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Recovery Rates in the Norwegian High Yield Bond Market

A study on default and recovery from 01.01.2005 to 30.06.2010

By Ane Glærum Haugland and Ole-Martin Brekke
Supervisor: Professor Thore Johnsen

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Norges Handelshøyskole

Content

Abstract

This thesis covers defaults in the Norwegian high yield bond market between January 1st 2005 and June 30th 2010. To a large extent, our task has been to register and document the details of all defaults that occurred within this timeframe and to use this information to compile a complete set of recovery rates.

Our findings show that security does not affect recovery rates in the way one would assume. The average recovery is actually higher for defaulted senior unsecured issues than senior secured ones. We have also found a range of factors that affect the recovery of a defaulted bond. Briefly put, bonds most likely to yield low recovery in a default were issued by partly financed start-up companies that built a single asset with a proprietary design.

Despite the fact that a lot of the bonds issued shortly before the financial crisis have defaulted, we have found that this market has many traits of a well functioning one. Recovery rate levels are comparable to what has been found in international studies. Companies tend to get chances to solve their problems before they end up in bankruptcy. Additionally, we have seen that bondholders act together as a group rather than fighting each other.

We would like to thank those that have helped us in the process of making this thesis: First of all, Professor Thore Johnsen, for his contributions throughout the fall. In the early stages we received a lot of help from Herleif Håvik and Øyvind Hamre (Pareto Securities) with the direction of the paper and how to proceed to gather the relevant information. Furthermore, our understanding of the credit events was greatly improved through conversations with Ola Nygård and Karianne Bruland (Norsk Tillitsmann). We would also like to thank Margaret Bryn and Martin Tveiten Helgeby for their assistance in providing input when compiling the final product.

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1. Preface

1.1 Introduction

The purpose of this thesis has been to identify and analyze defaults and recovery rates in the Norwegian high yield bond market as requested by Pareto Securities. Pareto is the dominant manager in the Norwegian high yield bond market (see section 6.4 in the appendix). The company wanted a complete analysis of the recovered values in all credit events in the Norwegian high yield market. Their research regarding both the Norwegian bond and credit markets provided us with guidelines for topics that would be interesting to cover in our thesis. Pareto's research on recovery focused on the bonds in which they have been involved, either as the issuance manager or as a broker in the secondary market. Our task was to extend the scope of this research by identifying a more complete set of defaults in the Norwegian high yield bond market over a longer time period and to analyze recoveries in these cases.

To be able to identify defaults and corresponding recovery rates, we were put in contact with the trustee for the majority of bonds issued in Norway, Norsk Tillitsmann ASA. Norsk Tillitsmann was established in 1993 to serve as an independent and competent bond trustee. Excluding government bonds, Norsk Tillitsmann is the bond trustee for 95 percent of the outstanding nominal amounts (NTM Presentation 2006). The company is owned by large institutions in the Norwegian financial market, including banks, insurance companies, investment banks and savings banks. In 1995, these institutions transferred their trustee activities to Norsk Tillitsmann. This point in time marks the beginning of the collected data at our disposal. These data are loan characteristics such as amounts issued, disbursement dates, maturity dates and the coupon paid. Furthermore, the Stamdata online database allows subscribers to access loan documents and correspondence between bondholders and the issuer.

In order to be as conclusive as possible with our findings, it would be beneficial to cover defaults over a whole cycle by going at least as far back as the year 2000. However, prior to the oil service cycle beginning in 2005, the issuance of high yield bonds was limited. Moreover, less information is available in the Stamdata database on defaults that occurred before 2005. It also proved difficult to gather necessary information and documentation

from other sources. Therefore, the scope of this thesis is limited to every high yield bond included in the Stamdata database that was outstanding as of January 1st 2005 or later.

Seeing as our work started in the summer of 2010, it felt natural for us to set the cut-off at the end of the first half of 2010. Therefore, the defaults we cover are those that occurred before July 2010. We have included the news flow related to these defaults after July 1st if it was relevant in order to determine the outcome of a default situation.

The primary object of our work was to create an overview of recovery rates for the time period covered. Pareto also suggested that we could look into what determinants can explain recovered values in each case. Research on recovery rates indicates several determinants: security, type of credit event, industry, leverage and vintage. We found that senior secured bonds actually had lower recovery rates than senior unsecured ones. Furthermore, we found that loss given default is higher in the oil service sector than other sectors. Additionally, we found that 45 percent of bonds issued in 2007 had been involved in a credit event. Other analyses we performed showed that young companies default more often than older ones and that they have lower recovery rates. On the other hand we were not able to determine that the size of a bond was related to the value recovered.

We also found it noteworthy that there are indications of systematic inefficiencies relating to equity pricing around the time of default. This is one of several observations that should be researched further.

1.2 The evolution of the global high yield bond market

The high yield bond market is fairly young. It emerged in the 1980s in the US when investment banks found customers willing to invest in former investment grade companies that had been downgraded. These so called “fallen angels” were found to be systematically undervalued. Led by Drexel Burnham Lambert (with Michael Milken), the investment banks started offering bond issues to finance small and medium sized companies that were unable to achieve an investment grade rating. Some of the large-cap issuers of high yield bonds in the 1980s included fallen angels such as airlines. Other companies included those that were unable to finance their growth with bank debt. This would typically be gaming corporations and cable television corporations (HY Bonds 1999) (Michael Milken). The remaining issuers were mainly small or medium sized firms that had existing leverage but wanted to pursue growth or acquisitions (HY Bonds 1999). The growth of the market was fueled in the 1980s by the wave of leveraged finance acquisitions that used high yield bonds as a main source of financing.

