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A STUDY OF COVENANTS

The developing Norwegian corporate bond market

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ABSTRACT

We perform an initial study on the field of covenants and its use in corporate bonds in Norway. Based on the respective loan agreements, we construct a database that includes key bond and issuer characteristics and the covenants, containing close to all the issues in the period between 01/01/1998 and 03/31/2008. We find that the use of covenants has increased significantly, and the market has obtained experience and become more professional within several dimensions. Furthermore, we find that several bond characteristics influence the use of covenants. However, our study does not find concluding evidence of a relationship between covenants and firm specific variables.

PREFACE

We hope others also find this subject interesting, and that this thesis can contribute to promote further research on the Norwegian market. In addition to the appendixes, we have enclosed a CD containing our database, complete with spreadsheets, the loan agreements, and a simple guideline. Please feel free to contact one of us for a copy of the data or any other questions.

Working with this project has been a valuable experience and a challenging process. We would like to express our gratitude towards them who have helped us along the way.

First of all, we would like to thank our always positive supervisor, Dr. Carsten Bienz. Your instructive comments, encouragement, patients and invaluable insight, are highly appreciated.

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PART ONE – THEORY AND BACKGROUND

1 INTRODUCTION

"A bond covenant is a provision, such as a limitation on the payments of dividends, which restricts the firm from engaging in specified actions after the bond are sold" Smith and Warner (1979, p: 117)

This thesis is about covenants. We define covenants as written clauses included in the loan agreement, restricting or imposing certain actions on the borrower. We will describe and analyze the use of covenants included in corporate bond issues in Norway based on the period from 01/01/1998 to 03/31/2008. To the best of our knowledge, no studies on the subject prior to this have been conducted on Norwegian data. This is also the reason for our relative broad approach to the subject. Thus, an important part of this thesis is to construct a comprehensive database to be used as foundation for our work and for research to come.

The market for corporate bonds in Norway has increased from a neglectable size in the 90's, to become an important market during the 21st century. In 2007 the nominal value of corporate bonds registered in *VPS* was more than NOK 150 billion. The globalization in the world of finance has also reached this market, and the largest group of owners of corporate bonds is foreign investors. Especially in the US, but also in other European countries, the investors are familiar with the use of covenants. Thus, the rapid increase in the share size of the market, its fast development, and the foreign influence and demand, adds to the importance of understanding the use of covenants in the indentures, and is part of the motivation behind this work.

The pioneer work of Smith and Warner (1979) is the foundation for the later studies on the subject. They show how the use of covenants in financial contracts can reduce the *agency cost of debt* – the agency costs associated with the conflicting interests of the issuing firm's bondholders and the stockholders. They argue that not only can the conflicting interests between the two lead to a shift in welfare from the bond- to the stockholders, but also the actions taken by the management to secure the stockholders' interest, can reduce the total value of the firm. Much of the later work on the subject focus on the issuing firm's future growth- and investment opportunities, probability of financial distress, in relationship to use of particular covenants (e.g. Nash et.al. 2003). Contrary to most of the recent literature that are looking at one or a few specific covenants, we focus on the entire specter of covenants included in the bond contracts. In

that way our approach is similar to that of Smith and Warner, but our analyses is to a larger extent founded on quantitative data.

Our main goal with this thesis is to describe and analyze the use of covenants in corporate bonds in Norway, and how this has changed over the last ten years. We have not found any comprehensive boilerplates or practical guides on the subject to exist. Other than the work of Smith and Warner (1979) and the *Mergent FISD dictionary database,* we have not been able to find this type of information on other markets either. Thus, in order to reach our goal we have constructed our own database including the bond characteristics, the covenants included in the indentures, some key information about the issuing firm, and macroeconomic conditions. We use the two sources, Smith and Warner (1979) and FISD, as basis for the categorization of the different covenants, but reading through the loan agreements, we needed in some cases to expand their work in order to better describe the situation in the Norwegian market. The finished database contains of close to all the corporate bond issues in the period, a total of 438 indentures.

Our approach to this work is primarily based on the quantitative data we have collected. In addition to this we will use some qualitative sources. We conducted a longer, semi-structured interview with three representatives from *Norsk Tillitsmann ASA* (NTM). We also had contact with both NTM and *Pareto Securities* in the course of our work. We will use the qualitative sources primarily to check the reliability and plausibility of our findings, analyses and general understanding of the market, but also to add a more practical dimension to our work.

We will show that the average use of covenants in Norway has increased rapidly during the period, and analyze possible explanations for this development based on key bond characteristics such as conversion rights, call provisions, pledged assets, denominated currency, listing and priority. We will present the theoretical and economical rationale behind the different variables and how they are expected to affect the use of covenants in general, and how this corresponds with our data. If relevant, we will extend the analysis to include the effect on the specific covenants. Similarly we will include firm specific variables such as the age and size, and the firm's probability of default. We will illustrate a strong relationship between many of the bond characteristics and the use of covenants in general. Based on theoretical and economical arguments, the inclusion of some specific covenants should be influenced by bond characteristics.

We will present examples from our data indicating that the market has "learned" about these relationships and has become more "mature" during the period.

Due to the lack of information on the subject combined with a fast evolving market, we believe there is need for a comprehensive description and analysis of the different covenants, and how they are being used. We will in this thesis provide this, and present the economic rationale and/or the consequences of including them in an indenture. We will also look at; which and who include them, and how the use has developed over time. Based on this we also present the benefits and consequences of including the different covenants, both in respect to the issuer and the bondholders. We will show how the impact of some covenants can be far reaching and prove expensive for the issuer. On the other hand, vague and unclear covenants can provide little real protection for the bondholders and also make monitoring the issuer harder and more costly. Thus, it can prove valuable for both the issuers and the bondholders to have an in-depth knowledge of the loan agreement in order to understand both the direct and more indirect consequences. We will also show examples of how the use of covenants and the writing of the loan agreements has become more detailed and sophisticated during the period, in line with potentials of improvement we find in the earlier contracts. We will argue that this indicates that the market has "learned" and increased its competence in the use of some covenants. Furthermore, we hope that our work of the different covenants can in some way assist in promoting this process.

We will also, based on our analyses of the markets use of covenants, formulate and test five simple hypotheses about the relationship between the average number of covenants included in each contract and some key variables. We will show how these tests indicate, different from the *Agency Theory of Covenants*, that the firm's probability of default (measured by the Z-score) does not affect the use of covenants, but that the age and the size of the issuing firm does seem to have an effect. The tests will also confirm what we find in the descriptive analyses; the bond characteristics seem to have a strong influence the number of covenants included in the indentures. We will also confirm that the use of covenants has increased significantly during the period.

Reisel (2004) finds that by including financial covenants, firms can significantly reduce the cost of debt by as much as 311 basis points. The aspect of spread will not be a main focus in our thesis, but in order to better explain the variables influencing the use of covenants we will

construct a multiple regression model. Because of the problems with *omitted bias* we cannot exclude the spread from our model. Bradley and Roberts (2004) demonstrate empirically how covenants and yield are determined simultaneously, creating a problem of *endogenous variables* in our model. This problem reduces the reliability of the output from our full sample regression model. However, for some of the key bond characteristics, we will show that because of the large significant coefficients, we can probably say that the direction which we find they affect covenants are correct, and in line with our other analyses. We will also present some possible approaches to bypass the problems in our model.

1.1 Structure – the two parts of the thesis

We have divided the thesis into two parts, where we in the first part – chapters one through four - presents the foundation for the second part. In chapter 2 we will start by presenting three important works that most later literature are based on; Jensen and Meckling (1976), Myers (1977) and Smith and Warner (1979). We present the theory derived from these studies – the Agency Theory of Covenants – and the cost of several types of conflicts that covenants can help reduce. We will also point out how financial distress influences this, and the potential costs of including covenants. The chapter will also present of some of the most important empirical work done on the subject. We will use the elements of this chapter to explain the use of covenants, and we will also later on compare our findings to those of previous studies.

In chapter 3 we will provide the reader with some important background information to the Norwegian market for corporate bonds. We will briefly present the history and size of the market, and its key participants. The intention is to increase the understanding of our analyses in part 2 by explaining the context of our work and pointing out some peculiarities about the Norwegian market.

The first part of our thesis is finished with presentation of our sample selection and the construction of our database, in chapter 4. We will describe the process in which the data is collected, the choice of input, and the database's scope. We will also focus on the validity of the data, and this is one of the reasons why the presentation will be quite comprehensive.

In part two we use the constructed database to describe and analyze the market and its use of covenants. We will in chapter 5 present the most important bond characteristics such as

conversion rights and security, and show how this influences the use of covenants both in theory and in our data. We will illustrate the development during the period and how this corresponds with the development in the general use of covenants. We will also in the chapter present and analyze some issuer specific variables in a similar matter.

We will in chapter 6 present the individual covenants we found included in the loan agreements. We have divided them into categories based on their workings and the type of protection they provide the bondholders. We will show, based on theory, economic rationale and/or empiric studies, the purpose of including the covenant, and the costs and effects. Thus, the chapter will focus on describing and analyzing the different covenants, who and how they are used and the development during the period. The chapter is finished with an analysis and description of the typical bond that includes covenants.

In chapter 7 we present five hypotheses based on the analyses in chapter 5 and 6. By using simple t-tests we want to take the analyses of the previous chapters a step further, and to some extent compare this to previous empirical work. We will base our test the average number of covenants in each contract and look at the entire period.

In chapter 8 we construct a multiple regression model in order to try to explain how different variables affect the use of covenants. We will present both the input and the output of the model. A large part of the chapter will be devoted to explaining the validity and complications of the model and we will present possible ways of working around this.

Finally, in chapter 9 we conclude on our work, and present possible further research.

2 THEORY AND EMPIRI

All theoretical and empirical work on the subject of financial covenants is in some way based on three articles published in the late 1970s. First, M.C. Jensen and W.H. Meckling (1976) developed in their article, "Agency costs and the theory of the firm", a theory of the ownership structure of firms. Their theory explains why debt is used to finance firms also before it generates tax benefits, and why lenders often place restrictions (e.g. covenants) on the borrowers' behavior during the time of the loan. They also explain why some industries use debt financing, and others do not. Their main focus is the nature of agency costs, how they are generated by debt and outside equity, and who bears the expense.

Second, Stewart C. Myers (1977) argued in his article, "Determinates of corporate borrowing," that a firm's optimal capital structure, hence its optimal amount of debt, depends on the value of the firm's future growth opportunities. Furthermore, assets in place should be financed by debt, because the cost is sunk, and he explains why firms should try to match loan maturity and asset life. He uses option pricing techniques to show how the firm's growth opportunities can be viewed as real options and can help explain corporate borrowing. His argument, that managers of firms with real options can engage in suboptimal investment strategies, is an important contribution to the later work on bond covenants.

Third, the first article to directly cover the use of covenants in bond contracts was written by Smith and Warner in 1979. The article, "On financial contracting," was based on the earlier work by Jensen and Meckling, and Myers. Using a boilerplate of covenants and primarily a qualitative method, they research the conflict between bondholders and stockholders by testing the "irrelevance hypothesis"[1] and the "costly contracting hypothesis" (CCH). The CCH states that controlling the conflict between the bond- and the stockholder increases the value of the firm. They find support for this hypothesis, and show how the use of covenants in financial contracts can reduce the agency cost of debt. They argue that not only can the conflicting interests between bondholders and stockholders lead to a shift in welfare from bond- to stockholders, but also the actions taken by the management to secure the stockholders' interest can reduce the value of the total firm. Furthermore, restrictive covenants are written to provide incentives that ensure a firm-

[1] The conflict does not affect the firm's total value.

value-maximizing strategy. It is in the stockholders' best interest to include covenants, as the value of the debt increases, and the agency costs associated with the bondholder–stockholder conflict are reduced.

2.1 The conflict between bondholders and stockholders

Stockholders hire managers because they believe that their competence and expertise will increase the total value of the company. Thus, theoretically the management should act on behalf of the stockholders and preserve their interests at all times. In reality, this is not always the case, as the extensive research on the subject illustrates.[2] In our analysis, we disregard the agency cost derived from this conflict. This assumption also underlies the work of Smith and Warner as well as later work on the subject. We will argue that the assumption does not considerably affect our analysis. Generally speaking, the managers' interests are more in line with the stockholders than the bondholders. Means to increase the managers' incentives to follow a stock maximizing strategy, such as stock options, have also increased in recent years. The managers' acting on behalf of the stockholders is the source of the conflict between the bond- and the stockholders. They sometimes find themselves in a position where they can transfer wealth from bondholders to stockholders if the company has risky bonds outstanding. In their pioneering work on bond covenants, Smith and Warner (1979) identify several important sources of conflict between the two groups, and their work is the foundation for the Agency Theory of Covenants.

2.2 The Agency Theory of Covenants (ATC)

The Agency Theory of Covenants is based on the work of Jensen and Meckling (1976), Myers (1977) and Smith and Warner (1979). The conflict between the bond- and the stockholders is the centre of the theory. The studies showed that after a risky bond is issued, management has the possibility to transfer wealth from the bondholders to the stockholders. Acting on behalf of the stockholders, the management can take actions that reduce the value of the outstanding debt as well as the total firm value. The investors, being rational, expect this and take it into account when calculating the price they are willing to pay for the bond. This way, possible ex post opportunistic behavior from the management results in an ex ante reduction in the bond price. This is a central concept in this thesis. We refer to this cost as the "agency cost of debt", and according to the ATC, one way to reduce these costs is by including covenants in the debt

[2] See for instance, Besanko et.al. (2007), p. 115

contracts. It is the firm's stockholders that bear these agency costs, who therefore have incentives to minimize them. By including covenants restricting the kinds of actions that lead to agency costs, thus ensuring bondholders that their wealth would not be compromised after the issue, the value of the firm's debt will increase. It is important to emphasize that including covenants is not without cost, either directly or as opportunity costs. As long as the extra price investors are willing to pay exceeds these costs, it is rational for the stockholders to include covenants in the debt contracts. According to the ATC, restricting the managers' behavior through the use of covenants is one way to reduce the agency costs of debt. The covenants can help better align the managements' interests with the bondholders. Smith and Warner (1979) identified four main conflict areas that result in increased agency costs, and that the covenants should aim to reduce. The list is not definitive, and other actions and conflicting interests may also influence the agency costs of debt.

2.2.1 Sources of the conflict between bond- and stockholders

2.2.1.1 Dividends

Dividends are used to transfer some of the company's wealth to the shareholders. The dividends can be financed by retained earnings, reducing the amount spent on investments. If the company has positive NPV projects, this will reduce the value of the company. By reducing investments, the value of the bondholders' stake can be diluted, as they have less collateral for their claims. The managers can also drain the company for value by selling assets and paying out the proceeds as dividends, in the worst case leaving the bondholders with worthless claims.

2.2.1.2 Asset Substitution

Jensen and Smith (1985) observed that the value of the stockholders' equity rises and the value of the bondholders' claim is reduced when the firm substitutes high risk for low risk projects. Asset substitution is therefore also often referred to as risk-shifting. It is well known that when a company has taken on risky debt, it can increase the value of its outstanding equity by increasing its projects and/or the riskiness of assets (variance). When choosing between mutually exclusive investment- projects, value can be shifted from the bondholders to the stockholders. One way of explaining this is by looking at the stockholders' residual claim as a real option, a call option on the company's assets (see, for instance, Black and Scholes, 1973, or Myers, 1977). In other words, if the value of the firm's assets exceeds the value of the debt, the shareholders will choose

to exercise their call option, paying the debt and getting the assets in return. Based on standard options pricing, the value of this real option can be said to increase when the volatility on the underlying assets (the company's assets) is increasing. By taking on projects with higher variance than stated when the bonds were issued, or by selling assets and replacing them with higher variance assets, the managers can increase the stockholders' value at the expense of the bondholders' value. Debt covenants can help resolve this issue by limiting the borrowers' investment and operation policy. These types of covenants cannot eliminate the problem entirely, but they create obstacles for managers looking to increase the company's variance. Many covenants address this issue both directly and indirectly.

2.2.1.3 Claim dilution

By issuing more debt with equal or higher priority, or secured by pledged assets, the value of the bondholders' claims will be reduced. The value of the bondholders' claims will be reduced, as issuing new debt increases the firm's likelihood of default (see, for instance, Masulis, 1980). The interest rate they receive does not reflect the risk they are taking on. If the new debt is secured by a pledge, this further dilutes the claims of the prior bondholders. To prevent claim dilution, several types of restrictive covenants can be included in the debt contracts. Fama and Miller (1972) coin the term "me-first" rules for these kinds of covenants, as they pledge that new or other claims will not supersede those of the bondholders.

Large debt-financed corporate buyouts (LBOs) in the 1980s showed how event risk can be an extreme example of claim dilution. According to Asquith and Wizman (1990), bondholders lose on average 2.5 percent of their value after such events, with most of the losses in bonds with the least protection from covenants.

2.2.1.4 Underinvestment

Underinvestment refers to when managers do not take on positive NPV projects because they only benefit the bondholders. Myers (1977) and Jensen and Smith (1985) argue that when a substantial part of a firm's value is derived from future investment opportunities, and it has outstanding risky bonds, the management has incentives to forego positive NPV investments. The management of a levered firm has incentives to limit the scale of investment because the additional returns from further investments primarily accrue to the bondholders. Firms with high growth opportunities are likely to be faced with more investment decisions in the future. When

presented with a positive NPV project and the managers believe that the gains would be split between bondholders and stockholders in such a manner that the stockholders do not receive a normal return, they may reject the project.

This conflict can be reduced by including financial covenants. Myers (1977) and others suggest that dividend restrictions should be included in the debt contracts to minimize this problem. This would lead us to believe that we will find covenants restricting or controlling the payment of dividends in firms with high growth and a lot of future investment possibilities. Limiting the management's freedom to spend the company's free cash flow can be an effective measure to prevent the underinvestment problem. Not having the possibility of distributing cash flow to the owners, the management is in some sense forced to invest (or build up a cash reserve). Other financial covenants can also help reduce this problem. Myers (1977) shows that levered firms are more inclined to refuse positive NPV projects, making restrictions on leverage a useful tool in this context.

The opposite situation may also be relevant, and is usually called over-investment. The term refers to situations in which the management retains the company's cash flow in order to finance negative NPV projects. This reduces the total value of the company.

2.3 Financial distress

2.3.1 Implications and the effects of financial distress

The above text showed that the management can have incentives, in addition to the opportunity to transfer wealth from bondholders to stockholders. In times of financial distress the incentives are particularly strong, as the potential benefit is much higher. The conflict between bond and stockholders becomes clear in the situations when it is uncertain if the bondholders will receive their promised payments. Bodie and Taggert (1978) show that underinvestment will intensify during periods of financial distress. This is mainly because when in financial distress, the benefit of new investments would most likely come to the bondholders. During times of distress the value of the firm is declining (Smith et al, 1989), hence increasing the underinvestment and claim dilution problem as the ”economic leverage” of the firm is increasing. Thus, when in distress the implicit gearing of the company increases and the value of the outstanding bonds decreases.

In this situation, the stockholders do not bear much of the risk associated with new investments, and the management can be tempted to "gamble" with the firms remaining wealth (when in trouble, double). The management can be tempted to take on negative NPV projects as long as the potential upside (the cash flows volatility) is high enough. Limiting the managerial behavior in these situations can significantly reduce the agency cost of debt in these situations.

Usually the management can postpone the default of the company, giving them time and opportunity to transfer value from the bondholders to the stockholders. In practice, it is often in such times of distress that the stockholders can materialize the wealth transfer. This is a recognized problem and some of the most extreme actions are restricted by law in most developed countries. The agency cost is negatively related to the firm's financial status, hence the ATC predicts that the poorer the company's financial condition is, all else equal, the more covenants is included in the debt contracts. It also predicts that small and highly levered firms have a higher probability for including covenants. This should also be true for volatile firms, firms with many liquid assets (e.g. not specialized), and in companies with information asymmetries. Myers (1977) argues that firms with considerable growth opportunities also will include covenants, based on the argument that the growth opportunities can be seen as a real option. According to ATC theory, since covenants on public bonds is more difficult to renegotiate, it is also more likely that these types of firms would prefer to use private debt.

2.3.2 Measuring the probability of default - the Z-score

We use the Z-score as a measure of the probability of default in our analysis in part two. It is based on the pioneer work by Altman, who built the first multivariate credit scoring model (Z-score) in 1968. Using a 20 year data sample (1946-1965), and collecting a large number of variables from the all the firms balance sheets, income statements and some key market values, he selected the five most relevant and best predictors to build his model on. The resulting score was then used to classify a firm. Almost all credit score models in use today are variations on this theme. Altman concentrate on the quantitative measures, but emphasize that the qualitative part should not be forgotten. We base our analysis on the newest edition of Altman's work on credit rating and default risk (Altman and Hotchkiss, 2006, pages 233-264), and the formula below adjusted to be used on private firms (page 246).

$$Z - score = Z' = 0{,}717X_1 + 0{,}847X_2 + 3{,}107X_3 + 0{,}42X_40{,}998X_5$$

$$X_1 = \frac{Current\ Assets - Current\ Liabilities}{Total\ Assets} \quad X_2 = \frac{Retained\ Earnings}{Total\ Assets} \quad X_3 = \frac{EBIT}{Total\ Assets}$$

$$X_4 = \frac{Book\ Value\ of\ Equity}{Total\ Liabilities} \quad X_5 = \frac{Sales}{Total\ Assets}$$

$$Z' > 2{,}90 => Safe\ Zone, \qquad 1{,}23 < Z' < 2{,}90 => Grey\ Zone,$$
$$Z' < 1{,}23 => Distress\ Zone$$

2.4 The cost of including covenants

By including covenants the agency cost of debt can be reduced, but this comes at a price. First of all it reduces managerial freedom and flexibility, which can prove costly in certain situation. For example, if a company has restrictions on merger activity, it might have to pass out on investments that would have yielded positive synergies and increased the total value of the firms. Many situations can incur when the cost outweighs the benefits of including covenants. Smith and Warner (1979) argues that an optimal contractual structure exists, making it an important consideration for the issuer. Furthermore, Begley (1994) argues, based on empirical evidence, that the firms based their decision on which covenants to include in the contracts on their perceived cost of including them. She also emphasizes the importance of the firm's probability of financial distress and future growth opportunities, when deciding for which covenants to include. This leads to the notion that how the firm values different types of flexibility and freedom will determine which covenants they include in their issues. A specific combination of covenants will be the most valuable for a particularly company, and is based on its characteristics and perceptions.

2.5 Empirical findings to date

In this part we provide a short presentation of some of the most important empirical work done on the subject to date. All the work is done on US data, and show that there is much empirical support for the ATC, and the early works of especially Smith and Warner. There also exists some expectations, and there is several limitations regarding the empirical work done so far.

I. Malitz (1986): "On financial contracting - the determinates of bond contracts"; researched a sample of 252 public debentures issued by 223 different firms. The main focus is three categories

of covenants; sinking funds, dividends restrictions and debt restrictions. He finds that it is the set of covenants, not the individual ones that provide protection, and that this is what he finds in the contracts as well. The primary result is empirical evidence showing that firms with high financial leverage benefit more from including restrictions than firms with lower leverage, hence are more likely to include them. He also finds that asymmetric information plays a significant role in determining the value of including covenants in the debt contracts. Difference in information regarding future investments opportunities also seems to have a significant impact, increasing the benefits of covenants when the difference in information between bond and stockholder is significant. This is often the case in smaller firms.

J. Begley (1994): "Restrictive covenants included in public debt agreements"; examines 130 non-convertible public debentures (issued between 1975 and 1979). She finds that firms with a higher probability of bankruptcy, fewer assets in place and generating less operating cash flows are more likely to include covenants that restrict dividends and additional borrowing

Nash, Netter and Poulsen (2003): "Determinants of contractual relations between shareholders and bondholders"; look at 496 public bonds (issued in 1989 and 1996), finding a negative relationship between the use of covenants and future growth opportunities, indicating that the firms try to preserve their flexibility and that this outweighs the benefits of including them. This is contradictory to previous findings, but they only find this for covenants restricting further debt and dividend payments. For other types of covenants the use is significantly lower for firms with higher growth opportunities, supporting earlier work. In line with other previous and later work (the ATC), they find that the use of other types of covenants is mainly driven by the probability for financial distress.

N. Reisel (2004): "On the Value of Restrictive Covenants: An Empirical Investigation of Public Bond Issues"; she finds that by including financial covenants firms can significantly reduce their cost of debt by as much as 311 basis points. This implies substantial agency costs. She also investigates the relationship between other covenants – investment, asset sale and payout restrictions – and the cost of debt, but does not find a significant relationship. Furthermore, she interprets her results as being consistent with the argument that it is too costly for high growth firms to include restrictive covenants on investments, asset sale and pay outs.

M. Billet, T. King and D. Mauer (2007):"growth opportunities and the choice of leverage, debt maturity, and covenants"; with a large sample evidence that consists of 7 016 observations (1989 to 2002), representing 1 410 different firms, they find a positive relationship between covenants and growth opportunities, debt maturity and leverage. They also find evidence suggesting that covenants can reduce the agency cost for levered high growth firms.

2.6 Short on the risk and pricing of corporate bonds

The risk and pricing of bonds is a large area of study, and for a review on the subject we will refer the reader to other texts.[3] Shortly put, the value of any bond is determined by discounting all the future coupon payments and the face value, calculating the present value of the expected future cash flow. An appropriate effective interest rate is used as the discount rate, and is based on the prevailing market rates. Therefore, if the going market rates increases the value of the bond decreases, as the present value of the future cash flow is lower. This effect is referred to as the *interest rate risk* and is one of three factors determining the risk of a bond investment; interest rate, credit and liquidity risk. A large part of corporate issues in Norway are floating rate notes (FRN), and are not affected by the interest risk.

The second factor affecting the price of a bond is called the *credit risk*. It is determined by the probability of the issuer not meeting its debt obligations in terms of late or failed payments or bankruptcy. The higher the credit risk, the more the investors demand to be compensated in form of higher interest payments.[4] Including covenants may reduce the probability of financial distress/default, hence reducing the bonds credit risk and lowering the issuer's price of debt. Thus, in this paper the effect of covenants on the bonds yield will primarily be related to the influence this type of risk.

Third, the price of a bond is influenced by its *liquidity risk,* and can be measured by the bond's buy/sell spread. Investors demand compensation when buying bonds with low liquidity. If held to maturity the liquidity risk is neglect able. This is often used as an argument for why investors with a long-term horizon (e.g. the Norwegian Government Pension Fund – Global, "oljefondet") should use this to their advantage and in assets (bonds) with a low liquidity.

[3] For further discussion see for instance; Bodie, Kane and Marcus , (2005) chapter 14
[4] The average rating for firms listed on Oslo Børs is BB.

3 CORPORATE BONDS IN NORWAY

This chapter provides the reader with a brief overview of some important aspects of the Norwegian corporate bond market. The chapter is divided into three parts. The first part gives a presentation of the markets history, explains how bonds are listed and traded, and how the market has developed in terms of traded volume. The second part presents the most important market participants and their function. Last, we have a short piece emphasizing some other key distinctions in the corporate bond market that the reader should be aware of. We will show how corporate bonds have become an important part of the Norwegian financial market during the last years, and provide the reader with background information that may increase the understanding of our analysis.

3.1 The market

3.1.1 History of the market

The market for corporate bonds in Norway is relatively new. Before the crises in the Norwegian banking industry in the early nineties, mortgage and power companies dominated the market. The market was strictly regulated, and certain types of firms were banned from issuing bonds all together. The mortgage companies had a panel matching borrowing and lending, and trade was done through market maker agreements. The bank crisis was a distinctive Scandinavian phenomenon at the time, and has many similarities to the situation in the UK at the time of this being written. A number of the mortgage companies went into bankruptcy as a result of the crisis. The banking sector in Norway was given massive governmental aid, and was forced into restructuring and consolidations. The crises also resulted in changes in the laws regulating the Norwegian financial industry. In 1992 the financial regulations was relaxed. Commercial banks were for the first time allowed to borrow in the bond market, and the softer regulations also made it easier for new types of firms to issue bonds. The amendments lead to a significant increase in the bond market turnover (among other things because of banks borrowing to buy struggling mortgage companies), and soon commercial banks became the dominant borrower in the private sector. The market for corporate bonds at that time was almost non-existing. Only a handful of the largest companies in Norway issued bonds, and few investors paid much attention to the

market. In chapter 6 we show the development in the number of corporate issues and the types of firms using the market since 1998.

3.1.2 Oslo Børs and the trading of bonds

The trading of bonds at the Norwegian stock exchange is done through one of its 63 members.[5] 38 of the members are international, reflecting the important role foreign investors play in this market. The most dominant sectors both in regard to stocks and bonds are oil & gas, offshore oil service, shipping, fisheries & fish farming, and IT[6]. The stock exchange administrates two markets for bond listings. The traditional market – "Oslo Børs" is subject to the EU directives regulating the security markets across Europe. In 2006 EU issued new directives increasing the regulations (e.g. demanding consolidated financial statements complying with International Financial Reporting Standard (IFRS) and increased requirements to the prospectuses). In addition to the traditional market for listing and trading of bonds, Oslo Børs opened the Alternative Bond Market (ABM) in June 2005. The new market was in many respects a reaction to the increased regulations from the EU. The regulation of ABM is independent of international agreements and is less extensive. It is primarily based on the regulations of Oslo Børs as of 12/31/2005, but the prospectus rules and application process is simplified. However, the information requirements and the trading rules are the same for both Oslo Børs and the ABM. ABM is divided in to two subcategories, one for bonds aimed towards retail investors (*allmennheten*) with a face value of less than NOK 500.000 and one for professional investors with face value exceeding this limit. Bonds not listed on the exchange are traded in the same way as those listed.

3.1.3 The size of the market

Figure 3.1 illustrates how the market volume has increased during the last years. In 2006 Oslo Børs and the ABM had a total turnover of NOK 718.5 billion (disregarding repos), reflecting a daily turnover of NOK 2.9 billion[7]. During 2006, CDs and bond issues listed amounted to approximately NOK 120 billion. To put this in perspective, the stock market raised NOK 51

[5] oslobors.no
[6] Oslo Børs, (2006)
[7] Oslo Børs, (2006)

billion in the same year.[8] Total amount of outstanding corporate bonds per 12/31/2007 was 153 NOK billion.

Compared to our neighboring countries the market for bonds is relatively small in Norway. Especially Denmark has a long tradition for using bonds (the market is approximately three times larger than in Norway). [9] In other respects the two countries are fairly similar, and can provide us with an idea of a potential for future increase in Norwegian bond market.

Figure 3.1: The Norwegian bond market in nominal values divided according to type of issuers (1992-2007)

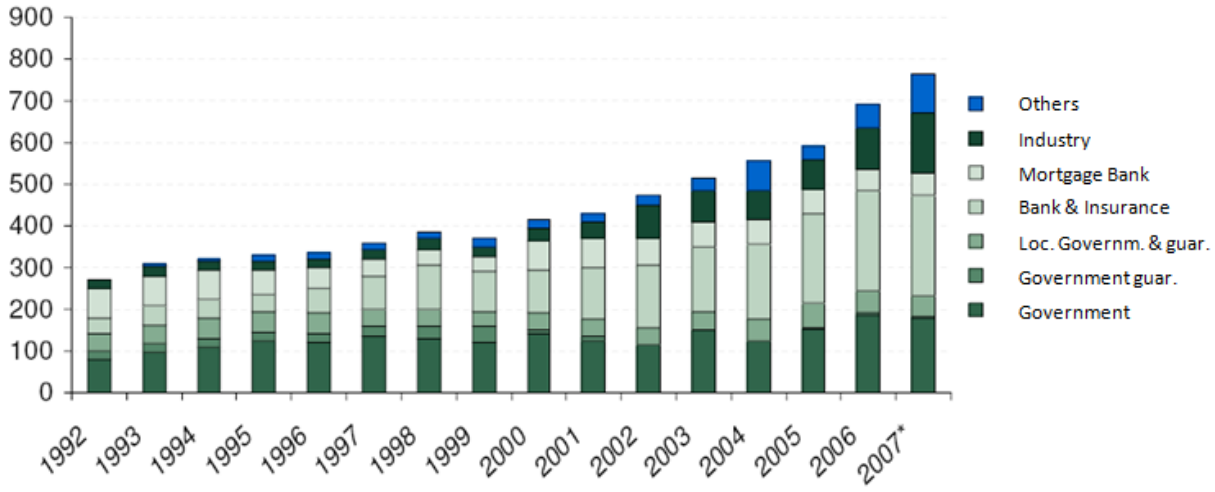


*Figure 3.1: Source: Swedbank/First Securities (2007). * per 09/28/2007. Y-axis in NOK billion.*

3.2 Key market participants

3.2.1 The Issuers

Looking at the total market for bonds in Norway, the government, banks, insurance and industrial companies are the largest groups of issuers. Figure 3.1 illustrates how both the total market and especially the market for corporate bonds have increased since the change of legislation in 1992. At the end of 2007 the corporate bond market was worth approximately NOK 150 billion[10], and it is playing an increasingly important role in the market. In chapter 6 we take a closer look at the types of industrial firms issuing bonds.

