What is the Historical Risk Premium for the Russian Market?

- A study on the Russian Trading System

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Abstract

Due to noisy historical data, the market risk premium in Russia and many emerging markets has been difficult to explain and is often of a more arbitrary nature, compared to risk premiums found in developed markets. Using the capital asset pricing model, we compared the monthly return on the Russian Trading System Index to the rate of Russian government bonds between 1995 and 2009, where we found the historical market risk premium to be 20% with a standard error of about 15%. However, we suspect that a risk premium of 20% is too low and that an extra premium of about 5-10% needs to be added to capture the country risk already included in the benchmark yield.

We also divided the period into sub-periods to bring forth driving factors of the market risk premium. We found risk premiums ranging from -210% to +138%, indicating that large abnormalities exists that are affected by certain events. In the earlier stages of our period, Country- and Political risk appears to have a great influence. As the market matured and the political instability decreased, oil prices and currency exchange rates had a greater impact on the market and the MRP.
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1. Introduction

This thesis focuses on how to calculate a Market Risk Premium that can be used on an emerging market, in our case the Russian market. The Market Risk Premium (here denoted the MRP) is the difference between the estimated return on a market portfolio and the risk-free rate (Yee, 2006). That is, the MRP reflects how much extra return an investor demands to be willing to hold risky assets, such as stocks, instead of risk-free assets. To estimate the future MRP, the historical MRP is often used as a proxy. Emerging markets are often synonymous with high returns, though often very risky. Today, foreign investors looking to enter an emerging market face problems related to estimating that risk. Compared to developed markets, where historic data provide a source for calculating an estimated MRP, the lack of historic data and noisy information on emerging markets makes this calculation more complicated (Damodaran, 1999). As a result, the MRP in many emerging markets has therefore been difficult to explain and is often of a more arbitrary nature, compared to MRP’s found in developed markets.

The term “Emerging Market” is commonly referred to as a country in a process of rapid growth and becoming more industrialized. Defined by International Monetary Fund (IMF), these countries have historically experienced an absence of Foreign Direct Investment (FDI). However, with an increasing flow of FDI into emerging markets, the domestic markets are forced to conform and become more dynamical. This often leads to an improved policy and institutional setting, making integration into the global financial economy possible (Mody, 2004). Today, several emerging markets are to be found worldwide, with the BRIC-countries (Brazil, Russia, India, and China) currently being the fastest growing economies in the world. The American investment bank Goldman Sachs anticipates that these countries will be larger than the G6-group (the US, the UK, France, Germany, Italy, and Japan) within 40 years.

Two factors; the uncertainty in calculating a historic risk premium and the fact that these markets are growing rapidly, imposes the necessity of further research. It is essential to find ways to estimate future rate of returns despite the lack of a historical track record.
1.1 Problem Background

The Russian market is particularly interesting to examine further for several reasons. Firstly, the country’s proximity to Sweden has made Russia a growing market for Swedish investors, whom have increasingly expanded their share of Russian securities during the 21st century. In 2002, Russian funds accounted an estimated 7.2 billion SEK. Five years later, this figure had increased more than 465% to 40.7 billion SEK. Secondly, the country’s last 20 years of political climate has not only meant opening up a new market, but also had major influences on turning the country into one of the biggest emerging markets of today (SCB, 2007).

As mentioned before, studies focusing on stock markets in these countries have been rather limited and/or incomplete, often as a result of inadequate number of financial instruments. Among the studies made, we can find some reoccurring patterns. In 1995, Bekaert & Harvey presented statistical evidence suggesting that many of these countries had a considerably higher volatility on returns than developed countries. These high returns emerged from possibilities to invest in early stages of a country’s economic growth (Mody, 2004). Often a substantial risk is present in these markets and the Russian market is no exception. Ever since the introduction of the Russians Stock Exchange (RTS) in 1994, political instability combined with uncertainty regarding the future has lead to a volatile stock market, resulting in a great deal of ambiguity. Goriaev & Zabotkin (2006) found that a considerable risk premium had been added to incorporate factors such as country risk, corporate governance, and currency risk. The lack of financial institutions in a turbulent political environment results in a large uncertainty among investors.

The theory many financial models rest upon when it comes to evaluate risk and return is the Capital Asset Pricing Model, CAPM, presented in Capital Asset Prices: A Theory of Market Equilibrium Under Conditions Of Risk, by William F. Sharpe in 1964. The main assumption behind the model is that investors “rank” companies according to how risky they are in relationship to the “average” risk on the market, and thereafter pay more or less for the company. This results in a linear relationship between expected returns and risk. Researchers and professionals have later on extended the model to incorporate more factors than only corporate risk and market risk, with elements such as currency devaluation, interest rates and political instability (Goriaev & Zabotkin 2006). One implication that can’t be avoided however is the MRP. As mentioned, it is commonly computed using historical data, assumed that “the MRP used yesterday is usable for tomorrow”. In America, the S&P 500, which is an
index of the 500 largest public companies, is often used as an approximation and has been so since 1957. The first American stock exchange was founded in 1927 compared to the first Russian stock exchange, which was founded less than 15 years ago, in September 1995. This makes estimating a valid MRP for the Russian market somewhat problematic.

1.2 Purpose

The purpose of this thesis is to compute a historical market risk premium for the Russian market, based on data from the RTS Index between 1995 and 2009.

For further analysis, we have created two smaller research questions based upon our purpose;

1. By dividing the period into sub-periods and isolate crucial events, can the driving factors behind the market risk premium be identified?
2. Is the historical market risk premium, found in this study, useful for estimating the future risk premium?
2. The Russian Stock Market

When Russia created its stock market in late 1995, it was a country in crisis. The communist Soviet Union had fallen only a few years earlier, replaced by a market economy. The country’s recent vigorous political climate not only meant opening up a new market, but also had major influences on turning the country into one of the biggest emerging markets of today. The total market capitalization exceeded 600 billion dollars in 2005, driven by an increasing number of stocks as well as high returns.

But the journey from a planned economy to a capitalist market has not followed a straight path; the country has experienced a rather rocky road leading up to today, where major political and economical events have resulted in considerable volatility. During its first decade, the Russian stock market experienced an average return on more than 50 % per annum. However, the standard deviation on weekly returns was 7.3%, almost twice the size of the American S&P 500 index, which during the same period experienced a standard deviation of 4% (Standard & Poor).