As the economy slowed down in the early 1990s, default rates increased for high yield bonds and the market faced its first period of difficulty. By the end of 1990, the average price in percent of par was 65.9 percent and default rates peaked at 9.3 percent in 1991 (High Yield Handbook, BNP Paribas 2006). This attracted a new kind of investor to the market: the distressed debt investors. Often referred to as “vulture investors”, the distressed debt investors would buy the debt and often take control of the company. This action could be done in order to secure cheap ownership by converting debt to equity on favorable terms. The next wave in the high yield market was the communications sector. Their share of the outstanding bonds increased from 4 percent to 15 percent over a span of two years from 1995 to 1997 (HY bonds 1999).

The Norwegian high yield bond market will be described in detail in this thesis. In short, the market has a large number of issuers incorporated outside Norway. The market has a large number of bonds which have been issued to finance the purchase or construction of assets (Norsk Tillitsmann 2006). The *shipping*, *E&P* and *oil service* sectors are large compared to international bond markets. The first issues in the Norwegian high yield market were shipping and oil service companies at the beginning of the new millennium. The market saw

significant growth as oil prices increased between 2005 and 2008. During 2005 and 2007, the demand from investors for oil and related industries was high and many projects were able to attract bond financing. The market halted in 2008 but is today once again perceived as very active.

Providing data for this sub segment of the Norwegian financial market may be very timely. The issue of Norwegian high yield bonds is returning to the record levels of 2006 and 2007. At the same time financial market participants are positioning themselves to take advantage of the opportunities (Dagens Næringsliv, 03.11.10). Moreover we show that the year 2012 will see a record level of maturing bonds, many of which have been involved in credit events during 2008, 2009 and 2010. A third important aspect as to why this market is worthwhile studying is that new banking-sector legislation; Basel III (Eurofi) may result in bonds becoming a more competitive form of financing compared to today's bank financing, thus shifting even more demand for high yield financing from banks to the bond market.

2. Theory

Theory concerning bond market basics, credit events and defaults, default frequencies and recovery rates are presented below.

2.1 The Bond Market – basics

A bond is a debt security that obligates the issuer to make periodical payments (coupons or interest) and to repay the principal amount through installments and/or at a set future date called the maturity date. A bond can be issued by a government, a local government authority or a corporation. We will focus on corporate bonds. A plain vanilla bond is a bond in its most comprehensive form. It is a series of predetermined coupons measured in percent of the principal value. A 5 percent coupon corresponds to a USD 5 payment for every USD 100 in principal once a year until and including the year of maturity.

2.1.1 Bonds within the capital structure

In corporate finance literature, the discussion of capital structure builds upon the Modigliani-Miller theorem, which states that value cannot be created in the relative amount of debt and equity financing. This is founded on a framework where no taxes or bankruptcy costs exist and in an efficient market without agency costs or asymmetric information.

The modern capital structure decision is less comprehensive as it is not limited to a choice between debt and equity. Firms have different access to a range of debt, equity and intermediate sources of financing. If debt is interpreted in the MM framework to be bank financing, bonds and convertible bonds are the most common alternatives within the debt category. A corporate bond is the name of a loan document between the corporation and its bondholders. Contractual obligations, collateral clauses and ranking relative to other debt will vary from one bond issue to the other.

Capital structure ranking	**Priority in a default**	**Expected recovery in a default**	**Capital cost**
Senior Secured (Bank or Bonds)	Highest	Highest	Lowest
Senior Unsecured (Bank or Bonds)	↓	↓	↓
Subordinated (Bonds)			
Preferred Stock			
Common stock	Lowest	Lowest	Highest

Table 1: Capital structure ranking in terms of priority, expected recovery and capital cost

High yield or speculative grade bonds are bonds with a high interest rate cost due to their high risk. The specific cutoff point of separation between an *investment grade* bond and a *high yield* bond is based on their credit rating when the bond is issued. A bond with a rating of BB+ or lower (S&P) is considered to be high yield (table 2 shows the separation for different rating scales).

2.1.2 Types of bonds

Throughout this thesis we use "bonds" as a term that includes all different types of bonds issued by corporations. In practice, many variations of bonds with attached terms exist. The most common types of bonds are "regular" bonds, convertible bonds and certificates.

A corporate bond is not limited to *plain vanilla bonds*. A corporate bond with less than a year to maturity at the time of issuance is called a certificate, while a bond with maturity several decades into the future (in theory it extends into perpetuity) is called a perpetual bond. There are also floating rate bonds where the coupon is set according to a reference rate and a margin. Moreover, a vast category of less comprehensive bonds exist, where interest rates can be inversely linked to the reference rate, or linked to something completely different, like inflation or a macroeconomic indicator. One category of bonds that is often addressed separately from other corporate bonds is convertible bonds. These are just like other bonds; however, at maturity, bondholders also have the option to convert the principal into shares at a given strike price. This provides the convertible bondholder with a potential upside provided that the stock appreciates. As a result, interest payment demanded by the bondholders is lower than for regular bonds. The issuer may prefer convertibles due to the decreased interest expense which is weighed against the potential dilution of equity if the bond is converted in the future.

2.1.3 Credit spread

A credit spread is defined as the difference in yields between two investments with equal maturity but different credit risk. In the case of the corporate bond market we want a measure of the total credit risk. To achieve such a measure, the convention is to calculate the credit spread as the difference between the promised yield on the bond and a government security. The latter security is used as a proxy for a risk free security and should have as equal characteristics to the bond as possible.

To exemplify the meaning of a credit spread, we perform a simple valuation of a plain vanilla 10 percent coupon bond repaying a USD 100 principal on maturity in year 5. By discounting the cash flows with an appropriate discount rate that reflects the risk of the investment, we get the value of the cash flow generated from the bond. If the discount rate and the coupon is the same, the price of the bond will equal the principal amount.

