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CAPITAL STRUCTURE

Firm Specific Factors that Determine the Capital Structure on the Stockholm Stock Exchange

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ABSTRACT

TITLE:	Firm Specific Factors that Determine the Capital Structure on the Stockholm Stock Exchange.
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KEYWORDS:	Capital structure, Panel data, Firm specific factors, Trade-Off theory, Pecking Order theory
PURPOSE:	This thesis aims to test firm specific factors that determine the capital structure of companies on the Stockholm stock exchange. The results will be compared with the results of earlier studies from USA and Switzerland. Furthermore, we will conclude if these firm specific factors have changed over time.
THEORETICAL PERSPECTIVE:	The theories explained and used in this thesis are the Modigliani Miller model, Trade-Off theory, Pecking order theory and the Market timing theory. We have also used other research articles to compare our results.
METHODOLOGY:	This thesis is based on a quantitative approach, which through a panel data analysis includes hypothesis testing.
EMPIRICAL FOUNDATION:	Three out of our seven different firm specific factors indicates to be significant. They are with the most significant first, growth, profitability and size. Furthermore, the tests completed on our regression analysis indicate superior results.
CONCLUSIONS:	The conclusion of our thesis indicates that the firm specific factors that determine the capital structure on the Stockholm Stock Exchange are comparable with the earlier results from both USA and Switzerland. However, our results indicate that it has been a change in the effect of these factors over time.

SAMMANFATTNING

TITEL:	Företags Specifika Egenskaper som Bestämmer Kapitalstrukturen på Stockholms Börsen
SEMINARIE DATUM:	Den 3 juni, 2009
ÄMNE/KURS:	Företagsekonomi, Finansiering, 15 akademiska poäng (15 ECTS), Magisteruppsats, Ekonomihögskolan, Lunds universitet
FÖRFATTARE:	Fredrik Lundberg och David Nellbeck.
HANDLEDARE:	Maria Gårdängen
NYCKELORD:	Kapitalstruktur, Företags specifika egenskaper, Panel data, Trade-Off teorin, Pecking Order teorin
SYFTE:	Syftet med uppsatsen är att bestämma vilka företags specifika egenskaper som bestämmer kapitalstrukturen på Stockholms börsen. Vi kommer att jämföra våra resultat med resultat från tidigare studier från både USA och Schweiz. Vi kommer även att undersöka om det har skett en förändring av dessa faktorer över tid.
TEORI:	De teorier vi har förklarat och använt oss av i denna uppsats är Modigliani och Miller teorin, Trade-Off teorin och Market Timing teorin. Vi har även använt oss av tidigare studier för att kunna jämföra våra resultat.
METOD:	Denna uppsats bygger på en kvantitativ metodansats som genom en panel data regressionsanalys inkluderar antagande tester.
EMPIRI:	Tre av våra sju olika företags specifika faktorer var signifikanta. De är med den mest signifikanta först, tillväxt, lönsamhet och storlek. Resultaten på testerna vi utförde på våran regressionsanalys var ansenliga.
SLUTSATSER:	Slutsatsen av våran uppsats är att företags specifika faktorer som bestämmer kapitalstrukturen på Stockholms börsen är jämförbara med tidigare resultat från USA och Schweiz. Men våra resultat indikerar att det har skett en förändring av effekten av dessa faktorer över tid..

FOREWORD

We would like to give a special thanks to our supervisor Maria Gårdängen for her support and advice throughout our thesis.

The writing of the Master thesis has been profoundly motivating and interesting during the whole progress. A company's capital structure is of most importance and something that we believe is very valuable to be aware of in terms of how it is affecting the company. Therefore we are most exited to share our findings with you as a reader. We hope you will find them as compelling as we do.

Lund, May 2009

Fredrik Lundberg

David Nellbeck

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1
INTRODUCTION

In this first section we will present an introduction and a background to our thesis. This section will further discuss the purpose, and limitations that will guide us to the problem that we have investigated. The final part of this section is the outline.

Could a firm enhance future prospects by altering the firm's capital structure? Could the firm decrease the risk of default by implementing capital structure policies? In a financial crisis like the one the world is experience at the moment the answer to this question is definitely. Optimizing the value of the firm has been the main objective for management over the years. However, in a time like these having a balanced and healthy capital structure has been the difference for a firm to survive or default.

In 1958 Modigliani and Miller presented their groundbreaking theory about how the value of the firm is affected by the firm's capital structure. They further developed their theories in 1963 and included tax benefits. Their theory has been under debate; nevertheless, other theories have evolved from their theories like the Trade-Off theory and the Pecking Order theory. The Pecking Order theory and the Trade-Off theory include the consideration of different costs and benefits, related to capital structure. Examples of related costs are cost of capital, agency costs and default costs. Examples of related benefits are tax benefits and benefits of lower default risk. A healthy capital structure will enhance a company's capability to take advantage of business opportunities and improve their earning possibilities. Capital structure is an imperative part of corporate business. A healthy capital structure could influence a company's earnings and improve future prospects as well as decrease the risk of financial distress. With a decreased default risk, the company could focus on its main objective to grow the business, instead of solving financial distress related problems. Optimal capital structure has been discussed in many research projects in the past. In some of these studies have the authors explained the connection between optimal capital structure and different theories. Some of these are static theories like the Trade-Off theory and more flexible theories like the Market Timing theory.

1.1 PURPOSE, CONTRIBUTION

The purpose of this thesis is to test and measure what impact relevant firm specific factors has on a firm's capital structure. We would like to conduct this research to receive an understanding if these firm specific factors have a negative or positive correlation and what effect the individual variable has on a firm's capital structure. Different theories will be explained to enhance our ability to understand our results. This will give an understanding of the underlying firm specific factors that influence the firm's capital structure. As final part of our analysis, we will compare our results with the results conducted from earlier studies. These studies have been made both in the United States of America and in Switzerland. Furthermore, they are conducted over different time intervals, which enable us to compare our results not only between countries, but over time as well. Other studies are made by Titman and Wessels 1988, Chang Chingfu, Lee Alice C. and Lee Cheng Fee 2009, Murray Z. Frank and Vidhan K. Goyal (2009), and Wolfgang Drobetz and Gabrielle Wanzenried (2006).

1.2 PROBLEM

There are many interesting aspects of capital structure to research about. However, the problem investigated in this thesis, is what firm specific factors that determine the capital structure on the Stockholm Stock Exchange.

1.3 LIMITATIONS

This study aims to test Mid Cap and Large Cap companies on the Stockholm Stock Exchange and the time period used is between the beginning of 2005 and end of 2008. This time period is investigated because we wanted to get an understanding of the current situation. We have only included non-financial companies in our research, due to financial companies' unique capital structure. The data used in this thesis are collected from DataStream and annual reports, which we believe are reliable sources of information. Furthermore, theories and models used for our regression are already existing models. Our objective is to us these models to answer our problem.

1.4 TARGET GROUP

The target group for this thesis is business students at Lunds University and other business schools. Furthermore, to get a complete understand of this thesis, knowledge within finance and statistics would be preferable, to fully realize our methods, regression and results.

1.5 OUTLINE

First: Introduction

In the first section are we presenting an introduction and a background to our thesis. This section will further discuss the purpose, and limitations that will guide us to the problem that we have investigated. The final part of this section is the outline.

Second: Theory

In this section are we explaining relevant theories used throughout our thesis. We are also providing a brief explanation of results from other relevant studies.

Third: Methodology

In the method section are we describing the scientific methods used to test our problem. We have used tangibility, growth, profitability, non-debt tax shields, volatility, size and uniqueness as firm specific factors in our study.

Fourth: Results and Analysis

In the results and analysis section will we describe the empirical findings, which are conducted by discussing our results and the relevant conclusions to our results. This section further includes the results and assumptions of our regression tests that will enhance our analysis and make our regression more credible.

Fifth: Conclusion

In the conclusion section will we summaries and conclude our studies. The conclusion will be based on all parts of our thesis, theories, methods and analysis. This section further includes suggestions on further studies within this area.

2
THEORETICAL FRAMEWORK

In this section are we explaining relevant theories used throughout our thesis. We are also providing a brief explanation of results from other relevant studies.

A balanced capital structure could be imperative for a corporation. A healthy capital structure could be vital to be able to take on new business opportunities. Discussions have been taken place if an optimal capital structure exists and if a company's value is affected by the amount of leverage a company has. In this section we are documenting and discussing the relevant theories for this thesis. The relevant theories explained in this section are the Modigliani and Miller theory, the Pecking Order theory, the Trade-Off theory and the Market Timing theory. These theories are what we believe the main theories of capital structure. We are going to explain, compare and discuss why these theories are important for the result of our analysis. Furthermore, in this section we are also providing a brief explanation of other studies made and their result within this area. These results are going to be the foundation for our comparison analysis in a later part of this thesis.

2.1 THE MODIGLIANI AND MILLER THEORY

"What is the "cost of capital" to a firm in a world in which funds are used to acquire assets whose yields are uncertain; and in which capital can be obtained by many different media, ranging from pure debt instruments, representing money-fixed claims, to pure equity issues, giving holders only the right to a pro-rata share in the uncertain venture?" This is the how Franco Modigliani and Merton H. Miller in 1958 begins their ground breaking article "The Cost of Capital, Corporation Finance and the Theory of Investment." Their model was the first concrete model of the correlation between capital structure and the value of the firm. The model provides the possibility to finance operations with different types of capital. The foundation of the model is from a company's debt, equity and the discounted rate. Modigliani and Miller described how the capital structure and the use of debt financing will affect a company. According to their theory a firm cannot increase the value of the firm by increasing debt. Instead a firm's value is increased by successful investment decisions, which increases

the firm's operational cash flows. Their conclusion is based on the assumptions of a perfect and a frictionless capital market (Modigliani and Miller, 1958).