2.1 The RTS Index

The Russian Stock market is in general divided between two segments; The Russian Trading System (RTS) and the Moscow Interbank Currency Exchange (MICEX). However, the RTS index is the main focus for this study for several reasons. The RTS index was the first calculated index on the Russian market, created in 1995, and covers approximately 85% of the total Russian market capitalization (Roschkow, Marsh & Todorovic 2009). Even though MICEX has surpassed RTS in liquidity and today has a significantly higher trading volume, RTS remains the leading index with respect to the number of traded stocks and is still considered to be the main benchmark in measuring the Russian equity market (ibid.). The RTS is also, as opposed to MICEX, quoted in USD and was in 1996 added to Standard & Poor’s global index portfolio as the first Russian stock index (Standard & Poor). Looking at sectors in RTS, the largest by far is Oil & Gas with 58% of the index, second is Industrial with 15.3% and third is Metals & Mining with 12.6% (RTS).
2.2 Market Size and Liquidity

The number of stocks listed grew dramatically during the first years, with more than 300 listed stocks in 1997. However, during the Bear Market (i.e. a market condition distinguished by falling investment prices and pessimism) in 1999, caused by a financial crisis and government default, the number sank to below 200. From year 2002 and onwards, the number of listed stock has remained fairly stable to approximately 230 (see Fig. 1 below). Figures 1 and 2 below are retrieved from Goriaev & Zabotkin (2006), but with one important modification. Originally, they showed both the RTS and MICEX. Since we are only interested in the RTS index, we have chosen to remove the data for the MICEX.

![Number of listed stocks on RTS](image1)

(Figure. 1. Goriaev & Zabotkin, 2006)

![Number of traded stocks on RTS](image2)

(Figure. 2. Goriaev & Zabotkin, 2006)

The number of stocks traded daily has fluctuated from around 100 in the 1997’s Bull Market (i.e. a market condition in which investment prices rises faster compared to the historical average) to 20-60 in year 2002. From 2005, it has remained stable at about 90, an increase with 50 % since 2002 (See fig. 2). The monthly trading volume has also increased considerably following the years of the financial crisis in late 1990’s. This is much due to the increased accessibility to the Russian market for international investors, which has lead to an increased flow from foreign capital (Goriaev & Zabotkin, 2006).
2.3 Major Political Events

Since the introduction of the first Russian stock exchange (RTS) in 1995, the country has gone through many different phases in its development under several forms of leadership. Initially, the direction in which the country was headed can be described as binary, where the possibility of a communist relapse was as likely as the reverse, a transformation to a law-based market economy (Zabotkin 2004). When Yeltsin got re-elected in 1996, the market was relieved. The election took place in June, and the RTS index surged as the results were acknowledged.

Next was the financial crisis and government default with the resulting devaluation of the ruble in 1998. This had considerable consequences on the RTS, which however was slightly relieved as a result of the election of Putin as president in 1999. The market improved during the beginning of 21st century, but only a few years later the next major event would take place as Russia’s largest oil company Yukos was accused for tax embezzlement and later declared bankrupt (BBC). Similar cases against other companies also took place, which largely affected company values on the RTS index. The adjustments that would follow as a result of these affairs lead to a drop of the RTS index of 33% in 2004 (RTS). During the next couple of years, the government would undertake large arrangements to re-establish the confidence in the market, such as securing property rights even further, in an attempt to lower the perceived political risk.

Since 2005, investors have proved to re-establish their trust in the Russian market, which also experienced a stabilizing effect under the re-election of Putin. The price of oil increased significantly during these years, leading to an increase in stock returns.

Goriaev & Zabotkin (2006) describes factors such as corporate governance and political risk as highly influential during the RTS index early days, whereas as elements of macro economic nature i.e. exchange rates, oil prices etc. had a greater influence later on. The authors argue that a political stability is a precondition and is a primary influencer, whereas macro economic factors are influential first when this political risk has been overcome. Findings in other emerging markets show similar results, and verify that emerging markets are influenced by country risk to a larger extent than developed markets that are more affected by macro economic factors. The Russian market has transcended and acquired qualities more similar to a developed market during recent years and has in the same time also become seemingly more sensitive to macro economic factors.
3. Theory

3.1 The Capital Asset Pricing Model

In 1964, William F. Sharpe published an article that was to change the theory of investments. He introduced the Capital Asset Pricing Model (CAPM), describing asset prices under different conditions of risk. Markowitz et al. (1959) had already written about diversified portfolios, that is, a portfolio consisting of multiple single assets, which together construct a portfolio carrying the market risk (also known as total risk, systematic risk, etc.). Sharpe sought to present a market equilibrium theory, where asset prices is deduced from company specific risk (also known as non-systematic risk, non-diversified risk, etc.), which is correlated with the market. He assumed investors prefer high rewards to low rewards and a low risk to a high risk, which was determined to be the only factors an investor would take into account in constructing a portfolio. These assets can be ranked with those two factors in mind, resulting in what is called the capital market line (CML).

Every investor would prefer a portfolio allocated on this line to all other possible portfolios. Hence, a linear relationship exists between the expected return on the asset and the standard deviation of the returns generated by the asset, that is, the risk of the asset. What Sharpe did, was to explain the relationship between single capital assets and the market risk. The asset’s total risk consists of market risk and a company specific risk, uncorrelated to the market. The larger the standard deviation from the market risk (the assets Beta), the bigger the risk, hence larger reward for carrying that risk is demanded. If the investor then can borrow/lend at the risk free rate, any investor can create his or her ultimate portfolio.

The model presented by Sharpe;

\[ E_{ri} = r_f + B_{im}(E_{rm} - r_f) \]

where \( E_{ri} \) is the expected return on the asset, \( r_f \) is the risk free rate, \( B_{im} \) is the assets correlation to the market risk, and \( E_{rm} \) is the expected return on the market. \((E_{rm} - r_f) = \) the market risk premium, MRP (Sharpe, 1964).
However, the purpose of this paper is not to estimate the risk on a single stock but the risk premium on the Russian stock market, RTS. We will therefore present the *diversification* theory, derived from the CAPM ideas.

Figure 4. below illustrates the difference between market risk and company-specific risk. Every single asset holds a specific amount of risk, measured in relationship to the overall market risk. This risk is denoted the company *beta*. That is, if the overall performance on market increases by 10%, a company with a beta of 1.5 is expected to return 15%. However, this company specific risk can be diversified away. Diversification means holding several, diverse assets in the portfolio. The idea is that, on average, the companies will perform as the overall market. Thus, the portfolio risk premium will equal the market risk premium. To achieve a satisfactory diversification effect, a dozen stocks is considered sufficient.