[8] Oslo Børs, (2007)
[9] Oslo Børs, (2006)
[10] Swedbank/First Securities, (2007)

3.2.2 The Investors

Figure 3.2 shows the relatively insignificant role national private investors play in the Norwegian corporate market. We leave to other studies to explain the reason for this in detail, but the reader should note that the opportunities for private investors (especially the smaller ones), to invest in corporate bonds in Norway are limited. Generally speaking, we will also argue that the "man in the street" in Norway has little knowledge about the market, at least compared to for example that of the US, Denmark or other countries where bonds are more common and have a longer history. The few private investors that use the market primarily invest in indexed bonds. In regard to our work on covenants, it is important to bear in mind that the lenders almost exclusively are professional and institutional investors. Foreign investors have the largest ownership of corporate bonds in Norway. Historically, this group has primarily invested in government bonds, but the increase in corporate issues the later years has boosted their interest. This may have had an effect on the use of covenants in Norway, as the investors are used to have this kind of protection when investing domestically. We made the same calculations as in figure 3.2 for the entire bond market. The results are very similar, but foreign investors have a larger share of the corporate market compared to the total market. (Norwegian insurance companies and private pension funds have the largest share of bonds overall in Norway.)

Figure 3.2: The ownership structure of outstanding corporate bonds in Norway

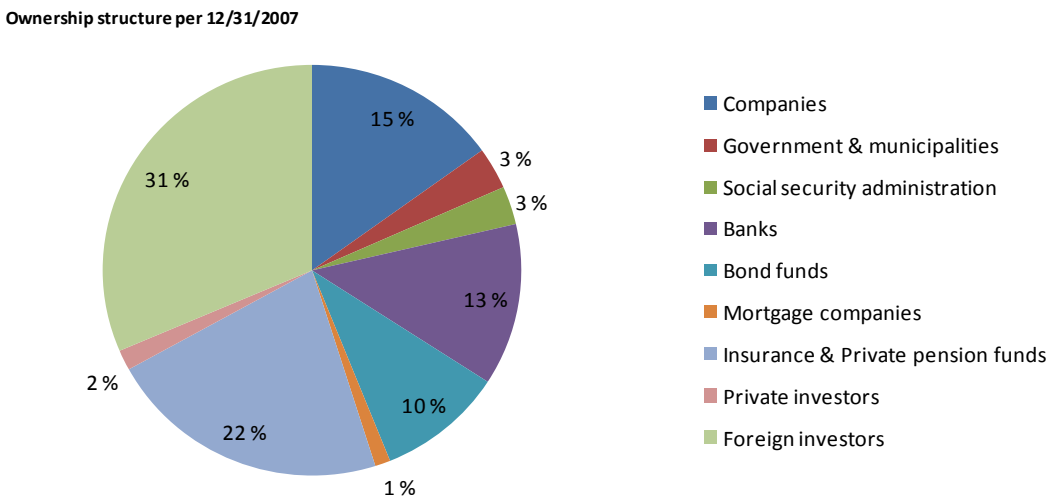


Figure 3.2: Based on numbers received from VPS (Norwegian Registry of Securities)

3.2.3 The Managers

The managers help the firms to organize the bond issues, and after writing the indenture, take it to the market. Managers also operate in the secondary market, operating as an intermediary between investor and the exchange. We will in our analysis in chapter 6 explain more of their effect on the issues and the use of covenants. The reader should bear in mind throughout the analysis that there can be several factors influencing the managers' effect on the use of covenants, for example; reputation, skills, routines, specialization, network and strategies.

3.2.4 The Trustee

The trustee serves as an intermediate between the issuers and the bondholders, and may act on behalf of all the bondholders. Prior to 1993, the bond managers, or possibly other investment banks, acted as trustees. As a result of the bank crises of the early nineties, investors started to question the dual role and conflicting interest of the banks - acting as both trustee and at the same time being a part of the bilateral loan. In addition, as a result of the crisis the publics' trust in the banks was generally low, and it forced the business to find other solutions to preserve the role of the trustee. A group consisting of the most important members of the Norwegian financial market, including the largest commercial banks, insurance companies and some large institutional investors, together founded "Norsk Tillitsmann ASA" (NTM) in 1993[11]. The three largest owners today is "DnB NOR Bank ASA" (13.95 %), "Nordea Bank Norge" (10.41 %) and "KLP forsikring" (10.36 %)[12]. Roughly 95 percent of all Norwegian bond issues have a trustee. NTM's market share as trustee is approximately 90-95 percent, depending on the unit of measurement applied. All high yield corporate bond issues in Norway use NTM as trustee, and most other corporate issuers do the same. The exception is primarily a handful of private placements not using a trustee at all. All listed bonds are required to have a trustee. The fact that no external lawyers or other financial institutions act as trustee illustrates the dominating position NTM has in the Norwegian market. Several law offices have tried to enter the market, but none has succeeded to this day.[13]

The trustee's primary task is to monitor the borrowing firm and to make sure it complies with the clauses laid down in the loan agreement. One of the advantages of having a trustee is that it

[11] norsktillit.no
[12] Section based on information from NTM, (2006)
[13] Private conversation with Elise Breivik, (NTM), 05/07/2008

enables the bondholders to speak with "one voice," and they can act on behalf of all the bondholders. It also helps solve the problems with free-riding in regard to the monitoring of the issuer, and can prove valuable as it can help ease solving minor problems and conflicts that arise during the life of the bond. The potential free-riding problem is also the primary reason why the issuer covers the costs of using a trustee. The trustee has a continuous dialog with the issuer, with the intention of preserving the rights of the bondholders. NTM also helps issuers to determine if certain actions are in line with the loan agreement.

NTM also plays an active role in the writing of the bond contracts. They often make the first draft of a loan agreement, and cooperate closely with the issuing manager. This way they also have a strong influence on the use and phrasing of bond covenants in Norway. Their influence can help explain the homogeneity of the bond contracts, as boilerplates are used to some extent. Furthermore, an important part of NTM's work is monitoring high yield loans, assuring predetermined changes in security are complied with during the different phases (e.g. security in a rig construction contract which by delivering of the rig is transferred to a security in the rig). [14] NTM also have a role as an agent in bank syndicate, except for the payments. They go through an account operator, but missing payments becomes NTMs' responsibility.

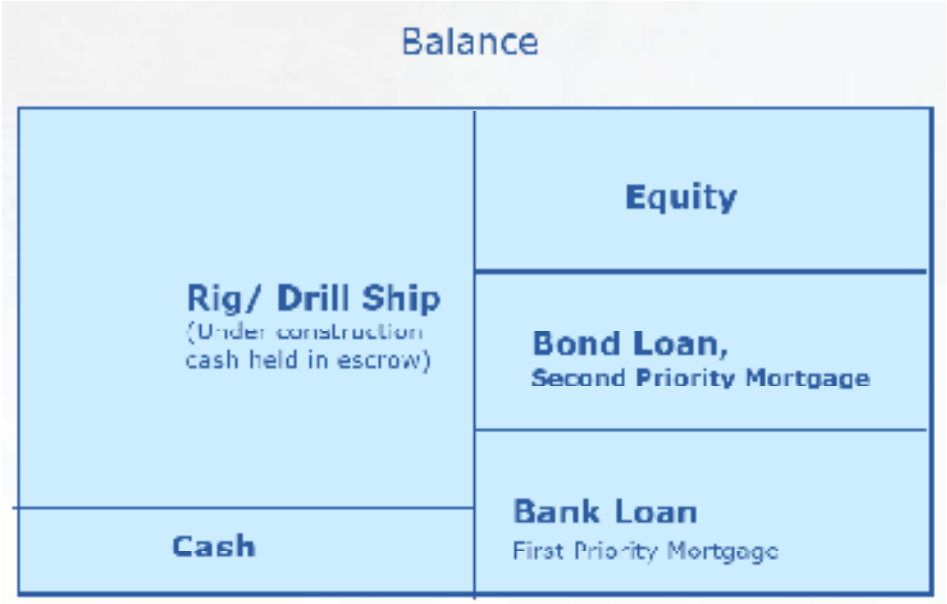
3.3 Other important Norwegian distinctions

In this chapter we have showed the growth in the Norwegian corporate bond market, and the bond market in general. Some of the biggest and most important Norwegian firms raise capital in this market (e.g. Telenor). In our work we refer to this kind of issues as "cash- flow backed" bond issues. Large corporations with a solid financial history, issue bonds that are primarily secured by their expected future cash flow, hence the name. In the resent years new types of firms has also started using the market. This is bonds issued to finance a particular project or purchase of one or several specific assets. The asset is usually used as collateral, and it is the cash flow from the future use of this particular asset that shall repay the debt. We refer to these issues as "asset-backed bonds". Figure 3.3 illustrates a typical structure of a high yield asset- backed issue.

[14] Same as security agent in banking consortiums

The reader should also bear in mind that for both these types of issues, the primary reason for issuing public debt instead of private, is to reduce the number of covenants and lower the general control of the lender.[15]

Figure 3.3: Typical firm balance behind an asset-backed issue



Source: NTM (2006) "Bond Trustee as Investor Protection"

[15] Private conversation with Ola Nygård, (NTM), 05/05/2008

4 DATA SAMPLE – CONSTRUCTING A DATABASE

The primary objective of this thesis is to provide the reader with an overview over the use of covenants in the Norwegian market for corporate bonds. Before this, very little time has been devoted to the study of this subject, and data on was scarce. Thus, an important aspect of our work was to construct a database recording the use of covenants. The database primarily consists of four different types of data; covenants, firm specific information, bond specific information and macroeconomic figures. The part of the database containing the details about the bonds key information is based on data provided by NTM and their electronic database, Stamdata. They also provided us with electronic copies of all the loan agreements. We created our database by reading through these contracts, and collating this with the bonds general characteristic. This part of our database includes close to all the corporate issues in the period. The key information about the issuing companies was collected using the Amadeus database.[16] In this chapter will consists of four parts. The first two parts explain the process of constructing the database, the third go through some possible sources of error, and last we present the calculation of the companies Z-score.

4.1 Sample selection

Owing to the fact that we had to read through all the contracts that was to be included in the database, we had to limit our total sample. First, we took a sample test of bond contracts issued by a number of different types of businesses. Based on this test and talks with representatives from both NTM and Pareto, we got strong indications that basically the only issues in Norway that include covenants are the corporate bonds. As a further check, we examined about ten issues for each line of businesses, using the business classifications found in Stamdata. This preliminary work indicated that other types of issues had short and more standardized loan agreements with close to none covenants. One reason for this can be the strict regulations imposed on some of these sectors. This is especially true for the Norwegian savings banks, accounting for a large percentage of the total issues. Both their financing and their operations in general are regulated by the authorities. They issue primary capital certificates (*grunnfondsbevis)* instead of common

[16] AMADEUS is a comprehensive, pan-European database containing financial information on over 10 million public and private companies in 38 European countries" (Amadeus)

stock. Thus, the relationship between bond and "stockholders" is somewhat different from the traditional situation, also making the need for protective covenants less obvious. Insurance companies and commercial banks also have legal restrictions in regard to their capital structure and financing, and we did not find covenants used in the sample contracts. Our random sample reading of ten power companies' contracts did neither reveal any use of covenants. For these reasons we chose to exclude all of these types of issues, leaving us with corporate bond issues.

An important objective with our work is to explore how the use of covenants has developed over time. Thus, we needed a relatively long data period. The market for corporate issues in Norway before 1998 was close to none existing. Therefore, our choice of corporate bonds is even more interesting as we can examine the market almost from its very beginning and provide an accurate and close to complete description of this market.[17] The relative long sample period is one of the reasons why we have not included short term notes such as Certificates of Deposits (CD). We did some random sample tests, however, of short term notes. We found that the CD's in our test sample did not include any covenants, and we choose to exclude all issues with maturity of less than a year.

Table 4.1: Sample 1

Year	All issues	Private placements	Not available	Sample 1
2008	6	0	1	**5**
2007	125	6	1	**118**
2006	109	1	0	**108**
2005	81	8	2	**71**
2004	56	13	0	**43**
2003	43	16	1	**26**
2002	25	8	0	**17**
2001	33	9	1	**23**
2000	18	0	1	**17**
1999	6	0	2	**4**
1998	7	1	0	**6**
Total	509	62	9	**438**

We found 509 corporate bonds issued in Norway between 01/01/1998 and 03/31/2008. This is based on our findings at Stamdata and our cross checking against an internal database provided to us by NTM.[18] Our cross checking makes our sample including close to all issues in the period. However, we got only access to 438 of these loan agreements, issued by 230 different companies. As we can see from table 4.1, 62 contracts were not available because they were private

[17] 21 issues between 1963 and 1998, with no more than four issues a year (NTM).
[18] The internal database contains information about all issues in the Norwegian bond market since 1943

placements, while nine loan agreements did not NTM manage to procure, and other sources was not of help either.

4.2 Constructing our database

In order to construct the database, we used the Mergent Fixed Income Securities Database (FISD) as a starting point.[19] Most researches (e.g. Reisel, 2004, and Billet et.al., 2007) that have done empirical work on the subject, uses this database. Thus, making this as our starting point, we can better compare our results to previous work and the situation in the US. However, the database we have built is what we would like to call an adjustment to the Norwegian market. We have included some additional categories not found in the FISD, which we believe is important in the Norwegian market. Generally speaking, most of them are a result of special conditions in some of the most important businesses in Norway such as oil and shipping. We describe these on how they are used in more detail in chapter 6.1 and 6.5.[20] Some of the FISD categories of covenants are also modified slightly, in order to better describe the prevailing conditions in Norway. Other modifications is a result of the difficulty we had obtaining extensive information about the FISD categories. We also looked at the main categories that NTM uses in order to get a better understanding of the Norwegian distinctive characteristics[21]. Thus, some covenants are either broader or narrower defined in our database than in the FISD. The analysis in chapter 6 provides the reader with an understanding of all the covenants, but for replication purposes we will direct the reader to appendix 1 and the definitions of all the covenants included in our database. For readers unfamiliar with covenants in general, a better understanding can also be obtained by looking at the appendix.

The first step in constructing our database was to create a list of all the issues in the period and their respective *ISIN* numbers.[22] To our surprise and to the best of our knowledge, no institution in Norway have created such a list (i.e. sorting the bonds by issue year and containing the ISIN numbers or other information), and we could only obtain unstructured "data files". We created such a list by searching through the Stamdata database. Based on this list we collected bond

[19] Interpretation of FISD covenants and what they include is based on "Corporate bond securities: Database Dictionary", by Mergent.
[20] See appendix 1 for definitions
[21] At the meeting 04/11/2008
[22] International Securities Identification Number (ISIN) - an alphanumeric code that uniquely identifies a security. It consists of a two character country code, a nine digit number and one check digit.

specific information from the Stamdata by looking up each individual ISIN number. We typed inn all the available information about the different issues and downloaded the respective loan agreements whenever available.[23] After completing this work, we sent NTM a list of the loan agreements not found at Stamdata. They were so helpful and returned the ones they were able to obtain.[24] The private placements proved impossible to obtain. The exact results of this work can be seen in table 4.1.

After completing the list of issues and collecting the loan agreements, we started the work of reading through them. Based on the FISD classifications, the process described in the next chapter, we created a large Excel file containing all the bond information and the covenant categories. We used this to register the covenants in each bond contract. Upon completion of this work, we collected information on each issuing firms by using the AMADEUS database. We used this database because of the relatively high number of foreign issues in our data and because of the possibility of exporting information to Excel. In addition to the financial statements we collected data on the year of incorporation and other firm specifics. The bond issues were linked with the financial data as of the first of January the issuing year. [25] For some issuers we had problems finding the corresponding financial statement. In the cases this was a problem, we used the financial statements for the previous year or at the end of the bond issuing year. We did not find the relevant information for all the issues, reducing our second sample to and 323 issues (and 162 issuing firms), see table 4.2.

[23] Appendix 2 shows how the bond specific information is presented at Stamdata

[24] The remaining contracts were tried to obtain through www.oslobors.no, but they could, of course, only provide us with loan agreements for listed bonds.

[25] The latest financial statement is our best estimate of both the bond issuers' financial situation and investors' knowledge about the company on the bond issuing date. We have disregarded that some firms in our sample publish quarterly reports.

Table 4.2: "Sample 2"

Year	Loan agreements	Issues by firms not in Amadeus	"Correct" financial statement not available	Sample 2
2008	5	1	0	**4**
2007	118	50	0	**68**
2006	108	18	0	**90**
2005	71	13	1	**57**
2004	43	6	0	**37**
2003	26	6	3	**17**
2002	17	4	4	**9**
2001	23	4	2	**17**
2000	17	0	0	**17**
1999	4	1	0	**3**
1998	6	1	1	**4**
	438	104	11	**323**

In other words, we operate with two data samples. Sample 1 includes all loan agreements and information about the bonds. In Sample 2 we have excluded the issues that we could not find company specific data for. In the descriptive analysis in the next two chapters we primarily use Sample 1, and the analysis can be viewed as representing all the issues in the period. We will not clearly distinguish between these two samples in the following parts, but bear in mind that if we only discuss covenants, Sample 1 is used. If our discussions both can be related to covenants and firm specific information, Sample 2 is used.

Finally, the macroeconomic factors used in the analysis are based on figures from *SSB*[26] and Norges Bank. We have included all the relevant interest rates; the Sight deposit rate, different maturities of *NIBOR,* and several Government bond interest rates.

4.3 Sources of errors – reducing the risk of subjective interpretation

Since collecting information from loan agreements is subject to some degree of individual interpretation, this can be a source of error. We faced this challenge by first carefully working us together through 30 contracts. We discussed our findings with one another and compared it to the FISD database and other empirical work on the subject. We also discussed the initial findings with NTM[27] and Pareto[28]. Based on this preliminary work we continued the registrations. We divided the data in two and read one part each. When finished we switched data and read through the contracts one more time, as a cross check.

[26] Statistics Norway
[27] Meeting with representatives 04/11/2008
[28] Private conversations with Stian Winther (Pareto)

Furthermore, clauses can also be subject to a misinterpretation because of the use of complicated legal terms in the contracts. We believe that our initial work and discussions also reduced this problem significantly. Readers with detailed knowledge of the FISD database may also find that we have broader (or narrower) definitions of some of the covenants with the same name as used in the FISD. We do not view this problem to be of importance, but when in doubt the reader is asked to consult appendix 1 for the definitions of all the covenants used in our database.

4.4 Calculating the Z-score – the probability of default

As we did not have reliable ratings on most of the companies in our sample, we had to make our own estimations based on the companies' financial statements. We based our analysis on the newest edition of Altman's (2006) work on credit rating and default risk. We use the model adjusted for private firms, because it was not possible to get market data for a significant number of the firms in our sample. The most obvious reason is that 81 of 261 firms were not, and have not been, listed. We also found it difficult to get historical market data for quite a few of the listed companies (e.g. the issuer's market capitalization on the time of the bond issue was difficult to obtain). Another simplification we had to make due to lack of information in the financial statement is the assumption that retained earnings equals 'other shareholders funds' found in AMADEUS. This includes for example premium on shares which should have been excluded from retained earnings. Thus, we might have a too high estimate on the z-score. Due to lack of information in some financial statements, our sample is reduced to 261 contracts when testing on z-score.

In the next chapters we will use the constructed database to describe and analyze the use of covenants in the Norwegian corporate bond market, and how this has developed over the last ten years. However, our focus is mostly concentrated on the 21th century due to few observations in 1998 and 1999.

PART TWO – ANALYSIS

5 DESCRIPTIVE ANALYSIS – THE ISSUES

We will in this chapter describe how the corporate bond market in Norway has developed the last ten years in terms of important bond characteristics. Our sample covers more or less all the issues, and can be viewed as accounting for the entire market in the period. We will show how the issue types change over time. We will present analyses to help explain the development in the types of issues, and how it possibly can affect the use of covenants. The main goal of this chapter is to illustrate how issue characteristics can influence the use of covenants, and to describe the development in the market. The chapter is divided into three parts. First, we present and analyze some important bond characteristics. Second, we take a closer look at the security linked to the bonds, and some aspects of exchange listings. Last, we describe aspects of the issuing firms and the bonds' managers. In appendix 3 we have provided the reader with a table summarizing the use of the bond characteristics.

5.1 Bond characteristics

5.1.1 Convertibles vs. bonds

We find that issues classified as either *bonds* or *convertible or exchangeable bonds* make up the market for corporate issues in Norway over the last ten years. Table 5.1 illustrates the percentage of total issues for the two different types in each year. The development can indicate that convertibles are the preferred type in more turbulent financial markets. Percentually, convertibles were mostly used in the period between 2000 and 2003 - a period characterized by turmoil in the capital markets around the world. The rapid increase in the use of convertibles in 2008 supports the argument, but for the macroeconomic conditions to be a reliable predictor, we should have found some increase in the use of convertibles in the second part of 2007. In turbulent financial markets, the price of risk tends to increase. For most firms, the price of issuing new debt increases, and convertibles are one way to lower this direct cost of borrowing. The development can also be ascribed to shifting trends in the financial market or changes in the types of firms that issue bonds.

It is important to bear in mind these changes in the use of bonds and convertibles because they can influence the use of covenants. Jensen and Meckling (1976) argue that since the holders of convertibles can recapture value transferred from bondholders to stockholders, the management

is less likely to engage in such activities with outstanding convertibles compared to bonds. We will expand this line of argument, and emphasize how convertible rights can narrow the gap between the bondholders' and the stockholders' interests.[29] We find strong indications that there is a negative relationship between conversion rights and the number of covenants included in the contracts. The average number of covenants per contract is 5.48 for bonds and 2.8 for convertibles. Table 5.1 shows the development over time and clearly illustrates this notion. The way convertible issues align the bondholders' interest with that of the stockholders may be one reason for our findings. Another reason can be that convertibles in general have lower priority and less security for their claims. We find that 60 percent of the subordinated issues are convertible bond; furthermore, we find that unsubordinated issues include 5.2 covenants on average, and subordinated 3.4. This indicates that the bonds' priority also influences the use of covenants in general. One reason for this is that subordinated issues do not usually include pledged assets, and have a plain and simple structure. NTM has argued that convertibles in general should include less restrictive covenants and have a lower priority. [30] We find this to be true on average for every year in our data.

Table 5.1: The type of bonds and average use of covenants

Year	Bonds		Convertibles		Callable		With Warrant	
	Of issues	*Avg. Covenant*	*Of issues*	*Avg. Covenant*	*Of issues*	*Avg. Covenant*	*Of issues*	*Avg. Covenant*
2008*	20 %	15.0	80 %	7.8	40 %	9.5	0 %	n.a.
2007	88 %	9.0	12 %	6.9	61 %	10.5	8 %	10.6
2006	81 %	5.5	19 %	3.1	49 %	7.6	4 %	4
2005	94 %	2.8	6 %	0.0	35 %	4.5	3 %	3.5
2004	79 %	2.7	21 %	0.2	26 %	1.6	0 %	n.a.
2003	77 %	2.1	23 %	0.0	12 %	5.7	0 %	n.a.
2002	65 %	4.4	35 %	0.0	53 %	4.8	0 %	n.a.
2001	74 %	1.4	26 %	0.2	26 %	0.2	4 %	1.0
2000	59 %	1.7	41 %	0.7	35 %	1.0	6 %	0.0
1999	75 %	2.0	25 %	0.0	75 %	2.0	0 %	n.a.
1998	100 %	3.2	0 %	n.a.	33 %	5.0	0 %	n.a.

* per 03/31/2008

5.1.2 Call options

Table 5.1 shows that over 61 percent of the issuers last year included a call option in their bonds, and it is widely used in the entire period. The call options terms vary among the contracts, from the very detailed to more general ones. In our data we find provisions both resembling *European*

[29] Later research on the topic (see, for instance, Anderson 1999) challenges this line of argument.
[30] Meeting with representatives from NTM, 04/11/2008

and *American* options.[31] Those that resemble American options specify a date from which the option is valid. The option can be exercised anytime between then and the date of maturity. On the other hand, the European options state one or several specific dates at which the options may be exercised. The dates always coincide with the date of interest payment, and some include a list of all exercise dates and the prevailing strike price for each date. As would be expected, the value decrease as maturity approaches. We find that the options resembling European options are the most frequently used in Norway.[32]

5.1.3 Warrants – not affecting the loan agreements

In general, warrants are used as a "sweetener" to make the bonds more attractive for the investors – something extra in addition to the interest payments. By including them, the issuer may lower the cost of borrowing and/or increase the investors' interest for the issue. Warrants are similar in structure to stock options, and provide value for the investors by letting them take part in the firm's upside potential. The maturity of warrants is usually measured in years, not months, reflecting the fact that they typically have much longer maturities. They are issued by the firm, and have a dilutive effect as new stocks are issued when the warrant is exercised, thus representing a cost for the existing stockholders if exercised. The use of warrants is relatively low in Norway, but has increased over the last three years. We find the highest use in 2007, when eight percent of the issues had a warrant attached. One possible explanation for the development can be that the use depends on the type and size of the firms that issue bonds. Furthermore, we find that warrants are included in the periods characterized by a lot of new businesses being introduced to the market. These firms are smaller and not as familiar to the investor community. This can lead us to believe that new firms, either because of their share size, lack of track record or high value of future growth opportunities, add warrants to their bonds in order to obtain more favorable terms. As with convertibles, warrants make the bondholders' interest more aligned with that of stockholders; therefore, we would expect to see the same negative relationship with the use of covenants. The reason why we do not find this is most likely the small share of the issue's total value the warrant represents. This indicates that warrants are just a "sweetener," a small bonus for the bondholders, and do not affect the shaping of the contracts.

[31] For more on options and option pricing, refer to for instance Brealey et.al, 2006, page 538.
[32] Common for all options is the provision that the loan trustee and the bondholders must be informed at least 30 banking days before an eventual redemption.

5.1.4 Interest type and payments

Table 5.2 shows how the share of fixed and floating rate issues in Norway has been relatively stable over the last ten years, each accounting for approximately half of the issues.[33] One might be surprised by the high number of floating rate bonds (FRN).[34] According to Pareto[35] the choice of fixed interest versus floating interest rate are determined based on the issuers expectations of future development in the interest rate and the managers expectation of demand for the different types. The difference though is not of high importance for the issuer or the bondholder as both have the possibility to swap the interest rate. FRNs are stated as a spread over a money market reference rate, most commonly the three-month Norwegian Interbank Offer Rate (NIBOR).[36] Bonds issued in USD use the London Interbank Offered Rate (LIBOR) as the reference rate. The bonds' interest frequency determines if the three- or six-month rate is to be applied.

Table 5.2: Interest types

Year	Fixed issues	Average interest rate (%)	Fixed spread	FRN issues	Average spread	Zero coupon	Adjust & Step
2007	42 %	8.870	8.870	55 %	3.59	1 %	2 %
2006	46 %	8.620	8.620	53 %	3.11	1 %	0 %
2005	49 %	7.310	7.310	48 %	1.97	1 %	2 %
2004	42 %	6.990	6.990	51 %	1.60	7 %	0 %
2003	54 %	8.010	8.010	38 %	1.22	8 %	0 %
2002	35 %	7.650	7.650	24 %	0.93	18 %	23 %
2001	30 %	9.898	9.898	65 %	2.43	0 %	5 %
2000	59 %	9.965	9.965	35 %	1.72	0 %	6 %

Very few alternative types of interest rates have been issued over the last three years. Looking at table 5.2, we see that there was some use of zero-coupon bonds between 2002 and 2004, but they are almost completely absent the last few years, even as the total number of bond issues has increased.

Most bonds in Norway make quarterly interest payments. Looking at the development since 2000 in table 5.3, the interest rate frequency has substantially increased. Annual payments used to be the common practice, but we see a clear shift towards quarterly and semi-annual payments. Much

[33] The reader is asked not to ascribe too much value to the 2002, due to the effect of the Kværner restructuring.
[34] Norway has, compared to almost every other country, a very high number of floating rate mortgages and bank loans. A possible explanation is that this is also reflected in the corporate bond market.
[35] Represented by Stian Winther
[36] NIBOR is a currency swap rate between NOK and USD.

of this development is due to the fact that most of the FRN bonds almost solely have quarterly payments now, but also because the fixed rate bonds have increased their interest frequency and include both semi-annual and quarterly payments.

Table 5.3: Frequency of payments (2000-2007)

	Interest Payments		
Year	**Annual**	**Semi Annual**	**Quarterly**
2007	8 %	28 %	64 %
2006	27 %	19 %	55 %
2005	44 %	8 %	48 %
2004	42 %	12 %	47 %
2003	42 %	15 %	42 %
2002	59 %	18 %	24 %
2001	26 %	9 %	65 %
2000	59 %	12 %	29 %

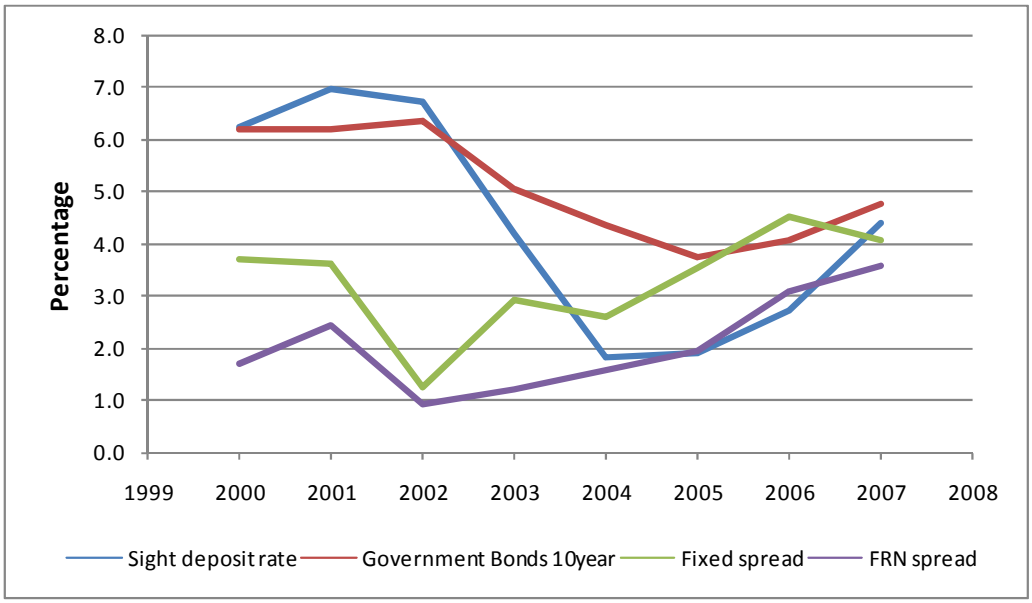
5.1.5 The spread

Table 5.2 and figure 5.1 illustrate how the interest rates and spreads on corporate bonds have developed compared to the most common Norwegian reference rates. The reader is asked to disregard the low spread in 2002 because of the effect of the restructuring of Aker Kværner on the data.[37] The FRN spread has been between approximately 100 and 350 basis points over the last eight years. We find that the spread in general has increased during the period. This can be an indication of increased credit risk among the issuers over these years, or because the markets demand higher compensation for taking on credit risk. A similar shift is observed in the fixed rate issues, as the spread between the reference rates and the average coupon rate is increasing; however, this spread in fixed rates is also influenced by other factors such as interest rate risk, thus making the FRN spread a better indication of the average risk of the companies issuing bonds each year. If the issuing firm's volatility has increased on average, all other things being equal, this would according to the ATC result in an increase in the overall use of covenants. We find a strong increase in the average number of covenants included in each contract during the period, and the issuing firms' increased credit risk may help explain the development. It is difficult to estimate how the spread in general affects the use of covenants. The two are

[37] They issued several bonds that year with interest rates lower than the next one on the list by more than 200 basis points, and the effect is enough to interrupt our sample that year.

dependent on each other, creating problems analyzing as they are determined simultaneously. We will address this issue in chapter 8.

Figure 5.1: Development in spread (2000-2007)



5.1.6 The currency – a more international market

We find that corporate bonds in Norway are issued in either Norwegian kroner (NOK) or USD.[38] Table 5.4 shows how the number of issues denominated in USD has increased from zero in 2001 to 36 percent of all new issues in 2007. Foreign issuers amount in total to 40 percent of the total USD issues, but the rest are issued by firms registered in Norway. One third of the USD denominated bonds was issued by companies outside Scandinavia.