Year (t+)	1	2	3	4	5
Coupon + Principal	10	10	10	10	110
Discount rate	10 %				
Value	$100,00				

If the news flow immediately after the issue increases the perceived risk of the bond (will be defined later), the value of the bond will fall as the discount rate is increased to account for the increased risk. The value of the bond would now be USD 83.24 with a 15 percent discount rate.

Year (t+)	1	2	3	4	5
Coupon + Principal	10	10	10	10	110
Discount rate	15 %				
Value	$ 83,24				

If the bond is traded at this point in time, the investor buying the bond will have the cash flow shown below if the bond does not default. If the bond does not default, his or her yield to maturity equals the 15 percent discount rate.

Year	0	1	2	3	4	5
Cash Flow for buyer	-83.24	10	10	10	10	110
IRR	15%					

In terms of the bond presented in the above example, a 5 year US treasury note would be a relevant proxy of a risk free rate. If the promised yield to maturity on a 5-year note is 5 percent annually, the credit spread for the bond would be 15 percent - 5 percent = 10 percent. Spreads are quoted in basis points. One basis point equal 0.01 percent, so a 10 percent spread equals a 1000 basis point (bp) spread. The spread calculated before the credit risk increase is 500bp. As a result, the credit risk is doubled in the example. To be able to understand why the risk doubled we want to look at the components that constitute the credit risk.

2.1.4 Credit risk

The concept of *credit risk* builds on the definition of the probability of default. This is the probability that a company is unable to meet its scheduled interest or principal payments and, as a consequence, ending up in breach with its contractual debt obligations. The spread calculated above is often interpreted as the probability of default multiplied with the loss in the event of a default. The result is that the spread allows for the successfully repaid bonds to pay for the losses incurred by the ones defaulting. In other words in a portfolio with an infinite number of risky bonds the return would equal that of the risk free security in a world with no systemic risk.

*Credit risk = Spread = P(default) * Loss given default = P(default)*(1-Recovery Rate)*

The figure below states the most basic form of credit risk models. It assumes that the investor will hold the bond until maturity. As a result the outcome is binary: either the bond defaults, with a corresponding loss, or it is repaid in full. The models may be much more complicated for investors that have a certain mandate that only allows them to invest in a certain risk class. Therefore, many models focus on the risk of migration between rating categories and corresponding loss to bondholders if they have to sell after a downgrade.

In addition to the probability of default and the loss given default, many other factors affect the spread. The mathematical description of the spread above does not take into account the fact that investors will demand a risk premium to invest in risky bonds since there will be a level of systematic risk. In effect, the P(D)*LGD states that the expected payoff of a large number of risky bonds will be the same as risk free bonds because the spread compensates for the losses incurred on defaulted bonds. When risk is introduced, the investor will also face volatility and he will demand a corresponding risk premium if the bond returns are correlated, which gives systematic risk that cannot be eliminated by diversification (beta>0). There is also a liquidity premium that is included in the spread. This can be significant in the high yield market as it has poor liquidity that tends to dry up when the economic environment is bad.

Nevertheless the foundation of understanding credit risk is the default frequency and the loss given default since they make up the largest component of the spread. Therefore data

on these are important areas to assess to improve the input in credit risk models. The two have been shown to be correlated since the macroeconomic environment will affect both asset values and the number of defaults (Altman, Brady, Resti and Sironi, 2002). One indicator of credit risk is the rating of a bond. Using data as far back as the 1920, previous research has mainly focused on historical default frequencies related to ratings classes and industries (Moody's Default and Recovery Rates 1920-2007). The research covering recovery rates is much more limited as this is not as easily accessible.

The *credit rating* of a bond is an assessment of the "credit worthiness" of a certain debt issue. Credit ratings are alphanumeric grades set by a credit rating agency, of which the most known names are Fitch, S&P and Moody's. The ratings are *relative* and similar ratings scales are made for municipality bonds, governments, and others. The ratings agencies all have a similar approach to long term corporate credit rating. Their rankings are similar, but with different notation to describe each rating class. They all address the credit risk of an issue, meaning that they take into account both the expected default frequency and the loss given default. However, the focus of the rating is first and foremost the relative ranking of likelihood of default. According to S&P, the single most important factor in the assessment of a company's credit is their likelihood of default (S&P Ratings FAQ). In practice, a rating is set given the probability of default and then notched up or down to reflect the expected loss in a default (HY Bonds 1999). The fact that credit rating agencies focus on default frequencies first and foremost was pointed out by Altman and Kishore (1996).

In effect these ratings mainly provide a professional opinion of how often a bond will default relative to another. A BB-rated issuer is expected to default more often than an AA-rated company, but more rarely than a C-rated bond.

Attaching certain default frequencies to the ratings is not an easy task. For all ratings the default frequencies will be affected by the economic environment. A-rated bonds may default as often in a downturn as B-rated bonds does in an upturn. This is why the credit rating agencies do not want to attach a predicted frequency to a certain rating, and why they emphasize that the ratings are relative (and based on expectation). The agencies issue both short- and long term ratings, using different scales for the two. The most applicable are the

long term ratings. Moody's uses these ratings to assess the credit risk of an obligation with original maturity of one year or more (Moody's Ratings).