![Figure 4. Diversification affecting the Portfolio](image)

There are several simplified assumptions on which the CAPM is build upon. These assumptions are widely criticized and are said to be too simplified, which makes it impossible to test the model empirically. Some researchers claim that the model is in fact useless and impossible to implicate due to the unreasonable assumptions (Fama & French 2004).
Investors are risk averse and care only about the asset’s expected value and standard deviation according to a probability distribution. They are indifferent to any other aspect. According to Fernandez (2004), this may or may not be true. His critique relates to investor expectations. Although the CAPM may be valid for a single investor, it is not for the entire market. Every single investor holds an individual belief about future cash flows/earnings for a company and the rate at which the cash flows should be discounted.

Investors can borrow and lend at a risk-free rate. Consequently, they can construct a portfolio with zero variance, that is, a risk free rate of return on the assets in the portfolio. This portfolio is then combined with a single risky portfolio to obtain the risk and return the investor prefers. (Sharpe 1964). Sharpe also assumes zero transaction costs, which we also know not to be true. There are costs, such as information collecting and direct costs to buy/sell assets, involved in every single transaction. Regarding the risk free rate and zero transaction costs, we will make no further alteration. They are generally established simplifications in the field of finance and economics.

3.2 Three Aspects of the Market Risk Premium

The term Market Risk Premium ranges over a broad spectrum of definitions. Fernandez (2004) describes three concepts of the MRP, which has different meanings but all are comprised under the term “Market Risk Premium”. In analyzing the MRP, it is important to understand the difference between these three parts and how each of these concepts have different implications for reaching an estimate of a MRP.

- **Required Market Risk Premium**
  - This is referred to as the risk premium an investor requires on a given investment. Usually applied within corporate finance to determine the cost of capital.

- **Historical Market Risk Premium**
  - The historical risk premium is based solely on statistics and shows the historical difference in return between the market return and the risk free return.

- **Expected Market Risk Premium**
  - This concept examines the projected risk premium, based on historical data as well as recent trends.
The key difference between these three concepts is that the historical market risk premium is the same for every investor while the required and expected market risk premium differs among investors depending on portfolios, market analysis etc. Since the historical market risk premium is based on pure statistics there are no room for speculations, making it a set number equal to all investors. In general, comparing historical returns of an investment with historical returns of the risk free rate will provide a rather good indicator, being that on average the market is usually right. In spite of this, the historical market risk premium is affiliated with uncertainties that are important to take into account. An example of this is that after a bad year on the stock market, the MRP will fall without an obvious reason, resulting in an overvaluation of shares in a good year following a bad one (Ibbotson & Chen 2003).

3.3 Prior Research

Ever since the publication of the CAPM in 1964, researchers have conducted empirical tests to test the validity of the model. The main implication is that the model is built upon what is called the market portfolio, which is supposed to contain everything of value. That is, not only stock, but also real estate, natural resources, human capital, etc. This has proven to be impossible, instead stock indexes, such as S&P 500, are commonly used as a substitute. There are many objections regarding the usefulness of the CAPM on developed markets, and the weaknesses are said to be even bigger on emerging markets, due to the lack of stable environments and historical data.

Several articles have been published regarding the implications of the CAPM on emerging markets. A general view that has been expressed over the years is that the CAPM as applied on developed markets not quite is sufficient for explaining the relation between risk and rate of return in emerging markets. Often emerging markets are found to be lacking the historical data required for an accurate input needed in the CAPM.

Garcie & Ghysels (1998) found evidence of differences needed to be taken into account, were local factors proved to be much more sensitive compared to developed markets. Often, emerging markets index and portfolio returns are uncorrelated with world returns and are dependent on much more local information for input in the CAPM to be accurate. In the ten emerging markets examined in their study, this theory received support for more than half of the countries. Although Russia was not included in their research, two other BRIC countries, Brazil and India were. It can therefore be assumed that their findings could have implications for Russia as well given the similarities of these
markets. Campbell (1994) also consolidated this theory that local factors play an important role in predicting returns in emerging markets. Often significantly more so than developed markets due to the lack of integration to the world economy but also because of higher degree of country risk found were i.e. political instability and currency instability have great influences. Campbell (1994) found that over half of the predictable variance in emerging markets could be traced to local factors and in accordance with Garcie & Ghysels (1998). He concluded that there is support that a local CAPM applied has close relationships with portfolio returns in many of these emerging markets.

The second factor that seems essential in studies regarding the CAPM on emerging markets is something referred to as high moment CAPM (Hwang & Satchell, 1999). This involves the consistency of the data used as input in the CAPM. The lack of historical data can here be compensated by using something called the Generalized Method of Moments (GMM), which is a method used to obtain estimates of parameters in statistical models (Hansen, 1982). Consistency is the most important property as estimator in this model, meaning that the quality is based upon the number of observations taken into account. Hwang & Satchell (1999), Garcie & Ghysels (1998) and Bekaert & Harvey (1997) argues that the CAPM can be more successfully applied on an emerging market if it’s a High Moment CAPM, meaning that the input used involves a larger amount of observations to make up for the lack of historical data.

3.4 Application of the CAPM

To summarize, research shows that the CAPM can be applied on emerging markets. However, for the model to be accurate, two factors seem imperative – local factors and consistency. As stated, local aspects need to be factored into the CAPM, due to the nature of an emerging market being less integrated with the rest of the world economy. There also seems to be a need for the lack of historic data to be compensated by more frequent time observations. To make up for lacking a historical index, the GMM suggests a solution using numerous observations to make the CAPM more applicable. Having a sufficient number of observations will make the estimator arbitrary close to the true value of the parameter according to Hansen (1982), which implies that more frequent observations therefore could compensate for lacking chronological data.
The traditional Capital Asset Pricing Model estimates future returns on single assets with help of the historical risk free rate, the expected market risk premium and the company beta.

\[ E_{ri} = r_f + B_{im}(E_{rm} - r_f) \] hence

\[ \text{MRP} = E_{rm} - r_f. \]

Please note that the CAPM uses the *expected* market return, which is not the same as the *historical* market return. But very often the expected market return is assumed to be *similar* to the historical return, and is therefore used as a benchmark.

As already mentioned, due to lack of historical data for the RTS index, analysts often use an arbitrary MRP. What we are interested in is to calculate a historical market risk premium for the Russian Trading System. The calculated MRP can later on be used to estimate future returns on single companies, which reaches beyond the purpose of this thesis.
4. Method

4.1 Theoretical Approach

Our framework is based upon the classical CAPM, presented by William F. Sharpe in 1964. Most of the articles we have used in order to build a theoretical approach cite Sharpe or the CAPM, as the CAPM is considered a main theory of modern financial theory.

