questionnaires), referred to as a quantitative method (Riley et al. 2000).

In this study, data will be gathered from a small group of respondents which makes personal involvement of the researcher possible, further this enables the interviewers to receive an in-depth comprehension of the subject matter. Hence, the data gathering technique in this research dictates the application of qualitative methods.

3.2 Sampling

When sampling strategy is to be designed, a distinction is made between probability sampling and non-probability sampling. *Probability sampling* is generally held to be the most rigorous approach to sampling for statistical research, where the assumption is that your sample will be statistically chosen at random. In *non-probability sampling*, units are deliberately selected to reflect particular feature of groups within the sampled population. When the intention is to collect qualitative data, as in this study, the validity and understanding you will gain from the data will be more to do with your data collection and analysis skills rather than the size of your sample (Ritchie & Lewis, 2003). Thus, the method of probability sampling is highly inappropriate for qualitative research and instead a non-probability sampling is employed for selecting the population for study.

There are a range of non-probability sampling techniques available. Nevertheless, the non-probability sampling applied in this study is known as purposive sampling. According to Ritchie and Lewis (2003), *purposive sampling* is an approach by which the sample unit is selected based on a certain criterion or purposive; it enables you to use your judgment to select cases that allows you to answer your research questions and meet your objectives. The sample units, for this research, are chosen due to their particular features and characteristics which will enable detailed understanding of the theme to be studied. The samples are some of the largest financial actors in the Swedish financial sector and have experts who are engaged in the computation of the MRP. A brief presentation of the examined companies follows.

Company A's main activity is to manage insurance policies that brought about by collective agreements or other agreements met by labor market organizations. The insurances cover compensation for income losses due to unemployment, compensation during illness, compensation for work injuries etc. The number of insurants reaches around three million people. This institute manages around 170 billion SEK, , which indicates that it is one of the

largest capital managers in Sweden. Thus, the company is regarded to have a well established market analysts and fund managers. Company B offers a wide coverage of object insurance to individuals as well as companies. It is one of the largest object insuring companies in Sweden with a total premium size of 10 billion SEK from approximately 1.8million policy holders. The third and last institute ,company C, is one of the largest banks in Sweden. As of September 2005 this bank had a closing balance of 1487 billion SEK and return on asset of 13.1 billion SEK as of the end of 2004.

3.3 Research strategies

Enquiries can be classified in terms of their purpose as well as by the research strategy used. The general classification is the threefold one of explanatory, descriptive and exploratory. *Exploratory studies* are a valuable means of finding out “what is happening” to seek new insights; to ask questions and assess phenomena in a new light. It is in particular useful if you wish to clarify your understanding of a problem. *Explanatory studies* emphasize the studying of a situation or a problem in order to explain the relationship between two variables. The objective of *descriptive research* is to “portray an accurate profile of persons, events or situations”; to go further and draw conclusions from your data (Saunders, Lewis & Thornhill, 2003).

As this study aim to investigate how the MRP is estimated by the financial actors and the reason for their choices and actions, thus a *descriptive research* study is applied. However in order to get an overview of the situation and to be able to have a clearly defined problem an *exploratory study* is made, using questioners, prior to the interview.

3.4 Interviews

There are different types of interviews that can be applied with a reliance on the type of purpose and research strategy. Interviews may be highly formalized and structured or they may be informal and unstructured (Saunders et al. 2003).

Structured interviews are questionnaires based on a standardized or identical set of questions. In *Semi-structured interviews* the researcher will have a list of themes and questions to be covered. Additional questions may be required in order to explore your research questions and objectives. The data may be recorded by note-taking, or perhaps by tape-recording the conversations. *Unstructured interviews* are informal, generally referred to as in-depth interviews. There is no predetermined list of questions to work through in this situation, although you need to have a clear idea about the aspects you desire to explore. The interviewee is given the opportunity to freely talk about events, behavior and beliefs in relation to the topic area (Saunders et al. 2003).

In this study, a questioner and interview were employed in order to obtain the utmost level of relevant information. Primary, a questionnaire with indistinguishable questions was sent to the Swedish financial actors, which can be explained as a structured interview. Thereafter, the financial actors were interviewed by telephone for additional questions in order to expand the knowledge of the already answered questions in the questionnaire. The list of the interview questions were sent to the respondents prior to the telephone interview. Thus, this second part containing additional questions can be classified as semi-structured interview.