Moody's	S&P	Fitch	
Aaa	AAA	AAA	Investment Grade
Aa1	AA+	AA+	
Aa2	AA	AA	
Aa3	AA-	AA-	
A1	A+	A+	
A2	A	A	
A3	A-	A-	
Baa1	BBB+	BBB+	
Baa2	BBB	BBB	
Baa3	BBB-	BBB-	
Ba1	BB+	BB+	High Yield / Speculative
Ba2	BB	BB	
Ba3	BB-	BB-	
B1	B+	B+	
B2	B	B	
B3	B-	B-	
Caa1	CCC+		
Caa2	CCC		
Caa3	CCC-	CCC	
Ca	CC		
	C		
C	D	DDD	Default
		DD	
		D	

Business Risk
- Industry Characteristics
- Competitive position
- Management

Financial Risk
- Financial Characteristics
- Financial Policy
- Profitability
- Capital Structure
- Cash Flow Protection
- Financial flexibility

Table 2: Credit rating scales (Moody's Ratings, Fitch Ratings and S&P Ratings scales
Table 3: Components of the ratings process

Many factors enter into the rating process. S&P has a comprehensive approach where the two areas of focus are business risk and financial risk. Within these categories observable traits that may indicate the degree of default risk are evaluated. The business risk is analyzed by considering industry characteristics, the competitive position of the issuer and quality of management. Financial risk is assessed by considering financial leverage, hedging practices to protect cash flow, profitability, financial flexibility, financial characteristics and -policy.

2.1.5 Capital structure and credit risk

According to Moyer (2005), credit risk is a function of three parameters: leverage, priority and time. *Leverage* refers to the amount of debt used to finance a company's assets. Credit risk increases as leverage increases. When a loan agreement is initiated, the capital structure

is used to allocate credit risk through *priority* mechanisms. *Time* refers to how capital structures can manage credit risk after the agreement is in place.

In order to assess the risk and return potential of a bond, it is important to understand how a company's capital structure is used to allocate and manage credit risk. As shown above, a company's capital structure may be viewed as a continuum of instruments with different risk/return characteristics resulting from credit layering: from the least risky senior secured bank loans to the most risky; common stock. The capital structure enables investors to invest in the instruments which fit their risk preferences. Both the concepts of allocation and management of credit risk through capital structures are presented below.

Credit risk is *allocated* in a company's capital structure through prioritization mechanisms which control the order of repayment to claimholders. The terms in a specific loan agreement states the priority of the bond relative to other bonds. The priority order is distinguished by grants of collateral, contractual provisions, maturity structure, corporate structure and guarantees or non- recourse provisions.

If *grants of collateral, i.e. security* are given, lenders receive a first priority security interest over proceeds from sale of the assets being pledged. If a company has defaulted, stakeholders with security will be repaid before other claimholders. Priority is further assigned through *contractual provisions* in the form of senior- or subordinated obligations. Another element that affects the allocation of credit risk between securities is the *maturity structure.* It is of importance because obligations maturing earlier than others will recover their principal first. As a result, if a junior bond matures a year before a senior secured bond, the credit support of the senior bond may be eroded. If a conglomerate comprises a non-operating holding company and operating subsidiaries, obligations may have different priority as a result of their placement in the *corporate structure*. In theory, claims from lower tier subsidiaries will be repaid in full before claims from a holding company are repaid. Consequently, claims in the holding company are structurally subordinate to lower tier subsidiaries. By providing the lenders with a *guarantee*, the guarantor effectively becomes legally bound as a co- obligor.

In order to protect lenders' claims against unforeseen issues and agency problems in the future, loan agreements need to *manage* changes in credit risk over time. To accomplish this, restrictive contract provisions and covenants are stated in the loan agreement. Their main purpose is to protect lenders by limiting a company's ability to change its capital structure and credit characteristics once a loan is issued. The need for protective covenants increases as credit risk increases. In the event of default, covenants in a loan agreement determine the scope of the company's bargaining power. Further, they determine the bondholder's negotiation leverage, claim status and share of recovery. Moyer (2005) identifies common covenants which may be implemented in order to protect lenders against the three sources of credit risk: leverage, priority and time.

Leverage covenants are implemented to protect lenders from the company incurring additional debt over a specified level. For instance, a leverage covenant may limit the total amount of debt to a specified EBITDA multiple.

The primary function of covenants designed to protect *priority* is to increase the probability that a firm's existing assets are used to repay the loan. Two commonly used priority covenants are *negative pledge clauses* and *restricted payment provisions*. The former states that unsecured lenders must be included if the borrower at a later point in time provides other lenders with security interests. The latter limits the firm's opportunity to distribute its assets to third parties. If a firm is a conglomerate, a loan agreement may be designed to include which subsidiaries are considered guarantors.

In order to protect lenders against unforeseen issues at a later point in *time*, four provisions are commonly used. The first is a *performance covenant* related to a company achieving targeted milestones in terms of operational performance. The second is a *put option* which provides lenders with the opportunity to get the loan repaid at certain specified points in time. A third provision is a *forced call* if the issuer is downgraded. It states that if the company is downgraded by a recognized rating agency, it will be forced to repay the loan. The fourth provision is a *performance-linked pricing provision*. It automatically adjusts the interest paid to lenders if for instance certain performance ratios are below a minimum threshold, to offset the increased risk the lenders are exposed to.

2.2 Credit events and defaults

2.2.1 Definition of credit event/default

When determining what constitutes a default we chose to look at the definition of a credit event as defined by the International Swaps and Derivatives Association (ISDA). Such definitions are the basis for payments made on derivative securities of a bond like a Credit Default Swap. These definitions are widespread in their use in financial contracts and can therefore be viewed as an industry standard of what constitutes a default (ISDA survey). For the purpose of analysis, some professionals would employ a wider ranging definition that includes securities that are very likely to default in the future.

A survey performed by ISDA in 2000 concluded that amongst a sample of a dozen European and US banks, the definition of default that is used for corporate assets is the one employed by the rating agencies like Moody's, S&P and others. The standard wording used for documentation is the one that can be found in the ISDA master agreement of 1999. These ratings agencies' definitions and that of the ISDA are very similar.