In addition, we have used articles and books by numerous outstanding researchers discussing the original CAPM and empirical tests conducted. Two authors that we have cited several times when discussing the CAPM are E. U. Fama and K. French, who have conducted a series of test and adaptations of the CAPM, as well as discussed tests conducted by other researchers. Fama is a professor at the University of Chicago Booth School of Business. French has been a faculty member of Yale School of Management and MIT. Both have numerous articles published in well-recognized journals within finance and economics. We have also chosen articles concerned with how the CAPM is applied on emerging markets in general, and the Russian market in particular. The classical theories together with later on conducted research should give us a good foundation to build our theory upon.

To get a better view of Russia and the history of the Russian market, we have used articles by A. Goriaev and A. Zabotkin, researchers at the New Economic School, Moscow. The articles have been a benchmark and provided us with a summary of the most influential events and their impact on the Russian market’s development. It has been important for us to get information from Russian sources, in contrast to the international sources used in examining the CAPM and the empirical approach. We have also used data from RTS.ru, the official site for the Russian Trading System.

4.2 Empirical Approach

Our purpose was to calculate the historical market risk premium on the Russian Market. As we were not interested in any specific company, we set the beta in the CAPM equal to one. As our risk free asset, we had two benchmark yields. Firstly, the 30-day MiBOR and secondly, a long-time 30-year Russian government bond. As a proxy for the market portfolio, we chose the Russian Trading System, as it is the most commonly used Russian stock exchange and also a member of Standard & Poor, which validates it and to some extent makes up for the limited transparency in the market.
We suspected that a risk premium for the period 1995-2009 would, due to a small sample, be followed by too large standard errors to be useful for estimating future returns. We therefore set up a complementary research question, where we isolated certain events that we considered especially significant to the development of the index and the risk premium. It would not make the standard error smaller, but it will give us the opportunity to isolate events found to have an impact on the RTS and the MRP. Finally, we will compare the two results and discuss possible implications.

4.2.1 Data Collection

Since our purpose is to calculate the historical market risk premium for the RTS index, we have chosen to use secondary data from the RTS index, which consists of the 50 largest companies listed on the RTS. The data for the RTS index is downloaded from the official site of the RTS (rts.ru). The information is also available to anyone who wants to duplicate our study, or conduct further research in the area. The RTS index has also been chosen as a primary source instead of the MICEX index for several previously stated reasons. The RTS index was the first calculated index on the Russian market, created in 1995, and covers approximately 85% of the total Russian market capitalization. MICEX is larger considering liquidity but RTS remains the leading index with respect to number of traded stocks and is the main benchmark in measuring the Russian equity market. The RTS is also, as opposed to MICEX, quoted in USD and was in 1996 added to Standard & Poor’s global index portfolio as the first Russian stock index.

The 30-year government bond is collected from Thomson Reuter EcoWin, and the 30-day MiBOR from The Central Bank of the Russian Federation. We could not find data previous to 1998 and 2000, respectively. We’ve searched in acknowledged databases such as Bloomberg and Reuters as well as on the Central Bank of Russia, and we have made the conclusion that the yields previous to 1998 and 2000 are not available today. The sources chosen are commonly used for acquiring data of the same kind by many financial institutes, which is important in order to avoid errors in the calculations made.

To obtain relevant literature on the Russian market, emerging economies and risk factors affecting the MRP in general, we have mainly used databases like DISA and Libirs in searching for articles. Keywords chosen has mainly been “Market Risk Premium”, “Equity Premiums”, “Investment Risk”, “Emerging Markets”, “Russian Market” and “The Russian Trading System”. From relevant articles, further sources were found through mainly using related references. Goriaev & Zabotkin’s (2006) article was found to be particularly relevant and lead us to other valuable sources, including Bekaert & Harvey’s article “Emerging equity market volatility” from 1995.
4.2.2 Data Processing
To calculate the average annual historical market risk premium for the RTS, we have averaged the monthly returns of the index (using arithmetic average) and subtracted the risk free rate (arithmetic average monthly yield). To get the annual risk premium, we multiplied the monthly averages by 12. The reason we chose to use monthly returns is that a larger sample (110 and 135 months compared to 12 years) produces a smaller standard error of the mean, although the mean, the average risk premium that is, would have been the same.

4.2.2.1 Average and Stationary Data
There are two ways in how to compute a mean; arithmetic and geometric average. The arithmetic average is what is usually called the “average”, where a series of returns are added and then divide by the number of these returns. Geometric average is the compounded returns. Differences between the two (Cornell 1999);

1. The arithmetic average is always equal to or larger than the geometric.
2. The more variation in the returns, the greater the difference between the arithmetic and geometric data.
3. Geometric data depends on the price level at the beginning and the end of the period. Arithmetic average also depends on the length of the periods.

There are issues with both methods were the arithmetic average tends to overestimate the returns, while the geometric average underestimates it (Indro & Lee 1997). Damodaran (2004) suggests that the arithmetic average is the most correct, assuming that the returns are uncorrelated over time. However, Fama & French (1988) find that returns are negatively correlated over time (5-year returns). In the long run however, the authors find that returns seem to be uncorrelated. So, when to choose which average to use, the answer seems to be; it depends. We will use the most accepted method, namely the arithmetic average, despite its flaws. However, using historical returns is based on the assumption that the future will be identical to the past, that is, the data are assumed to be stationary. That question is highly significant when it comes to emerging markets. The Russian market economy has a short and vigorous history, which often is hard to draw conclusions from, and even less so to predict a future path. When it comes to emerging markets, the case is even more problematic. In Russia for example, how is the sample and population defined? One could reason; “Russia has been a rocky road so far, and the rocky road will probably continue, so past data are significant.” But, in order
to find a statistical significant result, simplified assumptions must be utilized, sometimes leading to meaningful results. We will still test our data, but the discussion regarding necessary simplifications and their relevance for the outcome will surely be as interesting as the actual result.

4.2.2.2 The Standard Error
The standard error is also called the standard deviation of the mean, that is, a measurement of to what grade the actual returns differ from the mean (the larger the sample, the smaller the standard error). On a mature market, such as the North American, data stretching back to the 19th century is ready available, providing thousands of possible samples. But, even on the American stock market, Damodaran (1999) found the standard errors to be significant, making an estimation of future returns more or less useless. As an example; Cornell (1999) found that the standard deviation of American stocks for the last 60 years has been 16.5%. The standard deviation of the risk premium is approximately 19%. With a 95% confidence interval, the commonly used interval for statistical significance, the actual premium for the next year should be between -30% and +44%. Data reflecting time periods of ten or twenty years, as is the case in Russia and many other emerging markets, gives a standard error that can be even larger than the estimate itself. Aware of this implication, we will still carry out the research. What we aim to do is not to estimate the future, but to calculate the historical risk premium. Nevertheless, the standard errors must be taken into consideration and are important when discussing the accuracy of the research.