[38] Only two bonds were issued in Euro, and the remaining few issues are denominated in Swedish kronor

Table 5.4: Denominated currency in new issues

Year	Issued in NOK	Issued in USD
2008*	60 %	40 %
2007	63 %	36 %
2006	72 %	28 %
2005	76 %	21 %
2004	98 %	2 %
2003	96 %	4 %
2002	82 %	12 %
2001	100 %	0 %
2000	100 %	0 %
1999	100 %	0 %
1998	100 %	0 %
**Per 31.03.2008*		

The increase in foreign denominated issues can illustrate two important factors that may influence the use of covenants in general. First of all, covenants are used more abroad, particularly in the US, but also in many European countries. If these firms perceive that they benefit from using the same contracts in Norway as they do at home, we would expect the number of covenants to increase as the share of foreign companies increase. Secondly, the increasing share of Norwegian companies issuing bonds in USD can be viewed as an indicator of the increasing number of foreign investors in Norway. In chapter 3 we show how they are the largest group of owners of corporate bonds, and Norwegian firms might want to issue bonds in foreign currencies to attract this large and growing group of investors. The investors probably value the reduced or eliminated currency risk.[39] It can additionally provide the issuing companies with a valuable currency hedge, as more firms do business abroad. Furthermore, the foreign investors are most likely used to being protected by covenants. All other things being equal, it could be reasonable to expect them to demand covenants on Norwegian issues as well. Our interview with NTM supports this line of argument. [40] Among other things, they point to a group of investors in London that has been somewhat influential over the past few years. The demand from these investors and investors alike is a plausible explanation for the increasing use of covenants in Norway over the past few years. The increase in bonds denominated in USD coincides with an increase in the overall use of covenants. It is also possible that foreign issuers have introduced new covenants to the Norwegian market that local firms have adopted later on.

[39] If USD is the home currency there will be no currency risk associated with investing in Norwegian UDS bonds
[40] Meeting with representatives from NTM, 04/11/2008

We find considerable evidence supporting this line of argument in our data. Most striking is the fact that the average number of covenants included in contracts issued in USD is more than twice as high as for those issued in NOK. On average, the USD denominated contracts includes 8.71 covenants, but the figure for NOK issues is 3.99.

5.2 Trading and security

5.2.1 Bond listings

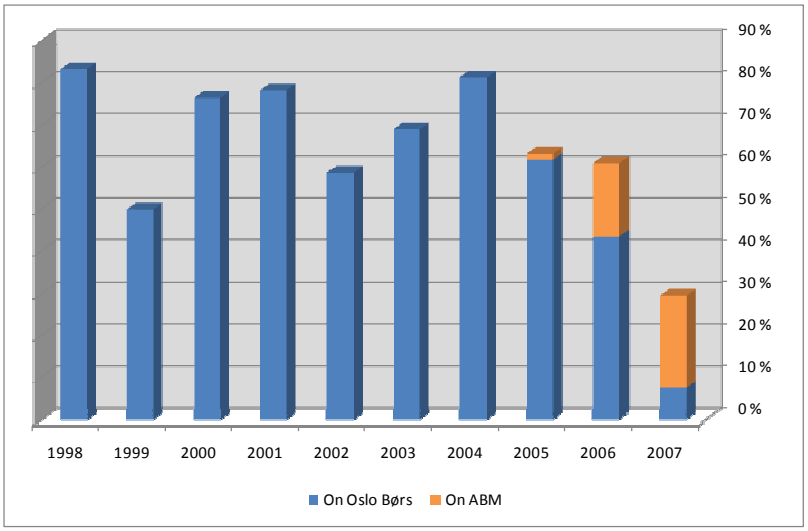
Eight percent of the total issues in 2007 were listed on Oslo Børs, and only 30 percent were listed on one of the two bond exchanges in Norway. The number of listings has decreased from 2004 to 2007, and no bonds have been listed so far in 2008[41]. The introduction of a new exchange in late 2005, the ABM, does not seem to have counteracted this trend. Nonetheless, it can be argued that the ABM has been a relative success after all. It captured 30 percent of the listings during the first year of operations and was the dominant exchange by 2007. The reason for ABM's relative success looks to be the same as for the drop in listings on Oslo Børs and listings in general. If the bond is secured by pledged assets or guarantees, the exchange requires extensive documentation. All the assets and securities need to be thoroughly described and valued, and the process of listing the bonds becomes very time-consuming and expensive. This is an important reason why very few Norwegian high yield issues with guarantees or pledged assets are listed on the exchanges. If the assets are not yet in place, the structure becomes even more complicated and may change over time, making it very difficult to list the bond. One example of such a dynamic structure is when a small and perhaps recently started oil rig firm wants to issue a bond in order to finance the building of a new rig. The borrowers would most likely demand some sort of security or sky-high interest rates to invest in a bond like this. One obvious solution is to use the asset as collateral, and we see this solution very much used by firms like this in our data. Typically the bonds are at first secured by an escrow account[42] and/or the construction contract is used as collateral. Gradually, as the rig is built, it is included in the security. Sometimes expensive equipment, i.e. tools and materials that are acquired as part of the building process, are also included in the pledged assets. This composition of the security is common among asset back bonds issued by small firms in the shipping and the oil industries. The structure makes

[41] 03/31/2008

[42] A financial instrument held by a third party on behalf of the other two parties in a transaction. Can include securities, cash or assets, and is released upon the fulfillment of some pre-defined obligations.

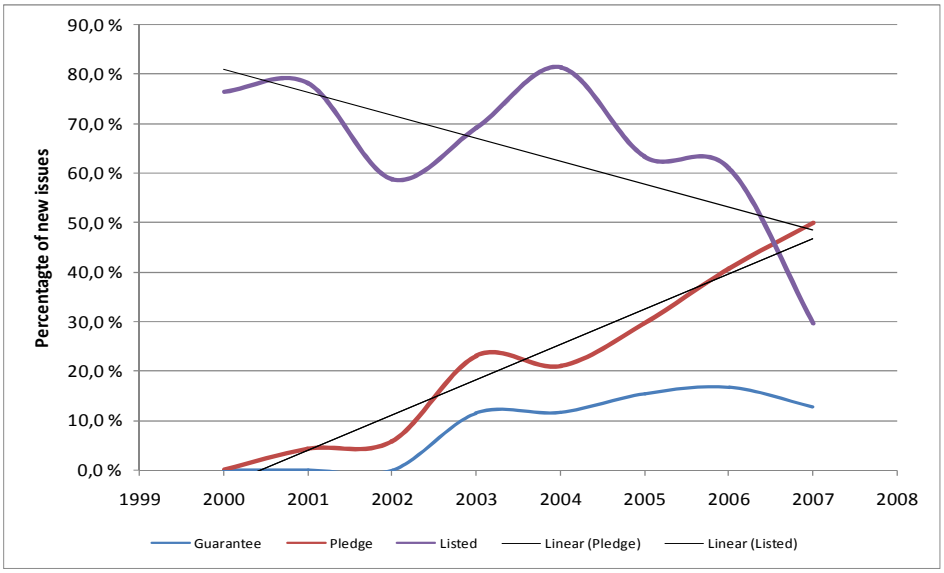
listing the bond complicated, because of the requirements for valuation and reporting in regard to the pledge.

Figure 5.2: The percentage share of new issues listed each year



We find it likely that the increase in young firms that secure their issues with pledged assets, and the increase in the use of pledges in general, can explain much of the decline we see in the number of listings over the last four years. We will in the next part of this chapter take a closer look on the effect of the bonds' security. In general, we can say that the bonds that get listed are those that have little security attached, few covenants and a largely straightforward structure.

Figure 5.3: The development in the use of pledges and guarantees, and the share of listed bonds



5.2.2 Pledges and guarantees – the increased use and its effect on covenants

In the previous chapter we argued that extensive bond contracts are less likely to be listed. Figure 5.3 illustrates the relationship between that the use of pledges and guarantees and the number of new listings, and the trend lines indicates a strong negative relationship. The use of pledges has increased from close to zero in 2000 to 50 percent in 2007, at the same time as the number of new listings has fallen considerably. There are several possible explanations for the development in the use of pledges. First of all, the number of high yield issuers has increased in the period. One way to reduce the yield and the lenders risk is by pledging assets as collateral for the payments. The increase in bond issues from small and young firms seen in figure 5.4 can provide an explanation for the rapid increase in the use of pledged assets as security. The economic rationale behind this is primarily the fact that young firms do not have much available financial history. When firms issue bonds, the investors, rating agencies, and other key players make their assessment of the firm's credit risk and future prospects based to a large extent on its financial history. Investors can settle for the firm's future expected cash flow as "collateral," if the firms' financial history and future outlook is satisfactory. For young or small firms, or firms in very volatile businesses, this is seldom the case. Thus, as the number of young firms increases, we would expect to see the use of pledges increase. We find some support in our data for this, as the correlation coefficient between the two is 0.7514. It is also important to bear in mind that the lines of business these young companies are in, affect their ability to use assets as collateral for their debt[43]. Most of the high yield firms that issue bonds in Norway are in capital intensive businesses, primarily shipping, oil, and oil supply. These firms often issue bonds to finance one particular asset, which will be the core of the companies' operations and the foundation for their future cash flow. There is a well-functioning secondhand market for most of these types of assets, and they are usually very liquid, increasing the value of the pledge from the lender's point of view. These firms are in general quite risky, and in order to be profitable, the projects often depend on volatile prices such as the price of oil or freight rates. The extent to which these firms use pledges indicates that their cost of including them is less than the value the lenders place on them. The cost for the issuer is primarily an increase in the marginal cost of debt. By using assets as collateral, they increase the price they have to pay or debt in the future and lose control over

[43] For example, IT or telecommunication firms seldom have assets that can serve as collateral

their assets, but altogether it seems that the benefit for many issuers is higher than the cost of not including it.

The inclusion of guarantees seems to have the same relationship as pledges with regard to the number of listings, but it is not as widely used. From the year 2000, the use of guarantees increased from zero to 12.4 percent in 2007. Figure 5.3 shows that there also seems to be a positive relationship between the use of pledges and guarantees. This is supported by the fact that 72 percent of the contracts that had some sort of guarantee also had a pledge. One important reason for this is that the guarantees are included in the type of asset-backed bonds described above. In these cases, the asset does not exist at the time of the bond issue, and guarantees by for example a mother company are included in the collateral. Combining guarantees and pledges can be one way to insure the lenders that their claims are always secured. The relationship may also be a natural result of the way these types of businesses are often organized. In these businesses, it is common to create subsidiaries for a specific project or asset, and it is not unusual for the mother firm to guarantee for the bonds that the subsidiary issues. Usually this is just for a limited period of time, until for example the vessel is built and delivered. This practice can help explain the increase we have seen over the last three to four years in the use of guarantees, as well as the close relationship that seems to hold between the use of pledged assets and guarantees.

Figure 5.4: Average number of covenants, percentage of issues with pledges and by young firms

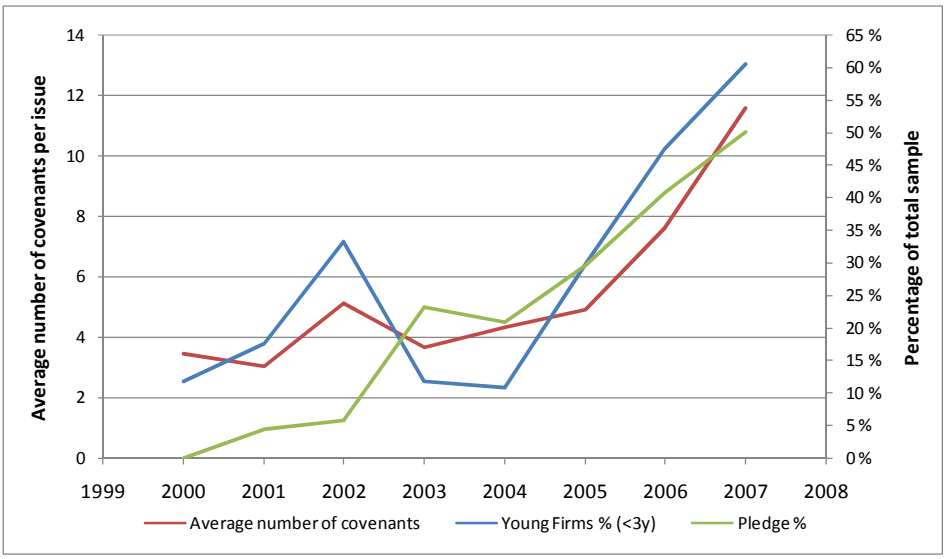


Figure 5.4: Left vertical axis shows the average covenant usage in each year. The right vertical axis shows percentage of total issues in a year which have pledge assets in addition to the share of total issues done by firms younger than three years.

We find strong indications of a close relationship between the use of securities and how many covenants are included in the indentures. The use of covenants can be seen as a means for protecting the pledged assets, and serve as an explanation for the relationship. From the bondholders' perspective, the inclusion of covenants helps preserve the value of their collateral by limiting the management's possible disposal over it. This is especially true if the assets are liquid and a secondhand market exists, as asset substitution and liquidation may be particularly tempting for the stockholders. As we will show in chapter 7, many covenants attempt to minimize these problems, and some are also directly aimed at protecting the pledged asset. We find this to be a plausible explanation for the rapid increase we have seen over the last four years in the average use of covenants. The fact that the use of pledges to secure the bonds has increased threefold during the same period can help explain the development in the use of covenants, because many of them both directly and indirectly serve as a protection of the pledge. It is also possible that when issuers use pledged assets, they also automatically include a few "standard" covenants that protect this asset, but we do not find much evidence to support this line of argument.

One might think that securing a bond issue would result in less use of covenants. By giving the bondholders claims over some of the company's assets, it can be logical to expect them to settle for less restrictive covenants. This definitely does not seem to be the case in Norway over the last ten years. The contracts that have pledges have more than three times (9.5 compared to 3) as many covenants included in their contracts, and many of these serve as protection for the pledge.

Furthermore, all these figures do have basically the same type of development over the period. This might indicate that the market in general is evolving. New types of firms are starting to use the market and the participants have gradually learned how to best use more sophisticated techniques, including elements such as collateral and covenants. Later on, we will present other examples and arguments for such a relationship.

5.3 Issuers and managers

5.3.1 The issuing firms

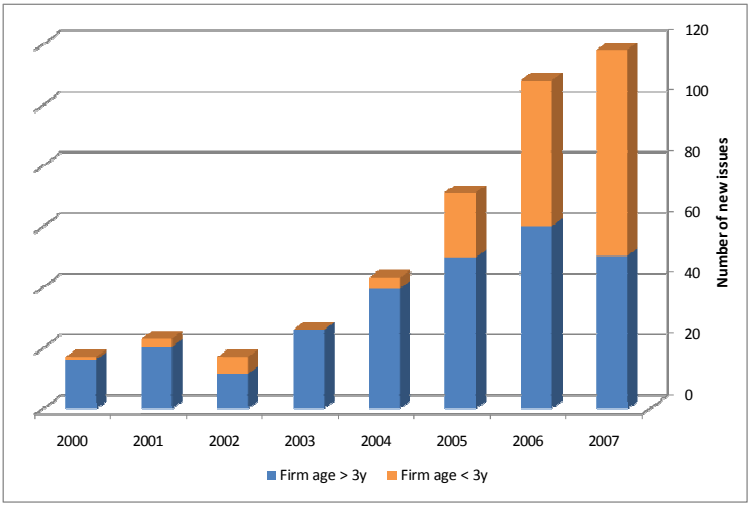
More than half of the issuers of bonds in Norway over the last ten years have only issued one bond. This is a possible reflection of the fact that there are few large companies in Norway, or that the market for corporate bonds is relatively immature. On the other hand, table 5.5 shows how some of the largest Norwegian companies use the bond market rather actively. The issuers are generally speaking in capital-intensive businesses. The number of companies with only one issue also illustrates the large number of issues by young and small firms.

Table 5.5: The companies with the most issues over the past ten years

Companies	
Wilh. Wilhelmsen ASA	17
Ocean Rig ASA	9
Petrolia Drilling ASA	9
DNO ASA	8
Entra Eiendom AS	7
Telenor ASA	7
Aker Kværner ASA	7
Norske Skogindustrier ASA	6
Olav Thon Eiendomsselskap	6
DOF ASA	6
Seadrill Limited	6
Number of different issuers last ten years	230
With one issue	146
With two or three issues	56
More than three issues	17
Number of issues by foreign firms	65
Number of foreign firms	35

Over the years, the share of foreign companies issuing bonds in Norway has increased considerably. Most of the increase is due to Swedish firms using the Norwegian market. International firms in oil and shipping with a strong connection to Norway also make up a substantial part of the increase. Many of these latter companies are registered in so-called "tax havens" like Bermuda or the Cayman Islands, but they have a significant part of their operations in Norway or have Norwegian owners (e.g. Northern Offshore Ltd and Seabird Exploration). Some of the issuers have a less obvious connection to Norway, but we find that most of them are by far either Scandinavian or registered in tax havens. This weakens any argument for foreign firms introducing covenants to the Norwegian market.

Figure 5.5: Share of firms younger than three years



One evident trend in regard to the issuing firms in our data is the rapid increase of young firms that issue bonds. Here, we define young firms as those that were incorporated three years or earlier prior to the respective bond issue. Figure 5.5 gives a good illustration of how young firms stand behind a continuously increasing share of the total issues. It also shows the rapid increase in the number of issues in general. First of all, this fact is important to bear in mind when we discuss covenants in general at an aggregated or average level. The number of issues has almost tripled from 2004 to 2007, ascribing more importance to the later issued contracts when looking at total average figures. Secondly, the increase in young firms that issue bonds may help explain the increase in the number of covenants. We illustrated in figure 5.4 how there seems to be a relationship between the number of young firms and the use of pledges. Furthermore, the relationship between the number of young firms and the average number of covenants included in each contract seems to be even stronger. The correlation coefficient between the development in the two figures is as high as 0.932. This may be interpreted as a relationship between the firms' age and the number of covenants they include in their bond contracts. Generally speaking, there can be a number of different economic rationales behind this relationship. First, the firm's age can be interpreted as a measure of its future growth opportunities. Previous empirical work (see, for instance, M. Billet et al. 2007) finds a positive relationship between future growth opportunities and covenants. It can be a useful simplification, as the real growth opportunities for the firms in our data are difficult to estimate.[44] Second, firm age may also serve as a good

[44] This is primarily because many are private firms and historical P/E figures or equivalent is difficult to obtain.

indicator of the companies' probability of financial distress. We showed in chapter 2 why investors will demand more covenants as the probability of default increases. Young firms in general have a higher probability of financial distress, and therefore, all other things being equal, investors' value covenants more when they are included in young firms' contracts. One could also argue that the investors are not only uncertain about the companies' ability to redeem the loan and pay their interest on time, but also their "willingness" to do so. For the lender, it is much more difficult to predict the actions of a company and management with no track record. This can be one of the reasons why one could expect these firms to include more covenants in general. As figure 6.3 shows, the average use of covenants per contract has almost tripled from 2003 to 2007, from a mere 3.7 to 11.6. Prior to 2003, the average number of covenants used in contracts was relatively stable. During the same period, the number of young firms in percentage of total bond issues also approximately tripled.

5.3.2 The business sectors

In what follows, we will use the *NACE rev 1.1* classifications of activities in order to classify the different firms. Over the past ten years, 49 different business sectors have issued bonds in the Norwegian market, but 29 of them have only issued bonds once or twice. Table 5.6 shows that only eight different industries have more than ten issues, and they amount to 70 percent of all issues in this period. [45] We will focus on these industries in the following analysis.

As we can see, the two dominant industries during the period are, perhaps not surprisingly, Service activities incidental to oil and gas extraction, and Sea and coastal water transport. The oil and gas sector is dominated by the firms Ocean Rig and Petrolia Drilling, while Wilh. Wilhelmsen dominates the shipping category.

Table 5.6: Business sectors with the most issues

Business sector	Issues	Average covenant pr issue	Measure numb. of comp	Share young firms	Issues after 2004
Service activities incidental to oil and gas extraction excluding surveying	58	4.86	40 %	40 %	60 %
Sea and coastal water transport	52	2.65	40 %	15 %	63 %
Letting of own property	31	4.61	45 %	42 %	65 %
Extraction of crude petroleum and natural gas	22	5.36	41 %	45 %	68 %
Other financial intermediation n.e.c.	18	6.50	56 %	94 %	83 %
Architectural and engineering activities and related technical consultancy	16	5.50	69 %	31 %	94 %
Building and repairing of ships	15	7.33	47 %	87 %	93 %
Management activities of holding companies	14	6.07	50 %	14 %	100 %

[45] We were able to find the business sector code for 323 issues

Table 5.6 shows that the category Building and repairing of ships includes the most covenants per issue, but category is strongly influenced by a large number of Aker Kværner issues, that included several covenants in their restructuring process. Large firms tend to use identical contracts over a longer period of time. Thus, a high market concentration in a business generally has a negative effect on the average number of covenants in an industry. The center column in table 5.6 is a measure of the concentration and shows the number of different companies included in the industry in relation to the industry's total issues. The higher the percentage figure, the more different issuers are in the industry. The measure is on average about 50 percent, indicating that the firms on average have two issues each. We have not been able to find any reliable relationship between the business sectors and the use of covenants in general. One reason could possibly be the relative homogeneity of business sectors using the market the most.

5.3.3 The managers

Table 5.7 lists the managers with the most issues in the period. By this measure, Pareto is the largest, more than twice as big as the number two company. On the other hand, measured in total issue size (volume), DnB NOR has been larger than Pareto for many years. There also seems to be a difference in the type of issues the respective managers take to the market. One example is also how DnB NOR issues more bonds that get listed than the other companies. In fact, 80 percent of the issues they manage get listed at some point. Combined with the fact that they have a large volume and relatively few issues, this illustrates how they in general manage large and simple bond issues. We showed earlier how listed bonds on average include less covenants. Thus, the issuer can to some extent predict the use of covenants on an issue. Furthermore, table 6.8 displays how the average use of covenants varies quite a bit between the top managers. The difference can be ascribed to a range of different factors, including difference in the issuing years, specializing in business sectors, or issue type, or it can reflect a conscious strategy or the level of experience. At any rate, it appears to have an effect on the use of covenants, but it is not easy to conclude with much certainty at this point whether it is a result of the sample selection or deliberate choices, or other factors.

Table 5.7: Top managers based on number of issues, and the use of covenants

Top managers 1998 - 2007	Issues	Average covenants per contract
Pareto Securities	162	6,21
DnB NOR	69	4,01
Nordea	57	3,47
Swedbank/First Securities	35	5,57
Fearnley	30	6,43
ABG Sundal Collier	23	5,83
SEB Merchant Banking	20	6,55
Fokus Bank/Danske Bank	12	3,67
Fondsfinans	9	3,22
Andre	21	n.a.

6 DESCRIPTIVE ANALYSIS – USE OF COVENANTS

We will in this chapter describe and analyze the use of the different covenants that we have found to be used in Norway during the period. We have divided the chapter into nine parts, where the first eight parts reflects the different categories of covenants. We have based the categorization on the workings of the covenant and the type of protection it provides the bondholders. The chapter will provide the reader with insight on the different covenants, why they are used, who uses them, the development during the period and possible explanations for this. We will finish the chapter by presenting and analyzing typical features of a bond including, and one not including covenants. An extensive summary of all the covenants presented in this chapter is to be found in appendix 4.[46]

6.1 Security protective covenants

6.1.1 Negative pledge – an important and widely used covenant

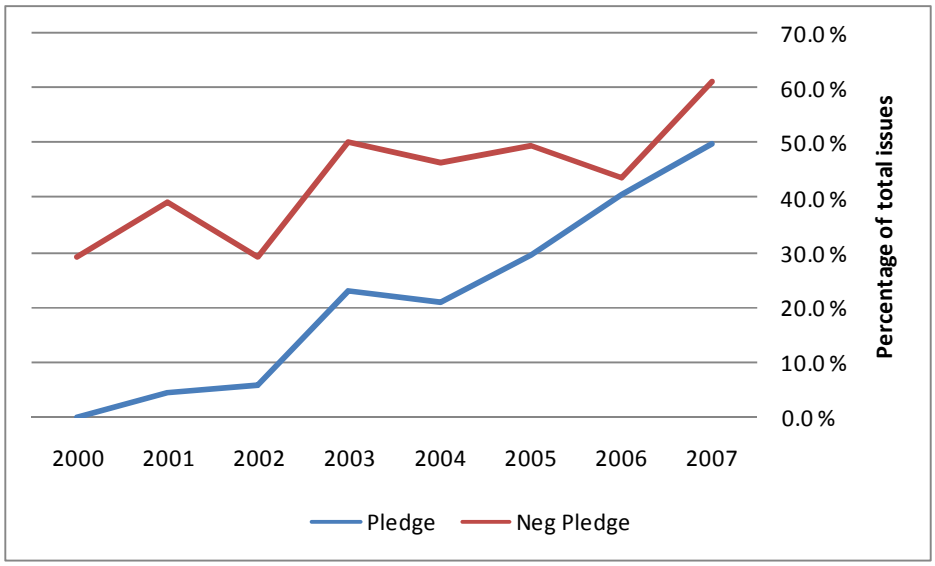
The negative pledge covenant is one of the most frequently used covenants in Norway, and is included in half of the bond contracts issued since 1998. The wording in a negative pledge clause can differ somewhat and is not always open to straightforward interpretation, but the intention and protection is more or less the same. When included in a loan agreement, the negative pledge clause limits the issuer from issuing new debt secured by pledges in the firm's assets. Basically, we find this covenant in two versions, depending on how the issue is secured in the first place. The first version is used if the bond issue in question is protected by pledged assets. In these cases, the covenant usually states that no additional debt is to be issued using the same asset as collateral. The second version is if the bond is not secured by any assets or guarantees, and the covenant states that no new debt is to be issued which is secured by any pledged assets unless the original bondholders are given equal or better protection. Both versions protect the bondholders from getting their claims in the issuer's assets diluted. The covenants also protect against the dilution of creditor priority. The covenant usually restricts the borrower from issuing additional debt with a higher priority than the bond, unless the bondholders are given the same or better priority as the new debt. This way, the covenant both directly and indirectly protects the

[46] Chapter 6.1-6.3 (4A), 6.4-6.6 (4B) and 6.7 (4C). Pair wise correlation between the most used covenants are shown in appendix 5.

bondholders by preventing the dilution of their claims and thus the lowering of the value of the bonds. The bonds' value is also protected, as the clause can reduce the borrower's incentives to issue additional debt if the covenant increases the cost of new debt significantly. Issuing additional debt can also reduce the value of the bonds by increasing the probability of financial distress. For this reason, it might prove valuable for the bondholders to include the covenant when lending to small and/or young firms, especially those in capital-intensive businesses. Their ability to raise new affordable capital often depends on the firm using its assets as collateral. Thus, for these issuers the cost of including this covenant is in many ways of a similar nature to the cost of including pledged assets.

The use of the negative pledge clause stands out in many ways. We find it used in every year in our data, and it is one of the covenants included in most of the contracts overall in the last ten years. The use of the covenant has an increasing tendency; the use has doubled from 2000 to 2007, but it fluctuates more compared to most of the other covenants. This can be interpreted as a sign that the use of the covenant is well-incorporated in the market and that underlying factors determine its use.

Figure 6.1: Pledge vs. negative pledge.



We have previously mentioned that there seems to be a relationship between the use of pledged assets and negative pledges, as well as covenants in general. Figure 6.1 indicates a quite strong positive relationship between the two, a notion supported by the fact that the correlation

coefficient is 0.85. Looking at the early years in the period, we see that many contracts included a negative pledge without pledging assets. In fact, as many as 52 contracts, twelve percent of our data, include the negative pledge as the only covenant in the contract altogether. These types of contracts are divided equally over the entire period, and eighteen different companies have issued them. A possible reason for the relatively frequent use of this covenant alone can be the large firms that have been issuing bonds several times over the period. Because these firms issued their first bonds in a period of a relatively low-developed bond market, very few covenants were imposed. In our data, there is a tendency for firms to issue identical or similar contracts over a long period of time. This can explain why many contracts still use the negative pledge as the only covenant. On the other hand, we still find that some firms issuing bonds for the first time in the later years also only include this covenant. Thus, not only do we find that the use of this covenant is to some extent influenced by the use of pledges, but also that it has been used throughout the period as an independent and often the only covenant. When used alone, it is generally issued by large and high-rated companies. The relatively high number of such issues may be the reason why we find little connection between the age of the firm and the use of the covenant, in contrast to many other covenants. In general, this covenant seems to have an important place in the market. The pattern of use suggests that it is has been well-known throughout the period. In the later years, the use has been influenced by issues secured by pledges and that uses the covenant to protect this asset, but it seems that other factors also play an important role in determining its use.

Table 6.1: Negative pledge vs. firm age

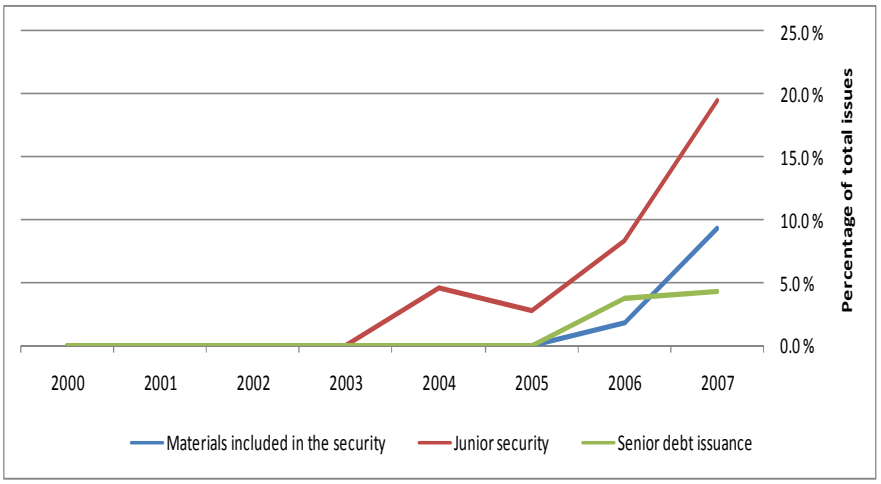
		Use of negative pledge		
Year	Issues firms < 3	Firms < 3 years	Firms > 3 years	Issues firms > 3
2000	1	0.0 %	31.3 %	16
2001	2	100.0 %	33.3 %	15
2002	3	100.0 %	33.3 %	6
2003	0	0.0 %	47.1 %	17
2004	3	66.7 %	44.1 %	34
2005	17	29.4 %	57.5 %	40
2006	40	57.5 %	34.0 %	50
2007	39	53.8 %	65.5 %	29

6.1.2 Junior security and senior debt issuance – debt restrictions applied differently

The covenant we call "junior security" is not used in FISD. It resembles the negative pledge, but in contrast to the negative pledge, the covenant restricts the borrower from issuing subordinated claims in one or all of the firm's assets. The covenant is primarily used in issues secured by a pledge in order to prohibit any other claims in the asset regardless of its priority. It is not self-evident why this covenant is included. First, because junior claims do not dilute the bondholders' claims and will always rank behind in the event of a default, and second, because it seems that other, more common covenants such as restrictions on indebtedness may provide the same protection. We will not argue that the rationale behind including this covenant is to protect the pledged asset, but rather that it functions as a more "sophisticated" way of restricting the issuers from issuing new debt. We would like to illustrate this point with a short example as follows. This covenant is primarily used in asset-backed issues, where proceeds are used to finance the purchase of one particular asset. We argued earlier that such companies likely need to use their assets as collateral in order to raise debt. Including this covenant makes it difficult for the issuer to take on additional debt with the assets in place today, but if the company wants to expand and purchase new assets, the covenant does not hinder this. In other words, the covenant protects against the issuer increasing its financial leverage as long as the company structure is the same as today, but the covenant does not influence the financing of company growth in general. If the company is regarded in the future (by others) as financially sustainable and can obtain affordable financing without the use of collateral, the covenant does not inhibit this. This distinction is in many cases desirable, and can be difficult to obtain using the more traditional restrictions on debt and security.

As we can see from figure 6.2, the covenant was recently put to use for the first time. The Junior security was used for the first time in a bond issue managed by DnB NOR in 2004; it has increased annually with an average of 4.9 percent, and was included in 19.5 percent of the new issues in 2007.