Moody's definition of default is one of the most comprehensive ones. It includes three types of credit events (Moody's Corporate Default Risk Service FAQ):

1. *"A missed or delayed disbursement of interest and/or principal, including delayed payments made within a grace period"*
2. *"Bankruptcy, administration, legal receivership, or other legal blocks (perhaps by the regulators to the timely payment of interest and/or principal; or"*
3. *"A distressed exchange occurs where: (i) the issuer offers debt holders a new security or a package of new securities that amount to a diminished financial obligation (such as preferred or common stock, or debt with a lower coupon or par amount, lower seniority, or longer maturity); or (ii) the exchange had the apparent purpose of avoiding default."*

The ISDA's definition of default as of their 2005 Master Agreement uses six categories which overlaps with the credit definitions created by Moody's (ISDA Master Agreement 2005).

The options available to a US company with bonds in default are illustrated in figure 1 below. The company may either restructure its debt out of court or under supervision of a

bankruptcy court. Independent of what solution is chosen, the outcome of the restructuring is either that the company continues operating after reorganization or that it will be liquidated. Bankruptcy proceedings may be initiated if it is possible to document that a debtor is both insolvent and insufficient. A company is insolvent if it is unable to meet its financial obligations when they are due, while it is insufficient if its amount of liabilities exceeds estimated value of its assets. If insolvency proceedings take place, legal action may be taken in order to liquidate assets to pay off outstanding debt. In Norway, bankruptcy proceedings are initiated by an application sent to the Probate Court. In the US, the in court process of reorganization or liquidation are initiated under Chapter 11 or Chapter 7 proceedings of the U.S. Bankruptcy Code.

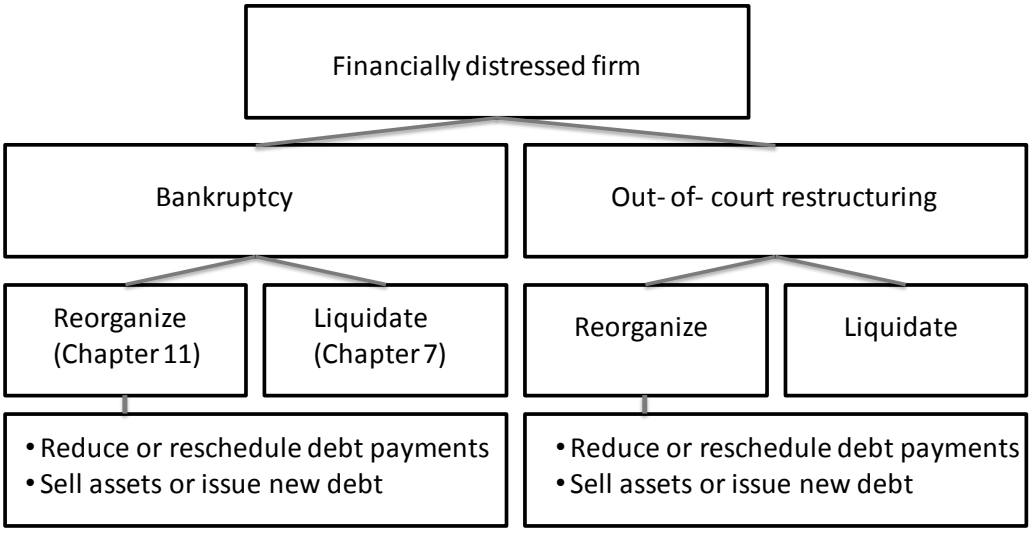


Figure 1: Options available to a US company in financial distress (Source: Stuart C. Gilson, 2010).

2.3 Historical default frequencies

All the credit rating firms publish annual default frequency studies. This is probably the most covered default topic within research and in the credit rating industry. The research covers default frequencies of investment grade and speculative/high yield bonds. It also looks at differences between geographic markets and industries as well as breaking down the default frequency for each rating class. Furthermore, migration analysis, which looks at the likelihood of a bond within a rating category moving up or down, is often done as an extension of default frequency research.

Table 4 below shows S&P's global default frequency within the high yield bond segment (speculative grade). The default frequencies are calculated based on the number of defaults relative to outstanding high yield bonds each year.

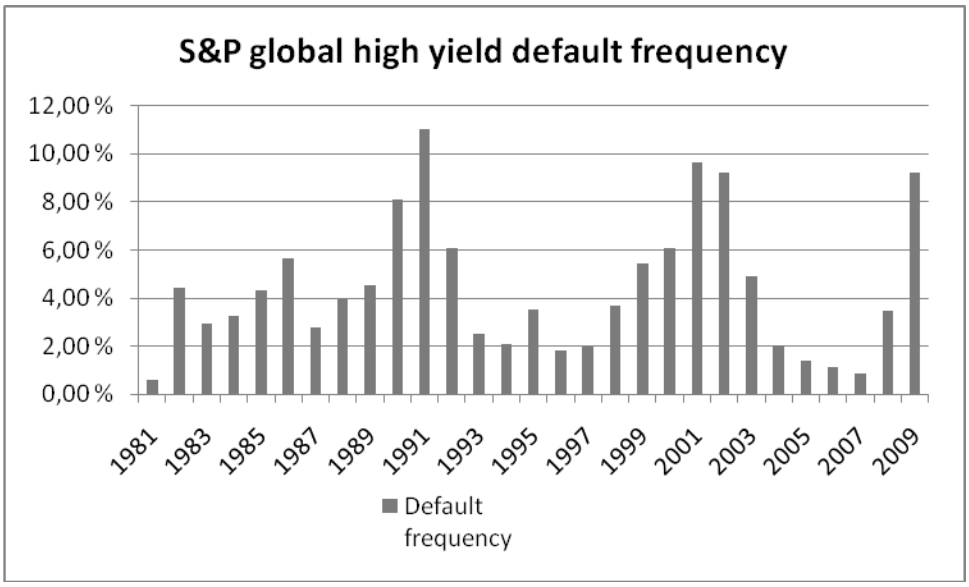


Table 4: Default frequencies 1981 – 2009 – Number of defaults relative to outstanding HY-bonds (Source: 2009 Annual Global Corporate Default Study and Rating Transitions, S&P 2009 Default Study)

As can be seen in table 5 the default frequencies are very different amongst the ratings included within the speculative grade category (BB, B and CCC/C). The table shows the historical average of "one year" default frequencies for different rating classes. These frequencies are also calculated on the basis of the number of defaults.