4.2.2.3 Country Risk
Country risk (i.e. factors such as political instability, regulatory changes, devaluation, etc.) is said to substantially affect the ability for a country to meet financial obligations and therefore indirectly affects the market risk premium, as this is influenced by the stock market and the country’s current financial situation. In Russia, the country risk is said to be significant (A.M. Best). A.M. Best, which is a ratings company, uses a five tier ranking system, where developed markets found in countries like Sweden and the U.S. are placed in the 1st tier, notable for low economic, political and financial risk. Russia, on the other hand, is placed in the 4th tier, together with countries like Indonesia and Jordan. Even though there has been a decrease in country risk regarding Russia in the years following 2004, much due to a further political and macroeconomic stabilization (Goriaev 2004), factors like these still have an impact on the MRP. The fact that country risk seems to be correlated among countries makes it non-diversifiable, even in a global portfolio. So, how can this extra country risk be reflected on the market?
According to Damodaran there are two general ways in how to calculate country risk:

1. Use a ratings agency such as A.M. Best, Moody’s, or IBCA. They measure default risk, but default risk and equity risk are driven by the same factors; stability of local currencies, budget and trade balances and political stability. Hence, a country’s default rating is possible to use an estimation for it’s country risk even when it comes to equity.

2. However, local government bonds are more likely to reflect the market’s view of the level of risk. Assuming that the market is correct, corporate bond yields are a more reliable and timely way of estimating country risk.

In our thesis, we do not intend to estimate the country risk, but it is however an important part of the discussion regarding the market risk premium. We don’t believe that the market is always correct, but in the long run however, prices set by the market is what investors believe to be correct. In addition, we appreciate the timing of bond yields, marked to market every day.

4.2.2.4 The Risk Free Asset

In an emerging market, the government bond chosen to calculate the MRP has strong implications on the result. On a mature market, a long-term government bond is often preferred to a short-term bond when calculating the MRP. That’s because long-term yields are used to discount future cash flows, hence the valuation of companies are based upon long-term yields. In some cases though, it might be more appropriate to use short-term bonds, such as a 30-day treasury bill.

In calculating our MRP we have chosen to use a 30-year as well as a 30-day Russian bond. The problem with using a long-term bond, such as a 30-year, on an emerging market is that the long-time yields tend to be extremely high and volatile. This is tied to the country risk associated with an emerging market like the Russian, where investors demand high premiums in order invest. In using a 30-year benchmark yield, the actual MRP might be underestimated.

To deal with this issue, we will also use a 30-day Moscow InterBank Offered Rate, MiBOR, to get a second benchmark yield, which might be less fallacious. A shorter government bond might give a better estimate of the MRP on the Russian market as well as emerging markets in general since it encompasses a smaller time period, diversifying some of the country risk away, which might be substantial over a longer period of time. The MiBOR is the interbank rate and not the rate at which
investors can borrow and lend money, but according to Goriaev & Zabotkin (2006), we will use it as an approximation for the short-term risk free rate. Comparing the impact the two bonds make on the MRP, we should see a difference between the longer and the shorter. Something that further should indicate the most benchmark yield.
5. Empirical Evidence

The traditional Capital Asset Pricing Model, presented by Sharpe in 1964, estimates a company’s future earnings with respect to the risk free rate on the market, the overall return on the market and the company’s beta. The model was developed with a mature and efficient market in mind, and previous research claims the model to be an insufficient instrument for estimating returns on emerging markets. It is nevertheless still in use and we shall here present our findings when using it on the Russian market and discuss the implications of the insufficiencies.


As it turned out, it was not possible to find the benchmark yields needed from 1995, the starting year of the RTS index. Instead, our first observation takes place in June 1998, in the middle of a severe government crisis. That is problematic but not insurmountable. We will discuss that matter and its impact on our results in section 5.2, but from here on we will have to satisfy with calculating a risk premium for the years 1998-2009.

The market risk premium over the 30-year government bond for the years 1998-2009 is 20.5 %. Using a 30-day MiBOR, the market risk premium is 20.4 %. (See table 1. below) So, the historical market risk premium seems to be around 20 % in both cases, using a short-term or long-term bond as the risk free rate. In comparison, according to Cornell (2000) the market risk premium for S&P 500 has been 9.2 % and 7.4 %, respectively. That is not all true though, the average Cornell uses stretches from 1926-1997 and he uses short-term Treasury bills and 20-year Treasury bonds as the risk free rates. Yet, most researchers conclude that the American market risk premium has been between 6-10 % over the years. Depending on which number believed to be the correct one, the risk premium for the RTS index has been 2-3 times the average of the S&P 500. That is, Russian investors got 2-3 times as high reward for every level of risk compared to if they had invested in the US stock market.
Table 1. 30-day and 30-Year Government Bonds Summarized

<table>
<thead>
<tr>
<th>N Statistic</th>
<th>Average MRP</th>
<th>Std. Error (%)</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-day Bond</td>
<td>110</td>
<td>20.49843364</td>
<td>13.7</td>
<td>544.810</td>
</tr>
<tr>
<td>30-year Bond</td>
<td>135</td>
<td>20.4422773</td>
<td>15.1</td>
<td>622.611 (Dec 99)</td>
</tr>
</tbody>
</table>

However, due to a small sample and high volatility in the returns, the standard errors are considerable. In Figure 5 below, it can be seen how the monthly market risk premium varies over time. The long-time trend, the average that is, is about 20%. But, from month to month, the premium varies considerably. Using the 30-year bond, the highest annual risk premium reached a single month was 544% (April 2002) and the lowest was -416% (October 2008). To estimate an actual market risk premium, with a 95% confidence interval, the premium is between -9.1% and 49.9%. As already mentioned, we do not aim to estimate actual risk premiums, but it is essential that the reader understands the dilemma. Neither do we estimate what premium investors demand, because that changes over time due to general beliefs, earnings ratios, price levels, etc.

Figure 5. Annual and Average Annual MRP (30-Year Bond)

Also worth noticing is that the average 30-year Russian government bond yield, contrary to expected, is lower than the 30-day MiBOR. Generally, a long-term bond yield is higher than a short-term bond.
yield. That is because the uncertainty grows larger the longer the time period, thus a higher yield is required. For example, according to Cornell (2000) the US short-term yield has been 3.8% compared to the long-term yield of 7.4%. For Russia, we expected the difference between the two yields to be substantial. The uncertainty about the development of the Russian economy is large and we expected investors to demand a much higher premium to purchase a 30-year government bond than a 30-day government bill. That was not the case, the long-term yield proved to be slightly lower. Thus, the market risk premium was higher (20.5%) using a long-term bond compared to the short-term bond (20.4%). One possible explanation could be that the country risk premium, reflected in both of the government bonds, could be so high that the time frame doesn’t really matter. The predictions of the coming month could be as unsecure as a prediction of the next decade. Worth noticing is also how the short-term yield has a higher volatility (See Appendix), which could suggest that investors react rather strongly on day-to-day events, but believe in a stabilization of the economy in the long run.