Figure 6.2: Security covenants - Development



The senior debt issuance covenant is also in many ways similar to the negative pledge, but its use and function differ somewhat. The covenant is included to prevent the issuing firm from raising more than a given amount of senior debt. The covenant is used on unsubordinated issues, and the intention is to ensure that senior claims do not increase to disproportionally high levels. The subordinated issues rank often ahead of the firms' equity in terms of liquidation preference. They have in general very few covenants included, and are usually convertibles. The covenant sets an absolute level of how many superior claims the issuer can obtain. In this sense, it is similar to restrictions on indebtedness, but we will argue that the primary function of this covenant is to protect the priority of the bondholders' claims from being diluted. This is because it allows the issuer to issue as much debt as it would like as long as the new claims are not superior to the bond. Thus, the primary objective for this covenant is not to protect against an increased leverage, but to protect the security and priority of the bondholders' claims.

6.1.3 Materials to be included in the security – pledged assets under construction

As in the previous section, the covenant is created based on our findings in the Norwegian bond contracts, and we find it to be very interesting. We have not found any covenants similar to this in the Mergent database or mentioned in the empirical work on the subject. The covenant is in many ways a good illustration of the recent development in the level of detail in which the covenants are being used and phrased. The covenant states that material, equipment, and parts of any sort that are acquired as part of the construction process shall be included in the pledged asset. The covenant is primarily used by asset-backed bonds in which the asset is under

construction. When included in the contracts, it helps to ensure that the bondholders' claims are secured by as much security as possible, pending the completion of the original pledged asset. During the construction period, the covenant is used to ensure that material equipment acquired in this period shall be separated from other material equipment and machinery and identified as belongings to the borrower. The covenant can prove valuable to the bondholders if complications arise during the construction of the asset. It provides protection against other creditors, in particular the company in charge of building the asset. If disputes about, for example, payment or other aspects of the construction contract should arise, the covenant can prevent the constructer from using equipment that rightfully should be a part of the bondholders security, as security for their own claims. More than 60 percent of the contracts that include this covenant also include the junior security covenant, which illustrates how these two are used on similar types of issues.

The covenant is included in contracts that are pledged with assets under construction. Thus, the increase from zero use prior to 2006[47] to being included in 9.3 percent of the contracts in 2007 can be explained by the increase in these kinds of issues. There are also many issues of this kind in 2006 and 2007 that do not include the covenant, and there are also such issues prior to 2006. Hence, this can be interpreted as an indication that the market participants have learned how to use this covenant over the last two years. We will argue that including the covenant involves very few costs for the issuer, and the main reason why it is not included in every contract, where it is relevant, is primarily due to a lack of knowledge or that it is regarded as unnecessary. We argue that the costs are low because all the issuer's stakeholders (e.g. stockholders) have strong incentives to see the asset completed. We also think it is fair to assume that the value of, for example, a finished vessel is higher than the value of its parts. Thus, the management will never have strong incentives to transfer wealth from the bondholders to the stockholders during the construction process. The covenant therefore mainly protects against other creditors' claims in a similar manner as the negative pledge. Contrary to the above covenants, this does not increase the issuer's price of new debt, and we would recommend it for use in every contract, if relevant.

The share level of detail in the covenant also indicates that the market has evolved over the last few years. We find a general tendency that the contracts have become more detailed and specific, especially during the last two years. The covenant is a clear sign of this development.

[47] Fearnley first manager to use it (Thule drilling in September 2006)

6.2 Corporate actions covenants – the put options

6.2.1 Change of control clauses (CC) – redemption if company control changes

The CC is used to protect against unwanted changes in the issuer's ownership structure. It can be used to retain and ensure that the present owner remains in control during the life of the bond. Lending money is a business based largely on trust, and the use of this covenant illustrates how important this element can be. We actually find that several contracts specifically name the persons that must be in control of the company, and how much of the company's shares these persons must own. More commonly, the covenant does not specify individuals, but states that this covenant is triggered in the event of a change in control. A change of control event is usually defined as a shift in the company's majority control; the phrase "more than 50 percent of the votes" is used for when change of control has occurred. In this "voting power percentage" covenant, we have collected all information regarding the trigger point for CC's. When CC appears, the trigger point is stated in 83 percent of the cases, and 50 percent is the most commonly used trigger. The covenant can also state a maximum share of the company that any single shareholder may hold, but this is used much less than the two other versions. The two covenants discussed in this chapter differ from most other covenants in that they are generally formulated as a put option that is triggered if the terms of the covenant are violated. The bondholders can exercise this put option and force the issuer to redeem all or parts of the loan at a predetermined price. The redemption price is stated as percentage of par, and is usually between 102 and 107 percent of par.

The CC provides protection against hostile takeovers, because it will trigger an event which may substantially reduce the company value.[48] The covenant affects the total value of the firm, as the entire loan may have to be redeemed prior to maturity and at a higher price. On the other hand, this covenant can be potentially costly to include for both the issuer and the bondholders. The company taking over is often bigger and has lower volatility than the target firm. All other things being equal, such takeovers will increase the value of the bond, as the probability of financial distress is, most often, reduced. If this covenant interferes with these kinds of desirable mergers, it can prove costly for the bondholders. In the case of friendly takeovers, it can also involve costs for the stockholders. The aim of mergers or acquisitions is to take advantage of synergy effects,

[48] Explanation from Mergent FISD Dictionary Database

and if the stockholders in both companies did not find the move beneficial, they would not go through with it. Smith and Warner (1979) use this as an argument against the importance of including restrictions on merger activities and covenants like the CC. The put option will not be exercised in valuable acquisitions, and otherwise the stockholders will stop the takeover. This is of course a valid argument in many cases, but it is not difficult to imagine acquisitions that the stockholders might view as beneficial but will decrease the value of the bondholders' claims. One example can be if the acquisition results in a shift to a more risky strategy. This may be the case if for example a shipping firm operating solely on long term contracts and in a stable market niche merges with a company that only uses spot contracts. If these two companies merge, the result will be an increase in volatility for the first company, and it will increase further if the risky price strategy is applied to the entire new company. Other examples can be a change in jurisdiction or that the merged company is taken off the stock or bond exchange, reducing the flow of information. Thus, such events may reduce the value of the bonds and possibly transfer wealth from the bondholders to the stockholders. It can also be difficult to estimate the synergy effects, and having the possibility to not be a part of the merging process can be valuable for the bondholders. Also, in 74 percent of the bond indentures, the covenant is combined with other, more general restrictions on merger activity.

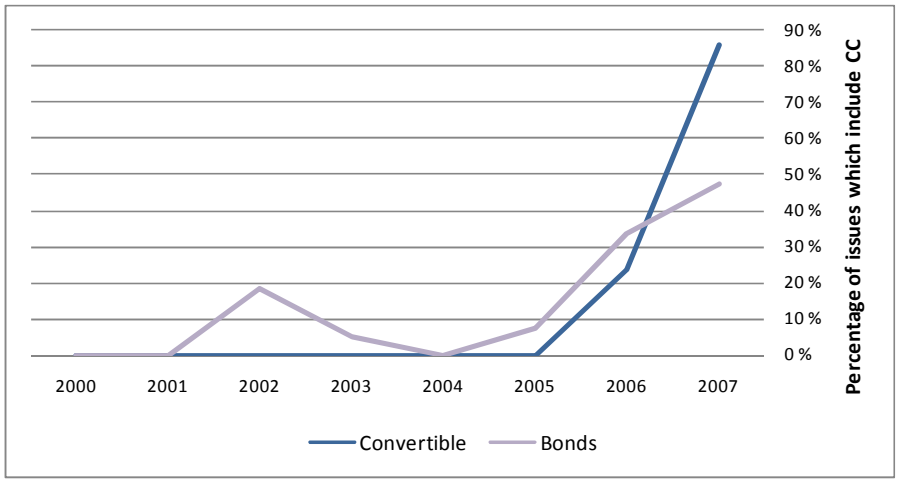
We find the covenant to be especially important when included in convertible bonds. In addition to a fixed income investment, the bondholders have a call option on the company's equity. As a simplification, one could say that the value of an option depends on the underlying asset's volatility – increased volatility results in a higher option value. [49] As described above, the acquiring company is often larger and has lower volatility than the acquired firm. All other things being equal, such a merger will decrease the value of the bondholders' call option, even if the merger contributes to positive synergies. A merger like this may have positive effects on the bondholders' fixed claims, and the proportion between these two factors determines the impact on the bonds' total value. Furthermore, it is important to emphasize that the exercise of the call option is dependent on the bondholders being able to value the underlying asset. This is normally done by looking at the market price for the company's share. Mergers often result in the new firm being delisted for a shorter or longer period of time, making valuation difficult and more subjective. The new organization can also include features that make valuation more challenging.

[49] Bodie, Kane and Marcus (2005)

In these cases, a merger will also reduce the value of the bondholders' conversion rights. Therefore, we expect the CC more frequently used in convertible bonds than in others, and possibly a relationship between the size or age of the firm and the use of the covenant. The latter is expected because we believe that small and/or young firms have a higher probability of being acquired by other firms, and also because they have a tendency to use convertibles more often.

Figure 6.3 illustrates the share of new bonds and convertibles that have included the covenant each year. As the figure shows, bonds include the covenant more often as measured in percentage of issues for every year except 2007. This is contrary to our and NTM's[50] expectations prior to this analysis.

Figure 6.3: Use of Change of Control in bonds and convertibles



We will argue that this is an illustration of how the market is immature and in a learning process.

Generally, convertible issues include fewer covenants, both because they usually have lower priority and security and because their interests are more in line with the stockholders than the holders of regular bonds. We believe that the increase from zero use of convertibles in 2005 to their inclusion in almost 90 percent of the issues two years later can only be explained by learning or some kind of new awareness. It can be a late reaction to the Aker Drilling case, [51] foreign influence, or a number of other factors that may have triggered it. At any rate, the economic arguments for including the covenant in convertible bonds are very strong. The fact

[50] Private conversation with Liv Mona Arntzen (NTM)
[51] This will be explained in section 6.2.3

that it is included in all four convertible issues so far in 2008[52] also supports the argument that the market has learned the value of including the covenant. It is now included in almost every convertible issue. We also find support for this in talking to Pareto.[53] Prior to 2006, Pareto has not included the covenant in any contract, but as of 2008 it is company standard to include it in all convertible issues the company manages.

6.2.2 Asset sale clause – redemption if certain assets are sold

The asset sale clause requires the bond issuer to use the proceeds from the sale of certain assets to redeem the bonds at par or at a premium. It is in many ways similar to the CC, but it specifies which or how much of an asset, and not shares, is to be sold to trigger the possible redemption. In some cases it also specifies one or more assets that the firm is obligated to acquire in order not to trigger the asset sale clause. The definition of assets can be relatively broad based, and the covenant may be stated based on certain shares, rights, or companies that are to be acquired or not sold. The covenant is used to protect bondholders against the issuing firm selling pledged assets and the case where the firm only has a few assets accounting for its total cash flow. As much as 88 percent of the contracts with an asset sale clause also include pledging of assets, emphasizing the importance of this covenant as a protection for the bondholder against the borrowing firm selling the security asset. In addition to protecting the pledge, the covenant helps reduce the problems related to asset substitution that drain the company of value, and hence protects against the agency cost of debt. By including a put option that can be exercised if certain assets are sold and/or substituted, it reduces the management and thus the stockholders' incentives to engage in such activities.

When CC appears in the indentures, 44 percent also include an "asset sale" covenant. Overall, both are included together in approximately ten percent of all the issues, and their development follows more or less the same pattern, emphasized by a strong correlation coefficient of 0.96.

6.2.3 Development in usage of the CC and the Asset sale clause

Figure 6.4 shows that both CC and asset sale clauses have been more frequently included in loan agreements in the later years. Apart from a few cases in 2002[54] these protection covenants were

[52] 03/31/2008
[53] Stian Winther (Pareto)
[54] Large impact on the total percentage in 2002 due to few observations

put to use during 2004 and 2005, and have had a large annual increase in use of around twenty percent.

Figure 6.4: Corporate actions covenants – Development in covenant usage and firm age

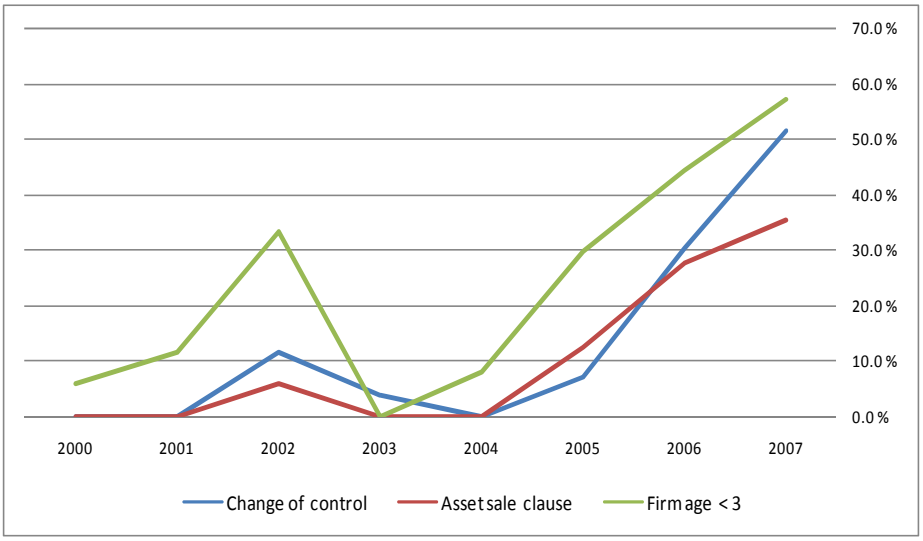


Figure 6.4: The vertical axis shows in how many percent of the contracts CC or asset sale are included. It also shows the percentage of total issues which is issued by firms younger than three years

The increased use of the CC that started in 2005 was affected by an event in the autumn of that year. Aker Drilling ASA issued a convertible bond, and the company was listed on the stock exchange. Shortly after, rumors of the company being taken over started to worry the owners of the convertible bonds, which made the market more aware of the need for a covenant like the CC. Investors feared that they could not make use of the conversion right or that it would at least decrease in value. This was primarily because of the expected lower volatility in the new firm, but perhaps worse was the fear of delisting. Ola Nygård at NTM[55] emphasizes that both of these factors are important reasons for the use of this covenant in convertibles, and that the Aker Drilling ASA issue was an eye opener for much of the market with regard to the covenant's importance. Looking at figure 6.3, the event coincided with the soaring use of the covenant in convertible issues and seems to help explain this development. On the other hand, this does not explain the use of common bonds. One possibility can be the increasing trend in the "acquisition market," making more investors interested in the option of getting their money back at par or premium if an unwanted acquisition should occur. A more plausible reason might be that the

[55] Meeting with representatives at NTM 04/11/2008

increased use should be viewed in relation to the increased use of pledged assets. This is especially true for the asset sale clause, as there are several indications of its use to protect the pledges.

Another possible explanation can be seen in figure 6.4, which shows the use of both covenants compared to the development in the issuers' firm age. The graph indicates a strong positive relationship between the development in the age of the issuing firms and the use of these covenants. Interpreting young firms as synonymous with lower creditworthiness/poorer financial conditions, ceteris paribus, according to the ATC, these firms should also include covenants more often. The correlation coefficients for the development in the firm age and the development in CC and asset sale clauses are respectively 0.9 and 0.93, emphasizing the strong covariance between these variables. Another interesting observation from the graph is the relatively large increase in the use of CC and asset sale clauses from 2001 to 2002 (followed by the large decrease in 2003), corresponds to an equal jump in the number of young firms. Bearing in mind the low number of issues in 2002, the increase still gives some strong indications of a relationship between the covenants and the firm age. Taking a closer look at the issues in 2002, it seems that the restructuring process of Kværner could have had some impact on the use of covenants that year. The company issued a large percentage of the total issues that year and used a lot of covenants for that time. However, Kværner was at the time one of the oldest companies in Norway, so it appears that the relationship between the firm's age and the number of covenants in 2002 is just a coincidence. DnBNOR managed these issues, and they were the first to include the asset sale clause. Overall, Pareto has the highest percentage of the use of these two covenants, possibly reflecting the fact that the company made it a "standard" covenant earlier than most.[56]

Even though we find strong indications that firm age influences the use of both covenants, a closer look reveals that this might not be the case. We find that a more plausible explanatory factor is that the market has evolved and learned the value of these kinds of covenants. This is particularly evident when looking at the use of the CC on convertibles. In regard to the asset sale clause, we find that learning over time may be the best explanation for the development in use we see, but also that the increase in pledged assets may have had a significant impact.

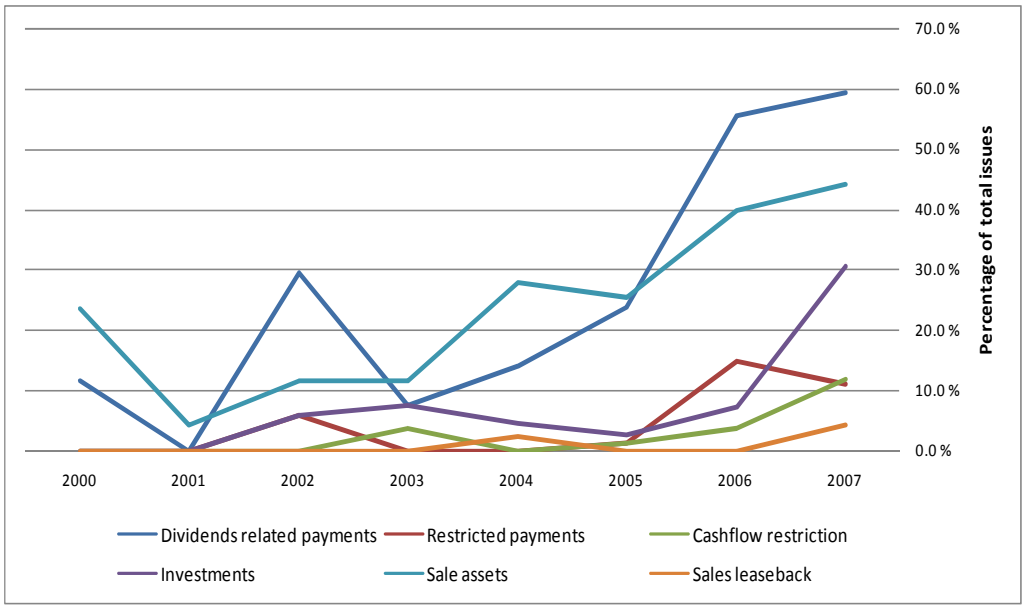
[56] Stian Winther (Pareto)

6.3 Corporate covenants – policy restrictions

6.3.1 Dividend restrictions – an important covenant with several implications

Restrictions on dividend payments is one of the few covenants we find almost every year in our data.[57] The covenant is based on a broad definition of the term dividends, and includes all types of payments to the company's stockholders. In addition to the regular dividend payments, the repurchasing of shares is the most commonly found restriction. Figure 6.5 shows the rapid increase in the use of dividend restrictions, especially between 2002 and 2006. In total over the period, 38.1 percent of the contracts included restrictions on dividend payments. The restrictions can take many forms. Most commonly, the contract states that only some percentage of the company's earnings each year can be paid out as dividends. Young firms look to have a more dynamic set of restrictions, forbidding the payment of dividends altogether for the next two years, for example, and subsequently a percentage limit applies. It can be argued that such a clause is especially valuable to include in the contracts of young firms. In 2007 we find that 80 percent of the young firms do so, but in 2006 the number is only 32 percent, and in 2005 only one of seventeen has included the clause. It seems that all types of firms apply this clause to their contracts, and that its popularity has increased by a relatively high rate over the last seven years.

Figure 6.5: Corporate covenants (Policy restrictions) - Development



[57] the only exception is in 1999

Paying out dividends to the stockholders can reduce the value of the bonds, depending on how the payments are financed. If the payments are financed by a reduction in investments, the future expected value of the firm's assets decreases. By reducing the future value of its assets, the company increases the probability of default and financial distress, and the value of their outstanding bonds today decreases. By paying out extensive dividends, the company may also have to reject positive NPV projects. Cash payments and other forms of value that transfer to stockholders, like repurchasing of own shares, can be used to "drain" the company of value. It can be done directly by selling assets (e.g. production equipment or brands) or by paying out liquidation dividends. More indirectly, it can involve issuing debt to repurchase shares, paying dividends, or financing investments that otherwise retained earnings could have financed. Either way, this increases the company's financial leverage, and thereby the probability of financial distress. In general, paying out dividends in any form is almost never positive for the company's bondholders. They would like as much liquidity in the firm as possible to minimize the probability of financial distress and to maintain security for their claims. On the other hand, paying out dividends in any form may reduce the total value if the company does not have unlimited positive NPV projects available. If the company has more cash than good investment opportunities, value will be destroyed as the total rate of return decreases. The management may also overspend on social activities, for example, or it can create slack in the organization. More importantly, the stockholders are of course concerned with the total value of the firm, but some also value the fact that the company pays dividends, which also can be a powerful form of communication. This is one reason why bond contracts never forbid dividend payments per se.[58] We find that the covenants restricting dividend payments are primarily based on restricting how much the company can pay out, in percentage of some accounting figure. Usually, it is stated whether or not unutilized permitted dividend payments are allowed to be carried forward. Most of the contracts have an upper limit on dividend payments at 50 percent of last year's net earnings after tax, usually on a consolidated basis. Smith and Warner (1979) found that the dividend covenant acts as a restriction on dividends financed by debt or the sale of existing assets (not dividends per se), which tends to reduce the value of the bond as the coverage decreases. We find that the same is true for the covenants that restrict dividends in Norway over the last ten years.

[58] As mentioned, some young firms have included clauses that prevent them from paying out dividends altogether, but only in a limited starting period

Based on the evidence provided by Kalay (1979), Smith and Warner (1979) show how the dividend covenants can have an effect on the firm's investment policy. One reason for this is that by placing an upper limit on dividend payments, one is at the same time setting a lower limit on how much to invest. This can help reduce the underinvestment problem.[59] Based on their analysis, Smith and Warner predict that the inclusion of dividend covenants depend on the bonds' maturity. Long term bonds have a higher probability of inclusion than shorter term bonds.[60] We have not been able to find such a relationship in our data, but it should be noted that the issues in our data are quite homogeneous with respect to maturity. Our data contain no CDs[61] (or other short term notes), which Smith and Warner use as an example.

We will argue that including dividend restricting covenants must represent some cost to the issuer. Otherwise, every contract should include it in order to help reduce the costs of the bondholder/stockholder conflict. In 2007, almost 60 percent of all bonds issued have included it, making it one of the most commonly used covenants. We also find it used almost every year in our data, but to a lesser extent in the earlier years. This implies that the covenant has been "known" to the market for at least ten years. It is also one of the few covenants described to some extent in the available literature on the subject, and the effect of its workings should be known to the participants in the Norwegian market. For this reason, we would argue that we expect to see it included in almost every contract if the cost of including it is zero. The cost associated with including it can be related to the loss of freedom over the company's financial policies and capital structure. The covenants also limit the possibilities of selling assets or taking on additional debt to pay out dividends to the shareholders. One important function of dividend payments is the information they reveal to the capital markets. The management of a company is better informed about the company's future prospects than the outsiders. This information asymmetry means that the market closely monitors the management's actions. This is one of the reasons why managements try to keep dividends at a stable level, and at least try not to reduce them. Therefore, the management will most likely set the dividends at a level they know the company can sustain over a longer period of time and over the economic cycles.[62] The investors are aware of this, and will probably interpret a reduction in dividends as a sign that the management does

[59] See chapter 2
[60] See Smith and Warner (1979, page 134-136)
[61] Certificate of Deposit
[62] Rather than increasing the dividends when the market is good, extraordinary dividends are paid out.

not believe that today's level is sustainable; they take it as implicit that the future earnings do not look as good as previously expected. If a company experiences a drop in earnings one year and has the covenant included, it will have difficulties maintaining the dividend payments. This again will most likely put downward pressure on the market price of the stock and reduce the stockholders' wealth. The management (acting on behalf of the stockholders), then recognizes this as a cost, and only if this is lower than the cost of including the covenants in the bond contract, will it do so. The management may also personally incur costs as a result of this, if parts of their compensation are in stocks, warrants/options, or similar.

6.3.2 Restrictive payments – payments to other creditors

The restrictive payments covenant includes restrictions on the issuer's payments to other creditors. Usually it limits the company's ability to redeem loans other than the bond in question prior to maturity. The covenant's main goal is insuring that no other creditors are favored over the bondholders, and that other lenders are not granted better terms after the bond is issued. The covenant is almost exclusively used in 2006 and 2007 and in fifteen and eleven percent of the issues, respectively (figure 6.5). Over 90 percent of the contracts including the covenant also use pledged assets as security and includes dividend restrictions. This illustrates that the typical issue including the covenant is issued by smaller and younger firms, and the issues are primarily asset backed. Furthermore, the covenant has a strong connection to dividend restrictions, and is often written as an extension of that clause. The pattern of use indicates that the market at some time during 2006 discovered the value of including the covenant.

6.3.3 Restrictions on cash flow – illustrating the development

This covenant limits what a company can do with all or some of its cash flow. In eleven of the twenty contracts that have included this covenant, the covenant restricts how the proceeds of the bond issue shall be used. This version of the covenant is only found in what we refer to as asset backed bonds. This is also a plausible explanation for the increase in the use of the covenant in 2007, a year with many such issues. The other 45 percent of the cash flow restrictions we find in our data are different requirements of how much cash or cash equivalent the firm has to keep at all times. In this sense, the covenant tries to preserve the issuer's liquidity. More than 90 percent of the companies that included this covenant also included dividend restrictions. The covenant can be viewed as a means to provide a minimum level of liquidity in the firm, thereby reducing

the probability of financial distress. Another interesting fact that should be mentioned about this covenant is that 55 percent of the issues that included it were managed by Pareto Securities, and that 55 percent were issued in USD. In general, these contracts also have considerably more covenants in total, and the contracts appear to be more "sophisticated." The covenant is another example of what appears to be an underlying trend in the market. The contracts use more specific and clear phrasings, and are in general more detailed. The introduction of this covenant is evidence of this trend and illustrates how the contracts to a larger degree try to increase the value of the covenants by making them more precise and accurate.

6.3.4 Sales leaseback – should be used more in Norway

Figure 6.5 shows that the sales leaseback[63] covenants are almost never used in Norway. Only six contracts in our data have included it, five of which were issued in 2007, just above four percent of the issues that year. Only three issuing companies have included them in their contracts.[64] Billet et al. (2007) have documented relatively extensive use of this covenant in US. The economic rationale behind including the covenant is quite obvious and straightforward. If a company sells some of its asset, merely to lease it back again, this reduces the value of the outstanding bonds. Because leasing liabilities rank ahead of debt liabilities such as bonds, engaging in significant sale leaseback deals will dilute the bondholders' claims, putting them further down the "list" of creditors. Giving up the ownership of an asset also reduces the bondholders' (indirect) collateral for their claims, as the assets available for sale in case of financial default are reduced. Based on this, we expected to find it used to a larger extent. Because so many issues in Norway are by firms with few and expensive assets, with relatively liquid secondhand markets (e.g. shipping and oil), this covenant could prove valuable for the bondholders if included.

6.3.5 Sale assets – widely used but subject to interpretation

The sale asset covenant is one of the most widely used in our data, one of only a few that are used every year in our data. Figure 6.5 illustrates that already in the year 2000; almost 25 percent of the issues included this covenant. After being used relatively little during the next three years, the use of the covenants increased rapidly from 2003 up until today, where it is included in 44

[63] See Appendix 1 for description of covenant
[64] Norwegian property, Norske Skogindustrier and PetroProd LTD

percent of the contracts issued. We found many variations of this covenant in our data, both with respect to the phrasing and the actual contents. Therefore, this category was quite difficult to register, but we believe that our approach provides a good description of the situation. Our approach is based on what kind of protection it provides the bondholders with. To exemplify the difficulties, consider this paragraph from one bond contract issued by DNO ASA: "The Company shall not sell or dispose of a substantial part of its operations, which might jeopardize the Borrower's ability to comply with its obligations under the Loan Agreement." [65] The contract does not clarify this any further, and the definition of what for example "a substantial part of operations" means, in terms of which or how much of its assets the company is allowed to sell, is subject to interpretation. It is also difficult to address what the contract means by "jeopardizing the borrower's ability to comply." We would argue that a strict interpretation would be that no assets are allowed to be sold unless replaced by an equivalent, as this would reduce the company's ability to "comply with its obligations." This is just one of many examples of general and vague paragraphs regarding restrictions on the sale of assets. We solved this problem by not including these types of phrases. The covenant includes restrictions on either specific assets that not are allowed to be sold, clauses that restrict how the proceeds of assets sold may be used, and at which price they are allowed to be sold, or how much/many assets are allowed to be sold, disposed of, or in other ways transferred from the company.

In its simplest form, the economic rationale behind restricting the company from selling off its assets seems uncomplicated enough. According to Smith and Warner (1979) and the Costly Contracting Hypothesis, this covenant is used because the value of each asset sold separately is less than the value of the assets as a going concern. It can also serve as a valuable protection against asset substitution, which Smith and Warner argue is one of the most important sources of conflict between bondholders and stockholders. By including this covenant, it is more difficult for the management (the stockholders) to replace the firm's asset with new higher variance and even negative NPV ones. It is not difficult to see how this covenant protects against asset substitution, but in Norway its most important function seems to be a bit different. In most of the cases where we find it used, it restricts the sale of one or more specific assets, such as named oil rigs or vessels. This may again be due to the fact that the firms owning these kinds of assets are often very dependent on them in terms of future earnings. We expected, and did find, that such

[65] ISIN NO 001 028373.2

firms, with few but very valuable assets, would include covenants that restricted the sale of these assets. As previously noted, many of these firms issue bonds to finance the purchase of their assets, and the assets serve as collateral. Thus, almost 85 percent of the contracts that have a sale asset covenant also have pledged assets. When included in these contracts, the covenant directly or indirectly serves as a protection of the pledged asset. This seems to be the main motivation for why this covenant is included in Norwegian bond contracts: to ensure that specific assets do not get sold in order to protect either a pledged asset or assets that are considered to be of utmost importance for the company. We also find some contracts forbidding the sale of assets altogether or over a specified value. However, these covenants do allow for assets to be sold as long as they are replaced by similar ones.

Clauses that restrict the use of proceeds from the sale of assets, and not the sale per se, were included in this category, but we do not find this version of the covenant in our data (although the asset sale put is similar). We will argue that such a clause could be valuable for many firms to include in their contracts, instead of restricting asset sales altogether. The strict version of this covenant is more "expensive" for the issuer to include. One reason for this is the possible case where the asset is more valuable to others than to the firm now owning it. It is also costly for the issuer to give up control over its own assets. The stockholders "lose" the opportunity to engage in asset substitution or to drain the company of value, which would be especially tempting in times of financial distress. This makes the covenant costly for the issuer to include. The softer version does not protect the bondholders from asset substitution, but help prevent the stockholders from draining the company. Thus, the optimal solution depends on how the two sides view the costs and benefits, but we are a bit surprised that no issuer has chosen the softer version of the covenant.

6.3.6 Investments – indirectly restricting the issuer's investment policy

This covenant restricts the investment opportunities for the issuing firm. The Mergent FISD refers to this covenant as restrictions that limit the issuer's investment policy in order to prevent "risky investments." In theory, this is desirable, but in practice it is difficult to make contracts that can prevent a firm from engaging in risky investments. How should risk be defined or measured? In some cases, measurements such as the expected or historical standard deviation can be applied, but in many cases the calculations would be, at best, based on many assumptions.

Another possible solution could be to state that all projects invested in should at least yield some hurdle rate or have a positive NPV. Unfortunately, this is difficult to include in bond contracts, which is most likely the reason we do not find it in any of our contracts. How to measure risk and forecast cash flows are difficult to agree upon in a contractual setting, and would also be difficult and time consuming for the trustee to follow up. We believe this is the reason why we do not find any evidence of this being applied to contracts in Norway.

We find primarily two different aspects which we have chosen to include in this category. First of all, it includes clauses that directly restrict the company's investment policy. The only form of restriction we find is that which states that the company is not allowed to make investments in other business sectors than the one they are in today. When the covenant is phrased like this, the covenant protects the bondholders from asset substitution. Thus, it can reduce the cost of the bondholder-stockholder conflict. It also makes it more difficult for the management to engage in acquisitions of firms in other lines of business, or to use surplus cash to speculate in financial markets, which might affect their ability to meet their obligations to the bondholders in the future. In addition to clauses that restrict the issuer from investing in other businesses, we also find some contracts that restrict the company's investment policy to investments related to a specific asset (e.g. a certain, named vessel). This covenant is sometimes included in asset backed bonds that use the asset as collateral. By including this, the bondholder can give the management incentives to invest in the pledged asset, while preventing asset substitution and unwanted diversification. This is particularly true if the contract also includes cash flow restrictions and/or restrictions on dividend payments. We find that 73.3 percent of the contracts that have restrictions on investments also include restrictions on dividends, suggesting that this might be the case. Another explanation could be that the firms including this covenant generally include many covenants.