3.5 The process of data collection

The data analyzed in this study was gathered by both questionnaires and interviews. Firstly, a questionnaire was sent to 60 banks, insurance companies and other financial institutes in Sweden. From the total 60 sent questionnaires, 20 responded that they do not carry out that type of analysis. The rest of the institutes did not respond. Thereafter, based on the response from the questionnaire, only four institutes were found to be fit for this study and these four largest financial institutes who compute their own estimation of the risk premium were selected to be interviewed. The interviews took place by telephone during approximately 30 minutes each.

Nevertheless, out of the four chosen companies, data was collected only from three of them since it became impossible to reach the responsible person for the fourth company. The authors tried to contact the company several times, without any success, until the time scope came to an end.

3.6 Data analysis

All researchers develop their own way of analyzing qualitative data (Taylor & Bogdan, 1984). The approach in this paper is directed towards developing an in-depth investigation of the estimation methods in use by the financial actors. Nevertheless, in this study the authors are less concerned with developing concepts and theories but explaining the forecasting process of the financial institutes in their own terms. This is done by describing the experience of the companies and applying existing theories. Further, the approach places an emphasis on making general assumptions, modifying, and developing them.

3.7 Delimitations

In this study, the authors will limit the population to the financial actors in the Swedish market. These actors include banks and insurance companies. This thesis does not intend to study the MRP as such, but the methods that are applied to forecast the MRP. Hence, any forecasting of the MRP will not occur and thus none of the methods will be applied to forecast the MRP. The size of the risk premium as well as the quantitative deviation between the ex-post premium and ex-ante premium has no relevance in this study.

3.8 Reliability and Validity

When conducting a research, there are two decisive concepts to take into consideration: reliability and validity. Reliability is the extent to which a measurement procedure yields the same answer however and whenever it is conducted. It responds to the question: Will the measures yield the same results on other occasions (Saunders et al, 2003). In a qualitative research, reliability may be complex as the interviewees as well as the interviewee's behavior, experiences and beliefs change over time. Thus, the results may not always appear to be

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the same (Christensen, Andersson, Carlsson & Haglund, 2001). Validity is concerned with whether the findings are really about what they appear to be about. Thus, validity is the extent to which it gives the correct answer (Saunders et al, 2003). In qualitative studies validity is an issue of whether the researchers see what they think they see and how they interpret their findings (Riley et al. 2000). As a qualitative research strives to obtain a profound understanding of a problem, the validity of the research is often high. Nevertheless, it is of great significance that you choose the right respondent to answer your questions and that the questions are understood by the interviewee (Christensen et al. 2001)

An important factor that increases the reliability of this study is the process of the out sent questionnaire. As mentioned earlier, prior to the telephone interviews, a questionnaire was not only sent to each of the financial actors, but also fully replied. This enabled the authors to understand more about the company and its situation, which made it easier to conduct the follow-up questions. Thereafter, the follow up questions could be conducted and sent, also prior to the interviews. The interview contained of the follow-up questions was recorded to increase the reliability. A factor decreasing the reliability to this study , may be the inability to receive the same answers if the study is conducted once more at a different point of time. Due to a change in time and environment, which can include more current researches made by the respondents, change in behavior of both the respondents and the interviewers, results may change as well.

In order to increase the validity, the questionnaire was conducted with relatively short and precise questions. However, the respondent was given the opportunity to provide with longer answers. Both the questionnaire and the follow-up questions were sent to four individuals in order to ensure that the questions were fully understandable and misinterpretations were minimized.

4 Empirical Findings

The three Swedish financial actors selected for interview consisted of one bank institute and two insurance companies. Each of the three respondents provided with information regarding the subject of matter, their personal opinions and experiences. This section presents the answers of the respondents, which includes the questionnaire as well as the interview questions.

4.1 Company A

The empirical findings endowed in this section have been obtained through a questionnaire and a personal interview conducted with the Portfolio and Risk Manager of this insurance company.

Company A estimates the MRP using the ex-post as well as the ex-ante method. The time horizon applied in computing the MRP is greater than 20 years and calculations are based on only the arithmetic mean. The portfolios used as market proxy is AFGX (Affärs data general index) and the risk-free rate applied in the computation for the risk premium is the short term treasury bills. As already recognized, there are a few different approaches in the application of the forward- looking method and this firm applies the dividend based approach and the survey method. The dividend based approach requires the term dividend growth and Company A assumes a constant dividend growth. The growth of the dividends is also forecasted from the historical dividend growth.