To summarize, the market risk premium for the RTS index 1998-2009, computed on monthly returns and a 30-day MiBOR/30-year government bond as the benchmark yield, has been 20.4% and 20.5%, respectively. Due to a relatively small sample size, we don’t suggest that the historical risk premium is usable as an approximation for estimating future returns. The real risk premium is most likely larger and not captured by an average over the entire period.

In the next section, we will break down the period into smaller sub-periods and calculate risk premiums for the different periods. As there was no substantial difference between the two benchmark yields, we will use the 30-year government bond yield, as it provides us with data ranging from 1998.

5.2 The Market Risk Premium – Sub Periods

In dividing our total time frame into smaller sub-periods we will here try to illustrate the impact of particular events on the MRP. The average MRP over the entire period (1998-2009) could be explained further by looking at abnormalities that have occurred within these sub-periods. The sub-periods also facilitate our effort to isolate these abnormalities and seeing to what extent these have had a contingent impact on the periods MRP.
Our total time frame has been divided into the following periods:

- February 1999 – December 2005
- January 2006 – July 2008
- August 2008 – January 2009
- February 2009 – September 2009

5.2.1 July 1998 – January 1999
Looking at our first period, the Asia crisis had already peaked but was still having severe effects on the Russian economy. The Ruble was devaluated and the RTS index experienced major contractions as the number of stocks decreased to fewer than 200 (Goriaev & Zabotkin, 2006). Oil prices were low at around $10 /barrel (BP) and the inflation peaked at 85% after the crisis (Trading Economics). The MRP from this period had a mean of –97.6 %, with the Standard Error of 136.5%.

5.2.2 February 1999 – December 2005
The second period meant a major stabilization for the Russian economy as it recovered from the previous crisis. With the resignation of Yeltsin and the election of Putin, the market became steadier as macroeconomics stability increased due to Putin’s prudent fiscal policy and the recovering oil price. Besides the Yukos affair, were Russia’s largest Petroleum Company at the time were accused for tax embezzlement and later declared bankrupt, this period meant a steady decrease in the Russian market. The RTS index increased with over 334% (Goriaev & Zabotkin, 2006), the industry grew with 75% and investment increased by 125% (Ria Novosti). The inflation decreased from a high of 85% in 1999 to around 10%, were it remained stable throughout the period (Trading Economics). Oil prices increased from $15/barrel in 1999 to $50/barrel in 2005 (BP). During this period, the MRP was on average 38% with the Standard Error of 17.7%.

5.2.3 January 2006 – July 2008
Starting in 2006, Russia started to experience a growth rate never before seen. The capital investment increased 27.2% between 2006 and 2007 and the country even surpassed China in nominal growth terms (Shyshkin, M. 2007). Oil prices increased significantly and reached an all time high in July of 2008 when the barrel price reached $147 (BP). The inflation remained around steady around 10% (Trading Economics). The average MRP for this period was 30% with the Standard Error of 17.1%.
5.2.4 August 2008 – January 2009

As the second financial crisis during our observation period struck Russia, the impact proved severe. The oil lost 70% of its value, which would have a major impact due to Russia’s high dependence on this single commodity. Escalating military tensions between Russia and Georgia also influenced the economy negatively in raisings concerns, resulting in foreign investors pulling billions of dollars out of Russia. After Putin criticized Mechel, one of Russia’s leading companies in mining and metal for selling resources at a higher domestic price then internationally their stock plunged by almost 38%. This created a fear that the company would head the same way as Yukos, but it also badly decreased Russia’s credibility as an investor-friendly country (Ria Novosti, 2008). The oil price decreased to $40/barrel (BP), while the inflation was at its lowest rate during our observation period at 9% (Trading Economics). During this period, the MRP averaged -210.3% with the Standard Error of 41.3%. An MRP of -210% is not possible in reality and is a result of our simplifications. We used monthly data to compute a fictive annual return, hence this number (which suggests that the stock market would have been annihilated, which is not the case).

5.2.5 February 2009 – September 2009

Even though the financial crisis still affects Russia, the market started to recover gradually in the first months of 2009. In the second quarter of 2009 the GDP rose by 7.5%, as did the inflation, which increased, to 14% (Trading Economics). However, as a result of the financial crisis, the income distribution in Russia had become more uneven with an increase in poverty. A recovering oil price had positive affects on the Russian export as well on the oil and gas subjugated stock market. The oil price increased from $43/barrel in the beginning of 2009 to around $75/barrel in the second half of the year (BP). The MRP for this period came to a staggering 138% with a Standard Error of 58.4%.

Table 2. Time Periods Summarized

<table>
<thead>
<tr>
<th>Period</th>
<th>Time Frame</th>
<th>Major Happenings</th>
<th>N</th>
<th>Average MRP (%)</th>
<th>Std. Error (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>June 1998 – January 1999</td>
<td>Asian Financial Crisis</td>
<td>7</td>
<td>-97.6</td>
<td>136.5</td>
</tr>
<tr>
<td>2</td>
<td>February 1999 – December 2005</td>
<td>Putin elected President, Yukos affair.</td>
<td>83</td>
<td>38</td>
<td>17.7</td>
</tr>
<tr>
<td>3</td>
<td>January 2006 – July 2008</td>
<td>Increasing oil prices</td>
<td>29</td>
<td>30</td>
<td>17.1</td>
</tr>
<tr>
<td>4</td>
<td>August 2008 – January 2009</td>
<td>2008 Financial Crisis</td>
<td>8</td>
<td>-210.3</td>
<td>41.3</td>
</tr>
<tr>
<td>5</td>
<td>February 2009 – September 2009</td>
<td>Market Recovery</td>
<td>8</td>
<td>138</td>
<td>58.4</td>
</tr>
</tbody>
</table>
6. Discussion

Russia is one of the largest emerging markets of today and investing in this market has meant high rewards but also a substantial high risk due to the volatile nature of the Russian economy. In general, investors use historical data as a benchmark when calculating that risk. Considering Russia, there are several problematic aspects regarding historical data. First of all, the short time span of the stock markets limits the possibility to assess long-term historical data. Secondly, the data available are not complete, and in some cases the credibility can be questioned. Thirdly, the data found might be affected by factors that are not incorporated in the traditional capital asset pricing model, which is used to calculate the market risk premium. However, we started by calculating the risk premium for the RTS index and found it to be about 20% with a standard error of 13.7-15.1%. We suspect that a risk premium of 20% is misleading and we will here discuss possible sources of error and the impact they constitute.