In this covenant, we have included restrictions on granting loans or guarantees to any third party, as Smith and Warner (1979) do in their article. The restrictions account for most of the findings in our data for the last three years. In 2007, 29.7 percent of the contracts (90 percent of the investment covenants that year) have such restrictions. The figure was 6.5 percent in 2006 and 2.5 percent in 2005. The first time it was introduced to the Norwegian market was in late 2005 by SEB Merchant Banking, and we find it quite quickly in other managers' issues. This can be ascribed to the fact that Pareto manages many of the small oil and shipping issues.

Generally speaking, we find that restrictions on investments are not much used in Norway. The only exception is in 2007, where 30 percent of the contracts restricted the respective firms from granting loans or guarantees to any third parties. We find this result a bit surprising because the covenant, at least theoretically, can help reduce the agency cost of debt, both by reducing the incentives for over- and/or under-investing and asset substitution. On the other hand, it is difficult in practice to write contracts that can control the issuing firm's investment policy. This might be the reason why we do not see it used more, and why the managers try to influence the investment policy by using other covenants, such as dividend restrictions. It is easier to restrict the firm from granting loans and guarantees in an effective manner. However, we do not see why firms should have significant incentives to do so in the first place, making this a "cheap" covenant to include for the issuer.

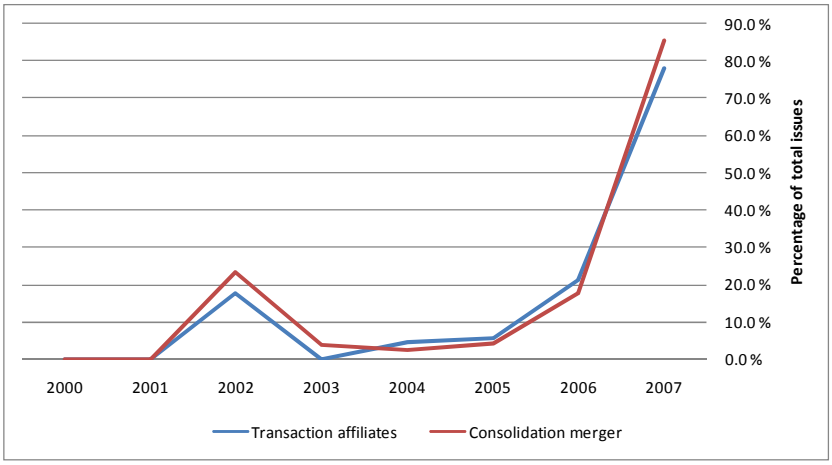
6.3.7 Consolidated mergers

This covenant restricts the issuer from consolidating or merging with other companies. Demergers are also often included in this covenant. By looking at our data, it would appear that the use of this covenant has rapidly increased during the last ten years (figure 6.6). The fact is that a vague version of this covenant is included in every issue, written as a restriction on merger activity if the merger prevents the issuer from "meeting its obligations under the loan agreement." We have registered this covenant when the wording is more concrete and operative. In 2006 and 2007, we find a clear shift to a more precise restriction of mergers, and this explains much of the increased use. Without this covenant, the value of the bond can decrease as the new firm has a higher variance. Prohibiting mergers can also come at a high cost for the bondholders. In relation to company takeovers, the acquisition firm is often larger and has a lower variance, making a sale of the company beneficial for the bondholders. All other things being equal, lowering the variance of the firm increases the bondholders' wealth. The early "vague restrictions" seem to have taken this into account by making it a topic open for discussion. It is the role of the trustee and ultimately the bondholders' meeting to decide on a merger. The strengthening of the covenant's protection and more specific language during 2006 may be a sign that this former strategy did not provide enough protection for the bondholders. The new version of the covenants looks more like a flat-out prohibition against mergers. It is our perception that the question is still up for discussion, but the new phrasing provides the bondholders with better "bargaining power."

6.3.8 Transaction affiliates – from zero to standard in a year

This covenant restricts the issuer from engaging in transactions with its subsidiaries that are not carried out in line with prevailing market prices. This covenant was used in 78 percent of all the contracts in 2007. Figure 6.6 shows how the use "exploded" from 2006 to 2007, when it seems to have become an almost standard phrasing in the contracts. The first issue that included the covenant was one of the important Kværner issues in 2002 managed by DnB NOR. After this, the covenant was not used again until 2005.[66]

Figure 6.6: Transaction affiliates and merger restriction – From low use to standard phrases



The covenant protects against the transfer of value within the group of companies. This is particularly important if the mother company does not own all the shares in a subsidiary. By "giving" such subsidiaries assets or services for less than the going market price, this company will increase its value at the expense of the mother company. Therefore, the covenant can be valuable for bondholders if the issuing company has subsidiaries or is part of a group of companies, especially if the issuer does not own 100 percent of its subsidiaries. By including the covenant, the stockholders accrue costs by giving up the possibility of making dispositions within the group that may be favorable for them. Almost 80 percent of the contracts in 2007 included this covenant. We do not see any other reason for this than that the market has learned about its use, and hence the covenant has become a standard formulation that most of the issuers include. We would argue that the issuers' cost of including this covenant is not very high. This can also support the notion that it has quickly become a standard in the Norwegian market.

[66] Aker Invest and Mosvold Drilling, both managed by Pareto

6.4 Stock related covenants

6.4.1 Stock issuance issuer – possibly not the best way to protect the bondholders

This covenant restricts the issuer from issuing additional common stock. Figure 6.7 shows that the covenant is not used much in Norway, but the use has increased from nothing at all to just above four percent of the contracts in 2007. 60 percent of the contracts that included the covenant were issued in USD, and exclusively by firms in the oil or shipping sector. It seems that the covenant is primarily used to ensure that the ownership of important assets is not diluted by issuing new stocks. In other words, it serves somewhat of the same function as an asset sale or change of control covenant, ensuring control over important assets or preventing today's owners' stock in the company from being diluted. We believe that bondholders' interests are better served by including these covenants. Generally speaking, it is positive for a company's bondholders when new stocks are issued. By decreasing the firm's financial leverage, all other things being equal, the probability of financial distress are reduced. This implies that there are high costs for the bondholders to include this covenant, in addition to the costs facing the issuer; thus, we find it difficult to see in which situations these costs would be lower than the perceived benefits of including the covenant. This may well be the reason why we observe the low use of it in our data.

Figure 6.7: Stock related covenants – Development in percentage of total issues

6.4.2 Stock transfer sale disposition – regulating the ownership of subsidiaries

This covenant has been increasingly used in Norway since 2002. In 2007, 18.6 percent of the contracts included this covenant. Generally speaking, this covenant restricts the issuer from "transferring, selling, or disposing of its own common stock or the common stock of a

subsidiary."[67] In our data, we did not find any clauses restricting the sale of stocks in the issuing firm the issuers has repurchased or similar. In the Norwegian market, this covenant is used to restrict the issuer from selling the stocks in a subsidiary or in other ways making dispositions that result in the loss of control in subsidiaries. The covenant is primarily used if the pledged assets or other important assets are under the control of a subsidiary. We have shown earlier how it is common practice for many firms in oil and shipping to create subsidiaries for their different assets, making the mother company a holding company with ownership in different subsidiaries that operate the different assets (e.g. vessels). Therefore, it may be of importance to the bondholders to ensure that the issuing company maintains ownership over its subsidiaries. This can help prevent asset substitution, the stockholders' draining the company of value, or losing coverage for their claims.

We find that DnB NOR was the first manager to introduce the covenant to the Norwegian market in October 2003.[68] Since then, Pareto has used the covenant most frequently. After including it for the first time in March 2003, they have managed 56 percent of the issues that have included this covenant. We would argue that many firms prior to this date also would have benefited from including this covenant, and that the kind of firms in our data has not changed so dramatically in this respect since at least 2003. Thus, the increased use of this covenant is most likely a result of some kind of learning or awareness that has occurred in the marked.

6.4.3 Maintain listing – the value of information and the conversion rights

This covenant is used to ensure that the issuer is listed on an exchange during the life of the bond. Usually the contracts in our data state that the company should be listed at Oslo Børs or another exchange approved by the trustee. The economic rationale behind this covenant primarily relates to aspects of information and valuation. The stock exchange has strict regulations for providing the market with accurate and extensive information about the company's development and future prospects. This information is also valuable for the bondholders, and one way to ensure this information flow is by including this covenant. By demanding that the bond should be listed, the bondholders would to a large extent achieve the same as demanding the stock to be listed. This is

[67] Mergent FISD
[68] NO0010198518, *Avantor ASA*

also one of the reasons why companies that list their shares often list their bonds at the same time, as well as the reason why we have included both types of phrasings in the covenant.

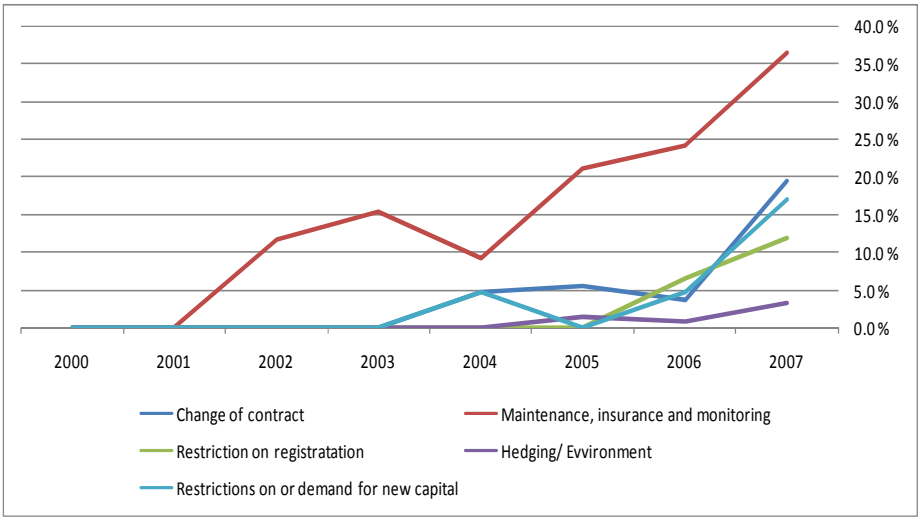
Ensuring this information is important for many reasons. First of all, it is very important for bondholders with conversion rights (convertible bonds). In order to price the underlying asset, having a market price in the form of a stock price at an exchange can prove invaluable. Thus, in the worst case, the bondholders' conversion right can be worthless if pricing the underlying asset is difficult. For this reason, we would expect to find that most of the issues including this covenant are convertibles, but convertibles only account for 28 percent of its use. Prior to 2004, the covenant was not used in Norway at all. Pareto introduced it for the first time in September 2005, and the use has increased to over eleven percent of the contracts in 2007. DnB NOR has managed half of the issues that include this contract.

We cannot find any plausible explanation for the development in the covenant's use, other than learning and awareness from the side of the market participants. We expected to find it included mostly in convertible issues, but they do not dominate the use of the covenant; thus, shifts in the number of convertibles cannot explain it. The information this covenant ensures is also valuable for other issues than convertibles. It can provide liquidity in the form of accurate pricing of the bonds themselves, and/or inform the bondholders of possible changes in the firm's ability to meet its obligations. To a large extent, this information also can be provided by including information covenants, thus ensuring the flow of information. Every issue in our data contains information covenants, and this may be one reason why it is not included in more bonds, but this does not explain the low use in convertible issues.

6.5 "Norwegian" corporate covenants

In the following section, we will present the corporate covenants that we find in the Norwegian market, but are not listed in the Mergent FISD main list of covenants. The categorizing is based on our findings in reading through the contracts, and is inspired to some extent by earlier works. Figure 6.8 displays the development to the covenants to be discussed in this section.

Figure 6.8: ”Norwegian” corporate covenants – Development in percentage of total issues



6.5.1 Change of contract – control of assets under construction

This covenant restricts the issuer from making material changes to their already-entered-into construction or rental contracts. The covenant was first used in Norway in 2004, and the use has increased from 4.7 percent in 2004 to 19.5 percent in 2007. We find evidence for this development being related to the increased use of pledged assets. The covenant is primarily used to secure the pledged asset in asset-backed issues where the asset is not already in place, by not allowing the issuer to agree to change important aspects of the construction contract. These changes can be, for example, with regard to the delivery data, quality, or quantity of assets. We find that 100 percent of the issues including this covenant also have pledged assets, providing an explanation for the development. This would support a hypothesis that the market has learned and evolved on this point. The covenant is also used by real estate companies in their rental contracts.

6.5.2 Maintenance, insurance and monitoring – uncertain level of protection

In contrast with most of the other covenants, this one requires the issuer to perform certain actions. Smith and Warner (1979) argue that maintenance requirements with regard to property, for example, will not have much impact if they are costly to enforce. Furthermore, they argue that this problem can be solved if third parties provide the maintenance, which often is the case in businesses such as shipping. Requiring sufficient insurance is easier and less costly to supervise. In most cases, the issuer would have incentives to take out insurance that will be viewed as satisfactory by the bondholders. However, by looking at the stockholders’ claims in the company

as a real option, one can see that this may not always be the case. If the firm in particular has a lot of risky debt outstanding relative to equity and/or the risky debt is secured by pledged assets, the stockholder/company may not have incentives to invest in insurance. In these situations, the real option is a long way from being in the money, and the management has incentives to increase the upside potential and the company's volatility by not buying insurance. Thus, the bondholders bear most of the risk, and the covenant can be a valuable tool in minimizing the effect of the incentives created by leverage and the conflict between bond- and stockholders. This is the reason why we would expect to find this covenant in issues by firms that are young and/or highly leveraged, and when assets are used as collateral.

Most examples we find state that maintenance, insurance and monitoring should be at a satisfactory level. The contracts that include all three aspects of this covenant are almost exclusively found in asset-backed issues where the asset is not yet in place. Restrictions on maintenance and insurance are also found in issues by real estate companies and other firms with valuable assets already in place. The use of this covenant has increased from being included in no contracts at all in the year 2000, to inclusion in 36.5 percent of the total contracts in 2007. We almost never find a specific explanation of what a satisfactory level implies and means in practical terms. We never find stated in the contracts the frequency of maintenance, how much to spend on it, or which suppliers to use. The level of insurance is also not specified in the contracts. The monitoring as a part of the covenant is exclusively related to issues where the asset not is yet built. In these cases, the covenant is used to ensure that the company oversees the construction, and makes them to some extent liable for how the supplier carries out the agreed-upon building of the asset.

We find evidence indicating a strong relationship between pledged assets and the use of this covenant; 93 percent of the contracts with the covenant are secured by pledged assets. This supports the argument that protecting pledged assets is one of the important rationales behind this covenant. All the contracts with this covenant have also included the CC covenant, illustrating the fact that this covenant is almost exclusively used when the pledged asset is not yet delivered to the issuer (with a couple of real estate companies being the exception). In line with Smith and Warner's argument, we do find that most of the issuers using this covenant are in shipping or oil, businesses that at least to some extent use external providers. More importantly, we find that this

covenant can provide valuable protection when included in these types of contracts, or if the firm has a high degree of leverage. It is possible to specify both insurance and maintenance more extensively to provide better protection, increasing the company's incentive to spend money on maintenance and insurance. From the company's point of view, this covenant has some obvious and direct costs, but from the way it is formulated in the contracts in our data, it is not clear how high these costs are in reality. One reason why it has become so popular may be that the real cost, and therefore the real protection it gives the bondholders, is in fact quite low.

6.5.3 Restriction on registration

This covenant was used in 11.9 percent of the contracts in 2007 and 6.5 percent in 2006. Prior to this, we do not find it used in Norway. Fearnley and Pareto are the managers that use the covenant the most, but First Securities was the first to include the covenant in an issue. Basically, the covenant restricts two things, the classification and/or the jurisdiction of assets. The classification is mainly related to ships (or floating oil rigs, etc.), where the covenant places a limitation on which class the vessel may be in. Indirectly, this restricts the issuer from rebuilding or making other material changes to the vessel. This helps prevent asset substitution, and thus contributes to reducing the agency cost of debt. The covenant can also restrict which country a company or asset is to be juridically registered in. This can prove important, especially when the bond uses the asset in question as collateral. Changing the jurisdiction can be one way of transferring wealth to the stockholder at the expense of the bondholders, if doing so makes it more difficult for the bondholders to secure their claims. The covenant is most commonly used with respect to which flag a certain vessel is to sail under, but it is also used in more general terms.

6.5.4 Hedging and environmental protection – preventing and creating disaster

This covenant is not much used, but we find the idea of including it interesting. This is not a covenant found in the Mergent database, and we have not found it mentioned in previous empirical work. Reading through the contracts in our data, we found that six contracts issued between 2005 and 2007 have included paragraphs that state that the issuer must hedge against either currency fluctuations or oil prices. The covenant also includes phrases that impose actions to prevent oil spills and other environmental catastrophes that the company may be held accountable for. We find this interesting because instead of restricting, the covenant imposes

some desired actions. The covenant tries to control the factors that contribute most to the riskiness of the business for oil companies, i.e. lawsuits and fines as a result of environmental disasters or large fluctuations in prices and/or currencies (the USD). By including such a covenant, the bondholders try to control the riskiness of the company they lend money by encouraging certain actions that can help reduce the risk in the specific business or company. We will argue that such covenants, if composed well, can provide the company with incentives to act in the best interest of the bondholders. One might argue that including mandatory environmental protection has little or no effect. Many countries have experienced the devastation of accidents such as that of the *Exxon Valdez*, and regulations already are very tight, but keeping to the minimum standard of security may prove to be insufficient. Another argument may be that the stockholders can hedge their own personal portfolios in a better way, and that company hedging is an unnecessary expense. This may also be part of the reason why we do not find the covenant used more, but the idea behind including it is interesting and may prove an effective way of protecting the bondholders.

On Tuesday, 22 April 2008, the front page of the largest Norwegian financial newspaper, *Dagens Næringsliv* (DN), read: "Must sell oil at half price" ("*Må selge olje til halv pris*"). As the oil price at the time reached new heights almost daily, the small Norwegian oil company Interoil was forced to sell approximately 12 percent of its total production at half price.[69] The three-year hedging deal was a condition two banks set if they were to provide the company with a loan. The small company stood to lose over 60 million NOK (or ca. 13 million USD) on the deal, and the constantly increasing oil price only added to the losses. This example illustrates the potential high cost of including such a covenant for the issuing firm. The hedging covenant shifts much of the bondholders' risk over to the issuing firm. The company can of course also benefit from such deals. The market for futures and derivatives can be characterized as zero-sum games, and had the oil price decreased in the above example, the company would have made a profit on the hedging deal. The important thing to bear in mind is the risk involved for the issuer when this type of covenant is included. The above example is from the world of bank loans, but we find similar contracts in our data (e.g. Norwegian Energy Company's issue in 2007[70]). Including the

[69] Interoil was forced to sell for USD 55, while the going market price that day was USD 112 and has only increased since.
[70] ISIN: NO0010379068

covenant is primarily relevant for small companies that are very dependent on the price of oil (or other volatile prices). It can also be beneficial to include in issues by small companies with most of their earnings in a foreign currency. From a bondholder's point of view, it can be very desirable to include such covenant. Up to this point, the covenant has not been much used, even as a significant number of small oil companies have issued bonds over the last few years. It is possible that the examples of how costly this covenant can turn out will contribute to decreased use in the future.

6.5.5 Restrictions on or demand for new capital

This covenant is meant to ensure that additional capital raised (e.g. equity issues) shall be used to finance the same project the bond issue finances. It may also include a minimum required amount that has to be raised in additional financing, when it should be done, and how. The covenant is included to ensure that projects have enough capital to be finished, and that this capital is not used differently. The covenant is used in 17 percent of the bonds issued in 2007 and 4.5 percent in 2006, but prior to that we do not find it in use. Interestingly enough, we sometimes find the covenant to be very specific compared to most of the others. Some contracts state how the company shall obtain the additional capital (debt or equity), within which date, and the exact or minimum amount that shall be raised. The covenant may prevent asset substitution, as it directly or indirectly limits the company's investment opportunities. It can also be viewed as a restriction on financial gearing, preventing the company from increasing the probability of financial distress and thereby the agency cost of debt. In contrast with the covenant that restricts leverage, equity ratio, or net worth, this covenant aims at controlling much of the same by stating a specific amount needed to be raised in equity to finance the rest of the project. The covenant is only used in asset-backed issues, by companies in oil (oil supply) and shipping. The increase in use can therefore to some extent be explained by the increase in such issues, but as previously shown, similar issues are also found in previous years, and learning may be as good as an explanation.

6.6 Financial covenants

In the next section, we will present the financial covenants used in Norway. The primary objective for this group of covenants is to limit the management's possibilities of increasing the firm's financial leverage, and hence the probability of financial distress and default. They also to some extent serve as early warning signals, and can be useful tools for the trustee and

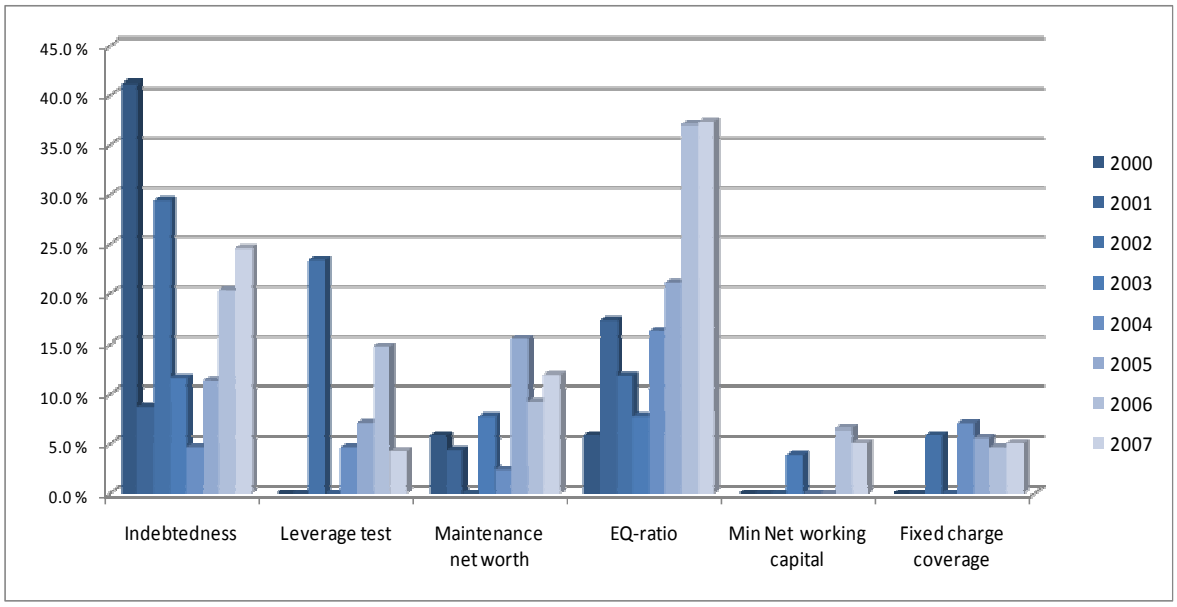
bondholders, enabling them to take control over the situation early on. The main difference among them is how they try to control the issuer's financial policy. We find that DnB NOR has introduced four of the financial covenants to the Norwegian market, but otherwise we do not find any particular patterns in terms of the type of company specifics, businesses, or similar that determines the use of these covenants.

6.6.1 Equity ratio and maintenance net worth – important covenant for investors

These two covenants are in many ways the same covenant. Equity ratio states a minimum percentage of equity the issuer shall obtain at any time. The maintenance net worth covenant is similar, but it states in absolute terms a minimum level of equity that needs to be maintained during the life of the bond. Both covenants are very straightforward. They are usually written in one sentence and clearly state the minimum equity level. This makes the covenants easy to spot and interpret in the indenture, and this might be the reason for their popularity among investors. Furthermore, the impact of including this covenant is also uncomplicated. According to NTM,[71] it is one of the first covenants Norwegian investors look for in a new issue. It can be argued that the equity ratio, as it is stated in relative terms, is more suitable for growing firms. Over time, covenants stated in absolute terms will lose their effect as the total assets grow. On the other hand, it may be easier to use absolute terms with regard to monitoring the compliance. We find that the equity ratio is the most used of the all the financial covenants, and one of the most used of all covenants the last few years. More than 35 percent of the issues in 2006 and 2007 include the equity ratio covenant, see figure 6.9. It is also the only financial covenant with a pronounced increase in use during the same period. We will argue that the simple equity ratio has taken over for many of the other financial covenants during the period. This may indicate that the equity ratio is viewed as sufficient to protect the bondholders, or that other types of covenants are being used instead. Maintenance net worth may also serve as a protection and early warning sign for the bondholders when the profitability is declining.

[71] Meeting with representatives from NTM

Figure 6.9: Financial covenants – Development in percentage of total issues



6.6.2 Leverage test and indebtedness

The relationship between the leverage test and indebtedness covenants is very similar to the one described in the above section. Leverage test is a relative restriction (in percentage terms) of the issuer's total amount of debt. It is almost identical to the equity ratio, except it uses the debt as the basis for the restrictions. The covenant that restricts indebtedness establishes a maximum amount of debt that the issuer can take on during the life of the bond. The covenant is often used to hinder the firm from issuing any additional debt at all by setting the limit to zero. The absoluteness of the covenants can make them unsuitable for many firms, especially growing firms, both because it may hamper profitable growth and/or because the real protection for the bondholders may be drastically reduced when the firms total equity grows.

Smith and Warner (1979) emphasize the importance of understanding the scope of restrictions when including limitations on additional debt, as it can apply to other aspects than just money borrowed. Furthermore, their analysis suggests that including restrictions on further debt issues is not optimal. At some time, assets have to be replaced by new ones; using retained earnings (lower dividends) or issuing new equity to invest will to some extent compensate bondholders at the expense of the stockholders, and increase the bond value. Since stockholders in these conditions will not pursue all positive NPV projects – the situation of underinvestment – the company value will be negatively affected. However, some limitations on debt also can also be in

the interest of stockholders, as they reduce the probability of financial distress. The use of indebtedness follows a relatively atypical development, as we find it used the most in some of the earlier years.

6.6.3 Minimum net working capital (NWC) and fixed charge coverage – the liquidity

These two covenants are used to preserve a minimum level of liquidity in the issuing firm. NWC can be a useful measure of short term liquidity and by keeping it at a satisfactory level, the probability of financial distress is reduced. Changes in the NWC can also be a valuable early warning with regard to future liquidity problems. Smith and Warner (1979) argue that this is an important aspect of this type of covenant, and that the value of the signal lies in the opportunity of commencing debt renegotiation at an early stage.

We find that the fixed charge coverage states a minimum interest coverage ratio the issuer has to maintain. Thus, it serves both as an indirect restriction on the amount of debt and as a restriction on the level of liquidity. The use of the covenant is stable but low during the entire period. Many of the financial covenants also apply to the issuer's subsidiaries, as seen in the next section.

6.7 Subsidiary restrictions

When a company raises capital in the bond market, restrictions are sometimes also imposed on the borrowers' subsidiaries. The main reason is to give a better protection for the bondholders. These covenants are included in order to avoid providing the issuer with "loopholes," i.e. avoiding compliance with the covenants by actions through its subsidiaries. Most importantly, value shifts from the bond- to the stockholders by asset substitution, over/under investment, increased leverage, and/or draining the company of value. Mostly, these covenants are used in industries which to a great extent demerge large investments (e.g. vessels) in a new subsidiary in order to reduce the parent company's risk exposure. Generally, these contracts express many of the covenants as applying to the issuer "on a consolidated basis" or to "the whole Group." There are also some covenants that are especially designed for subsidiaries and their relation to the mother company.

Table 6.2: Subsidiary covenants - Development

Year	Subsidiary guarantee	Borrowing restrict	Investments unrestricted subsidiary	Sale assets	Sales leaseback	Dividends related payments	Indebtedness	Leverage test	Maintenance Net worth	EQ-ratio	Fixed charge coverage	Merger restriction
2007	4.2 %	12.7 %	15.3 %	4.2 %	2.5 %	5.9 %	21.2 %	0.8 %	3.4 %	23.7 %	0.0 %	60.2 %
2006	2.8 %	1.9 %	0.9 %	6.5 %	0.0 %	5.6 %	10.2 %	8.3 %	7.4 %	24.1 %	2.8 %	0.9 %
2005	0.0 %	2.8 %	0.0 %	0.0 %	0.0 %	0.0 %	7.0 %	2.8 %	5.6 %	4.2 %	0.0 %	2.8 %
2004	0.0 %	0.0 %	4.7 %	14.0 %	2.3 %	0.0 %	7.0 %	4.7 %	2.3 %	14.0 %	7.0 %	2.3 %
2003	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	3.8 %	3.8 %	0.0 %	7.7 %	7.7 %	0.0 %	0.0 %
2002	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	29.4 %	23.5 %	0.0 %	5.9 %	0.0 %	0.0 %
2001	0.0 %	0.0 %	0.0 %	4.3 %	0.0 %	0.0 %	4.3 %	0.0 %	4.3 %	17.4 %	0.0 %	0.0 %
2000	0.0 %	0.0 %	0.0 %	5.9 %	0.0 %	0.0 %	0.0 %	0.0 %	5.9 %	5.9 %	0.0 %	0.0 %

One such covenant is the subsidiary guarantee, which is included to assure that subsidiaries never issue guarantees for debt obligations. This covenant reduces the risk for the bondholder, as the bond issuer is partially or wholly responsible for the subsidiary's guarantees. The covenant appeared for the first time in 2006 and was introduced by ABG Sundal Collier.

Borrowing restrictions have become quite popular after they were introduced in a bond indenture in late 2005 on a bond issue by Nor Property Holding AS. Its use has increased, and it was included in almost 13% of the issues in 2007. The covenant restricts the issuer's subsidiaries from taking on any debt obligations other than intergroup loans (from the parent company). It is worth noticing that all the contracts that include this covenant are asset-backed issues with pledged assets and negative pledge clauses. 50 percent of the issues also restrict the mother company from issuing debt. By combining these two covenants, one allows the group to transfer capital internally to where it is needed the most, without the fear of increasing the consolidated leverage. This reduces the probability of increased financial distress.

All covenants colored in table 6.2 have the same interpretation and use as when they are applied to the mother company. However, two differences are worth mentioning. First, the dividend related payments for subsidiaries include limitations on how much dividend can be paid to the parent company. The covenant protects the bondholders against a parent draining assets from the subsidiary, if the value of the subsidiary as a going concern is higher than its parts. The draining of assets can happen fast by selling off assets, or slowly by paying all retained earnings as dividend and not investing. This covenant protects against both. Secondly, investment restrictions for subsidiaries are generally very strict and restrict the subsidiaries from investing in anything other than the pledge asset, for example.

Subsidiary covenants were introduced in the Norwegian bond market for the first time in an issue by Seadrill in 2000 (managed by Nordea). The indenture included restrictions on maintaining a minimum net worth in addition to maintaining a minimum equity ratio on a consolidated basis, and was one of the more "comprehensive" loan agreements regarding restrictions on the subsidiaries before Aker Yards' bond issue in 2004. This was managed by DnBNOR and included more than double the number of restrictions on subsidiaries than any previous issue. During the past few years, it has become more common to impose covenants on the subsidiary, but mostly, covenants apply to the entire group of companies.

The covenants seem to have a relatively fluctuating development. The equity ratio has almost switched from a positive increase to a negative increase each year, but has been stable for the past two years, with usage close to 25 percent. It has been the most used subsidiary covenant over the period. The use should be seen in light of the increased use of the covenant applied to the mother companies. Subsidiary merger restrictions have appeared more clearly in 2007. Mostly, the merger restrictions' large increase can be ascribed to a revision of a standard formulation. It seems that the market wanted to specify that it also applies to the subsidiaries and the phrasing of many merger restrictions has been changed to also include this.