As mentioned above, according to the Portfolio and risk manager of company A, both the historical and the forward-looking method are employed to estimate the future equity risk premium. When utilizing the forward-looking method, the insurance company included the survey method, dividend-based method and the earning-based approach. During the interview, the portfolio manager contributed with an explanation of the reason for selecting both the historical and forward-looking method when estimating the equity risk premium. Primary, the interviewee emphasized the importance of predicting the equity risk premium; that it strongly assists to set portfolio return expectations and determine asset allocation policy. Both of the methods were employed since different expected returns are values used for different types of assets, depending on the type of the asset. The type of the asset can be in form of interest bearing asset, stocks etc.

As regards to the matter of how the final MRP is chosen in different situations, the portfolio manager stressed the significance to account for not only quantitative estimations when selecting between the two derived risk premiums. Rather, the qualitative factors also need to be taken into consideration. Thus, both quantitative and qualitative factors require to be taken into account in order to decide which risk premium is the right compensation for the risk of the assets.

Concerning the subject of the relationship between the estimated risk premium, which can either be derived by means of the ex-ante or ex-post method, and the actual risk premium is quite different. The estimated risk premium is not exactly equivalent to the actual risk premium in the short run. For instance, this was proven year 2005 when the forecasted risk premium was not coinciding with the actual risk premium of year 2005. Nevertheless, the portfolio manager signifies that they should match in the long run. Moreover, concerning the deviation between the equity risk premium derived from the historical method and the risk premium derived from the forward-looking method, it is proven that they are never

exactly the same due to different factors such as what data employed and time horizons. However, it can be concluded that they are positioned on the same level.

Furthermore, there is dissimilarity between the various types of forward-looking methods. The cause of using different methods within the forward-looking method is due to different assumptions about the future and different market factors. The portfolio manager stated that there is a difference between the dividend, earnings-based and survey method, however; again they are placed on the same level.

The portfolio manager could not provide with any indication of a relationship between the two different estimation methods. The company had not yet done any research within that area.

4.2 Company B

The information presented below was attained through a questionnaire and a telephone interview with the head of portfolio manager of one of the largest insurance companies in Sweden.

Company B, an insurance company applies both the historical method and the forward-looking method for the estimation of the MRP. The estimation is often calculated for a time horizon of more than 20 years and the statistical measurement is the arithmetic mean. The MRP is computed for different market indices which are most relevant for the assets to be allocated and the risk-free rate utilized is the repo rate. Dividends are assumed to grow at the same rate as the GDP (gross domestic product).

The head of portfolio manager stated that the employment of both estimation methods is of priority, although the forward-looking method is considered to be more preferable and interesting. Firstly the forward-looking method, which is of main attention, is computed. Subsequently, in order to judge if the forward-looking risk premium estimation is regarded as a reasonable and trustworthy estimation, the historical estimation method is applied. Thus, the procedure of determining risk premium estimation is a joint intertwined method, including both the forward-looking and the historical method. However, emphasize is mainly on the forward-looking method. As mentioned earlier, there are a variety of models to select from when estimating the forward-looking MRP. Nevertheless, this financial institute applies the earnings based approach.

When signifying the reason for the use of both estimation methods, the head of portfolio manager first explained the importance of the ex-post MRP: “All the assumptions we make about risk premium looking forward is based on historical experience, thus it is of great significance to compute the ex-post MRP in order to complement the forward-looking estimation, and also to assure that the computed forward-looking estimation does not deviate significantly from the historical estimation. Nevertheless, utilizing merely historical data to create an anticipation of the future risk premium can not provide with fair estimation of the MRP due to economical changes. Hence, the forward-looking method is obliged to be employed”.

Furthermore, from the interview, it was learnt that the estimation of MRP ex-post can result in many different premiums. This is due to the historical time horizon applied. Thus, the final decision on which ex-post MRP to employ is based by subjective judgment; however ex-ante is based on a less subjective judgment.