6.1 Country Risk and the impact on the MRP

As an emerging market, Russia is followed by a significant country risk. This country risk is embedded in both the stock market and the government bond yields. Due to political instability and other country risk factors, investors demand a premium to invest in government bonds in emerging markets compared to more developed markets. The average yield for the 30-year Russian government bond has been 12.6 %, compared to for example 5.2% for 20-year American treasury bonds. When we chose to use Russian bond yields as our risk free rate, we thereby excluded some of the country risk premium from the market risk premium. The average market risk premium of 20% and the risk premiums for the sub-periods are therefore most likely underestimated. Investors of today can choose to invest in American treasuries as well as in Russian, and in that point of view, the difference between the two yields must be accounted for in order to receive a risk premium for the Russian market in general. To make up for some of the excluded country risk premium, we project that an extra premium of about 5-10% needs to be added to the risk premium above.

Also worth noticing is that the average 30-year Russian government bond yield, contrary to our expectations, is lower than the 30-day MiBOR. Generally, a long-term bond yield is higher than a short-term bond yield. That is because the uncertainty grows larger with a larger time span, thus a higher yield is required. According to Cornell (2000) the US short-term yield has been 3.8 %
compared to the long-term yield of 7.4 %. For Russia, we expected the difference between the two yields to be extensive. The uncertainty about the development of the Russian economy is large and we expected investors to demand a much higher premium to purchase a 30-year government bond than a 30-day government bill. Since that was not to be the case, the long-term yield proved to be slightly lower. Thus, the market risk premium was higher (20.5 %) using a long-term bond compared to the short-term bond (20.4 %). One possible explanation could be that the predictions of the coming month could be as unsecure as a prediction of the next decade. Also to be noted is that the short-term yield has a higher volatility (See Appendix), which could suggest that investors react rather strongly on day-to-day events, but in the long run believe that the Russian economy will eventually stabilize.

6.2 Political Instability and the Impact on the MRP

The historical review of the Russian economy in general and the RTS in particular highlighted what researchers have found in other emerging markets. Campbell (1994) and Garcie & Ghysels (1998) have found evidence that emerging markets compared to developed markets are more sensitive to local factors. They mention factors such as political instability, currency instability, etc. The returns on the RTS index are strongly affected by political events and we have found several examples of occurrences like this on the Russian market. The re-election of Yeltsin in 1996 caused the RTS index to surge and his resignation in year 2000 caused a drop. Numerous controversial arrests of various business leaders have had the same affect to, which further gives support to this argument. One could say that the returns are more sensitive to political events than in developed market, but at the other hand, their lies a difficulty in differentiating political from economical events. Presidential elections, wars, and arrestments of business leaders are indeed political, but they are also important benchmarks for how the economical conditions might develop. The lack of stabile institutions will inevitably make the market very dependent upon political events and hard to predict since political events must be taken into account in excess of the regular business cycles. We therefore divided the period into smaller sub-periods, which we found very useful in trying to find a more reasonable risk premium. Mainly it will not simplify the estimation of a better historical risk premium, but rather, depending on the investor’s agenda, it can be utilized in using the MRP from a similar period as a benchmark in estimating future outcomes.
6.3 Commodities and their Impact on the MRP

As many other emerging markets, the Russian economy is highly dependent upon single commodities such as oil and gas. This makes Russia more integrated into the world market, yet in a skewed way. The economy is very sensitive to price changes in a few commodities, thus not as differentiated as developed countries. Oil and gas companies constitute 58% of the capitalization of the RTS index. Our findings clearly show how the oil boom during the later part of 2000 caused the RTS index to surge. During our observed period between January 2006 and July 2008, the oil prices soared and finally reached its peak in July at $147 /barrel. At the same time, the country experienced one of its most spectacular growth periods, even surpassing China in nominal growth terms. The MRP was at an average of 30% during this period and considering the reasonable standard error of 17.1%, the oil could clearly be said to have had a severe impact on this result. To further illustrate the impact from the energy sector on the RTS index, as the oil price plummeted during the next period between August 2008 and January 2009, so did the index as well as the MRP to an incredible -210%. Of course, the oil and gas sector was not the only factors constituting this decrease, but the oil price clearly correlates with the index and in conclusion the impact from current oil price must be considered substantial.

6.4 Country Developments and the Implication on the MRP

We have found that the Russian market has developed and changed its character a lot over the years. In broad spectra, the Russian market seems highly affected by country risk factors such as political instability in the initial stage. The market returns as well as the interest rates seemed much more sensitive to political events during our first period in 1998 compared to oil prices and other factors of macro-economic nature later on. The years following Putin’s election seemed characterized by this stability and instead oil prices and exchange rates to a larger extent started to influence the stock returns. Goriaev & Zabotkin (2006) found related results, were they describe political stability and a limited country risk as the foundation for a functioning market. Only when this has been achieved will economic factors fully influence the stock market, as is the case to a further extent in developed market.

Our empirical evidence and results from our different time periods suggest a similar result, were the factors influencing the market has changed over the years and become more sensitive to macro economic factors like those in developed markets as soon as country and political risk have been overcome. Our findings regarding the oil price and its influence on the MRP is in line with this, with
the only exception being the financial crisis in 1998, where it was overshadowed by the political instability and devaluation. As the political stability increased during the 21st century, its influence grew and in the financial crisis in 2008, oil prices were one of the major factors severely affecting the Russian economy. This might have been enforced as a result of Russia’s dependence in a single commodity, but it also illustrates how a macro economic factor grew significantly in influence over the given time period as the political climate stabilized.

6.5 Sub-periods

The Sub-periods covered do in general provide a structure for examining differences that took place and the impact from certain factors. In accordance with the CAPM, market returns minus a risk free rate tells us the MRP. This makes the underlying reasons for the market performance and the risk free rate essential in understanding the MRP.