A firm's market value is calculated through the future discounted rate of return, according to their theory (Modigliani and Miller, 1958).

$V = (E+D) = X / r$

V = Market value of firm
E = Market value of equity
D = Market value of debt
X = Return on asset
R = Discounted rate

In Modigliani and Miller's (1958) article they have examples in which they are trying to prove their model. The conclusions of their examples are that a company will not affect the value of the firm by using debt when financing operations. The reason behind their conclusion is that individual investors are able to debt finance their own investments in non-debt financed companies. The authors developed a set of propositions concerning the risk and value of the firm's debt and equity.

First proposition: The level of leverage a firm has does not affect the market value of the firm, which indicates that management of the firm can not change the value of the firm by changing the level of leverage.

Second proposition: Is a direct development of the first proposition. In the second proposition Modigliani and Miller implies that the expected return on the companies' equity depends on the level of leverage.

In 1963 Modigliani and Miller further developed their theory by indicating that the firm value should be an increasing function of the debt ratio, as an effect of the tax shield. However, for this theory to be correct, many non-realistic assumptions have to be met. The theory has failed under certain circumstances, including consideration of taxes, bankruptcy costs, transaction costs, and agency costs. According to Frank and Goyal (2003), Modigliani and Miller's theory provides a theoretical framework of understanding capital structure, however, the theory do not provide a realistic description of how firms should set up an optimal capital structure. Even though this theory has been under debate, it is the beginning of capital structure and further research and models within this area has evolved from this theory, for

example, the Trade-Off theory and Pecking Order theory. This theory is the foundation of capital structure and for further reading it is important to have an understanding of this theory.

2.2 PECKING ORDER THEORY

In the article "The Capital Structure Puzzle" Stewart Myers describes the Pecking Order hypothesis in 1984, which describes corporate financial behaviour. The author Stewart Myers explains the Pecking Order theory by stating three different financial activities.

First: even if fluctuations occur over time in earnings, investment opportunities, or in stock price, managers tend to keep dividend at a stable level.

Second: when companies finance operations, they tend to prefer internal financing generated from retained earnings. When this type of financing is not sufficient the company raise external financing in the means of debt and last equity.

Third: when raising external capital, the company will preferably raise the least risky security. The least risky security reflects the type of financing that has the lowest cost for the company. In general the lowest cost for the company is in retained earnings followed by debt and equity is the most expensive.

Table 1: Pecking Order Theory

First	**Second**	**Third**
Internal Financing Retained Earnings	External Financing Debt	External Financing Equity

Asymmetric information is when management has superior information about a firms prospects and the value of its risky securities, which could create imbalance. The costs of this superior information combined with transaction costs associated with new issuance are the financial costs that produce Pecking Order behaviour. For the reason of these costs, firms under the Pecking Order tend to finance new instruments over time after the hierarchical financing system. Companies tend to follow this hierarchical financing system to minimize asymmetric information costs and other financial costs. As a consequence, variation in a firm's leverage is driven by net cash flows and not by costs and benefits, as in the Trade-Off theory (Fama and French, 2002).

The Pecking Order theory has no well defined optimal debt ratio (Shyam-Sunder and Myers, 1999). According to Myers and Majluf (1984), the market is constantly undervaluing the relative value of projects that companies are about or pursuing. When this occurs, the market is undervaluing the securities issued to finance various projects. Because of this, external financing in the form of equity is generally higher then it should be. As a consequence, firms could reject a profitable project if they have to finance it with equity. Issuing debt could also be a problem due to the risk of having to high leverage levels; however, debt issuance is preferred over equity because it generally cost less for the company. To avoid both risky debt and costly equity, companies could exclude external financing. A company considers raising external capital when internally generated funds are not sufficient for the current investment opportunities. Under the assumption of the Pecking Order theory, this is the motive for a company to adjust their debt ratio and not because the firm would like to reach a certain optimal capital structure (Shyam-Sunder and Myers, 1999). Furthermore, Fama and French (2002) also support the relationship of issuing the least risky capital alternative first and then gradually issue more risky alternatives when needed.

According to research by (Shyam-Sunder and Myers, 1999), in mature public firms the Pecking Order theory explains the dept-equity alternative better then the Trade-Off theory. They argue that the Pecking Order theory perform well because firm's finance short run unanticipated cash needs with debt, as well as planning to finance unanticipated deficits with debt. In simulations experiments that have been made, the results indicate that The Pecking Order theory can easily be rejected when false, when the target adjusted models are not rejected when false (Shyam-Sunder and Myers, 1999).

2.2.1 LEVERAGE

According to the Pecking Order theory, debt levels generally decreases when investment costs is lower than retained earnings and increases when investment costs surpass retained earnings. Leverage is generally higher for firms with many investments in process and lower for more profitable firms. This is under the assumption of keeping investments fixed and using the simple version of the Pecking Order theory (Fama and French, 2002). Because current and future costs are important for a company, it is possible that they maintain a low debt capacity in order to be prepared for future investment opportunities (Myers, 1984). Furthermore, to be prepared for future investment opportunities, a firm could issue additional equity when going public.

The Pecking Order theory assumes that companies do not have a leverage target (Myers, 1984). However, according to research by Fama and French, 2002, their analysis indicates that firms have a leverage target, when consider future as well as current financing costs. Even if there is a target level, they consider the targets to be soft. Further, firms with positive net cash flows have no incentive to add debt because they could fund their operations and investments with retained earnings. In contrast to the Pecking Order theory there is the Trade-Off theory, in which firms push their debt ratio towards the debt target (Fama and French, 2002).

2.2.2 DIVIDENDS

The Pecking Order theory does not explain the reason why firms pay dividends (Myers, 1984). However, Pecking Order consideration should affect dividend decisions, when firms decide to pay dividends. Since it is expensive to finance investments with new securities, profitable firms have a tendency to pay out more dividends from their earnings. This indicates that it is less attractive for less profitable companies with high leverage and large current and expected investments, to pay dividends (Fama and French, 2001). Both investment opportunities and leverage indicate a negative correlation with the payout ratio (Fama and French, 2002).

2.2.3 VOLATILITY

Firms tend to have higher dividend and debt levels when net cash flows are less volatile. The reason being, that these firms could more accurately forecast their future costs of capital and could due to better capital predictability add risk with higher debt and dividend levels. This indicates that firms with high volatile earnings are expected to have lower debt and dividend levels. These firms could also carry less debt to finance investment opportunities with less expensive debt, instead of expensive debt or equity when net cash flows are low (Fama and French, 2002). Furthermore, according to Titman and Wessels 1988, is volatility in firm's earnings negatively correlated with leverage.

2.2.4 CORPORATE CREDIT RATING

Companies use both internal and external capital to fund operations. The external financing is raised either through equity or debt. In 1981 Stiglitz and Weiss in their article "Credit Rationing in Markets with Imperfect Information" developed a model for credit ratings. When

companies receive debt financing from commercial banks, the credit rating is a tool for banks to determine how much money a certain company will receive in debt and to what interest rate. The corporate credit rating is a function of the financial health of the individual company; consequently a financial healthy company has a high credit rating while a financial unhealthy company's has a low rating. A high credit rated company could issue more debt at a lower interest rate, due to their low risk of default. Hence, a company with high credit rating is more likely to issue debt then equity because the lower cost of capital. Moody's and Standard & Poor is the two major independent credit rating providers used for corporate credit ratings.

Table 2: Corporate credit rating matrix

Bond Rating		Grade	Risk
Standard & Poor's	Moody's		
AAA	Aaa	Investment	Lowest Risk
AA	Aa	Investment	Low Risk
A	A	Investment	Low Risk
BBB	Baa	Investment	Medium Risk
BB, B	Ba, B	Junk	High Risk
CCC/CC/C	Caa/Ca/C	Junk	Highest Risk
D	C	Junk	In Default

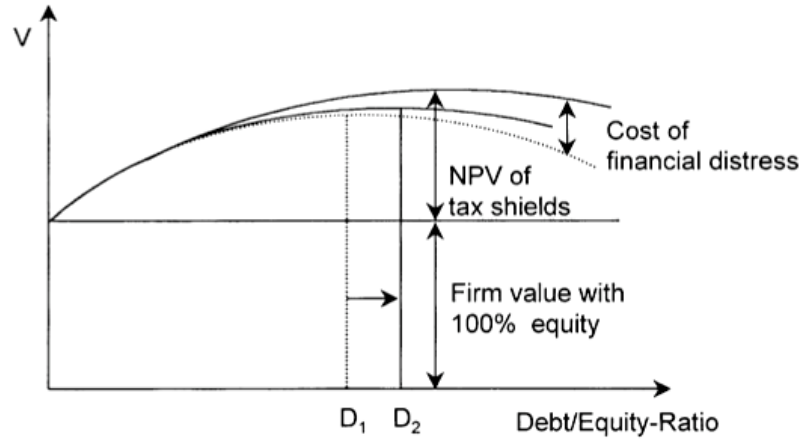
(www.moodys.com)
(www.standardandpoor.com)

2.3 THE TRADE-OFF THEORY

According to the traditional Trade-Off theory a company sets a target debt ratio and increases debt relatively to equity until the company reaches the optimal level. This theory argues that a company should increase debt until the tax shield is offset; this is where the company has reached its optimal value (Shyam-Sunder and Myers, 1999). Other leverage related and agency costs have to be taken in consideration when determine the optimal level (Bradley et al., 1983, Morellec, 2004). Furthermore, Fama and French made the same predictions about dividend payouts. By selecting the dividend payout that equates the cost and benefits of the dividends, a firm could maximize the value of the firm (Fama and French, 2002). Adding more debt at the optimal level decreases the value of the firm, due to expected future financial distress and bankruptcy costs. Random situations could take companies away from the optimal level, however, according to this theory a firm in this situation will work backwards towards the optimal level again.