By looking at the subsidiary's covenant usage at an aggregate level in comparison with the average number of subsidiaries the issuers have, we expected to find a positive relationship. The relationship is shown in figure 6.10. Surprisingly, we find a strong indication of a negative relationship between these average measurements. The annual change goes in the opposite direction each year (except for the change from 2004 to 2005). 74 percent of the younger firms issuing bonds in 2006 and 2007 included subsidiary covenants, compared to 38 percent of the older firms. Furthermore, much of the increased use is due to the fact that an increasing number of covenants in the later years are applied to both the issuer and all of its subsidiaries (through such phrasings as "whole group," etc.). We believe this reflects an increased awareness and that the market participants have learned the benefits of including such covenants over the last few years.

Figure 6.10: Average subsidiary covenants compared to the average use of covenants

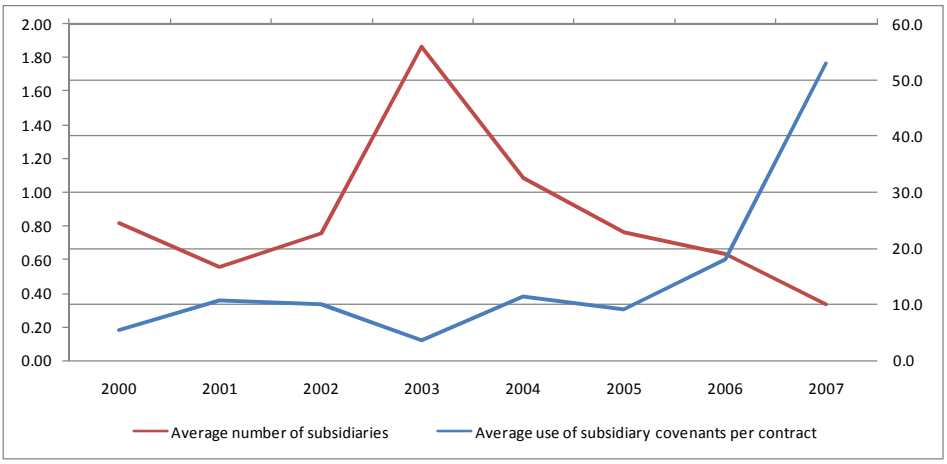


Figure 6.10: The left vertical axis shows average subsidiary covenants per contract while the right vertical axis shows average number of subsidiaries for the bond issuing firms.

6.8 Standard and information covenants

6.8.1 Cross default

The cross default covenant states that the bondholders may declare the issuer in default if it does not fulfill any of its other obligations. Usually there is a lower threshold amount on the issuing firms' aggregate unpaid obligations which decides when the bondholder can bring the bond in default. We find that all corporate contracts issued in Norway over the last ten years have included a cross default covenant.

The covenant can provide the bondholders with valuable protection, especially if the issuer is facing financial distress. It can help ensure that the bondholders receive what they are entitled to if the firm is heading for default. This is particularly important in bonds with high duration.[72] The covenant can also protect the lenders indirectly through other loans, as covenants on bank loans and other loans apply indirectly for the bond. At least in theory, it could be expected that covenants on other loans also to some extent apply indirectly to this bond contract. In practice, on the other hand, several factors reduce the value and impact of this. Private loan agreements, such as bank loans, are not publicly available information. Furthermore, commercial banks usually waive covenants, and rather increase the margin and/or their control of the company. As long as the other lenders regard the value of the going concern as higher than the default, they will not try

[72] Bodie, Kane and Marcus (2005).

to preserve the value of their own claims rather than using their right to default the company. In view of the fact that private debt loan agreements are not accessible for the public, it is impossible for an investor to take these covenants into account when reviewing investment opportunities. If for some reason the private debt indenture is accessible, covenants in private debt indentures could probably be included in the bond contract at a lower price for the issuer.

6.8.2 Cease to carry on, sell, or dispose a substantial part of the business…

"The Borrower shall not without the approval of the Loan Trustee;

(a) Cease to carry on its business, or

(b) Sell or dispose of all or a substantial part of its operations or change the nature of its business which might jeopardize the Borrower's fulfillment of its obligations under The Loan Agreement."

The standard formulation comes from a template made by the Norwegian banking industry in 1991, when a change of bond indentures came to pass in close to all indentures.[73] The phrasing is included in close to all Norwegian corporate bond issues, but due to its vagueness, we will argue that it provides little real protection for the bondholders. It leaves very much room for interpretation, and results in a lot of discussions and compromises being made between the issuer and the trustee. In principle, the covenant can have the same function as restrictions on merger activities, asset sales, and many other covenants. The high use of these other covenants reflects the relatively low value of this covenant. We will argue that the covenant can of course in some cases have some sort of value, but it seems to be a covenant that Miller (1977) would refer to as a "neutral mutation that serves no function, but does no harm, and can persist forever."

6.8.3 Information covenants

Almost every contract we have been examining includes information covenants. Usually, if the bond indenture includes this type of covenants, it uses more or less the same covenants. This may be an argument for low cost including such covenants or that information is important for the bondholders. Together, the covenants instruct how the issuing company shall provide the trustee and the bondholders with updated information during the life of the bond. It also specifies the minimum level of information that is to be provided and when this should be done. Including

[73] Meeting with NTM representatives 04/11/2008

these kinds of covenants is especially important if the bond issue is not listed on any exchange, as the issuer in this case has a limited legal obligation to provide the bondholders with information. The covenants call for information much like the requirements at any exchange, and include updated quarterly or annual reports and future expectations. We find that all market participants have understood the importance of including such covenants, and the variation between the contracts is minimal. Thus, we will not analyze the information covenants any further in this study. It is important, however, that the reader is aware that such information requirements exist, and that they are in general very homogeneous.

6.9 Bonds with and bonds without covenants

In the previous we presented the covenants used in Norway, and how this has changed over time. We will finish this chapter by looking at some typical characteristics of bonds that include covenants and compare it with those which do not. Table 6.3 provides a comparison analysis of the issues with no covenants at all and issues that include one or more. We have also divided the group with covenants in to two parts, to illustrate the difference between the indentures with few and those with many covenants.

The table shows that the spread, both FRN and fixed looks to be considerably higher for the bonds including more than five covenants, while the average spread for bonds without covenant and with fewer than five covenants are more equally. Higher spread in issues with many covenants can be interpreted as firms with higher credit risk include more covenants. Another explanation for this is provided by the median issue year for the bonds with covenants. The bonds with the highest use of covenants seem to have been issued later. Thus, it can be argued that the price of risk was higher in 2007 than in 2004 (the respective medians) and that this influences the average. On the other hand, the median age can also support our argument that the marked has evolved and learned during the last few years. For now the reader should have in mind that factors such as maturity, type of bond (e.g. callable or convertible), credit risk and the use of covenants all influences the size of the spread, and that the decisions often are made simultaneously.

Table 6.3: Bonds with and bonds without covenants

	Loan Agreements			
	Without Covenants	With Covenants		
Characteristics		**1-17 cov**	**1-4 cov**	**5-17 cov**
Number of issues	56	267	155	112
*Covenant	-	4	2	8
FRN spread (avg.)	1.70	2.72	1.80	4.09
Coupon spread (avg.)	3.64	4.13	3.18	5.33
Interest type				
Fixed	52 %	46 %	44 %	49 %
FRN	36 %	51 %	54 %	47 %
Zero	13 %	3 %	2 %	4 %
Maturity (avg.)	4.5	4.8	5.3	4.2
*Amount in NOK	145 000 000	300 000 000	300 000 000	275 000 000
*Issue year	2004	2006	2005	2007
Listed	66 %	61 %	77 %	38 %
Bonds/Convertibles	43% / 57%	92% / 8%	92% / 8%	92% / 8%
Foreign currency	2 %	20 %	12 %	30 %
Callable	18 %	45 %	26 %	72 %
Guarantee	5 %	15 %	6 %	26 %
Pledge	11 %	37 %	18 %	64 %
Unsobordinated	71 %	95 %	96 %	94 %
Z-score				
Median	0.87	1.10	1.11	1.01
Average	1.41	1.18	1.11	1.32
***Total assets (avg.)	3 152 908	9 165 957	14 457 573	1 937 231
**Debt ratio (avg.)	0.61	0.58	0.62	0.51
Firm age (avg.)	9.78	9.49	10.31	8.35
Foregin issuer	2 %	7 %	4 %	12 %

*Median, **Debt/Total assets, *** NOK Thousand

Furthermore, the analysis illustrates an interesting point in regard to the listing of bonds. We find the average number of listings to be almost identical for both the bonds with and without covenants. Looking at the two groups that include covenants the shows that indentures with just a few covenants are often listed than bonds without, but a significant lower number of those with several covenants are listed. This illustrates the fact that the more complicated the contracts are in terms of covenants and security, the harder it is to have them listed, but including just a few covenants seems to enhance the probability of the bond being listed. The analysis shows that all the other bond characteristics that were presented in chapter 5 are more frequently found in bonds that include covenants. One thing though stands out, the there seems to be little difference in the average firm age of the groups with and without covenants. The firms including covenants have

only a slighter lower average age than those which do not. On the other hand is it a relative large difference between the firms including many covenants and those including few.

Summarizing the analysis of table 6.3, the typical bonds issue not including any covenants at all is a convertible issue, with a lower than average spread, issued in NOK, listed on a exchange, has no security, is issued in 2004 by a medium sized firm and is relatively smaller in amount.

The most interesting results of the above analysis are the difference between the indentures which include only a few covenants and those including more than five. First, the typical issue with only a few covenants included is an unsubordinated bond with a lower than average spread. It is in general an uncomplicated indenture, listed on an exchange, and issued by a very large and financial solid firm and most likely in 2006.

The typical issue with many covenants has a relatively high spread. It is a common bond, but includes call provisions and other structures. It is secured by pledge assets and/or guarantees, not listed on an exchange and is issued by a small and relatively young firm. It is also more likely than other bonds to be issued in a foreign currency and by a foreign issuer

7 STATISTICAL ANALYSIS – HYPOTHESIS TESTING

In this chapter we take the analyses of individual covenants and their development a step further, and analyze the average covenants in the loan agreements. We will test five hypotheses based on our descriptive analysis in the previous two chapters, and previous empirical work on the subject. We will show how the data indicates that the size and the age of the firm seems to affect the use of covenants, and how the same is true for important bond characteristics and the issue year. We will also show that, contrary to what the ATC predicts and some previous empirical work, the covenant usage does not seem to be significantly different for firms with high or low probability for distress. We use standard t-test to test our hypotheses by comparing means for two different groups, and the chapter is structured in such a manner that each hypothesis is presented and tested separately. The chapter starts with a presentation of the assumptions common to all the tests.

7.1 Assumptions and interpretations

In this chapter we use the total number of covenants ('NumbCovenants') as a measure of the use of covenants in the loan agreement. We assign an equal value to all covenants. Interpreted as the level of protection which the bondholders are given, the measurements should be used with some caution. Different covenants has different degrees of protection[74], hence a covenant score of five does not necessarily mean that the bondholders are better protected than in an indenture with three. However, we believe that an accurate assessment of the protection provided by the covenants requires an individual evaluation of each contract, and quantifying it would prove difficult. In light of the analysis in chapter 6, we have also chosen to include subsidiary restrictions as a binominal variable[75] instead of including all the covenants to better reflect the real protection the covenants provide. Thus, we will argue that the total number of covenants in each contract is a good estimate of the bondholders' protection, and that the results may be interpreted in this manner. However, the main goal with the analysis in this chapter is to provide some insight to what factors that influence the use of covenants in general. Thus, the level of protection is not crucial for this type of insight and the results can be viewed without considering the difference in real protection between the issues.

[74] Quite obvious, and in line with Reisel (2004)
[75] Having one or more subsidiary covenants is represented with a value of 1

Furthermore, in this chapter we assume covenant variables being normally distributed ($N(\mu,\sigma^2)$) regardless of how they are grouped in each hypothesis. We do some robustness checks for the hypothesis by testing the hypothesis the "other way around". For example if one hypothesis test if low rated firms have higher number of covenants than high rated firms, we also test the average rating for firms with low covenant usage compared to those with high covenant usage. We are well aware of that it is not the same hypothesis, but are of the opinion that it is good as a robustness check as they test more or less the same.

7.2 The probability of default - Hypothesis one

Our first hypothesis is based on ATC and previous empirical work on the subject. ATC predicts a positive relation between covenants and probability of default, while some empirical studies find opposite indications, for example McDaniel (1986) and Begley (1994) who base their argument on the importance of flexibility when facing financial distress. Thus, in light of other empirical work and the ATC, we want to examine if firms with different probability of default have different use of covenants (on average).

We use the issuers Z-score to measure the firms' probability of default. We examine if borrowers with low Z-score (high probability of default) tends to have different use of covenants compared to those with high Z-score, by comparing the means in two different groups. A natural basis for the classification of the two groups is Altman's (2006) three different "zones". COVZLOW represents the number of covenants in the loan agreement for the respective borrowers with a Z-score below 1.23 (the *distress zone*). COVZHIGH indicates the number of covenants for the respective bond issuers with a Z-score higher than 1.23 (categorized as either in the *grey* or in the *safe zone*).

We formulate the null hypothesis (H_0) that there are no differences in covenant usage between firms with high probability of default and those with low probability of default, and want to test to see if we can find significant result of having different covenant usage between them. We perform a two sided test, to account for that some previous studies and ATC give different expectations.

H_0: There is no difference in covenant usage between the firms with high probability of default and the firms with low probability of default [Mean(COVZLOW) – Mean(COVZHIGH)] = 0

H_A: There is a difference in covenant usage between the firms with high probability of default and the firms with low probability of default [Mean(COVZLOW) – Mean(COVZHIGH) ≠ 0]

We fail to reject the null hypothesis, as shown in table 7.1. The average use of covenants is higher for firms not classified as being in the distress zone, a negative t-value. The averages are in line with for example Begley (1994), and indicate that firms in the distress zone are willing to pay a higher yield to have more flexibility. The standard deviations indicate a more scattered use of covenants in the distress firms. This is taken into account when we run the t-test. As COVZLOW has a variance of 1.62 times the variance in COVZHIGH, significantly different from equal variance at $p < 0.01$, we correct for unequal variances.

Table 7.1: Hypothesis one – The probability of default

Variable name	Group	Obs	Mean	Std. Dev.	T-statistics	P-Value		
						Ha: diff < 0	Ha: diff ≠ 0	Ha: diff > 0
covzlow	Z-score < 1.23	150	3.08	3.564***				
covzhigh	Z-score ≥ 1.23	111	3.31	2.799***	**-0.5743**	0.2831	0.5662	0.7169
Robustness:								
covzlow1	Z-score < 2.90	246	3.17	3.264				
covzhigh1	Z-score ≥ 2.90	15	3.27	3.240	**-0.1105**	0.4560	0.9121	0.5440
covzlow2	Z-score < Median	131	3.29	3.730***				
covzhigh2	Z-score > Median	130	3.06	2.707***	**0.5668**	0.7143	0.5714	0.2857
lowcovzscore	Covenants < 3	139	1.17	2.026***				
highcovzscore	Covenants ≥ 3	122	1.28	1.364***	**-0.518**	0.3025	0.6049	0.6975

***, ** or * in std.dev means that we have corrected for unequal variance at a level of significanse of at least 1%, 5% or 10% respectively
***, ** or * in in P-Values indicate the significanse level of the alternative hypothesis, at of least 1%, 5% or 10% respectively

We also check the robustness, by regrouping the variables by Z-score higher or lower than 2.9 (i.e. safe zone as one group and distress plus grey zone as the other group, COVZHIGH1 and COVZLOW1 respectively), we find significant result $p < 0.1$ for the null hypothesis, thus still failing to reject it. We only have 15 observations here, but the average is still higher for firms with higher Z-score. Furthermore, instead of grouping the variables in line with Altman's classification, we also make a robustness test by grouping the samples by the median of the Z-score (COVZLOW2, COVZHIGH2). Still, we fail to reject the null hypothesis. Worth mentioned here is that by dividing the sample in two equally large groups (in number of issues), the average covenant usage becomes higher in firms with higher likelihood of financial distress, and in line with ATC, though not being significant. Furthermore, we test if the average Z-score for firms issuing bonds with more than two covenants included in the contract have lower z-score on

average (LOWCOVZSCORE). The result is close to what we find in the original t-test, hence increasing the reliability of failing to rejecting the null hypothesis.

The above results indicate and that the Norwegian market has features analogous with the findings of, among others, Gilson and Warner (1998) but there is no statistical significant result which gives evidence of different use of covenants in the two groups. This is emphasized in our findings that indicate higher use of covenants in firms with high probability of financial distress, in line with ATC, when dividing in two equally large groups. What it seem to be like is that firms in the distress zone approaching a Z-score of 1.23, has more covenants than other firms in the distress zone, as the average changes from negative to positive when testing on median instead of distress zone.

7.3 The firm age - hypothesis two

With our second hypothesis we want to explore if the firms' age decides the use of covenants. We have shown throughout chapter five and six that the age of the issuing firm seems to have a strong influence on the development in the use of covenants over the years. As in previous chapter, we define young firms as those younger than three years at the time of the bond issue (COVYOUNG), and compare them to those older (COVMATURE). We use a one sided test, thus our hypotheses looks like the following:

H_0: There is no difference in the average use of covenant between young and mature firms [Mean(COVYOUNG) – Mean(COVMATURE) = 0]

H_A: Young firms include more covenants on average than more mature firms [Mean(COVYOUNG) – Mean(COVMATURE) > 0]

Table 7.2: Hypothesis two – The firm age

Variable name	Group	Obs	Mean	Std. Dev.	T-statistics	P-Value		
						Ha: diff < 0	Ha: diff ≠ 0	Ha: diff > 0
covyoung	Firmage < 3 y	112	6.29	4.395***				
covmature	Firmage ≥ 3 y	211	2.71	2.974***	**7.7297**	1.0000	0.0000	0.0000***
Robustness:								
covyoung1	Firmage < 5 y	136	5.54	4.413***				
covmature1	Firmage ≥ 5 y	187	2.79	3.038***	**6.2556**	1.0000	0.0000	0.0000***
covyoung3	Firmage < 1 y	41	5.12	3.675				
covmature3	Firmage ≥ 1 y	282	3.78	3.927	**2.0654**	0.9802	0.0397	0.0198**
lowcovage	Covenants < 4	185	9.77	6.188				
highcovage	Covenants ≥ 4	138	6.45	6.912	**4.5425**	1.0000	0.0000	0.0000***

***, ** or * in std.dev means that we have corrected for unequal variance at a level of significanse of at least 1%, 5% or 10% respectively

***, ** or * in in P-Values indicate the significanse level of the alternative hypothesis, at of least 1%, 5% or 10% respectively

From table 7.2 we can read that firms younger than three years have on average 6.29 covenants included in the loan agreement, while the more mature firms only have 2.71. In other words, young firms use over twice as many covenants on average compared to older firms. We reject the null hypothesis (t-statistics: 7.7297) and accept the alternative hypothesis, that young firms include more covenants on average in their bond indentures. The alternative hypothesis is highly significant at a $p < 0.001$ level, with an estimated power equal to 1. Young firms using more covenants than more mature firms can among other things be explained by their asset backed issues.[76]

We check the robustness of our answer by regrouping and defining young firms as being those younger than five years, and one more time defining young firms as those being younger than one year. Both provides significant results, younger firms include more covenants on average, but with lower difference in the mean compared to the original t-test. When examining firms younger than one year the p-value of the H_A is less than 0.05, indicating that younger firms have lower use of covenants. We also check the hypothesis the "other way around", dividing the average firm age in two groups, one with low covenant usage (LOWCOVAGE) and one with high covenant usage (HIGHCOVAGE). The average age is significantly higher ($p < 0.001$) for those who

[76] This is discussed extensively through chapter 5 and 6

include few covenants compared to those who include many covenants, hence supporting our first result.[77]

Based on the above, we reject the null hypothesis and accept the alternative hypothesis, and the answer seems to be relatively robust. We find that young firms on average include more covenants than the older ones.

7.4 The size of the firm - hypothesis three

In the next we test if the firm size, measured as the size of its total assets, affect the use of covenants in general. Bradley and Roberts (2004) finds that larger firms use fewer covenants in their contracts.[78] Smith and Warner (1979) and Griner and Huss (1995) argues that the size of the firm can be used as a measure of the probability of financial distress. The total asset can also be an estimate of the age of the firm, and it is also highly dependent on what type of business the company operates in. We will in the next not place much weight on what total assets can be a measure of, except the size of the firm. Thus, we will simply test if the size of the firm influences the average use of covenants, based on what Bradley and Roberts (2004) finds. Thus:

H_0: There is no difference in average covenant usage between large and small companies [Mean(COVTOTASSLOW) – Mean(COVTOTASSHIGH) = 0]

H_A: Small companies include, on average, more covenants than larger companies [Mean(COVTOTASSLOW) – Mean(COVTOTASSHIGH) > 0]

COVTOTASSLOW represents the average number of covenants in the loan agreement for those firms with low total assets, while COVTOTASSHIGH is the average for firms with high total assets. We use the median of the sample to categorize the firms.

[77] Five observations of firm age are changed from approximately 100 years to 25 years to decrease the standard deviation.

[78] Again, this is on private corporate debt but we find it realistic to assume the same in public debt

Table 7.3: Hypothesis three – Size of the firm

Variable name	Group	Obs	Mean	Std. Dev.	T-statistics	P-Value		
						Ha: diff < 0	Ha: diff ≠ 0	Ha: diff > 0
covtotasslow	Total assets < median	160	5.52	4.365***				
covtotasshigh	Total assets median	160	2.44	2.650***	**7.6314**	1.0000	0.0000	0.0000***
Robustness:								
covtotassolow1	Total assets < 200.000	63	5.777778	4.382*				
covtotasshigh1	Total assets ≥ 200.000	257	3.536965	3.677*	**3.7477**	0.9998	0.0003	0.0002***
lowcovtotass	Covenants < 3	148	1.32E+07	29400000***				
highcovtotass	Covenants ≥ 3	172	3785699	9277002***	**3.7283**	0.9999	0.0003	0.0001***

***, ** or * in std.dev means that we have corrected for unequal variance at a level of significanse of at least 1%, 5% or 10% respectively

***, ** or * in in P-Values indicate the significanse level of the alternative hypothesis, at of least 1%, 5% or 10% respectively

Firms with low total assets include more covenants on average than the firms with high total assets. The statistic is significant. With a t-statistics of 7.6314 we reject the null hypothesis, and finds support for the alternative hypothesis at a significance level of $p < 0.001$, stating that firms with lower total assets include more covenants. This is in line with our discussion in previous chapters, and with previous empirical work (e.g. Bradley and Roberts, 2004) depending on how you interpret the total asset figure. We also do a robustness check and find that firms with total assets lower than 200.000 uses significantly more covenants on average than firms with a higher total asset. We also checked if we could find significant differences in average total asset when dividing them in two groups; one with few covenants (LOWCOVTOTASS) and one with many covenants (HIGHCOVTOTASS). We also find this to be highly significant ($p < 0.001$), indicating that average total assets in the firms with few covenants are significantly higher than the average total assets in those firms with many covenants.[79] Thus, with more certainty we can reject the null hypothesis, and accept the alternative hypothesis that smaller firms have more covenants included in the bond indentures. Interpreting total assets as a measure of financial distress, this is in line with ATC.

7.5 Important bond specifics - hypothesis four

Our fourth hypothesis is actually a number of hypotheses, and is summarized in table 7.4. We test how a number of different important bond specifics affect the average use of covenants. 1 indicates presence of a bond specific.

[79] This was also true by omitting extremely high values in total assets

H_0: The presence of grouping variable X does not affect average number of covenants [Mean(GROUPVAR(0)) – Mean(GROUPVAR(1)) = 0]

H_A: The presence of grouping variable X result in higher covenant usage [Mean(GROUPVAR(0)) – Mean(GROUPVAR(1)) < 0][80]

Table 7.4: Hypothesis four – Important bond specifics

Grouping Variable	One tailed test (mean (0) - mean (1)) t-value	Diff. mean	Corrected for sign. unequal Std.dev	Meaning, significantly, on average:
Listed (1=Listed, 0=Notlisted)	6.9228***	3.17	x	Unlisted bonds more covenants
IssueType (1=Bond, 0=Convertible)	-5.4244***	-2.52	x	Bonds more covenants
Currency (1=Foreign, 0=NOK)	-5.5747***	-3.53	x	Foreign currecy issues more covenants
Callable (1=Callable, 0=Not callable)	-9.7290***	-4.11	x	Callable more covenants
Guarantee (1=Guarantee, 0=Not Guarantee)	-5.2922***	-3.92	x	Guarantee more covenans
Pledge (1=Pledge, 0=Not pledge)	-10.6901***	-4.88	x	Pledge more covenants
Unsubordinated (1=Unsub., 0=Sunordinated)	-2.0714**	-1.57		Unsubordinated more covenants

* Significant at a level of 10%, ** Significant at a level of 5%, *** Significant at a level of 1%

The mean comparison test finds significant result for our entire alternative hypotheses, with large differences in the mean. We find that issues secured by pledge assets or that is callable prove to have the outcome with the greatest difference between the issues including it and the ones which do not. This is statistically in line with our analysis in chapter five, where we find strong indications that issues with pledge assets include more covenants. Except for unsubordinated issues, which are significant at a level of $p < 0.05$, all others are significant at a level of $p < 0.01$. We reject our entire null hypotheses and accept the entire alternative hypotheses. Thus, the tests indicate that bonds not listed, are not convertibles, are callable, include guarantees or pledges, are issued in a foreign currency, or are unsubordinated result in higher average use of covenants compared to bonds with opposite characteristics.[81] This is in line with our indication in chapter 5.[82]

[80] For 'Listed' the hypothesis is the opposite, that is *[Mean(GROUPVAR(0)) – Mean(GROUPVAR(1)) > 0]*based on our previous discussion that unlisted bonds seem to have more covenants included

[81] See table 7.4 column 5

[82] Reasons for higher use of covenants with one or more of these bond characteristics are the same as discussed in chapter 5.

7.6 Year of issue – hypothesis five

We have through our thesis argued for an increased covenant usage on individual covenants, hence in this hypothesis we want to test if the year the bond was issued affects the average number of covenants included in the bond indentures. Thus, we have the following hypotheses:

H_0: Year X does not have different average use of covenants than the other years [Mean($COVYEARX_{all-i}$)) – Mean($COVYEARX_i$) = 0]

H_A: Year X have different average use of covenants than the other years [Mean($COVYEARX_{all-i}$)) – Mean($COVYEARX_i$) ≠ 0],

where $COVYEARX_i$ is the average covenant usage per loan agreement in year *i*, and $COVYEARX_{all-i}$ is the covenant usage on average for all the other years than year *i*.

Table 7.5: Hypothesis five – Year of issue

	STATAVARIBLE	(mean (0) - mean (1)) t-value	Diff. Mean	Corr. For unequal Std.Dev.	H_A	Meaning, significantly, on average:
2007	YEAR10	-9.3869***	-4.97	x	$H_A < 0$	2007more covenants than the other years
2006	YEAR9	-1.7719**	-.86		$H_A < 0$	2006 more covenants than the other years
2005	YEAR8	3.4962***	1.58	x	$H_A > 0$	2005 fewer covenants than the other years
2004	YEAR7	8.1879***	2.72	x	$H_A > 0$	2004 fewer covenants than the other years
2003	YEAR6	5.7531***	2.92	x	$H_A > 0$	2003 fewer covenants than the other years
2002	YEAR5	1.4287*	1.89		$H_A > 0$	2002 fewer covenants than the other years
2001	YEAR4	7.1984***	3.05	x	$H_A > 0$	2001 fewer covenants than the other years
2000	YEAR3	9.3840***	3.11	x	$H_A > 0$	2000 fewer covenants than the other years

* Significant at a level of 10%, ** Significant at a level of 5%, *** Significant at a level of 1%

We find strong evidence of increased use of covenants in the past few years. The development in the differences in average goes from being largely positive and significant in 2000, to highly negative and significant in 2007. This gives strong indications of increased usage over the years. There can be several explanations for this development. First, it can be explained by an obtained experience and more professional market participants – a view both we and NTM share.[83] Furthermore, as the market is relatively new and have been exposed to few cyclical turnarounds, the market conditions might be one explanation. However, there is no question about increased covenant usage.

[83] Meeting with representatives (NTM)

8 MULTIPLE REGRESSION

In this chapter we focus on a regression model to find what aspects which affect covenant usage and to what extent some variables affect the number of covenants in the loan agreements. We focus on regressions for bond issues with fixed interest rate, owing to the fact that most other literature have this focus, hence making our empirical testing more comparable with others. In Norway, approximately half of the corporate issues are coupon bonds. This chapter is structured as follows; Section 8.1 presents assumptions regarding the Ordinary Least Square (OLS) method. Section 8.2 defines the explained variable and the explanatory variables in the regression model together with results. Section 8.3 presents possible approaches to go around the endogeneity problem, while a short summary is present in section 8.4.

8.1 Ordinary Least Square (OLS) - Assumptions

"OLS is a method for estimating the parameters of a multiple regression model. The OLS estimates are obtained by minimizing the sum of squared residuals (RSS)" (Wooldridge, 2006, p: 867). To perform an unbiased Multiple Linear Regression (MLR) by OLS estimation of parameters, several assumptions have to be "fulfilled".

First of all, and what forms the MLR model, it assumes a linear relationship between the dependent variable and the independent variables, which by violation can result in underestimated OLS estimators and R^2.[84] Furthermore, the model have an assumption of independence of error terms, that is the error terms are uncorrelated ($cov(u_i, u_j) = 0, i \neq j$). If this assumption is violated, we refer to the variables as being auto-correlated. With positive autocorrelation the estimates of the standard error will be underestimated, which again result in that OLS undervalues the true variation in the error term, and can also inflate R^2.[85] Moreover, it assume normally distributed error terms with an average of zero and constant variance (homoskedasticity: $Var(u_t) = \sigma^2$). In other words, this is an assumption of no systematic variation by the error terms and the dependent variable and will in general prevent inefficient estimators and biased error terms so that one can use t-statistics to get reliable conclusions.

[84] Ayyangar (2004)
[85] Flatebø and Haveland (2006)

Additionally, $E(u_t) = 0$ is an assumption in the unbiased OLS model. "The error term has an expected value of zero given any values of the independent variables" (Wooldridge, 2006, p: 92). Furthermore, he argues that this is the most important assumption needed for unbiasedness. If the assumption is violated the result will be biased estimators and error terms. We will discuss this further in section 8.3. Finally, the model assumes no perfect collinearity[86], which means no perfect correlation among independent variables. Some correlations are allowed, but at least there cannot be perfect correlation. A rule of thumb is that correlation above 0.3 is not good, while a correlation over 0.5 is bad.[87] As MLR coefficients provide estimates for a change in one explanatory variable, keeping all the other explanatory variables constant, high correlations between explanatory variables bias these coefficients, increasing in the level of correlation. Thus multicollinearity results in unreliable coefficients, but it does not affect the efficiency of the estimators.[88]

If these assumptions hold, OLS will have several beneficial characteristics, known as Best Linear Unbiased Estimators (BLUE).[89]

8.2 The explained, the explanatory variables and regression coefficients

The following variables to be discussed are summarized in appendix 6

8.2.1 The explained variable

As mentioned earlier, the variable to be explained, 'NumbCovenants', is a measure of total number of covenants included in the bond indentures.

"An empirical model should include variables which are expected to have a causal effect to the explained variable" (Keller and Warrack, 2003). Due to extensive analyses of some explanatory variables in previous chapters, we will not discuss how they are affecting covenant usage to a great extent. However, new variables will be discussed extensively.

[86] Referred to as multicollinearity if the independent variables have high, but not perfect correlation, or if it is correlation among several variables.
[87] Carsten Bienz (2008)
[88] Ayyangar (2004)
[89] For further discussion on BLUE, see Wooldridge, 2006, p: 108-109

8.2.2 The explanatory variables

We have divided the explanatory variables in four different groups; *bond-specific variables*, *firm-specific variables*, *macroeconomic variables* and *dummy variables*.

8.2.2.1 Bond-specific variables

Bond maturity (*'Maturity'*) is the maturity of the bond issue. Choosing a shorter maturity will reduce the underinvestment- and the assets substitution problem, thus the longer time to maturity, the more covenants do we expect to find in the loan agreements. Billet et al. (2007) are one of many who use maturity in their model.

'CouponSpread' is the difference between the bond's coupon yield and the Government bond with equal maturity. As Government bond with exactly the same maturity as the corporate issue usually not exists, we have calculated the coupon spreads against Government bonds with maturity as close as possible to the corporate bonds maturity.[90] Ceteris paribus, we expect to find more covenants the lower the spread is and vice versa.

In accordance with Nash et al. (2003) we are taking into account that there can be a temporal pattern in our data. *'IssueYear'*, a value from 0 (1998) to ten (2008) depending on the year the bond was issued, is included to intercept changes in covenant usage which have occurred over the sample period, owing to the worked up experience, a more professional market and other factors which may influence covenant usage.