Regarding the issue of the reason for utilizing the earnings-based approach, the head of the portfolio manager was not able to provide with a specific reason. It was stated that there is always a need for a choice of a method that is considered to be appropriate for the specific situation a company is coping with, and this company has selected the earnings-based approach.

Company B does not believe that the MRP looking forward is going to be as high as it was in the past for Sweden. In the short-run the estimated MRP, ex-ante or ex-post, deviate significantly from the actual but in the long-run it is assumed to coincide. Also he believes that there is no relation between the historical and the forward-looking method.

4.3 Company C

The information provided in this part of the empirical findings was assembled through a questionnaire and a personal interview with the head of portfolio and risk manager of Company C.

Company C forecasts both the ex-ante and ex-post MRP which implies that both the historical as well as the forward-looking estimation methods are applied. An arithmetic mean is computed for a time horizon of 20 years or more, if data is available. Company C utilizes the market return of Stockholm ALL Shares index as market proxy and the interest rate for short term government bond is used as risk-free rate of return. The ex-ante MRP is estimated by different approaches such as consulting academic studies, the firms own competition based on the yields and earnings of the different types of assets.

As stated above, both estimation methods are employed in Company C. However, the head of portfolio and risk manager indicated that the historical method can be used as a guide to the future. Since, economical conditions has a tendency to change through time, one have to test if the estimation made based on historical data still seems to be reasonable. This can be done by deriving an ex-ante estimation. Thus, in order to determine the reasonable MRP, the consideration of different estimation methods becomes important. Subsequently, out of the two forecasted risk premiums (ex-ant & ex-post), the one that appear reasonable is selected. Furthermore, different risk premium are used for different asset types.

The head of the portfolio manager provided with the information that these days, there are better financial instruments compared to 40-50 years ago which enables us to spread risks in plenty ways. Thus, the risk premium has to be lower in the future than it was in the past. The head of the portfolio manager wished to confirm this notion by mentioning some academic studies which show that the risk premium is going to continue to decline. Therefore, these types of subjective information are considerable in determining the reasonable risk premium since an expectation of a lower risk premium is now embedded in the thoughts of Company C.

According to the head portfolio manager there are two reasons for not taking the estimation made from historical risk premiums reasonable for granted. The first reason is that the valuation of stock markets strongly mounted, which makes all the ex-post estimations of the risk premium automatically lead to an over-estimation of the future risk premium, unless the stock market is believed to continue at the same pace as in the past. The second reason is that there is a cyclical change of the valuation of stock market over the business cycle, but the risk premium goes in the opposite direction against what is theoretically ex-

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pected to happen. When the stock market rises in value, the realized return becomes higher, thus the expected rate of return increases in pace with it, as a result of higher optimism about the market.

Company C was not able to provide with information regarding the relationship between the estimated MRPs and the actual risk premium, nor about the linkage between the ex-post and ex-ante MRP.

5 Analysis

According to Damodaran 1999, the historical method is the standard method to employ when estimating the MRP. This statement indicates that a great amount of financial institutes utilizes the historical method in the estimation process of MRP. However, the empirical section in this study demonstrates that this is not the case for the three examined companies. The financial institutes employ the historical method as well as the forward-looking method.

It can be viewed that the historical method is indeed included in all three of the companies explored in this study, although as a component in the overall estimation process of the MRP. Furthermore, each company comprises the ex-post method in the forecasting procedure based on different individual grounds. Company A along with company C, consent to the application of the two methods due to the exploration for appropriateness of different risk premiums for different asset types, whereas company B includes the ex-post approach as a confirmation factor in order to obtain a reasonable ex-ante MRP with a low degree of deviation from the ex-post MRP.