Figure 3 illustrates how a company should be operating at the top of the curve to maximize the value of the firm. Further, the figure also illustrates how the value of the firm is affected at different stages of the model. The presumed corporate objective for both the Trade-Off theory and the Pecking Order theory is shareholder maximization (Shyam-Sunder and Myers, 1999).

Figure 1: Trade-Off theory model



(Bartram, 2000)

The traditional Trade-Off theory argues that there is an optimal capital structure for individual firms. The optimal capital structure differs between firms because the tax rate is not the same for all firms, furthermore, the expected effect and impact rate of financial distress and bankruptcy costs varies among firms as well. The theory argues that profitable firms have more profits to protect from taxation and should therefore carry higher levels of debt. This supports by Fama and French (2002) and they indicate that this is the opposite for the Pecking Order theory in which highly profitable firms carry less debt. A firm could use more debt to offset the tax shield when experience a high marginal tax rate. Higher growth companies should carry less debt, because financial distress costs are higher for these firms. Financial distress costs are expected to be higher for firms with more volatile cash flows and they should therefore use less debt. With volatile cash flows, the probability of fully offsetting the tax shield is decreased. Both existing equity and existing bonds will decrease in value if interest rates increase. The effect on equity will be more significant then for debt if interest rates decrease in value. When the equity effect is superior, the effect on the firm will indicate a higher level of leverage (Frank and Goyal 2004). These are some of the aspects that could determine the individual firm's optimal capital structure.

2.3.1 AGENCY COSTS

In a publicly traded company there are many people's interests that have to be met. It is the conflict of interest in the relationship between debt holders, shareholders, managers and employees that is called the agency cost. Agency costs especially arise, when the firm value is volatile and when a firm has high financial leverage. In a perfect world a company should realize an investment with positive net present value and reject project with negative net present value. When managers work in the interest of the shareholders, they may not realize a profitable project because the firms leverage is too high. The reason could be that the firm value is volatile and the interest of debt holders has to be satisfied primarily. Therefore, firms with low value and high leverage can reject profitable projects. This underinvestment problem is more vital today in a world of globalization and when more investment opportunities are available. Furthermore, an investment opportunity that has a negative net present value today but has tremendous potential might be rejected due to agency conflicts. (Bartram, 2000)

2.3.2 FINANCIAL DISTRESS AND BANKRUPTCY COSTS

If payment obligations can or are expected not to be fully and timely meet a firm will experience financial distress. For firms the transaction costs of financial distress originate due to illiquidity. The expected costs of financial distress are generally determined by the actual size of the cost and the probability of getting into a situation of liquidity. Regarding the size of the cost of financial distress, both the less obvious indirect as well as the direct costs has to be taken into account. Financial distress affects the relationship with both supplier and customers. It also affects employees due to an uncertain business environment. Firms with liquidity problems could experience a drop in credit ratings, which will induce higher financial costs due to more expensive debt. Furthermore, financial distress could ultimately lead to bankruptcy, which is very costly on all aspects of the firm. (Bartram, 2000).

2.4 MARKET TIMING THEORY

The Market Timing theory implies that firms do not have an optimal debt ratio. There are two interpretations of the market timing theory (Baker and Wurgler, 2002).

The first version: includes rational managers and unfavourable selection costs that vary between firms or over time (Myers and Majluf, 1984). Following information releases, firms have tendency to announce equity issuance, which could reduce information asymmetry

(Korajczyk et al., 1991). According to this version of the theory, the result of past efforts to time the equity market determines the capital structure (Baker and Wurgler, 2002).

The second version: of the theory includes irrational managers and time varying miss pricing. When companies are in need of external financing they should choose the least expensive option for that specific time. The theory indicates that when a company's market value is higher relative to the book value or past market value, the firm should consider issue new equity for financing and when the market value is lower then the book value the firm should consider to buy back equity (Baker and Wurgler, 2002). The firm should take advantage and exploit temporary fluctuations in the cost of equity, relative to alternative types of financial funding. When this strategy is successful the firm's cost of equity is decreased which benefits current shareholders on the expense of new shareholders. The capital structure of the Market Timing theory is a function of earlier attempts to take advantage of miss pricing of market values. Managers are supposed to believe that they are able to time the market regardless if the market is efficient or inefficient (Baker and Wurgler, 2002).

Other important incentives for implementing equity market timing policies, is that research analysis have shown that on average, equity market timing has been successful over the long run. Indications of high long run returns when firms buy back equity and low long run returns when firms issue new equity; is some of the factors that supports the miss pricing version. Furthermore, long run abnormal profits to equity issuers could be used as a measure of the magnitude of exploitable miss pricing and of the asymmetric information (Loughran and Ritter, 1995). Also, on average equity issuers are able to time the market component of the cost of equity, according to Baker and Wurgler, 2000, which makes the total gains of market timing even larger. Even if managers should be able to time efficient and inefficient markets, the primary motivation for equity market timing is inaccurate pricing.

Furthermore, companies have shown signs to issue additional equity when investors show interest of the company and are prepared to pay a premium for the company, due to future earning prospects. In anonymous surveys, CFOs have admitted that they have tried to time the equity market (Graham and Harvey, 2001). They have done this through monitoring the market and purposely due to positive market conditions issued new equity when the book value of the firm is lower relative to the market value. This indicates that managers do believe they are able to time the equity market. With support from different researches Market Timing theory appears to be an important influence on financial decisions and that many managers

use market timing theories when determine their capital structure (Baker and Wurgler, 2002). Over the years both the Pecking Order and the Trade-Off theory have been challenged by the Market Timing theory. However, variations in circumstances support different theories, so it naturally indicates that the capital structure is a mix of different theories (Huang and Ritter, 2004). Other research tests have been made by Longhran and Ritter (1995).

2.5 OTHER RESEARCH STUDIES

There have been several studies on capital structure over the years. Research articles given different perspective on capital structure and different theories have been tested. In this section, we are going to present conclusions of four research studies, all of which are relevant to our problem. We find these research articles to be important for our studies and they are the foundation of our comparison study. The research presented in these articles is from both Europe and the United States of America. Furthermore, these research articles are from different time periods, which will enable us the opportunity to compare our results over time as well as between countries. The articles we are going to present are "*The Determines of Capital Structure Choice*" by Titman and Wessels (1988), *"Determinants of capital structure choice: A structural equation modeling approach"* by Chang Chingfu, Lee Alice C. and Lee Cheng Fee (2009), *"Capital Structure Decisions: Which Factors Are Reliably Important?"*, by Murray Z. Frank and Vidhan K. Goyal (2009), and *"What determines the speed of adjustment to the target capital structure?"*, by Wolfgang Drobetz and Gabrielle Wanzenried (2006).

In Titman and Wessels (1988) research article, they are examining how different variables determine and affect the capital structure. The data used in their research is from the time period between 1974 and 1982. In their sample, they conclude 469 firms from the United States of America.

The results of their study indicate that uniqueness was negatively correlated with debt levels. The reason for this is that a firm generally has a lower debt ratio, if they could potentially implement higher costs on their workers, customers and supplier, in the event of liquidation.
The size of the firm is negatively correlated to short-term debt. Titman and Wessels (1988) argues that the reason for this could be that small firms' confront relatively high transaction costs when issuing long term debt. However, they argue that various leverage related costs may not be of main significance, since transaction costs assumed to be small relative to other

determinants of capital structure. Furthermore, current debt levels scaled by the market value of equity are negatively correlated with past profitability. According to Titman and Wessels (1988), none of the other factors, volatility, collateral value, future growth and non-debt tax shields indicated any affect on debt ratios. (Titman and Wessels, 1988)

Chang et al. (2009) determined and ranked the relevant impact of firm specific factors. Their research is in the time period between 1988 and 2003 and covers firms from the United States of America. In their article they have concluded slightly different results, then what Titman and Wessels (1988) concluded. One reason for this could be the different time period that is tested.

General results in this type of study according to Chang et al. (2009), is that leverage decreases with volatility, advertising expenditures, research and development expenditures, bankruptcy probability, profitability and uniqueness of the product. And leverage increases with fixed assets, non-debt tax shields, growth opportunities, and firm size.

However, their results indicate that growth is the factor that has the largest influence on the capital structure. However, the growth factor indicate different results if calculated using market to book assets ratio which indicates negative effect on leverage and when market to equity ratio is used, the result indicates a positive effect on leverage. The second most influential determinant is profitability. This factor also indicates different results dependent on how it is calculated. It has a negative effect on leverage if calculated operating income divided by total assets and a positive effect on leverage if calculated operating income divided by total sales. The firm specific factors in relevance order are: growth, profitability, collateral value, volatility, non-debt tax shield and uniqueness (Chang et al., 2009).