8.2.2.2 Firm-specific variables

As an input in our regression model we have calculated a "rating" based on Altman's Z-score. Using *'Zscore'* is in line with Nash et al. (2003) which have used this measure among others on likelihood of default.

We include *'FirmAge'* in years as an explanatory variable. Younger firms are often smaller, with higher growth opportunities. According to Dunne et al. (1989) who analyze US firms find,

[90] If corporate bond maturity ≥ 7 years: Coupon minus 10 year Government bond is used.
If 4 years ≤ corporate bond maturity < 7 years: Coupon minus 5 year Government bond is used.
If corporate bond maturity < 4 years: Coupon minus 3 year Government bond is used.
All connected to the prevailing Government bonds in the year of issue.

consistent with previous research, that the growth variance decrease with age.[91] Thus, by including firm age we cover, at least to some extent, growth opportunities, which among others Kahan and Yermack (1998) includes.

Total assets (*'TotAss'*) is included as a measure on the size of the firm. We expect larger firms to include fewer covenants as they have lower possibility to face financial distress, ceteris paribus. "Investors are though less concerned about conflicts of interest between bondholders and shareholders" (Nash et al. 2003, p: 221). We use total assets in billions just to get higher coefficients in the regression.

While total assets say something about the size of the firm, debt to total assets ('DebtRatio') points out how much of the assets which is financed by debt, and is included to account for that higher debt ratio often resulting in higher probability of default.

8.2.2.3 Macroeconomic factors

We use the difference between government bonds 10 year minus Government bond 3 year *('Government10minus3')* to say something about the market conditions.[92] A government 10 year higher than Government 3 year, that is positive difference and an upward sloping yield curve, gives indications of improving conditions in the economy; hence we are expecting fewer covenants in these periods compared to periods with negative difference in interest rates. This is in line with Riger (1991) who argue that market condition is important when choosing covenant structure.

Another good measure to say something about the market conditions at a given time is the number of bankruptcies the year after the issue. We have used the year after as it takes time from having financial trouble to the bankruptcy actually occurs. This is though almost perfectly positively correlated with 'government10minus3',[93] giving strong indications of 'government10minus3' as a good measure of the market condition in a given year.

[91] Coad (2007)
[92] Appendix 7 shows the market conditions for each year
[93] Correlation close to 0.95

8.2.2.4 Dummy variables

The dummy variables are present in table 8.1. We have had, earlier in this paper, extensive discussions on why these dummy variables affect the number of covenants, thus omitting the discussion here.[94]

Table 8.1: Dummy variables in the regression model

Explanation	Variable name	DUMMY VALUE 1	DUMMY VALUE 0
Listed at an exchange	Listed	Listed	Not listed
Callable bond	Callable	Callable	Not callable
Bond versus converible issue	IssueType	Bond	Convertible
Pledge assets	Pledge	Pledge	No pledge
Guarantee	Guarantee	Guarantee	No guarantee
Unsubordinated	Unsubordinated	Unsubordinated	Subordinated
Currency for the bond issue	Currency	Foreign currency	NOK

8.2.3 The regression model and results

Based on the discussion in the two previous sections, we apply the following regression equation:

$$\text{NumbCovenants} = \beta_0 + \beta_1 * \text{'FirmAge'} + \beta_2 * \text{'Zscore'} + \beta_3 * \text{'TotAss'} + \beta_4 * \text{'DebtRatio'} + \beta_5 * \text{'CouponSpread'} + \beta_6 * \text{'Maturity'} + \beta_7 * \text{'IssueYear'} + \beta_8 * \text{'Govern10minus3'} + \beta_9 * \text{'Listed'} + \beta_{10} * \text{'Callable'} + \beta_{11} * \text{'IssueType'} + \beta_{12} * \text{'Pledge'} + \beta_{13} * \text{'Guarantee'} + \beta_{14} * \text{'Currency'} + \beta_{15} * \text{'Unsubordinated'}$$

Table 8.2: Full sample regression coefficients[95]

Variables	Regression 1	Variables	Regression 1 (Cont.)
firmage	0.0369739	**listed**	-0.4340455
	(0.96)		(-0.9)
zscore	0.0599464	**callable**	1.436359***
	(0.57)		(2.83)
totass	0.0171578*	**issuetype**	1.453743**
	(1.94)		(2.38)
debtratio	-0.5500937	**pledge**	1.817491***
	(-0.58)		(3.57)
couponspread	0.1275892	**guarantee**	3.054866**
	(1.1)		(2.29)
maturity	0.0246771	**currency**	0.2494541
	(0.38)		(0.36)
issueyear	0.6088196***	**unsubordinated**	-0.2793594
	(5.58)		(-0.36)
govern10minus3y	-1.769616***	**constant**	-2.54648*
	(-4.64)		(-1.93)
		R-squared	**0.6435**

***, **, * indicates the significance level at 1%, 5% and 10% respectively.
T-statistics are present in parentheses.

[94] The dummies are extensively discussed in chapter 5
[95] See appendix 8

The firm size, measured by total assets,[96] has significant influence on number of covenants. Interestingly, the relation is positive which imply that larger companies include more covenants. However, the coefficient is slightly positive on total assets in billion meaning that per billion increase in total assets, the number of covenants only increase with 0.017. When the largest company in our sample has total assets of approximately 104 billion[97], the argument of low influence is emphasized. Even though it is not affecting covenants, it is surprising according to the ATC and the simple t-test we did in chapter seven, that number of covenants seem to be higher in large firms.

Regression results shows that 'issueyear' has a highly significant influence on covenants. The later the issue year, the more covenants are included, as the value of the variable have a score of 0 for 1998 to 10 for 2008. This might be explained by the experienced obtained, and a more professional bond market over the sample period. We have in the previous chapters, in addition to obtained experience, ascribed this increase to larger share of younger firms issuing bonds, more foreign currency issues and indicated the general situation in the economy as a possible explanation for this. However, younger firms show tendency of lower use of covenant than more mature firms, though not significant.[98] This is quite surprising in elucidation of our descriptive part and the t-test in chapter 7.3. However, defining young firms as growth companies, this is in line with Kahan and Yermack (1998) which find a negative relation between restrictive covenants and growth opportunities.[99] Issues in foreign currencies seem to have a positive relation to covenant usage, in line with our previous indications. However, this is far from being significant. At a highly significant level, general conditions ('govern10minus3') in the economy seem to reduce the covenant usage, in periods with expectations of improving economical conditions. This is in line with our expectations and empirical studies like Bradley and Roberts (2004) which finds that covenants varies systematically with macroeconomic factors.[100]

The regression results indicate close to no relation between the issuer's probability of financial distress and covenants, similar to what we find when comparing means in firms with high- and

[96] In billion
[97] Norsk Hydro ASA
[98] In addition; a very small coefficient (0.0369 per year)
[99] We find it realistic to assume that the statement also applies to number of covenants, not only the restrictive covenants that argues for
[100] On private corporate debt

firms with low z-score. However, the coefficient is slightly positive, indicating a tendency of that lower probability of default results in more covenants, without statistical significance.[101] This is the opposite of what ATC predicts, and are in line with for example Begley (1994) and other which ascribe low covenant usage in firms facing financial distress as firms value flexibility. Debt ratio seems to emphasize the tendency in z-score. Even though it is not significant, it shows tendency of highly levered firms including less covenants.

Several of the other dummy variables affect covenants significantly with great positive influence. If the bond issue is issued with a redemption right for the issuer (callable), more covenants are included. One possible explanation can be that bondholders require more covenants as compensation of the bond issuer's redemption right. Bond issues compared to convertible issues have also more covenants, represented in a positive coefficient of 1.45. Convertibles using fewer covenants than bond issues are similar to what Billet et al. (2007) finds, and can be ascribed to convertibles having a call option on the issuers' stocks. Pledge assets and guarantee have also significant coefficients, 1.81 and 3.05 respectively, and are those two with highest coefficients. Based on our discussion in chapter 5 and 6 several covenants are included to protect the pledged assets, hence in line with the results here. Furthermore, the regression shows tendency of fewer covenants for issues which is unsubordinated, though not being significant, something which also seem to be the case for bonds which is listed.

In contrast to what Billet et al. (2007) finds, we have indications of slightly more covenant usage in bonds with longer maturity. The result is not significant, which may ascribe this to contingency. Furthermore, the impact is small, represented in a coefficient of 0.0246. Finally, higher coupon spread seems to, surprisingly, increase number of covenants. This is not statistically significant. According to previous empirical work[102], 'CouponSpread' and 'Maturity' are determined simultaneously as covenants. We will address this problem in the next section.

[101] Remember that higher z-score indicates lower probability of default.
[102] For instance Billett et al. (2007), Reisel (2004), Bradley and Roberts (2004)

8.3 Endogenous variable – Violation of OLS assumption

One of the assumptions presented in section 8.1 are expectations of error terms equal zero. This assumption can be violated in many ways. The two most important cases are instances of omitted variables and when one or more explanatory variables are correlated with the error term in the regression equation. The latter violation is often referred to as endogeneity. In other words, this is a problem as causal connection in regression is that the explanatory variables affect the variable to be explained, not the other way around (i.e. the explained variable should not affect the explanatory variable). In other word, the explained and the explanatory variable should not be determined simultaneously.

Covenants and the bond coupon are determined simultaneously according to for example Goyal (2003) and Bradley and Roberts (2004). Statistical models ignoring this simultaneity between spread and covenants, are miss specified, hence might result in biased statistics.[103] Bradley and Roberts (2004) also suggests that maturity can have the same endogeneity problem as spread, without doing further research.

We have the endogeneity problem in the explanatory variable, 'couponspread'. Number of covenants should, to some extent, be explained by the spread on the bond. This can be emphasized by that the lower the spread is, ceteris paribus, the more covenants have to be included in the loan agreement to get investors who are interested in lending money to the bond issuing firm, and vice versa. However, the covenant usage should also have effects on the spread, as the borrower has to include more covenants to get cheaper loans. Thus it is not a truly independent variable. We do neither have the option to exclude spread from the regression model as this will result in violation of the assumption, referred to as omitted variable bias, under specifying the model or excluding a relevant variable.[104] Owing to the fact that this is a problem in our regression model, and according to Wooldridge (2006) who argues that this is the most important assumption with OLS regression for unbiasedness, we cannot trust our OLS regression as it will result in biased and inconsistent estimators. Two possible approaches to go around the problem are two stage least square (2SLS) regression, with a variable working as an instrument for spread, or divide our sample in several subsamples with different spread intervals.

[103] Bradley and Roberts (2004)
[104] Wooldridge, 2006, p:95

As emphasized in section 8.2.3, Bradley and Roberts (2004) give indications of bond maturity also being an endogenous variable. We assume that is not much of a problem in our case as our sample has relatively homogenous maturity.[105]

8.3.1 Approaches to by-pass the endogeneity problem

8.3.1.1 2SLS - Finding an instrumental variable

There are several important aspects to the instrumental variable which has to be fulfilled making it appropriate as an instrument. First, the instrument has to be correlated with the endogenous variable and significantly affect it. Second, the instrument cannot have the same problem as the original endogenous variable, which cannot correlate with the error term in the regression equation. Finally, an instrument cannot be a variable that belongs as an explanatory variable in the regression equation, even though it is not correlated with the error term and are correlated with the endogenous variable. If an instrument fulfills all these three conditions, consistent estimates might be obtained.[106]

We had problems finding such a variable, even though great effort was embedded in this work. 'Manager' was one variable we examined. It is economical rationale to assume that the manager will not directly affect the number of covenant in a bond indenture. If manager affect the number of covenants it has to be indirectly through other variables as for example in what kind of business sectors the different managers acting as organizers. In addition, our data implies no connection between manager and number of covenants. Furthermore, spread also has to be significantly affected by manager. Economical rationale sustain that manager can explain some of the spread, as the quality of the managers can differ. However, examining this further we did not find such a relation, thus we had to look at other variables as instruments for spread.[107] All variables were examined to try to find instruments, but owing to the fact that almost everything which affects the spread also affects covenant usage, we did not succeed in finding an instrument.

8.3.1.2 Omitting spread by regression of subsamples

Another approach to solve the regression is to exclude the spread from the regression model and run several regressions on subsamples of spread. In other words, by dividing the spread into for

[105] See appendix 9
[106] This section is based on Wooldridge, 2006, p: 521
[107] See Appendix 10 for information regarding manager as not being an appropriate instrument for spread

example four intervals (e.g. 0-200 basis points, 201-400 basis points etc) we obtain different results for each spread interval. It is better the smaller the spread intervals are regarding individual predictors, but smaller intervals does also complicate the interpretation of the regression results. In addition, we only have 115 coupon bonds which contain all firm specific information, thus we have divided them into four groups. On the other hand, dividing them into fewer subsamples will do the interpretation easier, but also be more like disregarding spread in the regression model, hence being without intention.

In appendix 11, we have shown the result from sub- regressions of four different spread intervals. There seems to be very different results for each spread interval which might imply that the spread affects the number of covenants in great extent. However, by dividing our sample into four intervals when we do this analysis, a new problem arise due to fewer observations in each group; multicollinearity. Since multicollinearity result in unreliable coefficients, and that we have extensive problems with it, several coefficients are biased. Thus, making any conclusion is "dangerous" and not suitable.[108] However, one main "benefit" with the multicollinearity problem is that those variables with low correlation to other explanatory variables with the multicollinearity problem are, to some degree, accurate. The accuracy is increasing in lower absolute correlation. In appendix 11, coefficients without suspicion of being exposed to multicollinearity are colored. This is based on variance inflation factor (VIF) were we have colored those variables with lower VIF than 10 and 1/VIF lower than 0.1[109] in addition to having a correlation at least under 0.51 to all other variables. Thus, the colored coefficients are more comparable within the different spreads. Since the multicollinearity problem is extensive making conclusions inappropriate, we tried to use it in the context of saying something about the reliability of the full regression model by looking at the "unbiased" coefficients. If the coefficients between the different spread intervals had been relatively close to each other (the colored coefficients), we could have compared them to the full regression model. Unfortunately, this is not the case. Thus, we will only conclude with, from the sub- regressions, that 'CouponSpread' seems to affect covenant usage.

[108] By deleting the correlated variables, which is often present as one option, we might introduce omitted variable bias, that is having a violation of the assumption mentioned in chapter 8.3. As we have several correlating variables, this is not a good option.

[109] These rules of thumb are present by Acock, 2006 (p:229)

8.4 Summary

We have not been able to go around the endogeneity problem. Thus, our result from the full sample regression model in section 8.2.3 has to be interpreted in elucidation of a possibly endogeneity problem. We have several arguments for having an endogeneity problem. First, other empirical work argues (and prove) the simultaneously determination of spread and covenants. The low influence 'CouponSpread' has in the full sample regression compared to what we get an idea of in the sub- regressions (by large difference in the comparable coefficients)[110], gives indication of endogeneity problem in the full sample model. Furthermore, it is economical rationale to assume such a problem. Finally, our analyses through chapter 5 to 7 indicate stronger relationship between the firm specific characteristics and covenant usage then what we find here in the full sample regression model.

However, for those variables showing large and significant coefficients, that is 'callable', 'issuetype', 'pledge', 'guarantee', 'govern10minus3' and 'issueyear', we can probably say that the direction they affect covenants, as discussed in section 8.2.3, are correct, even though we have a endogeneity problem in a model with high variance. Though we place higher uncertainty to what extent they affect covenants - the share size of coefficients.

However, we will not conclude with anything when it comes to the firm specific variables. All shows small coefficients not being significant, in a model with high variance and an endogenous variable.

[110] This might be explained by other problems with our model as well

9 CONCLUSION

An important part of this thesis has been to construct a database containing the information needed to gain insight to the use of covenants in Norway. Our database covers the period between 01/01/1998 and 03/31/2008. It includes information about the use of covenants and key bond characteristics of close to all the corporate issues in the period, in total amounting to 438 issues. For 323 of the indentures we have also calibrated this with the issuing firms' relevant financial statements, the year of incorporation and other variables. The construction of the database has been a significant part of our work, and it is the foundation for this thesis.

Based on the descriptive analyses, and a t-test, we find strong evidence of a large annual increase in the average use of covenants throughout the period. It is especially evident the last three years. We also find this underlying trend in close to all the individual covenants. This evident increase in it selves can be interpreted as showing that the market has evolved and "learned" about the use of covenants during the period.

We also find that the market has learned *how* to use the different covenants during the period. Our analyses of the theoretical and economical rationale for including the different covenants, reveals examples strengthening the argument of learning. One example is the Change of control covenant's importance in convertible bonds, and the use of the covenant going from not included to become a standard phrasing in convertible indentures in the course of a year. This emphasizes our statement of obtained experience and more professional market participants. A notion shared by practitioners.

Furthermore, we observe that several covenants have been vaguely formulated. We argue that clarification and more specific phrasing of some covenants could reduce the cost of monitoring and increase the bondholders' level of protection. We find that several of these unclear formulations *has* been changed and specified during the period. This indicates that the market has "learned" how to phrase many of the covenants more appropriate. We find some covenants still to be diffuse, and expect this process to continue in the future.

In addition to more accurate phrasing of the covenants, we find that the market has begun to use some new and more "advanced" types of covenants; covenants that are more adapted to the

specific issuing firm and the business sector it operates in. Some are also more dynamic in the sense that they account for expected changes during the life of the bond.

Based on our descriptive analyses and our statistical models, we find strong evidence of certain bond characteristics influencing the average number of covenants included in the indentures. We conclude that convertibles bonds in general including fewer covenants, while issues with pledge assets as collateral, issues with guarantees and issues with call provisions, use more covenants overall. We ascribe the use of more covenants in issues with pledge assets to the fact that many of these issues finance specific and often highly risky projects, so called asset-backed issues. We also find that several covenants are specifically aimed at protecting the pledge assets, also contribute to explaining the higher use of covenants.

In our descriptive analyses and t-tests, we find strong indications of more covenant usage in issues denominated in foreign currencies and unsubordinated issues, while listed bonds seem to include fewer covenants. We find the arguments behind these relationships to be convincing. However, our multiple regression model does not support these findings. Even though the model probably is biased, due an endogenous variable, we cannot conclude with certainty that these bond characteristics significantly influence the use of covenants.

Contrary to the ATC and other empirical work (e.g. Begley, 1994), which respectively predicts/finds higher and lower use of covenant for firms facing financial distress, we do not find evidence of different covenant usage between firms with high or low probability of default.

Based on our descriptive analyses and simple statistical test, we find that younger firms seem to include more covenants on average. If age is interpreted as a measure of future growth opportunities, this is contrary to previous empirical studies (e.g. Begley, 1994). We also find that smaller firms seem to include more covenants than larger ones. Nash (2003) uses this as a measure of the probability of financial distress. Interpreted this way, our findings are in line with the predictions of the ATC. However, because of contradictory indications in the regression model, and small coefficients with low statistical significance, we are not able to conclude with certainty that any of the firm specific variables significantly influence the total use of covenants.

Interestingly, bond indentures with or without covenants do not seem to be as different, regarding bond and issuer characteristics, as we were expecting. Spread is though higher on average for

those including covenants, especially those which have many covenants included. Our suggestion is that this can be ascribed to the increased part of risky issuers the last few years in a time were covenants have been more incorporated. This is emphasized in issues without covenants have an issue year median of 2004, while those with more than five covenants have a median of 2007.

We find that the typical bond not including covenants at all is; a convertible issue, with a lower than average spread, issued in NOK, listed on an exchange, has no security, is issued earlier in the period, by a medium sized firm.

The typical issue with only a few covenants is; an unsubordinated bond with a lower than average spread. In general an uncomplicated indenture, listed on an exchange, and issued by a very large and financial solid firm.

The typical issue with many covenants has a relatively high spread. It is a common bond, but includes call provisions and other similar structures. It is secured by pledge assets and/or guarantees, not listed on an exchange, and issued by a small and relatively young firm. It is also more likely to be issued in a foreign currency

We have through this thesis provided the reader with a comprehensive description of both the theoretical foundation and the practical use of the different covenants used in Norway. We hope that this can be used as a foundation for further studies on the subject.

9.1 Further studies

The most obvious extension of our work is to develop the full sample regression model to address the problems regarding endogeneity. This can be done by developing our suggested approaches, or to use a different method such as logistic regression. By solving the problems in the model, it would also be possible to focus more on the benefits of including covenants in terms of the spread.

Furthermore, it could be interesting to expand the analyses by looking at the covenants that we did not found used in our sample. One example could be *Legal defesance* or other covenants that looks to be important in other countries. Such a study could possibly further promote the development of the Norwegian market. It could also be interesting to directly compare the Norwegian market to those of other countries with developed corporate bond markets such as the US, or for example to our neighboring countries.

A study of how the general market conditions affect the use of covenants could also prove valuable. Our regression model indicates that macro economical factors may influence the use of covenants. However, the total use of covenants has increased rapidly during the last years, a time of booming financial markets. Thus, in order to obtain unambiguous results, such a study would benefit from being conducted a bit further into the future.

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Sources of additional data input

Amadeus database

www.bvdep.com/en/amadeus.html (Financial statements)

Financial dictionary (www.financial-dictionary.thefreedictionary.com) Searchword: Negative pledge

Konkursrådet (www.konkursradet.no)

www.konkursradet.no/art/?id=145 (Bankruptcies in 1998 and 1999)

Norges Bank (www.norges-bank.no)

http://www.norges-bank.no/Templates/Article____41851.aspx (Interest rates)

Norsk tillitsmann (www.norsktillit.no)

Oslo Børs (www.oslobors.no)

www.oslobors.no/ob/aarsstatistikk_obligasjoner

www.osloabm.no/ob/abm_aarsstatistikk

www.oslobors.no/ob/meglerfirmaer

Stamdata (www.stamdata.no)

Statistics Norway (www.ssb.no)

www.ssb.no/emner/11/02/konkurs/tab-2008-04-25-02.html (Bankruptcies 2000-2008

11 APPENDIX

11.1 Short description of covenants in the database

This appendix provides the reader with a list of all the definitions of the different covenants used in our database. The primary objective is to facilitate further research using our database. It can also serve as an introduction to the different types of covenants used, and provide the reader with valuable background information. The list is presented in an alphabetical order, enabling the reader to use it as a reference list. Covenants peculiar to the Norwegian market, or decided to be separated as an own covenant, are marked with *.

Asset sale clause: If the issuer sells some specified assets, it has to redeem the bond or use the proceeds from the sale to replace the asset. The clause specifies to what price the loan shall be redeemed. It is in practice a put option for the bondholders.

Borrowing restrict (subsidiary): Restricts subsidiaries from borrowing. Only borrowing from parent is allowed.

***Cash flow restrictions:** The covenant covers restrictions to maintain a stated minimum amount of free available cash. Also include restrictions on future cash flow, for example restriction on what to do with cash flow from certain assets (e.g. has to be placed on an escrow account) and limitations/restriction on what to do with the bond proceeds.

***Change of contract:** Restricts the issuer from making material changes to their already signed construction or rental contracts. Includes changes is delivery date, price, quantity, quality or scope.

Change control put provisions (CC): States that if a change of control event occurs, the issuer has to redeem the loan. Gives the bondholders a put option, and is somewhere referred to as a *poison put*.

Consolidation merger: The clause prohibits consolidation or merger with other entities.

Dividends related payments: Include restrictions on how much (in percent or absolute figures) the company are allowed to pay out in dividends and/or which criteria that have to be meet in

order for them to do so. Also include restrictions on other transfers to shareholders (e.g. repurchase of shares)

***Equity ratio:** Restrictions on a minimum equity ratio.

Fixed charge coverage: Limitations on minimum interest coverage ratio.

***Hedging/Environment:** Imposes mandatory hedging against fluctuating prices such as in currency or oil price, or commands certain actions to lower the probability of environmental disasters.

Indebtedness: Restrictions on the borrower's possibilities to incur further debt. It includes both restrictions on a stated maximum debt amount or a total prohibition of raising further debt. Restrictions on issuing subordinated debt are also included.

Investments: The clause includes all types of restrictions on the firms' investments policy. It can limit possible investments to same industry or to specific assets. Also includes restrictions on granting loans or to furnish guarantees to any third parties.

***Junior security:** Prohibits the issuer to permit junior security in the pledged asset. If the covenant is included in an indenture without pledge, it restricts the highest total amount of pledge assets. Junior security clauses imposed on subsidiaries are also included.

Leverage test: Includes restrictions on a maximum leverage ratio.

***Maintain listing:** Includes commands to maintain the bonds and/or the company's stocks listed.

Maintenance net worth: Covers restrictions on maintaining a minimum level of net assets or equity.

***Maintenance, insurance and monitoring:** Commands the borrower to keep maintenance, insurance and/or monitoring of certain asset(s) or projects at a satisfactory level.

***Materials included in the security:** The covenant emphasizes that all material and/or equipments acquired as part of the construction process shall, to the extent possible, be segregated and separated from other material equipments and machinery and clearly be identified as the borrower's property, and be included in the loan security.

***Minimum net working capital:** Restrictions on maintaining a specified net working capital. For example stated in absolute figures, percentage or just emphasizing that it has to be positive.

Negative pledge clause: Restrict the issuer from issuing new debt secured by pledged assets, unless better or the same protection is given to the bondholders. Also includes total restrictions on issuing new debt pledged by assets.

Restricted payments: Includes restriction on the repayment of debt or other payments to creditors. For example a prohibition of paying back debt before maturity or limitations on when and in what amount, the debt shall be repaid.

***Restrictions on, or demand for new capital:** The covenant commands certain use of additional raised capital. Also includes requirements on additional financing regarding how, when and in what amount that should be raised.

***Restriction on registration:** Includes restrictions or requirements regarding a firms' or assets' jurisdiction (e.g. under which law), flag or classification (e.g. of vessels).

Sale assets: Prohibits the sale of assets in general or sale of a specific asset, in addition to restrictions on hiring out assets.

Sales leaseback: Partial or total restrictions on sale-leaseback transactions.

Senior debt issuance: Includes restrictions on the total amount of senior debt the issuer is allowed to issue.

Stock issuance: Prohibits the issuer from issuing new common stocks neither in the issuing firm or its subsidiaries.

Stock transfer sale disposing: Restrictions on selling the common stocks of a subsidiary.

Subsidiary guarantee: Includes restrictions that prohibit the issuers' subsidiaries to guarantee for debt obligations.

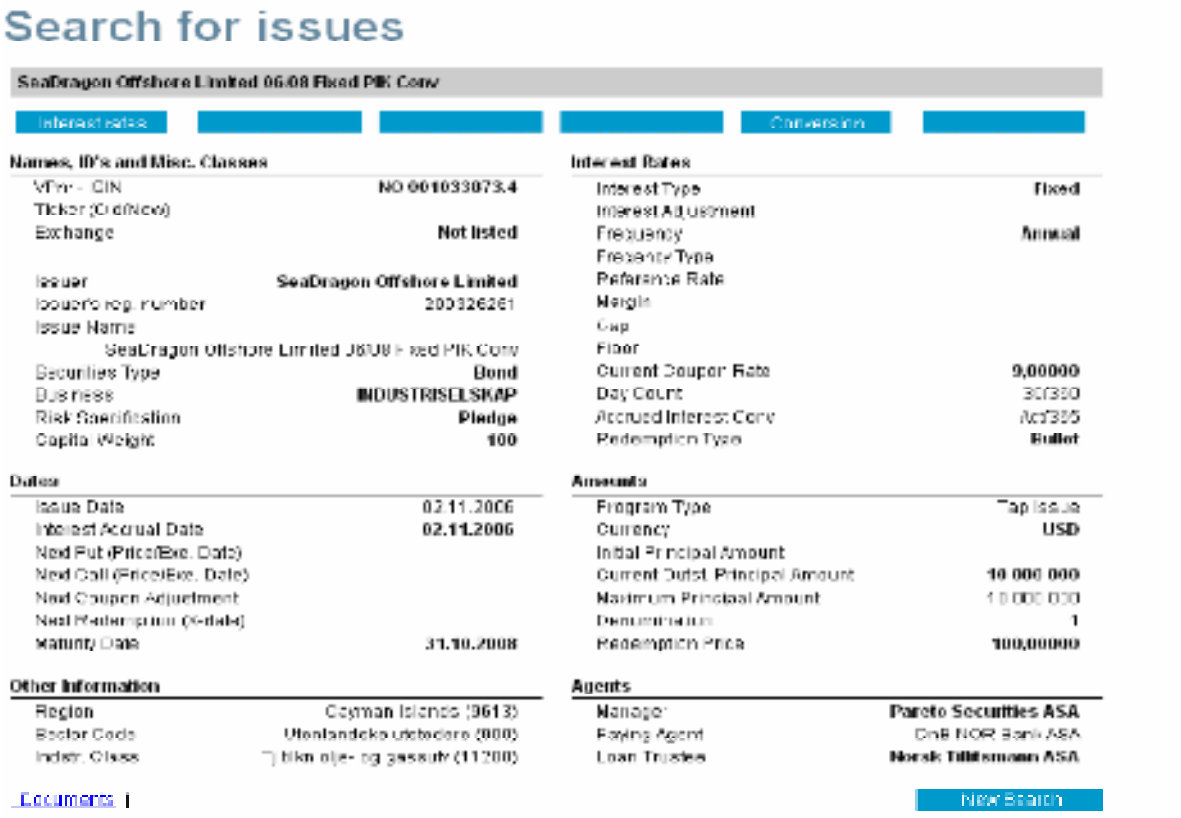
Subsidiary restrictive (others): Dividend related payments, investments, sale assets, indebtedness, leverage test, maintenance net worth, equity ratio, fixed charge coverage and

merger restriction includes restrictions on the subsidiaries in similar way as for the issuer. *See the respective covenant.*

Transaction affiliates: The covenant restricts the issuer from engaging in transactions with its subsidiaries that are not carried out in line with prevailing market terms and prices.

Voting power percentage: Wording in a bond indenture defining what classifies as a change of control event.

11.2 Stamdata – how we got bond specific information



This "picture" from Stamdata.no (source: NTM - Bond trustee as investor protection) shows how the bond specific data were collected. We had to manually copy and paste information, as NTM did not have the possibility to provide us with these data.

11.3 Bond characteristics

ISSUE			Bond characteristics							
Year		Number of issues	Exchange	Callable	Called/ Converted	With Warrants	Guarantee	Pledge	Unsobordinated	Subordinated
2008	Occurrences	5	0	2	0	0	1	4	5	0
	In percent		0.0 %	40.0 %	0.0 %	0.0 %	20.0 %	80.0 %	100.0 %	0.0 %
	%-change		-29.7 %	-21.0 %	-3.4 %	-7.6 %	7.3 %	30.0 %	8.5 %	-8.5 %
2007	Occurrences	118	35	72	4	9	15	59	108	10
	In percent		29.7 %	61.0 %	3.4 %	7.6 %	12.7 %	50.0 %	91.5 %	8.5 %
	%-change		-31.5 %	11.9 %	-8.6 %	3.9 %	-4.0 %	9.3 %	-2.9 %	2.9 %
2006	Occurrences	108	66	53	13	4	18	44	102	6
	In percent		61.1 %	49.1 %	12.0 %	3.7 %	16.7 %	40.7 %	94.4 %	5.6 %
	%-change		-2.3 %	13.9 %	-16.1 %	0.9 %	1.2 %	11.2 %	-2.7 %	2.7 %
2005	Occurrences	71	45	25	20	2	11	21	69	2
	In percent		63.4 %	35.2 %	28.2 %	2.8 %	15.5 %	29.6 %	97.2 %	2.8 %
	%-change		-18.0 %	9.6 %	7.2 %	2.8 %	3.9 %	8.6 %	6.5 %	-6.5 %
2004	Occurrences	43	35	11	9	0	5	9	39	4
	In percent		81.4 %	25.6 %	20.9 %	0.0 %	11.6 %	20.9 %	90.7 %	9.3 %
	%-change		12.2 %	14.0 %	5.5 %	0.0 %	0.1 %	-2.1 %	2.2 %	-2.2 %
2003	Occurrences	26	18	3	4	0	3	6	23	3
	In percent		69.2 %	11.5 %	15.4 %	0.0 %	11.5 %	23.1 %	88.5 %	11.5 %
	%-change		10.4 %	-41.4 %	-37.6 %	0.0 %	11.5 %	17.2 %	35.5 %	-35.5 %
2002	Occurrences	17	10	9	9	0	0	1	9	8
	In percent		58.8 %	52.9 %	52.9 %	0.0 %	0.0 %	5.9 %	52.9 %	47.1 %
	%-change		-19.4 %	26.9 %	26.9 %	-4.3 %	0.0 %	1.5 %	-42.7 %	42.7 %
2001	Occurrences	23	18	6	6	1	0	1	22	1
	In percent		78.3 %	26.1 %	26.1 %	4.3 %	0.0 %	4.3 %	95.7 %	4.3 %
	%-change		1.8 %	-9.2 %	-9.2 %	-1.5 %	0.0 %	4.3 %	36.8 %	-36.8 %
2000	Occurrences	17	13	6	6	1	0	0	10	7
	In percent		76.5 %	35.3 %	35.3 %	5.9 %	0.0 %	0.0 %	58.8 %	41.2 %
	%-change		26.5 %	-39.7 %	-14.7 %	5.9 %	-25.0 %	-25.0 %	-41.2 %	41.2 %
1999	Occurrences	4	2	3	2	0	1	1	4	0
	In percent		50.0 %	75.0 %	50.0 %	0.0 %	25.0 %	25.0 %	100.0 %	0.0 %
	%-change		-33.3 %	41.7 %	16.7 %	0.0 %	25.0 %	-41.7 %	0.0 %	0.0 %
1998	Occurrences	6	5	2	2	0	0	4	6	0
	In percent		83.3 %	33.3 %	33.3 %	0.0 %	0.0 %	66.7 %	100.0 %	0.0 %
Total		**438**	**247**	**192**	**75**	**17**	**54**	**150**	**397**	**41**
			56.4 %	**43.8 %**	**17.1 %**	**3.9 %**	**12.3 %**	**34.2 %**	**90.6 %**	**9.4 %**

The table shows, annually, how many bonds which have the respective bond "characteristic", expressed in both occurrences and in percentage of annual issues, and percentage change from the previous year. It also include total for the whole period. 2008 is per 03/31/2008.