Ratings class	AAA	AA	A	BBB	BB	B	CCC/C
Average one year default frequency (1981-2008)	0%	0.03%	0.08%	0.24%	0.99%	4.54%	25.67%

Table 5: Historical average one year default frequency for different ratings classes (Source: 2008 Annual Global Corporate Default Study and Rating Transitions, S&P 2008 Default Study)

2.4 Research on recovery rates

Insight provided by research on larger samples of defaults in the US may provide us with elements to consider when studying recovery rates. Much of the research performed is based solely on *trading prices* after default (S&P, 2009 Annual Global Corporate Default Study and Rating Transitions). The other genre of research is the one that uses *ultimate recovery rates*, where a combination of trading prices and actual values recovered is used as the basis of calculating recovery rates. There are two large scale studies of *ultimate recovery*

rates identified by Charles Smithson (Credit portfolio management, 2003); S&P's Portfolio Management Data (PMD) database and Fitch Risk Management's Loan Loss Database. S&P's research on the PMD database has showed that seniority, amount of collateral, time spent in default and the size of the debt cushion are all significant in determining recovery rates.

Altman and Kishore (1996) performed some of the early research on the topic of recovery rates. They looked at 728 defaults from 1978 to 1995. They found that seniority and sector/industry were significant in determining recovery rates. They also found that neither credit ratings at the time of issuance, the time to maturity at issuance, or the size of the issue affected recovery significantly.

2.4.1 Measuring ultimate or trading price recovery rates?

There are two different ways of determining recovery rates. One is based on trading prices of the defaulted bonds. These recoveries reflect the markets valuation of the expected eventual recovery. The other way to measure recovery rates is to look at a combination of the eventual recovery to investors and trading prices. An eventual payment can be a cash payment or consideration in the form of shares or a new bond (or nothing). The credit rating agency Moody's has performed research on a database of 3500 loans and bonds from 720 US non-financial corporate default events (Moody's Ultimate Recovery Database). One of their findings was that the trading price gives good indication of ultimate recovery rates. However there are many cases where trading prices are very misleading. The trading prices explain (R^2) 50 percent of the variation in recovery rates (Moody's Ultimate Recovery Database). For the investor that is holding a bond on a mandate limited to a certain risk category, the most relevant recovery rate is the trading recovery rate since this investor would typically have to sell the bond once default is detected. For the investor that holds the bond until maturity and is able to and willing to sit through a default, the ultimate recovery rate is the most applicable.

In the world of credit rating the recovery rates are more relevant the lower the rating of the bond is. For an investment grade rated bond the main source of credit risk is the risk of a downgrade, and as such loss given migration is more applicable than loss given default. Few securities go directly from a state of investment grade to default. For a high yield bond

(rating based definition) the primary concern is a default more so than a downgrade and thus the recovery rate and corresponding loss given default becomes most relevant.

When determining *trading price based recovery* one can use the trading price on the day of the credit event or a certain time after. Moody's use what is considered the industry standard in their Default Risk Service database (Moody's 2008: Corporate Default and Recovery Rates); a 30-day post credit event trading price.

In Moody's Ultimate Recovery Database, three different methods are used when calculating *ultimate recovery rates* (Moody's Ultimate Recovery Database FAQ). The methods differ depending on the type of solution reached in each case. The recoveries are discounted back to the last interest payment date before default under all methods using the pre-default interest rate on the bond.

Under the *settlement method*, recovery rates are calculated based on the value of the instruments received when the solution is approved. The value of the instrument is discounted from the first point in time it can be priced. The second method, the *liquidity method*, is used when the bondholder receives a new bond or when changes to the existing bond agreement take place. In this case the recovered value is apparent once the new bond is either repaid at maturity, called or once a new credit event occurs. The recovered amount is discounted back from the day of the liquidity event. The third method is to use *trading prices* of the defaulted instrument, at or post emergence. The first available trading price decides the point where the recovered value is determined.

The method which is considered by the agency to be the most appropriate in a specific default situation is used. In some cases one will have to choose between the liquidity method and the trading price method. The one that best describes the effect of the credit event will be chosen.

2.4.2 Historical recovery rates

In addition to their trading price recoveries, Moody's introduced their Ultimate Recovery Database in 2006. In their study of Corporate Default and Recovery Rates from 1920-2007 they presented historical recovery rates by capital structure for both methods.

(Value weigthed numbers)	Moody's		Altman and Kishore
	Trading Price Recovery	**Ultimate Recovery**	**Trading Price Recovery**
	1982-2007	1987-2007	1978-1995
Senior Secured	54,21 %	65,77 %	57,89 %
Senior Unsecured	34,85 %	38,95 %	47,65 %
Senior Subordinated	29,80 %	29,11 %	34,38 %
Subordinated	27,58 %	26,51 %	31,34 %

Table 6: Historical recovery rates (Source: Moody's Default and Recovery Rates 1920-2007 and Altman and Kishore, 1996).

Table 6 shows that Moody's have found differing recovery rates between security classes both when calculating *ultimate* and *trading price recovery*. As we would expect the ranking within the capital structure matters as a determinant of recovery in a default (Altman and Kishore, 1996). The recovery for senior secured bonds is higher when calculating the ultimate recovery rate. It is difficult to conclude that there is any significant difference between the methods since the time periods covered are not the same.