It is reasonable to concur with the three companies regarding the utilization of the historical method in the MRP forecasting procedure, since the historical data contains all the information which was not available in the past. Thus, by means of historical data, the future can be foreseen to some extent. Nevertheless, as noted by company B and C, the business cycle in the past may not repeat in the future, a factor the historical method does not consider. This is to say that, according to Fernandez, (2004) the method of estimating ex-post risk premium, assumes that the required return to equities in the past was equal to the return actually received and that the market is all investors' efficient portfolio, but this method provides inconsistent results, and at present exaggerates the required market risk premium(Fernandez, 2004). As mentioned by company C the valuation of stock markets strongly mounted, this makes that all ex-post estimations of risk premium automatically lead to an over-estimation of the future risk premium, unless otherwise the stock market is believed to continue as the same pace as in the past. The return in the stock market in the far past has shown consistency at a certain range and as a result the risk premium historically has been over estimated. This argument can be supported by the study of Arnott and Bernstein (2002), which states that investors have grown accustomed to the idea that stocks "normally" produce an 8% real return and a 5% risk premium over bonds, compounded annually over many decades. The reason for this thought is because long-term historical returns have been in this range, with impressive consistency. Thus, since investors see these same long-term historical numbers, year after year, these expectations are now embedded into the collective psyche of the investment community. However, both figures are unrealistic from current market levels (Arnott & Bernstein, 2002). Therefore, the ex-post risk premium can not be as reasonable as it seems to be.

Based on the theoretical drawbacks of the ex-post method and the arguments of the three explored companies in this study, regardless their reasons for employing the ex-post method, the authors can agree to the following statement:

Statement 1: Estimating MRP using solely historical data can not be considered to be a fair estimate of the future MRP.

The objective in estimation of the risk premium is to extrapolate the future. However, as viewed above, historical data can not give the best estimate of the future, thus using other

assumptions and models which can be helpful to looking forward seems to be important in order to support the ex-post forecast. Thus the incorporation of the ex-ante estimation method as alternative instrument may lead to a better estimate. That is because it is based on future expectations. For instance, one of the approaches for ex-ante estimation is computed using the Gordon model which can be written as $k = D/P + g$, where k is the expected market return (see section 2.3.1). The argument put forward by the advocates of this model, for forecasting the risk premium, is the following: K is the return required of the market (a diversified portfolio) and must much the return expected by the market (Fernandez, 2004).

Furthermore, as stated by the head of portfolio manager of Company B, the ex-ante risk premium is the primary approach in use but needs to be complemented by the ex-post method. The explanation for considering the forward-looking risk premium as the main approach is, according to the head of portfolio manager, since the objective is to view the future returns, future returns can better be forecasted utilizing the forward-looking method. The reasoning sounds to be persuading due to the fact that the forward-looking estimation model uses accounting fundamentals, such as dividends, earnings and growth expectation etc. as an input in the estimation process and earnings are, according to Siegel (1999), the sources of cash flow. The notion as stated by Siegel (1999), that future stock returns should not be viewed independently of current fundamentals, since the price of stocks is the present discounted value of all expected future cash flows can also make the ex-ante estimation to look of primary significance.

As observed in the row data, the risk premium is computed using the two different methods (ex-ant & ex-post) by all the financial institutes interviewed. However this does not indicate that the ex-ante estimation method provides with a better anticipation of the future. In fact, the ex-ante method contributes with certain drawbacks, such as the assumption that the price of the shares coincide with their value and that dividend growth is as expected by the market (Fernandez, 2004). Based on these arguments, neither can the forward-looking estimate be considered as the fair estimate of the ERP alone.

Moreover, according to Fernandez (2004) investors' expectations are not homogeneous which indicates that the investors who expect higher growth will have a higher market risk premium. This phenomenon may be viewed in the case of Company C in the opposite direction, who believes that the risk premium will decline due to better financial instruments. Thus, this is another contributing factor to the non-acceptation of the forward-looking method as better estimate than the historical. By taking this information into account, the following statement ascertained:

Statement 2: Estimating MRP using solely the ex-ante method can not be considered to be fair estimate of the future MRP.

Based on the arguments above, the risk premium looking forward can not fairly be estimated using only one method. This implies that neither ex-post nor ex-ante alone can provide with a faire estimate of the MRP. Thus, the two statements above can be congregated into a joint proposition.

Proposition 1: In order to reach a faire estimate of the MRP looking forward, both the ex-post and ex-ante estimates of the MRP should be computed.

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So far the discussion was about which estimation method is used to estimate the MRP. But when the ex-post and ex-ante ERP are calculated how does the decision maker decide which one to choose?

The fundamental variables in the ex-ante method do not contain any certain information about the future more than the historical data on MRPs. Thus, the authors do not believe the ex-ante risk premium to be of primary significance alone, in comparison to the ex-post. The significance of the risk premium as such is the same whether it is computed ex-post or ex-ante until the required risk premium as an input for the decision making is selected. The question is, if the two estimates are believed to be equally important until the choice is made, how is the fair risk premium recognized? After the risk premiums are worked out quantitatively, there are other issues that need to be taken in consideration, to be able to identify the one that appear to be most appropriate.