11.4 (4.A) Corporate actions, Security protective covenants and corporate covenants

ISSUE			CORPORATE ACTIONS			SECURITY PROTECTIVE COVENANTS				CORPORATE COVENANTS - POLICY RESTRICTIONS							
Year		Number of issues	Change of control	Voting power percentage	Asset sale clause	Neg. Pledge	Materials included in the security	Junior security	Senior debt issuance	Dividends related payments	Restricted payments	Cashflow restriction	Investments	Sale assets	Sales leaseback	Transaction affiliates	Consolidation merger
2008	Occurrences	5	4	4	1	2	0	0	0	4	0	1	3	2	0	4	5
	In percent		80.0 %	80.0 %	20.0 %	40.0 %	0.0 %	0.0 %	0.0 %	80.0 %	0.0 %	20.0 %	60.0 %	40.0 %	0.0 %	80.0 %	100.0 %
	%-change		28.3 %	33.4 %	-15.6 %	-21.0 %	-9.3 %	-19.5 %	-4.2 %	20.7 %	-11.0 %	8.1 %	29.5 %	-4.1 %	-4.2 %	2.0 %	14.4 %
2007	Occurrences	118	61	55	42	72	11	23	5	70	13	14	36	52	5	92	101
	In percent		51.7 %	46.6 %	35.6 %	61.0 %	9.3 %	19.5 %	4.2 %	59.3 %	11.0 %	11.9 %	30.5 %	44.1 %	4.2 %	78.0 %	85.6 %
	%-change		21.1 %	24.4 %	7.8 %	17.5 %	7.5 %	11.2 %	0.5 %	3.8 %	-3.8 %	8.2 %	23.1 %	4.3 %	4.2 %	56.7 %	68.0 %
2006	Occurrences	108	33	24	30	47	2	9	4	60	16	4	8	43	0	23	19
	In percent		30.6 %	22.2 %	27.8 %	43.5 %	1.9 %	8.3 %	3.7 %	55.6 %	14.8 %	3.7 %	7.4 %	39.8 %	0.0 %	21.3 %	17.6 %
	%-change		23.5 %	16.6 %	15.1 %	-5.8 %	1.9 %	5.5 %	3.7 %	31.6 %	13.4 %	2.3 %	4.6 %	14.5 %	0.0 %	15.7 %	13.4 %
2005	Occurrences	71	5	4	9	35	0	2	0	17	1	1	2	18	0	4	3
	In percent		7.0 %	5.6 %	12.7 %	49.3 %	0.0 %	2.8 %	0.0 %	23.9 %	1.4 %	1.4 %	2.8 %	25.4 %	0.0 %	5.6 %	4.2 %
	%-change		7.0 %	5.6 %	12.7 %	2.8 %	0.0 %	-1.8 %	0.0 %	10.0 %	1.4 %	1.4 %	-1.8 %	-2.6 %	-2.3 %	1.0 %	1.9 %
2004	Occurrences	43	0	0	0	20	0	2	0	6	0	0	2	12	1	2	1
	In percent		0.0 %	0.0 %	0.0 %	46.5 %	0.0 %	4.7 %	0.0 %	14.0 %	0.0 %	0.0 %	4.7 %	27.9 %	2.3 %	4.7 %	2.3 %
	%-change		-3.8 %	-3.8 %	0.0 %	-3.5 %	0.0 %	4.7 %	0.0 %	6.3 %	0.0 %	-3.8 %	-3.0 %	16.4 %	2.3 %	4.7 %	-1.5 %
2003	Occurrences	26	1	1	0	13	0	0	0	2	0	1	2	3	0	0	1
	In percent		3.8 %	3.8 %	0.0 %	50.0 %	0.0 %	0.0 %	0.0 %	7.7 %	0.0 %	3.8 %	7.7 %	11.5 %	0.0 %	0.0 %	3.8 %
	%-change		-7.9 %	-7.9 %	-5.9 %	20.6 %	0.0 %	0.0 %	0.0 %	-21.7 %	-5.9 %	3.8 %	1.8 %	-0.2 %	0.0 %	-17.6 %	-19.7 %
2002	Occurrences	17	2	2	1	5	0	0	0	5	1	0	1	2	0	3	4
	In percent		11.8 %	11.8 %	5.9 %	29.4 %	0.0 %	0.0 %	0.0 %	29.4 %	5.9 %	0.0 %	5.9 %	11.8 %	0.0 %	17.6 %	23.5 %
	%-change		11.8 %	11.8 %	5.9 %	-9.7 %	0.0 %	0.0 %	0.0 %	29.4 %	5.9 %	0.0 %	5.9 %	7.4 %	0.0 %	17.6 %	23.5 %
2001	Occurrences	23	0	0	0	9	0	0	0	0	0	0	0	1	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	39.1 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	4.3 %	0.0 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	9.7 %	0.0 %	0.0 %	0.0 %	-11.8 %	0.0 %	0.0 %	0.0 %	-19.2 %	0.0 %	0.0 %	0.0 %
2000	Occurrences	17	0	0	0	5	0	0	0	2	0	0	0	4	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	29.4 %	0.0 %	0.0 %	0.0 %	11.8 %	0.0 %	0.0 %	0.0 %	23.5 %	0.0 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	-20.6 %	0.0 %	0.0 %	0.0 %	11.8 %	-25.0 %	0.0 %	0.0 %	-1.5 %	0.0 %	0.0 %	0.0 %
1999	Occurrences	4	0	0	0	2	0	0	0	0	1	0	0	1	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	50.0 %	0.0 %	0.0 %	0.0 %	0.0 %	25.0 %	0.0 %	0.0 %	25.0 %	0.0 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	-16.7 %	0.0 %	0.0 %	0.0 %	-16.7 %	8.3 %	0.0 %	-33.3 %	-41.7 %	0.0 %	0.0 %	0.0 %
1998	Occurrences	6	0	0	0	4	0	0	0	1	1	0	2	4	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	66.7 %	0.0 %	0.0 %	0.0 %	16.7 %	16.7 %	0.0 %	33.3 %	66.7 %	0.0 %	0.0 %	0.0 %
Total		**438**	**106**	**90**	**83**	**214**	**13**	**36**	**9**	**167**	**33**	**21**	**56**	**142**	**6**	**128**	**134**
			24.2 %	**20.5 %**	**18.9 %**	**48.9 %**	**3.0 %**	**8.2 %**	**2.1 %**	**38.1 %**	**7.5 %**	**4.8 %**	**12.8 %**	**32.4 %**	**1.4 %**	**29.2 %**	**30.6 %**

The table shows, annually, how many bonds which have the respective covenants, expressed in both occurrences and in percentage of annual issues, and percentage change from the previous year. It also include total for the whole period. 2008 is per 03/31/2008.

11.5 (4.B) Stock related covenants, "Norwegian" corporate covenants and financial covenants

ISSUE			STOCK RELEVANT COVENANTS			NORWEGIAN CORPORATE COVENANTS					FINANCIAL COVENANTS					
Year		Number of issues	Stock issuance issuer	Stock transfer sale disp	Maintain listiing	Change of contract	Maintenance, insurance and monitoring	Restriction on registratation	Hedging/ Evvironment	Restrictions on or demand for new Equity/Debt	Indebtedness	Leverage test	Maintenance net worth	EQ-ratio	Min Net working capital	Fixed charge coverage
2008	Occurrences	5	0	2	1	1	0	0	0	0	2	0	1	2	1	1
	In percent		0.0 %	40.0 %	20.0 %	20.0 %	0.0 %	0.0 %	0.0 %	0.0 %	40.0 %	0.0 %	20.0 %	40.0 %	20.0 %	20.0 %
	%-change		-4.2 %	21.4 %	9.0 %	0.5 %	-36.4 %	-11.9 %	-3.4 %	-16.9 %	15.4 %	-4.2 %	8.1 %	2.7 %	14.9 %	14.9 %
2007	Occurrences	118	5	22	13	23	43	14	4	20	29	5	14	44	6	6
	In percent		4.2 %	18.6 %	11.0 %	19.5 %	36.4 %	11.9 %	3.4 %	16.9 %	24.6 %	4.2 %	11.9 %	37.3 %	5.1 %	5.1 %
	%-change		1.5 %	5.7 %	1.8 %	15.8 %	12.4 %	5.4 %	2.5 %	12.3 %	4.2 %	-10.6 %	2.6 %	0.3 %	-1.4 %	0.5 %
2006	Occurrences	108	3	14	10	4	26	7	1	5	22	16	10	40	7	5
	In percent		2.8 %	13.0 %	9.3 %	3.7 %	24.1 %	6.5 %	0.9 %	4.6 %	20.4 %	14.8 %	9.3 %	37.0 %	6.5 %	4.6 %
	%-change		0.0 %	1.7 %	7.9 %	-1.9 %	2.9 %	6.5 %	-0.5 %	4.6 %	9.1 %	7.8 %	-6.2 %	15.9 %	6.5 %	-1.0 %
2005	Occurrences	71	2	8	1	4	15	0	1	0	8	5	11	15	0	4
	In percent		2.8 %	11.3 %	1.4 %	5.6 %	21.1 %	0.0 %	1.4 %	0.0 %	11.3 %	7.0 %	15.5 %	21.1 %	0.0 %	5.6 %
	%-change		2.8 %	8.9 %	1.4 %	1.0 %	11.8 %	0.0 %	1.4 %	-4.7 %	6.6 %	2.4 %	13.2 %	4.8 %	0.0 %	-1.3 %
2004	Occurrences	43	0	1	0	2	4	0	0	2	2	2	1	7	0	3
	In percent		0.0 %	2.3 %	0.0 %	4.7 %	9.3 %	0.0 %	0.0 %	4.7 %	4.7 %	4.7 %	2.3 %	16.3 %	0.0 %	7.0 %
	%-change		0.0 %	-1.5 %	0.0 %	4.7 %	-6.1 %	0.0 %	0.0 %	4.7 %	-6.9 %	4.7 %	-5.4 %	8.6 %	-3.8 %	7.0 %
2003	Occurrences	26	0	1	0	0	4	0	0	0	3	0	2	2	1	0
	In percent		0.0 %	3.8 %	0.0 %	0.0 %	15.4 %	0.0 %	0.0 %	0.0 %	11.5 %	0.0 %	7.7 %	7.7 %	3.8 %	0.0 %
	%-change		0.0 %	3.8 %	0.0 %	0.0 %	3.6 %	0.0 %	0.0 %	0.0 %	-17.9 %	-23.5 %	7.7 %	-4.1 %	3.8 %	-5.9 %
2002	Occurrences	17	0	0	0	0	2	0	0	0	5	4	0	2	0	1
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	11.8 %	0.0 %	0.0 %	0.0 %	29.4 %	23.5 %	0.0 %	11.8 %	0.0 %	5.9 %
	%-change		0.0 %	0.0 %	0.0 %	0.0 %	11.8 %	0.0 %	0.0 %	0.0 %	20.7 %	23.5 %	-4.3 %	-5.6 %	0.0 %	5.9 %
2001	Occurrences	23	0	0	0	0	0	0	0	0	2	0	1	4	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	8.7 %	0.0 %	4.3 %	17.4 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	-32.5 %	0.0 %	-1.5 %	11.5 %	0.0 %	0.0 %
2000	Occurrences	17	0	0	0	0	0	0	0	0	7	0	1	1	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	41.2 %	0.0 %	5.9 %	5.9 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	-25.0 %	-25.0 %	0.0 %	0.0 %	0.0 %	41.2 %	0.0 %	5.9 %	5.9 %	0.0 %	0.0 %
1999	Occurrences	4	0	0	0	1	1	0	0	0	0	0	0	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	25.0 %	25.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	-25.0 %	-41.7 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
1998	Occurrences	6	0	0	0	3	4	0	0	0	0	0	0	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	50.0 %	66.7 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Total		**438**	**10**	**48**	**25**	**38**	**99**	**21**	**6**	**27**	**80**	**32**	**41**	**117**	**15**	**20**
			2.3 %	**11.0 %**	**5.7 %**	**8.7 %**	**22.6 %**	**4.8 %**	**1.4 %**	**6.2 %**	**18.3 %**	**7.3 %**	**9.4 %**	**26.7 %**	**3.4 %**	**4.6 %**

The table shows, annually, how many bonds which have the respective covenants, expressed in both occurrences and in percentage of annual issues, and percentage change from the previous year. It also include total for the whole period. 2008 is per 03/31/2008.

11.6 (4.C.) Subsidiary covenants

ISSUE			SUBSIDIARY RESTRICTIONS											
Year		Number of issues	Subsidiary guarantee	Borrowing restrict	Investments unrestricted subs	Sale assets	Sales leaseback	Dividends related payments	Indebtedness	Leverage test	Maintenance Net worth	EQ-ratio	Fixed charge coverage	Merger restriction
2008	Occurrences	5	1	1	0	1	0	0	1	0	0	1	1	3
	In percent		20.0 %	20.0 %	0.0 %	20.0 %	0.0 %	0.0 %	20.0 %	0.0 %	0.0 %	20.0 %	20.0 %	60.0 %
	%-change		15.8 %	7.3 %	-15.3 %	15.8 %	-2.5 %	-5.9 %	-1.2 %	-0.8 %	-3.4 %	-3.7 %	20.0 %	-0.2 %
2007	Occurrences	118	5	15	18	5	3	7	25	1	4	28	0	71
	In percent		4.2 %	12.7 %	15.3 %	4.2 %	2.5 %	5.9 %	21.2 %	0.8 %	3.4 %	23.7 %	0.0 %	60.2 %
	%-change		1.5 %	10.9 %	14.3 %	-2.2 %	2.5 %	0.4 %	11.0 %	-7.5 %	-4.0 %	-0.3 %	-2.8 %	59.2 %
2006	Occurrences	108	3	2	1	7	0	6	11	9	8	26	3	1
	In percent		2.8 %	1.9 %	0.9 %	6.5 %	0.0 %	5.6 %	10.2 %	8.3 %	7.4 %	24.1 %	2.8 %	0.9 %
	%-change		2.8 %	-1.0 %	0.9 %	6.5 %	0.0 %	5.6 %	3.1 %	5.5 %	1.8 %	19.8 %	2.8 %	-1.9 %
2005	Occurrences	71	0	2	0	0	0	0	5	2	4	3	0	2
	In percent		0.0 %	2.8 %	0.0 %	0.0 %	0.0 %	0.0 %	7.0 %	2.8 %	5.6 %	4.2 %	0.0 %	2.8 %
	%-change		0.0 %	2.8 %	-4.7 %	-14.0 %	-2.3 %	0.0 %	0.1 %	-1.8 %	3.3 %	-9.7 %	-7.0 %	0.5 %
2004	Occurrences	43	0	0	2	6	1	0	3	2	1	6	3	1
	In percent		0.0 %	0.0 %	4.7 %	14.0 %	2.3 %	0.0 %	7.0 %	4.7 %	2.3 %	14.0 %	7.0 %	2.3 %
	%-change		0.0 %	0.0 %	4.7 %	14.0 %	2.3 %	-3.8 %	3.1 %	4.7 %	-5.4 %	6.3 %	7.0 %	2.3 %
2003	Occurrences	26	0	0	0	0	0	1	1	0	2	2	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	3.8 %	3.8 %	0.0 %	7.7 %	7.7 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	3.8 %	-25.6 %	-23.5 %	7.7 %	1.8 %	0.0 %	0.0 %
2002	Occurrences	17	0	0	0	0	0	0	5	4	0	1	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	29.4 %	23.5 %	0.0 %	5.9 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	-4.3 %	0.0 %	0.0 %	25.1 %	23.5 %	-4.3 %	-11.5 %	0.0 %	0.0 %
2001	Occurrences	23	0	0	0	1	0	0	1	0	1	4	0	0
	In percent		0.0 %	0.0 %	0.0 %	4.3 %	0.0 %	0.0 %	4.3 %	0.0 %	4.3 %	17.4 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	4.3 %	0.0 %	0.0 %	4.3 %	0.0 %	-1.5 %	11.5 %	0.0 %	0.0 %
2000	Occurrences	17	0	0	0	0	0	0	0	0	1	1	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	5.9 %	5.9 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	5.9 %	5.9 %	0.0 %	0.0 %
1999	Occurrences	4	0	0	0	0	0	0	0	0	0	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
	%-change		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
1998	Occurrences	6	0	0	0	0	0	0	0	0	0	0	0	0
	In percent		0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %
Total		**438**	**9**	**20**	**21**	**20**	**4**	**14**	**52**	**18**	**21**	**72**	**7**	**78**
			2.1 %	**4.6 %**	**4.8 %**	**4.6 %**	**0.9 %**	**3.2 %**	**11.9 %**	**4.1 %**	**4.8 %**	**16.4 %**	**1.6 %**	**17.8 %**

The table shows, annually, how many bonds which have the respective covenants, expressed in both occurrences and in percentage of annual issues, and percentage change from the previous year. It also include total for the whole period. 2008 is per 03/31/2008.

11.7(5.) Pair wise correlation between most appearing covenants

Covenant	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Change Control	1																								
Voting Power Percent	0.9001	1																							
Asset Sale Clause	0.3669	0.3316	1																						
Negative Pledge	0.0685	0.0815	0.2747	1																					
Junior Security	0.2196	0.2186	0.3859	0.1906	1																				
Dividend restriction	0.3917	0.3813	0.5207	0.1385	0.2621	1																			
Restricted Payments	0.223	0.2193	0.4141	0.12	0.1983	0.3107	1																		
Cashflow Restriction	0.1232	0.1243	0.3281	0.1447	0.0499	0.2203	0.26	1																	
Investments	0.2473	0.1952	0.4085	0.2014	0.2343	0.3758	0.2278	0.2664	1																
Sale Assets	0.2591	0.1923	0.4127	0.2328	0.326	0.3316	0.2095	0.1419	0.3344	1															
Transaction Affiliates	0.5168	0.494	0.4586	0.1176	0.3565	0.5096	0.2166	0.2087	0.371	0.2322	1														
Stock Transfer Sale Disp	0.1438	0.1298	0.3344	0.1846	0.2147	0.2521	0.0941	0.2978	0.2382	0.351	0.2092	1													
Maintain listing	0.1372	0.0946	-0.018	0.0558	-0.0374	-0.0503	-0.0326	-0.0549	0.1419	0.1456	0.1022	0.0716	1												
Change Construction Contr.	0.243	0.2051	0.4308	0.1379	0.292	0.2764	0.2811	0.3486	0.3681	0.3416	0.2484	0.2558	-0.0755	1											
Maintain Insurance (monitor)	0.2437	0.2125	0.561	0.129	0.3157	0.33	0.4252	0.2878	0.3331	0.5827	0.266	0.3701	-0.0147	0.5319	1										
Restriction on Registration	0.2478	0.1772	0.2736	0.0808	0.2832	0.2423	0.0982	0.1999	0.2024	0.2559	0.2556	0.2978	-0.0089	0.3107	0.3644	1									
Restriction on new equtiy/debt	0.2989	0.2695	0.4092	0.187	0.2346	0.2684	0.2148	0.4314	0.3286	0.2286	0.3575	0.3358	0.0191	0.4608	0.2931	0.2981	1								
Merger	0.528	0.4725	0.3247	0.1366	0.2169	0.3678	0.1678	0.2225	0.3993	0.2087	0.7178	0.1803	0.2216	0.2712	0.2347	0.153	0.2423	1							
Indebtedness	0.1203	0.0823	0.1944	0.0482	0.1603	0.2749	0.0895	0.1709	0.2797	0.2418	0.23	0.2887	0.2152	0.0858	0.1834	-0.0503	0.1495	0.277	1						
Leverage Test	0.0264	0.0533	-0.0008	-0.0624	0.0761	0.0695	0.0532	-0.0216	-0.0019	0.0126	0.0904	0.0704	-0.0687	-0.0861	0.0168	-0.0216	0.0378	-0.0332	0.163	1					
Maintenance Net Worth	-0.0526	-0.0463	-0.0147	0.0322	-0.0672	0.0715	-0.0913	-0.0351	-0.0286	-0.054	0.0185	0.0383	0.0564	-0.0429	-0.0978	-0.0351	0.0483	0.0087	-0.0903	0.0005	1				
Eq-Ratio	0.1782	0.2177	0.0911	0.0216	-0.0671	0.3031	-0.0347	-0.0382	0.048	-0.0194	0.2261	-0.0291	0.03	-0.1301	-0.1272	0.01	-0.0467	0.1382	-0.0837	-0.0299	0.338	1			
Min. Net Working Capital	0.0406	0.0289	0.0375	0.0177	0.081	0.137	0.0416	0.1342	0.1162	0.0846	0.0451	0.0548	-0.0461	0.076	0.0787	0.1929	0.0042	0.0662	0.0089	0.0438	0.1552	0.1421	1		
Fixed Charge Coverage	0.0812	0.1057	0.1179	0.0933	0.0145	0.1441	0.0207	0.1559	0.2113	0.1528	0.0284	0.1336	0.0878	0.0883	0.0653	0.0023	0.217	0.0927	0.2366	0.275	0.1177	0.0415	0.0793	1	
Subsidiary	0.3192	0.3365	0.2881	0.2258	0.178	0.4132	0.068	0.173	0.3043	0.2194	0.4786	0.2136	0.1651	0.1924	0.1397	0.1299	0.2195	0.4966	0.2003	0.1473	0.1657	0.3537	0.1162	0.1644	1

The table shows pair wise correlation of covenants. All covenants with fewer than 15 occurrences over the sample period are not included. Bear in mind that these correlations are not the same as those mentioned in chapter 5 and 6, as we in those chapters use correlation on annual development rather than on contractual level as this table shows.

11.8 (6.) Summarizing explained and explanatory variables

Variable	Obs	Mean	Std. Dev.	Min	Max
NumbCovenants	**115**	**3.156522**	**3.44529**	**0**	**16**
firmage	115	7.556957	5.920049	0.02	20.8
zscore	115	1.002643	2.007609	-7.049	14.913
totass	115	8.392188	20.91457	0.002474	104.169
debtratio	115	0.587087	0.2126951	0.03	0.999
couponspread	115	3.811391	2.417936	0.14	10.76
maturity	115	4.916174	2.954657	1	24.75
issueyear	115	6.286957	2.372227	0	10
govern10minus3y	115	0.4685217	0.5357782	-0.39	1.4
listed	115	0.5391304	0.5006479	0	1
callable	115	0.3826087	0.488151	0	1
issuetype	115	0.6695652	0.4724282	0	1
pledge	115	0.3304348	0.4724282	0	1
guarantee	115	0.0782609	0.2697571	0	1
currency	115	0.173913	0.3806935	0	1
unsubordinated	115	0.8434783	0.3649394	0	1

This table shows all variables included in the full sample regression model. The high standard deviation in some variables can be explained by a few issuers, and are, to some extent account for in the robustness check (appendix 8).

11.9 (7.) Government bonds 10 – 3 year

	Government Bonds		
Year	*10year*	*3 year*	Govern10minus3
2008	4.43	4.55	-0.11
2007	4.78	4.79	-0.02
2006	4.07	3.74	0.34
2005	3.74	2.90	0.84
2004	4.36	2.95	1.40
2003	5.04	4.24	0.80
2002	6.38	6.39	-0.01
2001	6.24	6.44	-0.21
2000	6.22	6.61	-0.39
1999	5.52	5.39	0.12
1998	5.40	5.32	0.08

The table displays Government bonds with 10 and 3 years to maturity. “The interest rates are estimated by weighing one or two government bonds with remaining term to maturity. End of day quote” (Norgesbank.no). Positive difference in Govern10minus3 indicates improving market conditions.

11.10 (8.) Regression coefficients

Variables	Regression 1	Regression 2	Variables	Regression 1 (Cont.)	Regression 2 (Cont.)
firmage	0.0369739	0.0370463	**listed**	-0.4340455	-0.4633648
	(0.96)	(0.97)		(-0.9)	(-0.97)
zscore	0.0599464	0.0626032	**callable**	1.436359***	1.419134***
	(0.57)	(0.6)		(2.83)	(2.84)
totass	0.0171578*	0.0163473*	**issuetype**	1.453743**	1.353373***
	(1.94)	(1.91)		(2.38)	(2.79)
debtratio	-0.5500937	-0.6189063	**pledge**	1.817491***	1.782539***
	(-0.58)	(-0.63)		(3.57)	(3.62)
couponspread	0.1275892	0.1261728	**guarantee**	3.054866**	3.04939**
	(1.1)	(1.09)		(2.29)	(2.28)
maturity	0.0246771	0.0280185	**currency**	0.2494541	0.2270208
	(0.38)	(0.44)		(0.36)	(0.34)
issueyear	0.6088196***	0.5991128***	**unsubordinated**	-0.2793594	
	(5.58)	(5.78)		(-0.36)	
govern10minus3y	-1.769616***	-1.776862***	**constant**	-2.54648*	-2.57925
	(-4.64)	(-4.6)		(-1.93)	(-1.97)
			R-squared	**0.6435**	**0.643**

***, **, * indicates the significance level at 1%, 5% and 10% respectively. T-statistics are present in parentheses.

The table above shows the regression results with the problem of endogeneity represented with 'CouponSpread'. Regression 1 includes all the explanatory variables present in chapter 8.2, while regression 2 excludes 'Unsubordinated' due to suspicion of multicollinearity. As we can see, the coefficients are almost identical for both regressions, something which imply relatively low correlations between unsubordinated and the other variables than issuetype. Hence we keep unsubordinated in the regression to not face the problem of an omitted variable bias. The regression is also checked for heteroskedasticity. Due to high standard deviation in some of the variables, we have run several robustness tests by deleting extreme values in the different variables. The coefficients did not change much. Due to our endogeneity problem, we will not include these robustness checks in the paper.

11.11 (9.) Bond maturity not a endogenous variable

Maturity years	Frequency	Percent	Cum.
0	1	0.65	0.65
1	6	3.92	4.58
2	9	5.88	10.46
3	30	19.61	30.07
4	11	7.19	37.25
5	63	41.18	78.43
6	9	5.88	84.31
7	8	5.23	89.54
8	1	0.65	90.2
10	12	7.84	98.04
11	1	0.65	98.69
15	1	0.65	99.35
25	1	0.65	**100**
Total	**153**	**100**	

As we can see from the table, the bonds' maturities are centered around three to five years. Thus, we find it as a fairly assumption to disregard the possible endogeneity in this variable. Maturities are rounded to nearest integral number, to better show our argument.

11.12 (10.) Manager not appropriate as an instrumental variable for coupon spread

Number of obs	153
F(14, 138)	3.43
Prob > F	0.0001
R-squared	0.2579
Adj R-squared	**0.1827**
Root MSE	2.2482

couponspread	Coef.	Std. Err.	t	P>t
_Imanager_1	-2.72	3.179475	-0.86	0.394
_Imanager_4	-0.1500001	3.179475	-0.05	0.962
_Imanager_5	-0.3300002	3.179475	-0.1	0.917
_Imanager_8	-0.4433334	2.596031	-0.17	0.865
_Imanager_9	4.33	3.179475	1.36	0.175
_Imanager_10	0.0285713	2.403458	0.01	0.991
_Imanager_11	-3.2425	2.513596	-1.29	0.199
_Imanager_12	-0.6414286	2.403458	-0.27	0.79
_Imanager_13	-0.6733333	2.596031	-0.26	0.796
_Imanager_14	1.124545	2.348198	0.48	0.633
_Imanager_15	-1.67375	2.384607	-0.7	0.484
_Imanager_16	-1.654546	2.348198	-0.7	0.482
_Imanager_17	-0.6334616	2.291056	-0.28	0.783
_Imanager_18	1.193382	2.264699	0.53	0.599
_cons	3.93	2.248229	1.75	0.083

The table shows the different managers influence to spread. As discussed in chapter 8.3 regarding finding an instrumental variable, several aspects with the instrumental variable has to be fulfilled. A requirement mentioned is that the instrumental variable has to significantly affect the endogenous variable, in this case the managers has to affect 'CouponSpread'. As we can see from the table over, this is not the case. The coefficients are not in great extent different from zero, which saying that manager actually not having large influence on 'CouponSpread'.

11.13 (11.) Sub-regressions on spread intervals

	Regression on spread intervals - basis points			
Variables	**0-200**	**201-400**	**401-600**	**601-1100**
firmage	0.025742	0.0293663	-0.1033838	-0.336227*
	(0.3)	(0.17)	(-1.29)	(-2.49)
zscore	-0.2669076	-0.2614299	0.2292962*	-1.393157**
	(-0.22)	(-0.74)	(1.85)	(-2.76)
totass	0.0173577	-0.0174707	-0.0068731	0.0255931
	(1.03)	(-0.44)	(-0.14)	(0.06)
debtratio	-2.453095	-6.637579	1.674828	-17.59157*
	(-0.6)	(-0.95)	(0.7)	(-2.29)
maturity	-0.0097734	0.1154539	-0.7745113**	0.0065883
	(-0.1)	(0.49)	(-2.15)	(0.01)
issueyear	0.5164517**	0.3247481	0.790276***	-1.432443
	(2.37)	(1.12)	(2.99)	(-1.91)
govern10minus3y	-1.263285	-0.2645807	-1.873412***	-10.88667**
	(-1.6)	(-0.14)	(-3.75)	(-3.28)
listed	-1.278667	-0.9650421	0.9188525	4.867622***
	(-1.17)	(-0.7)	(0.59)	(4.82)
callable	2.032422	0.9874154	1.394163	7.662922***
	(0.96)	(0.38)	(1.51)	(8.09)
issuetype	2.997494	2.835791	1.116462	17.14474*
	(1.05)	(0.9)	(0.94)	(2.15)
pledge	2.616384**	0.1748041	1.25432	6.827632***
	(2.36)	(0.05)	(1.32)	(6.1)
guarantee	2.794653	4.997059	5.156115***	-0.9018013
	(1.36)	(1.43)	(3.92)	(-1.36)
currency	-1.435332	0.2466002	0.386844	1.521227
	(-0.52)	(0.11)	(0.28)	(1.51)
unsubordinated	-1.956272	0.7416556	-0.8839644	(dropped)
	(-0.7)	(0.46)	(-0.58)	
constant	0.6847257	2.36627	0.0615631	6.490886
	(0.19)	(0.34)	(0.03)	(1.93)
R-squared	**0.7093**	**0.6529**	**0.7331**	**0.9810**

***, **, * indicates the significance level at 1%, 5% and 10% respectively.
T-statistics are present in parentheses.

The table display regression coefficients for four different intervals. The main point of doing this analysis was to get around the endogeneity problem. However, by doing this a new problem arise, multicollinearity, mostly because of a small sample in each spread interval. The problem is extensive, and just the colored coefficients do not have too high correlation. When comparing the "unbiased" coefficients for different spreads, the spread seem to have great influence on spread, owing to the great difference in the coefficients. However, these coefficients are mostly not significant, and to some degree influenced by the correlation to the variables with mulitcollinearity problem. 'Unsubordinated' is dropped in spread interval 601-1100 due to only one observation.