2.4.3 Determinants of recovery: Research and findings on recovery rates

Research on what determines recovery is fragmented and in many cases it is performed under the banner of bankruptcy costs. Below are some elements that are considered to be important determinants of the level of recovery in a default. The most important ones are security (seniority and collateral), industry, ratings and age of the firm. All of these determinants except ratings will be key parts of our analysis in the findings section.

2.4.3.1 Seniority and collateral

One of the main goals of the thesis was to analyze recovery rates for different parts of the capital structure. We limit ourselves to look at recovery rates for bondholders and not provide a comprehensive overview of recovery rates for equity, preferred stock or bank debt. The focus is therefore on seniority and collateral/security. Seniority and collateral both address the ranking amongst claimants and it is considered to be the most important factor in estimating recovery for an issue. Senior bonds should always have recovery that exceeds junior bonds in the same issuer. Therefore we expect the average recovery rates of senior bonds should exceed that of a subordinated one unless there is a large difference in the type of issuers in the two security classes.

Moody's has shown that the percentage of total claims that are junior to your claim is a significant indicator of recovery. The larger portion of total claims that are junior your claim, the higher the recovery is. They name the amount of debt below your claim the "debt cushion". The amount of total debt relative to all assets (leverage) was not shown to be a significant determinant of recovery (Moody's: Determinants of recovery rates on defaulted bonds). Early research on the topic identified both seniority and operating sector as the most important determinants of recovery rates (Altman and Kishore 1996).

2.4.3.2 Industries

Both databases show that the industry the issuer operates within is an important factor, with recovery rates differing a lot between sectors. This is something we want to look at as we have very dominating o*il and gas* and o*il service* sectors in the Norwegian bond market.

Altman and Kishore (1996) found that *public utilities* and the *petroleum and chemical* sector had significantly higher recoveries than other sectors, even when adjusting for differences in seniority. The difference in recovery rates between sectors will to a large degree be attributed to the fact that sectors have different types of assets and leverage. Sectors with a large degree of tangible assets and low leverage should have significantly higher recovery rates that those that have intangible assets and high leverage.

2.4.3.3 Initial default event

Moody's has found that if the default event is "default within a grace period" or "distressed exchange" recovery will be higher. Prepackaged restructurings or bankruptcy (Chapter 7 or 11) indicate a lower recovery (Moody's: Determinants of recovery rates on defaulted bonds).

2.4.3.4 Tangible assets relative to intangible

Tangible assets, defined as "Property Plant and Equipment", divided by total assets on the balance sheet has been found to be a significant determinant of recovery rate. A high degree of "hard" or tangible assets will generally indicate higher recovery (Moody's: Determinants of recovery rates on defaulted bonds).

2.4.3.5 Time spent under bankruptcy

Research performed on Moody's Ultimate Recovery Database shows that time spent in bankruptcy before a final solution is ready is a significant determinant of recovery. With

longer time spent in Chapter 11/7 proceedings, the expected recovery falls (Moody's Ultimate Recovery Database).

2.4.3.6 The effect of bank debt

Could default frequencies and recovery rates differ between issuers that have both bank and bond financing in their capital structure? On the one hand we could assume that companies with bank financing are less risky than those who are not. Also it could be an advantage to have access to multiple sources of financing. On the other hand the bank debt would rank ahead of bonds in a default which could possibly indicate that recovery for bondholders should be lower.

2.4.3.7 Rating

Based on our intuition it could be likely that highly rated companies should have higher recovery rates. The quality of asset and leverage are important elements considered when determining the default likelihood of an issue. The same factors that would give a high rating should therefore indicate a high recovery. Nevertheless, while rating predicts default likelihood effectively, it is much less clear how recovery and rating at issue is related. Studies performed with the data in Moody's Ultimate Recovery Database analyzed how recovery rates are affected by the rating. They found no clear connection between the two (Moody's Ultimate Recovery Database). The same was found by Altman and Kishore (1996). They explained that this could be because the focus of a credit rating is the likelihood of default and to a lesser degree the expected loss given default.

2.4.3.8 Asset fungibility

The easier the asset is to liquidate- the higher we would expect recovery to be. A very fungible asset is a warehouse holding commoditized inventory. This inventory could easily be sold at market prices. Less fungible assets are assets made specifically to be used in the defaulted company. Highly customized tools and machinery would have little or no value to buyers. In studying the Norwegian market the degree of standardization of the asset could be an indicator of its fungibility. A supply boat made according to standard specifications would easily be sold while an asset that is *one of a kind* or made on a proprietary design would be much less fungible.

2.4.3.9 Size of the issue

The size of the company can be viewed as a sign of quality. Size is often a result of long term growth, which could be interpreted as a proof of the viability of the product or business model. One would assume that large cap companies issue large bonds and vice versa. Altman and Kishore (1996) studied the correlation between size and recovery rates, but they did not find that the size of the issue mattered when calculating recovery.

2.4.3.10 Time of incorporation and time of issue

One element which would be interesting to study is the way recovery rates and default frequencies vary with the year the bonds were issued. In a meeting with Norsk Tillitsmann we were encouraged to also look at the year the company was established to see if startup companies have different recovery rates to those that have been in business for a while. This is based on a hypothesis that recovery rates may be smaller for companies that had been founded recently. As for length of time to maturity for the bond at issue, Altman and Kishore (1996) found that this was not significant in determining recovery rates.

2.4.4 Other findings on recovery rates

Another interesting result is Altman, Resti and Sironi (2003) who showed that in periods of high default frequencies, default rates are low and vice versa. They suggested that this is because both are linked to the overall state of the economy. Downturns create illiquidity and also affect asset values and therefore a positive *correlation between loss given default and default frequency* is logical. This translates into a negative correlation between default frequencies and recovery rates (since RR=1-LGD). It is a reminder that comparing recovery rates in different markets should be done for the same time period. Comparing recovery rates in a period with high default frequencies with an historical average would be inaccurate.