In the article *"Capital Structure Decisions: Which Factors are Reliably Important?"* by Frank and Goyal (2004), they examines publicly traded U.S firms from 1950 to 2000 and the relative importance of firm specific factors on leverage decisions.

According to their conclusion, the most reliable factor and their relational effect on leverage is that median industry leverage has a positive effect on leverage. This indicates that if a firm competes in a specific industry and the median firm has high leverage, also the individual company tends to have high leverage. Furthermore, if a company has a high market to book ratio, according to their conclusion the company tend to have low levels of leverage. Firms

with high profitability have less leverage. A firm tends to have more leverage if the company has more collateral. Companies that do not pay dividends have more leverage then companies that do pay dividend. When the inflation rate is high, companies generally has higher levels of leverage. Finally, larger firms tend to have higher levels of leverage relative to smaller firms (Frank and Goyal, 2004).

In the article *"What determine the speed of adjustment to target capital structure?"* by Wolfgang Drobetz and Gabrielle Wanzenried, they argue about what factors that determine the capital structure and the speed of adjustment. They also try to show how macroeconomic factors affect the capital structure. In their research they have used 90 non-financial firms from Switzerland and the time period is between 1991 and 2001. We are going to compare the result of their firm specific factors with the result of ours. The firm specific factors they are using in their research are tangibility, size, growth and profitability.

These are the results that they established through their research.

First, tangibility indicates a significance coefficient of 5 % and is positive correlated with leverage. The authors' conclusion is in line with that debt capacity increases with the proportion of tangible assets as the Trade-Off theory predicts.
Second, the Trade-Off theory suggests that size indicate a proxy for low probability of default, which is in line with Drobetz and Wanzenried, (2006) results that size is positively related to leverage and is significant at a 5 % coefficients level.

Third, their growth variable indicate a lower leverage for firms with high market to book ratios then for firms with low market to book ratios, however, the result only indicate significance for market values of leverage. The authors receive support by Fama and French, (2002) that these results consistent with the extended version of the pecking order theory and the Trade-Off theory.

Fourth, leverage indicates a negative correlation with profitability. Profitability indicates a significant coefficient and their results are supported by the Pecking Order theory (Drobetz and Wanzenried, 2006).

3
METHODOLOGY

In the methods section we will describe the scientific methods used to test our problem. We have used tangibility, growth, profitability, non-debt tax shields, volatility, size and uniqueness as firm specific factors in our study.

3.1 EPISTEMOLOGICAL CONSIDERATIONS AND RESEARCH APPROACH

In the following text will the fundamentals for research methodology be presented and in which way the methodology is applied in our research.

3.1.1 POSITIVISM AND HERMENEUTIC

The way research should be performed and viewed has been well argument for in the method literature. An issue concerned is how and to what degree knowledge about reality is possible contributing. A separation is done by dividing the epistemology into positivism and hermeneutic. The characteristic of positivism is that everything can be studied empirically, also social systems and humans. The results should be produced in such a way that it either could be accepted or rejected. Behind the positivism is also a strong ideal that research should be cumulative, which implies that all research should be done with previous studies in mind to extend the knowledge in a specific area. The counterpart to positivism is hermeneutic which implies that the reality is constructed by humans and has to be researched through how human imagine the reality. In hermeneutic research there are no general roles to apply and the researcher's values and interests control the study (Jacobsen, 2002). From this fact we can determine that our research follow the positivism approach for research.

3.1.2 DEDUCTIVE AND INDUCTIVE

How can we best describe the reality. There are two schools of viewing the relationship between theory and research. The method to go from empirical findings to theory is called the inductive approach. The idea of perfection is researchers that collect data about the reality with small expectations and then formulate theories based on the data to give explanation to the reality. The other option is to start gathering theoretical information to get a hint of the

reality and afterwards collect empirical data to see if the expectations are true. This calls deductive approach and is commonly used in research education (Jacobsen, 2002). You will most likely see the similarities to our research based on the explanation above and the deductive research method we are using.

3.1.3 QUANTITATIVE AND QUALITATIVE

The method to use in a research is dependent on how the problem will be approached. There is two ways; an exploring problem needs often a method that can see change in unexpected circumstances. This will often imply a need to be focused on a few research units to see shades in the context and be able to go more deeply. The other way around is the quantitative method, which is considered when the approach of the problem is to find a range of a phenomenon. A more extensive approach is considered to be able to have many units in consideration to find the answer to the problem. (Jacobsen, 2002)
Our study is dependent on many observations and will therefore be using the quantitative method to give us the possibility to do a research that explains the capital structure in general.

3.1.4 SECONDARY AND PRIMARY DATA

Close related to the quantitative method is the use of secondary data. Secondary data is when a researcher is using existing research reports in purpose of summarizing existing studies or to integrate the reports in their own point of view. Primary data is a different kind of data, which the researcher is collecting by him or her self, with the help of one or a few methods to collect information for the research. Because of our basis in other research studies, we consider us to use secondary data method.

3.2 DATA COLLECTION AND DELIMITATIONS

The data material included in our research consists of data from non-financial companies listed 2005 to 2008 on OMX Stockholm large and mid cap. The Datastream database has been our main source for collection of data. The amount of companies included in our study is 96. We had almost no short fall of companies since we collected the remaining missing data from annual reports.

Why we are using the period between 2005 to 2008 are because of the International Financial Reporting Standards (IFRS) was implemented in Sweden, 1 January 2005. IFRS have been developed to give companies a new methodology for accounting its business and make it

easier to compare companies using the Generally Accepted Accounting Principles (GAAP) and companies using IFRS, due to the similarities between the two accounting standards (Deloitte, 2004). IFRS have changed the accounting system for Swedish firms to the degree that it would be difficult to compare companies before 2005 and after (Deloitte, 2004), if one did not recalculated values. Due to lack of time, we decided not to do this. To compare companies from 2005 and forward was inline with our aspiration to make research with the new accounting rules. The large and mid cap stock lists from OMX Stockholm, where used to obtain companies with a more stabile capital structure for a more reliable result. Financial firms such as banks and insurance companies are excluded because their leverage is strongly influenced by investor insurance schemes (Rajan and Zingales, 1995). We excluded all firms that Datastream have listed as actors in the financial and bank sector.

We have been using similar calculations and definitions in our thesis as Drobertz and Wanzenried did in their research article "What determines the speed of adjustment to the target capital structure?" from 2006.

3.3 METHODLOGY PROBLEMS

It is important to be critical to the information and data that has been collected, processed and presented in a research (Halvorsen, 1992). We have read many research articles during our thesis with the attempt to be critical to the information and data that we have collected. Our research are based on more than one study in the same area which is positive in the sense that it gives us different views considered our topic, which will enhance our ability to provide a good and reliable research.

3.3.1 RELIABILITY

Should we get the same result if the test where conducted by a different researcher. When the same method used for conducting the test is given the same result, the research is said to be reliable (Jacobsen, 2002). It is about the researcher's subjective view that can be a critical part for the outcome. The well-defined data used in the research is raw data from Datastream and has not been exposed for recognition. Other interpretations in the research method, which has been made, will be explained later in this section.

3.3.2 VALIDITY

A research is often divided into internal and external validity. The internal validity concern, if the research is measuring what it is supposed to measure and if the study is perceived to be relevant (Jacobsen, 2002). The external validity is about the probability for a research outcome to be valid in other circumstances (Jacobsen, 2002). To receive a full explanation for the future is not likely; however by comparing our outcome with similar studies in the field, can we receive an indication of the validity of our research. Globalisation has as well positive impact for our studying in the context of more equal economic climate.

3.4 DEPENDENT VARIABLE, CAPITAL STRUCTURE

The capital structure is the core of corporate business. The relation between the debt and equity level is the foundation of capital structure. In our study we have used capital structure as our dependent variable. This is the dependent variable that our independent variables are going to be tested against. Capital structure can be measured in various ways. In our study we have used Total Liability to Total Liability + Market Equity as the measurement for capital structure.

3.5 INDEPENDENT VARIABLE

Variables that cause the capital structure to change are referred in the text as independent variables or firm specific factors.

3.5.1 Collateral value

The type of assets company posses could affect the capital structure. High levels of collateral or tangible assets could improve the likelihood of repayment for creditors, which could decrease agency costs. Even in a situation of liquidation creditors will retain more value from the company's tangible assets. The proportion of tangible assets a company possesses and the proportion of leverage has a positive relationship, according to predictions by the Trade-Off theory (Drobetz and Wanzenried, 2006).

Collateral value (PPE / TA) = Property, Plant and Equipment to Total Assets

3.5.2 Growth

A company would like to experience growth; however, a firm would prefer healthy growth, not to endanger their core business. Furthermore, rapid growth contra less growth is an issue

that could create agency problems. A company in high growth industries is more likely to experience higher agency costs. If a company is issuing short term over long term debt the expected agency costs are reduced, which indicates that growth rates possibly are correlated to short term debt ratios. However, long-term debt levels should be negatively correlated to future growth. It could also be suggested that debt and growth opportunities are negative correlated because growth opportunities are capital assets and ad value to the company, but do not generate a taxable income (Titman and Wessels, 1988).

The cost of debt is generally higher for high growth companies. Companies with more growth and investment opportunities carry less debt, according to the Trade-Off theory. The reason for this being that these companies would like show signs that they would not be a part of underinvestment and asset substitution (Drobetz and Wanzenried, 2006). However, the result is mixed among different studies of the correlation between growth opportunities and leverage. According to Titman and Wessels (1988) growth companies are negatively correlated to leverage, when the authors Rajan and Zingales (1995) indicate a positive relationship.