As stated, there are different factors contributing to the decision process made by the financial institutes regarding which computed MRP to choose, the ex-post or ex-ante, whether as required input for the CAPM (Capital Asset Pricing Model) or any other models. All three companies rely not only on quantitative estimations when selecting between the two MRPs. Rather, they stress the importance of other qualitative factors that needs to be taken into consideration. These qualitative factors can be the individual manager's belief about future economic situations. For example, the information gathered from company C, the portfolio manager believes that the risk premium in the future is not going to be as high as in the past and market optimism has made the historical risk premium to be over valued in the past. His beliefs can be reasonable due to the study completed by Siegel (1999) which predicted that the equity risk premium will shrink in the future because of low current dividend yields and high equity valuations. The notion of the shrinking risk premium is also shared by company B. Although the head of portfolio management in company A did not articulate the notion of shrinking risk premium, he confirms the need for subjective evaluation in the determination of a fair risk premium.

Since no simple model of MRP estimation has been universally accepted (Derrig & Orr, 2003), there are no rules indicating the ratings of the best method to estimate the ERP. Rather, the financial institutes must make their personal judgment in order to decide which calculated ERP, ex-post or ex-ante to select.

In order to choose a suitable risk premium in a given situation, certainly the MRP outcomes of the two estimation methods are regarded as crucial factors. However, since different MRPs may match the various assets, such as stocks, bonds, etc, there may thus not be the same MRP chosen in every case, in every point of time. For certain assets, the historical MRP is regarded as the preferable MRP, whereas for other assets the forward-looking MRP is selected. This decision depends on the mentioned qualitative factors. These underlying thoughts and subjective reasoning of the financial institute have an impact on the determination of the risk premium as a final input. Thus, proposition one can be modified as follows:

Proposition 2: In order to reach a faire estimate of the MRP looking forward, both the ex-post and ex-ante estimates of the MRP should be computed and every estimate should be evaluated through consideration of some qualitative factors.

6 Conclusions suggestion for further study

6.1 Conclusion

This section contains conclusions drawn based on the analysis of the row data.

- *Are the two estimation methods (ex-post and ex-ante) in use for practical investment decisions?*

Based on the analysis, it can be concluded that both the ex-ante method and the ex-post method are used by the three financial actors when forecasting the MRP. Thus, the ex-post approach is not the only method in use by the financial actors, which is an inequality to what many researchers believe. The data and the analysis demonstrate that the use of only one method can not guaranty an optimal estimate. Hence, any financial institute or an investor with adequate knowledge of the two MRP estimation methods and with access to input data should prefer to estimate the MRP using the two methods.

- *How is the appropriate risk premium determined by the different financial actors for the different equity allocation decisions*

Various institutes or investors can apply different values of MRP as an input for models such as CAPM or for other investment decisions. As observed in the analysis, this is due to the fact that the choice of the fair MRP involves some subjective judgments from the individual analyst or investor. These subjective reasoning of the financial actors influences the determination of the risk premium as a final input. In addition, it was found that there is no evidence to say that one MRP estimation method is better than the other MRP estimation method.

6.2 Suggestions for further study

The authors would like to suggest a statistical study to test the degree of accuracy of the two estimation methods over a longer range of time.

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Appendix 1

Questionnaire in English

The objective of this questioner is to gather data on the methods used to forecast risk premium for the Swedish market. The data is going to be used only for academic purposes. The data will be used to write a senior thesis in business administration, by two students at the Jönköping international business school.

The researchers would like to forward their gratitude in advance for all who devoted their precious time in answer the questions.