6.5.1 The Government Default (June 1998 - January 1999)

In our first observed period from June 1998 to January 1999 the MRP was at a negative -97.6%. The main reason for this was most likely the soaring interest rate, peaking at 60%, which came as a result of the financial crisis that were occurring at the time. Political instability contributed to the uncertainty, as Yeltsin’s government defaulted on debt that lead to the ruble collapse and devaluation in 1998, which could be considered a significant reason for the falling returns on the RTS index. The oil price at the time was stable around $10 /barrel which points to the conclusion that the effect from the oil price wasn’t nearly as severe as in 2008. Instead, large political failures seemed to be the primary driver. As an investor would never consider investing to a negative risk premium, an MRP of -97.6% do not help us any further in estimating the risk premium. Nevertheless, findings regarding the driving factors of the MRP seem evident and could therefore be considered useful in an improved understanding of the local market situation for other periods.

6.5.2 The Recovery (February 1999 – December 2005)

The second period is distinguished by an increased political and economical recovery. A decreasing inflation that eventually stabilized around 10% added to the stability of the period. The market risk premium was 38%, almost twice as big as the risk premium for the RTS index history on average. We find two explanations for this. Firstly, the second period is a period of recovery. The crisis in 1998, where the RTS index experienced a negative MRP of -97%, was inevitably to be followed by a period of surging returns. The recovery was probably faster and higher than expected by investors, hence a higher return than expected. Secondly, the relatively stable political environment was also a
contributing factor to a higher MRP. Yet, a MRP of 38% is probably too high, mainly caused by investors underestimating the market returns. A sustainable market risk premium for the RTS index is most likely smaller than 38%.

### 6.5.3 The Oil Boom (January 2006 – July 2008)

As stated previously, the third period was distinguished by an increase in the RTS index, much due to the increasing oil prices. The MRP decreased from the preceding period from 38% to 30%. The market performance surpassed prior years, but not at the same rate as earlier which would have increased the MRP further. This lead to a decrease in the MRP that would have been lowered even more if it were not for the interest rate that in the same time became slightly lower. We find that the political stability also continued during this period, were no major happenings affecting the market is noticeable, making the market performance reflect economic conditions rather than political factors.

### 6.5.4 The 2008 Financial Crisis (August 2008 – January 2009)

During the fourth period, the second financial crisis struck which drove down the market considerably. Coming of a period of with tremendous economic growth, this meant a major decrease in the MRP as the interest rates kept increasing together with the falling index. The MRP during this period was at a low at -210%. As a result of previous years high market performance this number looks abnormally high, which partly explains it. However, as mentioned earlier the oil value decreased with 70% during this period, reinforcing the poor market performance even more. At the same time, Prime minister Putin took a political action when he criticized a Russian company for charging more expensive domestically then internationally. As a result, the company “Mechel” which were the target for accusations and also one of the biggest companies on the RTS index plummeted 37%. We find this incident to clearly illustrate the political risk factor, which seems to be a resurfacing occurrence, constantly present in an emerging market like the Russian.

### 6.5.5 Today (February 2009 – September 2009)

The market risk premium equaled 138% for the last period but will not add much value to the discussion regarding an MRP. An MRP of 138% is once again a sign of investors underestimating the market returns in the recovery of a crisis. The sample is also very small, consisting of only eight months, which contributes to a large standard error. Nonetheless, the interesting aspects are the underlying parameters. The world economy is recovering and oil prices are surging, causing high returns on the RTS index. At the same time, interest rates are still low. Looking back at the recovery from the government crisis in 1998, we have reason to believe that MRP will eventually fall to a more sustainable level given the same development.
7. Conclusion

The purpose of this thesis was to calculate a historical market risk premium for the Russian market, based on data from the RTS index between 1998 and 2009. As our findings illustrate, the market risk premium is 20.4% for the entire period based on a 30-day bond and 20.5% based upon a 30-year bond. Worth noting here is that the MRP is higher based on the long-term bond.

Looking at our additional research questions we have reached several conclusions. Our first research question focused on dividing the entire period into smaller sub-periods, trying to isolate crucial events and seeing whether these had effects on the MRP. We found that the character of the Russian market seemed to have changed during the time period measured. The large difference between the sub-periods with one period experiencing an MRP of -210% and another +137% indicates that large abnormalities exists that are affected by certain events. Political happenings, ruble devaluation, oil price changes and so on. The factors we have found to influence the MRP changes in consideration to impact during the period and seems to stand in relation with the market maturity. In the earlier stages of our period, Country- and Political risk appears to have a greater influence on the MRP compared to macro economic factors. As the market matured and a political stability was achieved, oil prices and currency exchange rates started to have a greater impact on the market and the MRP. We therefore conclude Political Stability to be a pre-requisite for a market to be fully functioning and to be receptive to economic factors common in developed markets. Even though there has been a clear change in market character, Russia still seems susceptible to Political Risk factors and can therefore only be considered fully functioning during a more stable political climate. We also conclude that the impact from single commodities, primarily oil, has a major impact on the MRP since it capitalizes approximately 50% of RTS index.

Since the conclusion that certain crucial events affect the MRP significantly stands it could be used to estimate an MRP for the long run. The political instability and country risk still have large implications on the MRP, as do the oil price that affects the market as well as the interest rate. Even though the MRP’s found in some of the sub-periods are extreme, they also indicate what kind of events that drive the MRP which can be used to predict the future MRP. Therefore, our conclusion is that 20% is too low and that an additional country risk of 5-10% preferably should be added.
During “non-chaotic” times, the MRP has remained stable at around 30%, which also could be a reasonable MRP for the Russian market. If the political climate continues to improve and succeeds in creating stable institutions under which companies can operate, that would lower the MRP further. The Russian economy will most likely continue to be dependent upon its energy sector, thus also continuing to make the market sensitive to commodity prices.

Regarding further research on the subject based on this thesis we have identified three issues to be especially interesting. First of all, the difference between chosen benchmark yield is found to highly affect the MRP and can be additionally investigated. Due to the changing world economy of today, were globalization has meant border transcending investments, investors can more freely choose among risk free assets from a broad range of markets, not being limited to a single domestic market. The implications on our findings in this thesis would probably by considerable if another benchmark yield, (e.g. the American) would have been chosen. The difference between more freely selected risk free rates could therefore be subject for further research.

Second, we would like to investigate whether the driving factors (political, single commodities etc.) found in this thesis are applicable on other, similar markets. Can the same correlation be drawn from the Indian or Brazilian market? This would to a larger extent strengthen the conclusions made in this thesis and make the results valid in a broader spectrum.

Third and lastly, as mentioned in section 3.4, our model will not be applied to estimate future earning on the RTS index. Future research could here broaden the applicability of our model and additionally investigate if the established MRP is correct and if a correlation with the future yield of the RTS exist.
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Appendix

1. The 30-Year Government Bond Yield (%)

2. The 30-Day Government Bond Yield (%)

37
3. The RTS Index 1998 - 2009


(Goriaev & Zabotkin, 2006)