A positive relation between growth opportunities and the amount of debt is supported by a simple Pecking Order theory. The reason being that debt could be used for financing when the investments opportunities exceed retained earnings. However, there is the possibility that growth companies maintain a low debt ratio because they would not want to finance future investments with equity. This could be the case even if a company has many growth opportunities because they are concerned and would like to balance both future and current financial costs, all of which is assumptions under a more complex version of the Pecking Order theory (Drobetz and Wanzenried, 2006).

Growth (CE / TA) = Capital Expenditures to Total Assets
Growth (GTA) = Total Assets $_{t}$ - Total Assets $_{t-1}$ to Total Assets $_{t-1}$

3.5.3 Size

The size of the firm could affect the capital structure choice. For smaller firms the cost of a bankruptcy is higher relatively to larger firms (Drobetz and Wanzenried, 2006). It is important to be diversified not to experience financial distress and generally larger firms are more diversified (Titman and Wessels, 1988). This assumptions supports by the Trade-Off theory that larger firms could carry more debt, due to negative relationship between size and

probability of default. The Pecking Order theory suggests that since larger firms are more diversified and less risky they could be more levered. However, smaller firms pay more to issue new equity and to some extent more for long-term debt then larger firms. This indicates that smaller firms would prefer to borrow short-term rather then long term, due to the lower costs of this alternative. It further implies that a smaller firm has a higher leverage relatively to larger firms. According to Titman and Wessels (1988), the size effect reflects their view with the logarithmic transformation of sales, and affects mainly the small firms.

Alternatively, larger firms are more closely monitored by analysts and should therefore be able to issue informational more sensitive equity, which could indicate of a lower leverage level. With this view in mind the Pecking Order theory assume a negative relationship between size and leverage (Drobetz and Wanzenried, 2006).

Size (LOG / TA) = Natural Logarithm of Total Assets

3.5.4 Profitability

A firm's profitability affects the choice of capital structure. It is in managements and in the shareholders interests that a company is continuously profitable to be able to maximize the value of the firm. Furthermore, a company that shows little volatility in cash flows and in earnings could add risk in other sectors of the business to further develop the company (Bartram, 2000). Firms that are more profitable are pushed towards higher book leverage according to the Trade-Off theory by agency costs and by taxes. When a firm is profitable, the expected bankruptcy costs are low. The profitable firms are encouraged to finance with debt since corporate interest payments are deductible. Furthermore, agency problems are decreased when a firm is profitable and highly leveraged because it entitles the firm to pay out dividends, which signals positive predictions for the future. This scenario indicates a positive relationship between profitability and book leverage (Drobetz and Wanzenried, 2006).

However, according to the Pecking Order theory, companies with high earnings should carry less debt because these companies finance investments with retained earnings. This is supported by the assumption that a company is financing investments after a hierarchical financing system according to the Pecking Order theory. A hierarchical financing system assumes that a profitable company is will support investments with retained earnings and not with debt or equity (Drobetz and Wanzenried, 2006).

Furthermore, according to Chang et al. (2009), the current capital structure should be affected by a firm's level of retained earnings and realized profitability. This indicates that less profitable firms have to debt finance to a larger extent then profitable firms (Chang et al., 2009).

Profitability (OI / TA) = Operating Income to TOTAL ASSETS

3.5.5 Non-debt tax shield

The debt tax shield is an important tool for lowering the taxable income; however, there are more systems to lower the taxable income. One example is the non-debt tax shield, which includes depreciations, which affects the firm's corporate taxable income. The non-debt tax shield could to certain extend work as a substitute for the debt shield. This indicates that a company that has several assets that could be depreciated does not have to add debt to the same extent in their operation to offset their tax shield. This would indicate that companies could have less leverage in their capital structure, if they have a large non-debt tax shield relative to their cash flows (Titman and Wessels, 1988).

Non-Debt Tax Shield (DEP / TA) = Depreciation to Total Assets

3.5.6 Volatility

Volatility in net cash flows could affect the choice of dividends and debt levels, when considering current as well as future financial costs. Firms with less volatile cash flows are likely to have higher dividend and more debt. These firms could predict their future costs of capital more efficient, then firms with high volatility net cash flows and could for that reason take on additional risk in higher dividend and debt levels. Firms with high volatility in net cash flows are more likely to have less leverage. These firms will probably have lower levels of debt, in situations when cash flows are low and they preferably finance profitable investment opportunities with less expensive debt instead of expensive and risky debt (Fama and French, 2002). Furthermore, a firm's optimal debt ratio has a decreasing relation to the volatility of earnings according to (Titman and Wessels, 1988).

Volatility (CV(ROE)) = Coefficient of variation of Return on Equity

3.5.7 Uniqueness

The uniqueness of a company's products could affect the choice of capital structure. Customers, workers and suppliers could be producing specialized and unique products and

would suffer substantially if their main customer has to liquidate (Chang et al., 2009). With their unique products they will have skills and expertise that could be difficult to impose to other customers. If a firm is liquidating all these underlying partners, customers, workers and suppliers are going to be affected. For this reason, workers, suppliers and customers are affected by the capital structure of a firm, and due to this the debt ratio is expected to be negatively correlated to uniqueness (Titman and Wessels, 1988).

Furthermore, companies that are in threat of substituting products whose innovation could be easily copied are likely to spend less on research and development. Research and development are positively related to uniqueness. Firms that are involved in research and development are likely to develop even better and more unique products in the future.

Uniqueness (SGA / S) = Selling, General and Administrative Expenses to Sales

3.6 PANEL DATA

When including variables that explain changes in time and when variables that could be analysed cross-sectional are included in the sample, panel data techniques could be used. Panel data indicate a sample that includes both time-series and cross-sectional elements, which could be referred as pooled data (Brooks, 2008).

Benefits with panel data over pure time-series or pure cross-sectional data, is that it could deal with more complex problems and address a broader range of issues on its own. Panel data could examine how the relationship between variables changes over time. Combining cross-sectional and time series data could increase the number of freedom; which could provide a more correct measure. Panel data in contrast to time series data, could decrease multicollinearity problems, due to panel data's nature of combining data (Brooks, 2008).

A limitation with pooling data is that the relationships between the average values of the variables are assumed to be constant across all of the cross-sectional units in the sample and over time (Brooks, 2008).

The regression should be tested for period or individual effects; this could be done using EViews. One should first test for fixed or no effects and thereafter test for fixed or random effects, which could preferably be accomplished through a Hausman test. When these tests have been completed, one could determine what effect model to apply (Brooks, 2008).

The fixed effects model and the random effects model are broadly two approaches to estimate panel data. Fixed effects equates to a specified regression on the data after removing cross-sectional elements or period specific means from the dependent variable and exogenous regressors (Baltagi, 2001). In a fixed effects model all the slope estimates are fixed both over time and cross-sectionally, while it allows the intercept in the regression model to differ cross-sectionally, but not over time. The random effects model proposes that the intercepts are constant over time and has different intercept terms for each entity. With the relationship assumed to be the same both temporarily and cross-sectionally between the explanatory and explained variables. A random effect model is preferred when the entities in the sample have been selected randomly from the population. However, a fixed effects model is preferred when the entities in the sample effectively make up the entire population (Brooks, 2008). If any unobserved omitted variable are correlated with the included explanatory variables, a fixed effects model could be used and a random effects model could be used when the variables are uncorrelated with the explanatory variable. The random effects model assumes no correlation with the residual, while the fixed effects model assumes correlation with the residual (Brooks, 2008).

3.7 TEST THE REGRESSION

We performed several tests on our result from the panel data regression analysis. The reason for these tests is to establish reliability.

3.7.1 R-SQUARE

R^2 is the explanation factor for the dependent variability in Y, which is explained by the independent variable X. Generally a high R^2 indicates a superior result on a scale between 0 and 1 (Brooks, 2008).

3.7.2 F-TEST

When running an F-test both an unrestricted and a restricted regression are required. The coefficient is restricted in the unrestricted regression. Furthermore, both these regressions determine their individual residual sums of squares. In the test statistic these two sums of squares are compared. The F-test is a robust test. The F-test could estimate multiple hypothesis and single hypothesis, which indicates that the F-test could estimate tests made by the T-test. Since the T-test only could estimate single hypothesis (Brooks, 2008).

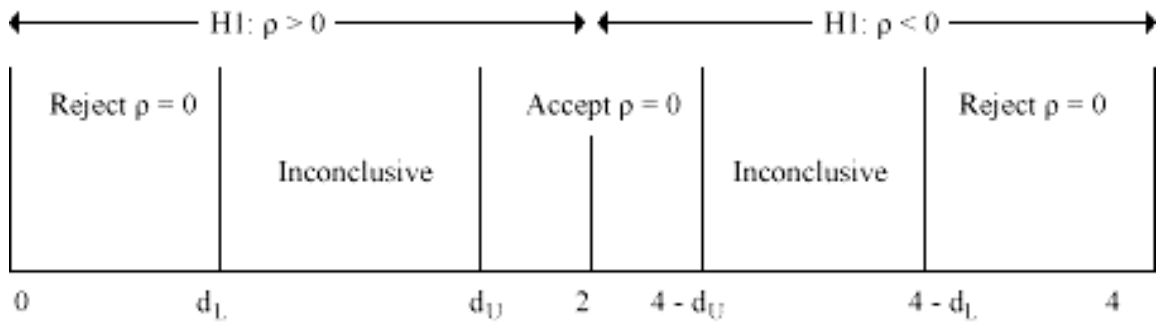
3.7.3 SIGNIFICANCE LEVEL

Common significance levels are 1, 5 or 10 percent. These significance levels indicate that the hypothesis is rejected either at 1, 5 or 10 percent level. Type 1 error and Type 2 error are two classical errors that could be made when using hypothesis tests. These errors indicate that a variable could be rejected when true and not rejected when false. One could either increase variation in the sample or increase the sample size to reduce for these problems (Brooks, 2008).