1. which method does your firm apply in estimating the risk premium
 - ex-ante (forward-looking)
 - ex-post (historical)
 - both
2. if ex-post is the answer in the above, then what is the time horizon used to compute the risk premium?
 - 10 years
 - 15 years
 - 20 years Other _____
3. which mean is used
 - arithmetic mean
 - geometric mean
4. Which portfolio/index do you use as a market proxy?
 - SAX
 - OMX30
 - another _____
5. Which security is used as the risk-free?
 - short-term treasury bills
 - long-term treasury bonds
 - other _____
6. If the forward-looking, or ex-ante method is applied, which of the following models is used to compute the risk premium?
 - a survey method (ask economists or experts)
 - dividend based approach
 - earnings based approach
7. If dividend based approach, what is the assumption for dividend growth?
 - constant growth
 - non constant
8. How is growth computed?
 - g is considered as equivalent to GDP growth
 - g is computed from historical earnings growth
 - other _____

Appendix 2

Questionnaire in Swedish

Bäste Företag,

Vi är två studenter från den Internationella Handelshögskolan i Jönköping som ska skriva en magisteruppsats inom finansiering. Syftet med denna undersökning är att samla information om de olika metoder som används vid beräkning av den uppskattade riskpremien på den Svenska marknaden. Det vore jättesnällt om Ni kunde ta Er 10 minuters tid och svara på frågorna i den bifogade filen. Om vi inte har kommit till den finansansvarige vore vi tacksamma om Ni kunde vidarebefordra filen till rätt person.

Med Vänliga Hälsningar,

Dalia och Temesgen

Syftet med denna undersökning är att samla information om de olika metoder som används vid beräkning av den uppskattade riskpremien på den Svenska marknaden. Informationen kommer endast att användas för akademiska ändamål, till en magisteruppsats inom Företagsekonomi skriven av två studenter på Internationella Handelshögskolan i Jönköping.

Studenterna vill tacka Er på förhand för att ni tog Er tid för att svara på dessa nedanstående frågor.

1. Vilken metod använder Ert företag för att räkna ut riskpremien?

- Framåtblickande (ex-ante, forward-looking)
- Historisk (ex-post, historical)
- Båda

2. Vilken tidsperiod används för att räkna ut (estimat) den historiska (ex-post metod) riskpremien?

10 år

15 år

20 år

Annat-----

3. Vilket medelvärde används?

- Arithmetic mean
- Geometric mean

4. Vilken marknadsindex används?

- All Aktier
- OMX30
- Annat _____

5. Vilken riskfri ränta används?

- Kortsiktiga räntan

Bilagor

- Långsiktiga räntan
 - Annat _____
6. Vilken av de följande framåtblickande metoderna används för att uppskatta (estimat) riskpremien?
- Enkät metoden, dvs. fråga experter (Survey method, ask economists or experts)
 - Utdelningsbaserad metoden (dividend based approach)
 - Avkastningsbaserad metoden (earnings based approach)
 - Annat _____
7. Om den utdelningsbaserade metoden används, vad är antagandena om utdelningstillväxten?
- Konstant tillväxt
 - Icke konstant tillväxt
8. På vilket sätt är tillväxten uträknad?
- Tillväxten är detsamma som BNP tillväxten
 - Tillväxten är beräknad från den historiska avkastningstillväxten (historical earnings growth)
 - Annat _____

Appendix 3

Interview questions

If you forecast both the ex-ante and ex-post ERP

- Why do you compute using the two methods?
- In which situations do you use them?
- Which of them gives closer results to the actual risk premium?
- Which risk free rate do you use
- Which portfolio is used as a market proxy

If you compute using only one method

- Which One
- Why not both
- Have you considered the application of the other method
- If forward-looking, which of the different techniques?
- The reason for selecting that particular method or for not selecting the other one?

Appendix 4

Interview questions in Swedish

Om Ni använder både ex-ante och ex-post metoden, Var vänlig svara på följande frågor

- Varför använder ni båda metoderna?
- När och hur använder ni dem?
- Hur kan ni beskriva dem i förhållande till den verkliga (actual) riskpremien?
- Vet ni om det finns något förhållande mellan de två metoderna (ex-post och ex-ante)? Ex: Correlation.
- Hur stor är avvikelsen mellan de två resultaten?
- Vad kan vara orsaken till att de inte är lika?

Om Ni endast använder en metod, Var vänlig svara på följande frågor

- Varför använder Ni inte båda två?
- Har ni övervägt tillämpning av den andra metoden?
- Den framåtblickande metoden kan beräknas på olika sätt, vilken av dem används och varför?
- Vet ni om det finns något förhållande mellan de två metoderna (ex-post och ex-ante)?
- Vad vet ni om den metod som ni inte använder?
- Hur stor är avvikelsen mellan de två?
- Vad kan vara orsaken till att de inte är lika?