3.7.4 AUTOCORRELATION

In a regression the residual are not supposed to be correlated over time, otherwise there are signs of autocorrelation. If a regression shows sign of autocorrelation, it indicates that the residual for time t-1 is affected by the residual for time t. One way to test for autocorrelation is the Durbin-Watson's test (Brooks, 2008). For there to be no autocorrelation in the result in the test, the value should be close to two. If the result values are under one or over three there are signs of autocorrelation (Andersson et al., 1994).

Figure 4, Durbin-Watson diagram



(Ramanathan, 1998)

3.7.5 BERA-JARQUE TEST OF NORMALITY

Normal distribution in a regression could be tested through a Jarque-Bera test. The mean and the variance are the first two moments in which the entire distribution is characterized by. Skewness and kurtosis are the standardized third and fourth moments of a distribution. To what extent a distribution is not symmetric about its mean value are measured by skewness. The shape of the tails of the distribution is measured by the kurtosis. When performing the

Jarque-Bera test, the result should indicate no skewness and the coefficient of kurtosis of 3, for this the sample to be considered normally distributed (Brooks, 2008).

3.7.6 HETEROSCEDASTICITY

If the material contains heteroscedasticity it could have affect on the result. All measurements need to indicate the same variance in the residuals for the material not to contain heteroscedasticity. When the material contains heteroscedasticity the test of the regressions coefficient will not be properly estimated, which could make the result unreliable (Ramanathan, 1998). To test for heteroscedasticity one could use a White's Heteroscedasticity test, or plot the residuals against the estimated value of Y. The residuals should not be correlated with the estimated value of Y, which suggests that the regression is not supposed to be significant. To attempt to solve the problem of having heteroscedasticity, one could transform variables into natural logarithm (Brooks, 2008).

3.7.7 MULTICOLLINEARITY

When explanatory variables are having a close linear relationship, the general linear model is experience multicollinearity (Darnell, 1994). When a regression is experience multicollinearity, one is not able to change one variable and keeping the other one constant, because both would change. The reason is that both these explanatory variables are moving close together. Due to this relation, it is difficult to understand the partial effect of one variable. Furthermore, the result could be drastically altered when adding or reducing variables from the model, making the interpretations of the results more difficult. It is very rare with perfect multicollinearity, however, it could accidentally occur in a regression when dummy variables are involved (Ramanathan, 1998). Another issue with multicollinearity is that the individual coefficient will have standard errors when the R^2 indicate high values. To correct for this problem, one could transform highly correlated variables into ratios. These ratios should thereafter be included in the regression instead of the individual variables (Brooks, 2008). This is what we have done in our regression to minimize multicollinearity. In our study we have used a correlation matrix to establish if we experience multicollinearity. In this test perfect multicollinearity indicate a correlation coefficient of 1.0.

4
RESULTS AND ANALYSIS

In this section are we presenting our empirical findings, which are conducted by discussing our results and the relevant conclusions to our results. This section further includes the results and assumptions of our regression tests that will enhance our analysis and make our regression more credible.

We will present our results from our panel data regression in the first part of this section. Firm specific factor will be presented individually to give an enhanced understanding of their result. After this the different tests made on our regression will be presented.

4.1 RESULTS

We have determined which factors that affect the capital structure through testing the factors against the dependent capital structure variable. This is conducted through an original least-square method. We have from the test result examined the confidence interval to indicate the width in the variables movement and also determine if the relationship between a specific variable and the capital structure are positive or negative related. We concluded through the coefficient and the p-values, if the factors where significant and to what extent the factor explained the dependent variable. The results are presents with a significant level of 5 percent. The p-value explains the probability of obtaining the estimated value (Ramanathan, 1998). We do not believe the t-statistic value accurately determine the effect of our factors, when we want to compare the relationship between the factors and the dependent variable. The t-statistic value reflects the relative value of a ratio between the factors coefficient and standard error.

Table 2, Variables significance					
Factor	**Variable**	**Coefficient**	**Std. Error**	**t-Statistic**	**P-value**
Growth	CE / TA	- 0.511209	0.171252	- 2.985133	0.0031
Profitability	OI / TA	- 0.413266	0.088548	- 4.667152	0.0000
Size	LOG / TA	0.206235	0.034183	6.033297	0.0000
Growth	GTA	0.033341	0.008499	3.922988	0.0001
Volatility	CV (ROE)	0.006242	0.003299	1.892201	0.0595
Collateral	PPE / TA	0.110268	0.080322	1.372826	0.1709
Non-tax debt	DEP / TA	- 1.015111	1.017971	- 0.997191	0.3195
Uniqueness	SGA / S	- 0.030797	0.038341	- 0.803237	0.4225

Capital Expenditures to Total Assets

The most explanatory factor is the growth factor, which is measured through Capital Expenditures to Total Assets. The p-value for the variable is 0.0031, which point out that the variable is significant at the 1 percent level. Growth indicates a negative correlation coefficient of 0.511209.

Operating Income to Total Assets

The second most explanatory variable is the profitability factor, which is measured through the Operating Income to Total Asset. The p-value for the variable is 0.0000, which point out that the variable is significant at the 1 percent level. Profitability indicates a negative correlation coefficient of 0.413266.

Natural Logarithm of Total Asset

The third most explanatory variable is the size factor, which is measured through the Natural Logarithm of Total Asset. The size factor is significant at the 1 percent level. Size indicates a positive correlation coefficient of 0.206235.

Growth in Total Assets

The fourth most explanatory variable is the second growth factor, which is measured through Growth in Total Assets. The second growth factor is significant at the 1 percent level. The second growth variable indicates a positive correlation coefficient of 0.033341.

Coefficient of Variance of Return on Equity

The fifth most explanatory factor is the volatility, which is measured through the Coefficient of Variance of Return on Equity. The volatility factor is not significant at the 5 percent level,

with a p-value of 0.0595. However, volatility is significant at the 10 percent level. Volatility indicates a positive correlation coefficient of 0.006242.

Property, Plant and Equipment to Total Assets

Collateral value is measured through Property, Plant and Equipment to Total Assets. The collateral value factor is not significant, with a p-value of 0.1709. Collateral value indicates a positive correlation coefficient of 0.110268.

Depreciation to Total Assets

Non-debt tax shield is measured through Depreciation to Total Assets. The non-debt tax shield factor is not significant, with a p-value of 0.3195. Non-debt tax shield indicates a negative correlation coefficient of 1.015111.

Selling, General and Administrative Expenses to Sales

Uniqueness is measured through Selling, General and Administrative Expenses to Sales. The uniqueness factor is not significant, with a p-value of 0.4225. Uniqueness indicates a negative correlation coefficient of 0.030797.

4.2 ANALYSIS

After presenting our results in the last part of this thesis, we will in this section analyse the results and compare them to the results of other studies. We will further compare our results between Switzerland and the United States and determine if there is a change over time. The authors of the articles we are going to compare our results to are Titman and Wessels (1988), Frank and Goyal (2004), Chang et al. (2008) and Drobetz and Wanzenried (2006). Finally in this section, we are discussing the results of our regressions tests.

4.2.1 SUMMERY ANALYSIS

In our study we included seven different measurement variables that determine the capital structure. The measurement variables used are growth, size, uniqueness, non-debt tax shield, collateral value, profitability and volatility. When completed our regression analysis we determined that we have four significant variables with a significant level of 5 percent. The variables that indicate a significant value are in order growth, profitability and size. We concluded two growth variables in our study, both of which indicate significance. However, these growth variables indicated both negative and positive correlation dependent on how

calculated, this should be considered. The variables that showed no significance are in order volatility, collateral value, non-debt tax shield, and uniqueness. However, volatility is significant at the 10 percent level.

4.2.2 GROWTH

The growth factor is significant and indicates a high negative correlation coefficient. According to our results growth is the firm specific factor that explains the choice of capital structure the most. This is when growth is calculated through capital expenditure divided by total assets. The second growth measurement shows a positive correlation, this contradiction should be considered. However, we have chosen to focus on the more significant first measurement in our study.

Growth companies have a large demand for capital to finance investment opportunities. They generally finance these investments with internally generated revenues and with equity. According to Titman and Wessels (1988), companies with high growth potential should have an objective to use equity when financing investment opportunities. Companies with high growth potential are more likely to experience agency related costs. These assumptions are in line with our results, when growth is negatively correlated with leverage levels.

Our result is consistent with the result of Chang et al. (2008), who concluded in their results that growth is the variable that explains the capital structure the most. Our result is in line with the estimations of Frank and Goyal (2004) and Drobetz and Wanzenried (2006) that growth is negatively correlated with leverage. The results of Titman and Wissels (1988), did not establish that growth is a significant factor. A reason for this could be that their study was made over 20 years ago and according to Chang et al. (2008), did not Titaman and Wessels (1988), use a reliable regression model. Furthermore, both the Trade-Off theory and an extension of the Pecking Order theory assume that growth is negatively correlated to leverage (Fama and French, 2002).

4.2.3 PROFITABILITY

The second most explainable significant factor for determining a firm's capital structure is profitability. Profitability has a high negative correlation coefficient. This indicates that firms with high returns tend to have low levels of leverage. Furthermore, our result is consistent with the results of Chang et al. (2008), who positions profitability as the second most

explainable variable after growth. Also have the conclusion that firms with more profit have less debt. This is further in line with Titman and Wessels (1988), Drobetz and Wanzenried (2006) and Frank and Goyal (2004), whose results states that profitability is negatively correlated with leverage. The conclusion of the comparison is that all four earlier studies indicate the same result, which strengthens the reliability of our result.

Furthermore, a company would prefer internally generated capital before issuing debt, which the Pecking Order theory supports. This result is in contradiction with the Trade-Off theory, which states that firms with high profits should increase debt levels to offset the tax shield (Shyam-Sunder and Myers, 1999).

4.2.4 SIZE

The third most explanatory factor is size, which in our regression model has a positive correlation coefficient. This indicates that larger firms have more leverage. A larger company is generally more analysed, which give larger firms a more correct value. This is because less asymmetric information is involved when estimating the value of larger firms. This further indicates that larger companies do not have to change their capital structure to the same degree as smaller firms, to maximize the value of the firm. This supports by the research of Rajan and Ziangales, (1995). Larger firms are more analysed and generally are having a better credit rating then smaller firm. A better credit rating will give larger firms preferable terms when raising debt, which will enhance larger firms to issue debt over equity.

Our results are consistent with Frank and Goyal (2004) and Drobetz and Wanzenried (2006), who also indicate that larger firms tend to have more leverage. This result is further in line with the Trade-Off theory, which suggests that larger firms could ad more debt, due to lower probability of default (Drobetz and Wanzenried, 2006).

4.2.5 VOLATILITY

Volatility is not significant at a 5 percent level; however, it is significant at the 10 percent level. Volatility has a positive correlation coefficient of 0.0062, which indicates that this variable do not extensively explain the capital structure.

A firm with high volatility in earnings increases the risk of financial distress (S.M Bartram, 2000). Firms with highly volatile earnings could quickly be in situations when they are not capable of paying their debt responsibilities. For this reason, highly volatile companies are

more likely to carry less debt. Furthermore, highly volatile companies could be carrying lower levels of debt, because when in quick need of capital they could issue less expensive debt instead of more expensive debt or equity (Fama and French, 2002). Our results are consistent with the results of Chang et al. (2008), who indicate a positive correlation with volatility and the level of leverage.

4.2.6 COLLATERAL VALUE

Collateral value have a positive correlation coefficient, however, collateral value is not significant in our regression. A positive correlation is in line with that the level secure assets increase the likelihood of repaying creditors in case of financial distress. This enhances the assumption that these companies are capable of carrying higher levels of debt. This is further consistent with the Trade-Off theory (Drobetz and Wanzenried, 2008).

4.2.7 NON-DEBT TAX SHIELD

The non-debt tax shield has a negative correlation coefficient and is not significant in our regression model. The reason for the negative correlation coefficient is that the non-debt tax shields function as a substitute for the debt shield. This shows that companies' with much depreciation assets do not have to increase their debt to offset the tax shield to the same degree (Titman and Wessels, 1988). This is consistent with the Trade-Off theory that indicates that debt should be used to offset the tax shield.

4.2.8 UNIQUENESS

Uniqueness has a negative correlation coefficient and is not significant in our regression model. Companies with unique products would prefer to have low debt levels, which is consistent with the assumption that these companies could be having a sensitive relationship with suppliers and customers (Chang et al. 2008). Firms with unique products could transfer cost to their suppliers in case of financial distress. This further indicates that the more unique a company's products are the more uncertain is the value of the products, when financial distress is present. This is further in line with the conclusion of Titman and Wessels, (1988).

4.2.9 CONCLUSION OF ANALYSIS

We believe our factors indicate very interesting results and have significant effects on the capital structure choice. When we evaluated our study with the other studies from USA and

Switzerland and concluded comparable results, we believe this conclusion made our results more realistic. The correlation between Sweden, USA and Switzerland could be an effect of similar business climates and business systems. However, our results indicated the least correlation with the article conducted by Titman and Wessels (1988). The reason behind this could be that their research was conducted over 20 years ago. This could support the assumption that the firm specific factors effect on the capital structure has changed over time, which is very interesting. Furthermore, our results could be reasoned and implemented on different capital structure theories, like the Pecking Order theory and the Trade-Off theory.

4.3 RESULT OF THE REGRESSION TESTS

We have conducted several tests to ensure the credibility of our results. The reason for these tests is to enhance our analysis and make the regression more convincing. We are using panel data to estimate our results; the reason for this is that we are using both time-series data and cross-sectional data.

After deciding to use panel data did we perform a test for fixed or no effects model. When the fixed effects model was of better fit, did we test for fixed or random effects. We conducted this test through a Hausman test. When the tests were completed did we come to the conclusion that the fixed effects model was of most appropriate fit for our analysis (Brooks, 2008). We further tested the impact of dummy variables in our regression. However, dummy variables are excluded from our regression, since they did not improve the results.

The result of our regression indicates of an R^2 of approximately 0.905 and a Prob (F-Statistic) of close to 0, which we are pleased with. This indicates that the regression is explaining more then 90 percent of our sample with a significant result. We decided to use a 5 percent significant level, because we consider our observational sample of 384 observations to be of appropriate fit (Brooks, 2008).

Furthermore, autocorrelation is an issue when running a regression. To check for autocorrelation in our regression we performed a Durbin Watson test. The result of this test was approximately 1.72, where 2.0 is the optimal level. Even though we are not at the optimal level, we believe that autocorrelation is not of serious concern for our results (Brooks, 2008).

To test if the sample is normally distributed we conducted a Jarque-Bera test. The results of this indicated a skewness of approximately 0.98 and a Kurtosis of approximately 4.85. When

having a positive skweness it indicates that the distribution has a longer right tail and when kurtosis is in excess of 3.0 it indicates a peaked distribution. Since our p-value is less then 0.05 we could reject the null of normality at a 5 percent level. When having a large sample size and being close to normal distribution, our assumptions is that this is of no concern for our results (Brooks, 2008).

Furthermore, to test for heteroscedasticity in our regression we used a White's test. We experienced low values of heteroscedasticity in our regression. We came to this conclusion after comparing standard errors and t-values in a regression with White's standard errors and in a regression with ordinary standard errors.

The final test we conducted was to check for multicollinearity. We constructed a multicollinearity matrix to check for this problem. By transforming our variables into ratios did we minimize for this issue. The result of this test indicates some variables with moderate multicollinearity; however, we believe that multicollinearity has to be of greater extent to be a serious issue (Brooks, 2008).

After performed our tests and made adjustments to our regression, we believe that our results are credible. According to our results, did the regression not include serious issues. However, performing tests on the regression is important and the test results have made the interpretations of our analysis more convincing.

5
CONCLUSION

In this final section are we providing a summary and conclusion to our study. The conclusion will be based on all parts of our thesis, theories, methods and analysis. We conclude this section by giving suggestions on further studies within this area.

This purpose of this thesis was to test what firm specific factors that determine the capital structure on the Stockholm Stock Exchange.

To solve for this problem different capital structure theories have been used, the Modigliani and Miller theory, the Pecking Order theory, the Trade-Off theory and the Market Timing theory. Furthermore, we have used a panel data regression model to estimate the results of the correlation of our dependent variable and the explainable independent variables. After several tests did we come to the conclusion that a fixed effects model was of best fit for our analysis.

The firm specific factors included in our study are growth, size, uniqueness, non-debt tax shield, collateral value, profitability and volatility. We determined what effect these seven different explainable factors have on the capital structure. Three of these factors indicated to be significant at a 5 percent level after our regression analysis was completed. The significant factors were in order growth, profitability and size. The factors that failed the significant level were in order volatility, collateral value, non-debt tax shield, and uniqueness. However, volatility passed the 10 percent significant level.

Growth is a significant factor and has a negative correlation coefficient. This indicates that when growth companies need external financing the will prefer to use retained earnings and equity before issuing debt (Titman and Wessels, 1988). Furthermore, debt could be more expensive for growth companies then larger firms. Our estimated growth results are consistent with the results of Chang et al. (2008), who indicate that growth is the factor that explains the most of the capital structure. The results are in line with the results of both Frank and Goyal (2004) and Drobetz and Wanzenried (2006). Finally, both the Trade-Off theory and an extension of the Pecking Order theory assume growth to be negatively correlated with leverage (Fama and French, 2003).

Profitability is a significant factor and has a negative correlation coefficient. This points out that profitable firms finance investments with internally generated capital before they use debt or equity. Our results are consistent with the results of Chang et al. (2008), who also positions profitability as their second most explainable factor. Furthermore, our results are in line with the results of Frank and Goyal (2004), Titman and Wessels (1988) and Drobetz and Wanzenried (2006), who indicate that profitability is negatively correlated with leverage. Finally, the Pecking Order theory assumes the same results as ours, however, the Trade-Off theory do not, which assumes that profitable firms should add debt to offset the tax shield (Shaum-Sunder and Myers 1999).

Size is a significant factor and has a positive correlations coefficient. This indicates that larger firms have more leverage. Larger firms are generally more analysed, which gives larger firms a more correct value. Our results are consistent with the results of Frank and Goyal (2004) and Drobetz and Wanzenried (2006), who indicates that size is positively correlated to leverage. Furthermore, our result of the size factor is in line with Trade-Off theory, which indicates that larger firms have a lower probability of default (Drobetz and Wanzenried, 2006).

Finally, we are satisfied with our results. All information in this thesis is collected from reliable sources. We have thoroughly conducted necessary tests and we believe our firm specific factors are significant for the capital structure choice. Our results with earlier studies from the USA and Switzerland are comparable. This could be explained by similarity in business climates between these countries. However, the results of Titman and Wessels (1988) are not as consistent with ours results as the other studies. We believe the reason for this could be that the firm specific factors that determine the capital structure have changed over time.

5.1 SUGGESTIONS ON FURTHER RESEARCH

Suggestions on further studies within this area could be to test how corporate governance could explain the level of leverage a company has. This could be difficult to estimate, however, the result could be very interesting, especially in a time like we are experience at the moment. Another interesting study would be to explain how macroeconomic factors affect the choice of capital structure.

6
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www.moodys.com

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Atrium Ljungberg B

Björn Borg

Brinova

Gunnebo

Fagerhult

Heba

Hemtex

HiQ International

Indutrade

LBI International

Lundbergs

Mekonomen

Morphic

New Wave Group

NIBE

Nobia

PA Resources

TradeDoubler

Wihlborgs

6.6 ELECTRONIC SOURCES

Datastream

7
APPENDIX

7.1 TABLES

7.1.1 TABLE 1, FIXED EFFECTS MODEL

Dependent Variable:CAPSTR
Method: Panel Least Squares
Sample: 2005 to 2008
Cross-sections included: 96
Total panel (balanced) observations: 384

Variable	Coefficient	Std. Error	t-Statistic	P-value
C	- 1.019783	0.246549	- 4.136233	0.0000
CE / TA	- 0.511209	0.171252	- 2.985133	0.0031
GTA	0.033341	0.008499	3.922988	0.0001
LOG /TA	0.206235	0.034183	6.033297	0.0000
SGA / S	- 0.030797	0.038341	- 0.803237	0.4225
DEP / TA	- 1.015111	1.017971	- 0.997191	0.3195
PPE / TA	0.110268	0.080322	1.372826	0.1709
OI / TA	- 0.413266	0.088548	- 4.667152	0.0000
CV / ROE	0.006242	0.003299	1.892201	0.0595

Effect Specification

R-Squared	0.905396	Mean dependent var	0.332045
Adjusted R-Squared	0.870596	S.D. dependent var	0.185634
S.E. of regression	0.066778	Akaike info criterion	- 2.349077
Sum squared resid	1.248599	Schwartz criterion	- 1.279111
Log likelihood	555.0228	F-statistic	26.01670
Durbin-Watson stat	1.721167	Prob(F-statistic)	0.000000

7.1.2 TABLE 2, RANDOM EFFECTS MODEL

Dependent Variable: CAPSTR
Method: Panel Least Squares
Sample: 2005 to 2008
Cross-sections included: 96
Total panel (balanced) observations: 384

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	- 0.457003	0.095118	- 4.804600	0.0000
CE / TA	- 0.351732	0.140965	- 2.495172	0.0130
GTA	0.014727	0.006151	2.394201	0.0171
LOG /TA	0.125632	0.013990	8.980349	0.0000
SGA / S	- 0.072366	0.019956	- 3.626324	0.0003
DEP / TA	- 2.699741	0.570521	- 4.732064	0.0000
PPE / TA	0.160722	0.036690	4.380524	0.0000
OI / TA	- 0.419660	0.071060	-5.905683	0.0000
CV / ROE	0.006505	0.003244	2.005264	0.0457

Effect Specification

R-Squared	0.337078	Mean dependent var	0.095990
Adjusted R-Squared	0.322936	S.D. dependent var	0.082144
S.E. of regression	0.067591	F-statistic	23.83471
Sum squared resid	1.713216	Prob(F-statistic)	0.000000
Log likelihood	-		
Durbin-Watson stat	1.298592		

7.1.3 TABLE 3, NONE EFFECTS MODEL

Dependent Variable: CAPSTR
Method: Panel Least Squares
Sample: 2005 to 2008
Cross-sections included: 96
Total panel (balanced) observations: 384

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.339537	0.059996	-5.659316	0.0000
CE / TA	-0.058057	0.132291	-0.438859	0.6610
GTA	-0.003944	0.009348	-0.421893	0.6733
LOG /TA	0.107747	0.009076	11.87125	0.0000
SGA / S	-0.080150	0.013604	-5.891540	0.0000
DEP / TA	-2.888294	0.426135	-6.777885	0.0000
PPE / TA	0.158167	0.025464	6.211340	0.0000
OI / TA	-0.435375	0.065961	-6.600511	0.0000
CV / ROE	0.013235	0.005647	2.343590	0.0196

Effect Specification

R-Squared	0.528849	Mean dependent var	0.332045
Adjusted R-Squared	0.518798	S.D. dependent var	0.185634
S.E. of regression	0.128772	Akaike info criterion	-1.238384
Sum squared resid	6.218359	Schwartz criterion	-1.145791
Log likelihood	246.7698	F-statistic	52.61535
Durbin-Watson stat	0.400958	Prob(F-statistic)	0.000000

7.1.4 TABLE 4, HETEROSCEDASTICITY TEST

Dependent Variable: CAPSTR
Method: Panel Least Squares
Sample: 2005 to 2008
Cross-sections included: 96
Total panel (balanced) observations: 384

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.019783	0.302479	-3.371416	0.0009
CE / TA	-0.511209	0.177638	-2.877812	0.0043
GTA	0.033341	0.009159	3.640059	0.0003
LOG /TA	0.206235	0.043276	4.765547	0.0000
SGA / S	-0.030797	0.026958	-1.142397	0.2543
DEP / TA	-1.015111	1.114099	0.911150	0.3630
PPE / TA	0.110268	0.076178	1.447492	0.1489
OI / TA	-0.413266	0.123116	-3.356712	0.009
CV / ROE	0.006242	0.003245	1.923254	0.0555

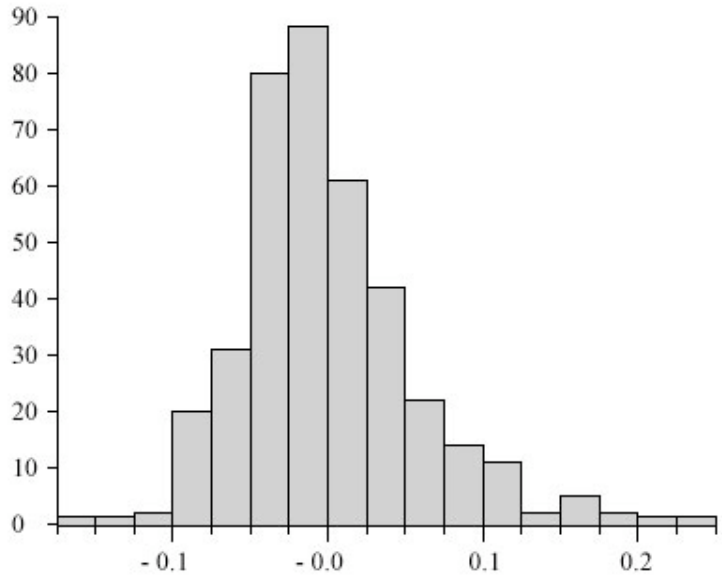
Effect Specification

R-Squared	0.905396	Mean dependent var	0.332045
Adjusted R-Squared	0.870596	S.D. dependentvar	0.185634
S.E. of regression	0.066778	Akaike info criterion	-2.349077
Sum squared resid	1.248599	Schwartz criterion	-1.279111
Log likelihood	555.0228	F-statistic	26.01670
Durbin-Watson stat	1.721167	Prob(F-statistic)	0.000000

7.1.6 TABLE 5, MULTICOLLINEARITY MATRIX

	CE/TA	GTA	LOG/TA	SGA/S	DEP/TA	PPE/TA	OI/TA	CV/ROE
CE / TA	1.000	0,269	0,096	-0.149	0.116	0.476	0.039	0.010
GTA	0.269	1.000	-0.252	-0.028	-0.187	-0.060	-0.043	0.011
LOG / TA	0.096	-0.252	1.000	-0.197	0.184	0.349	0.118	0.043
SGA / S	-0.149	-0.028	-0.197	1.000	0.065	0.025	-0.419	-0.107
DEP / TA	0.116	-0.187	0.184	0.065	1.000	0.400	0.144	0.000
PPE / TA	0.476	-0.060	0.349	0.025	0.400	1.000	-0.125	0.048
OI / TA	0.039	-0.043	0.118	-0.419	0.144	-0.125	1.000	0.081
CV/ROE	0.010	0.011	0.047	-0.107	0.000	0.048	0.081	1.000

7.1.5 FIGURE 1, JARQUE-BERA TEST



Series: Standard Residuals
Sample: 2005 to 2008
Observations: 384

Mean: 2.96
Median: -0.009141
Maximum: 0.249178
Minimum: -0.156335
Std. Dev: 0.057093
Skewness: 0.977035
Kurtosis: 4.847693

Jarque-Bera: 115.7178
Probability: 0.000000