S&P pointed out in their Annual Global Corporate Default Study for 2009 that the *distribution of recovery rates* shows a bi-modal distribution where the most frequent recovery rates are either low or very high. They show that for 2303 observed recovery rates approximately 40 percent have recoveries of less than 10 percent or more than 90 percent. Also Moody's Ultimate Recovery Database shows the same pattern.

3. Data

We start off by discussing how the high yield bond sample was determined. Then, the sample is described in greater detail. Finally, we look at how the bonds involved in credit events were identified and assigned to different default categories. The Stamdata database of Norsk Tillitsmann was used to determine the sample, the bonds involved in defaults and to compute recovery rates.

3.1 Determining the high yield bond sample

In table 7, the content of the Stamdata database is presented. More than 21,000 tranches with an aggregated volume of NOK 5,139.4bn are registered in the database. As the table shows, the public sector, bank, finance and energy and utility dominate the issues in the Norwegian bond market, both in terms of number of issues and aggregated value.

Industry	Volume (NOKm)	Number of bonds	% of aggregate volume	Average tranche size (NOKm)
Bank	1,586,580	11599	31%	137
Treasuries & other government	1,898,277	3069	37%	619
Energy and Utility	307,219	1370	6%	224
Finance	744,821	2295	14%	325
Property	84,038	555	2%	151
Industry	81,838	392	2%	209
Service	46,119	291	1%	158
Food and Beverages	67,120	291	1%	231
Oil and Gas	130,237	288	3%	452
Wholesale and Retail	37,161	246	1%	151
Transportation	43,609	203	1%	215
Telecom/IT	35,337	162	1%	218
Shipping	36,457	152	1%	240
NA	11,672	129	0%	90
Pulp and Paper	14,656	53	0%	277
Media	7,263	26	0%	279
Fishery	5,952	23	0%	259
Insurance	1,017	10	0%	102
Auto	41	2	0%	21
Aggregated volume (NOKm)	5,139,415			
Total number of bonds		21156		
Total average tranche size (NOKm)				243

Table 7: Overview of the content in the Stamdata database as of June 30th 2010, these are accumulated numbers of all issues in the database (issues outstanding since 1995's).

The final high yield sample comprises 198 companies having issued 534 bonds. In the same timeframe since 2005 there were 15,423 tranches registered as outstanding in the Stamdata database, which shows that the high yield market is a small part of the total Norwegian bond

market. In order to determine the high yield sample, different criteria were used. Companies rated *investment grade*, issues with maturity before January 2005 and foreign credit institutions were excluded. Examples of companies rated *investment grade* were companies within the *public sector*, *bank*, *finance* and *energy and utility*. Companies where the government holds a controlling ownership stake and companies secured by a government guarantee were also excluded.

The remaining sample included issues with different risk profiles. As described in the appendix, *investment grade* is a term attached to a bond issue based on its rating. It is supposed to reflect the likelihood of a default occurring. The majority of the remaining bonds were not rated by the large rating firms. Pareto Securities was of great help when determining whether the remaining companies were investment grade or high yield companies. Following discussions with Pareto, we decided to exclude high yield companies with aggregated historical issues less than NOK 30m. A list of the number of tranches excluded under each criterion presented is shown in section 6.2 in the appendix. After narrowing down the sample, a few adjustments were made to avoid counting certain issues more than once. For instance, this was done for bonds issued by Remedial, MPU, Austevoll, Marine Subsea, Hurtigruten, Crew Gold and Krill Seaproducts.

Each bond in the Stamdata database has an industry tag, which was reclassified in certain cases. As a result, the "oil and gas" category in our sample includes exploration and production (E&P) companies only. Initially, there was no "oil service" industry tag in the database. We decided to reclassify the following companies as "oil service" companies; rig companies, seismic providers, offshore supply companies, FPSO companies and yards with supply and rig building. The industry tag "shipping" comprises all vessel owning companies, where the vessels can be bulk, oil tankers, chemical tankers or even cruise ships. "Pulp and paper", "transportation", "fishery", "property", "telecom/IT", "wholesale and retail", "service" and "foods and beverages" accounted for 12 percent of the outstanding amounts and were consolidated into the category "other".

3.2 Sample description

3.2.1 Industry overview

Table 8 illustrates the Norwegian high yield bond market divided by industry for the time period covered. 68 percent of the volume outstanding in our sample is issued by companies operating within the *oil and gas* and *oil services* industries. In section 6.6 in the appendix, the volumes outstanding within each of the industries categorized as *other* are presented.

Industry	Amounts outstanding (NOKbn)	Percent of outstanding
Oil Service	116,39	53 %
Oil and Gas	32,65	15 %
Shipping	24,41	11 %
Industry	17,78	8 %
Other	28,03	13 %
Total	219,26	100 %

Table 8: Volumes outstanding in the Norwegian high yield bond market in the time period 01.01.05 – 30.06.10 (in total and divided by industry)

3.2.2 Types of bonds

When analyzing recovery, convertible bonds, certificates and "regular bonds" are treated as one group. Nevertheless, it is interesting to investigate what kind of issues that dominate the Norwegian high yield market and what kind of interest rate structure that is used. As table 9 shows, the "regular" bonds have dominated the issues since 2005; however, convertibles also account for a considerable portion of the market. The issuers of certificates are predominantly *large cap* companies like Seadrill, Wilh. Wilhelmsen, Aker Solutions and Norske Skog.

Type of bond	Issued amount (NOKbn)	Percent
"Regular" bonds	149,1	68 %
Certificates (<1 yr)	19,8	9 %
Convertibles	50,3	23 %
Total	219,3	100 %

Table 9: Percent of issued amount being regular bonds, certificates and convertibles

	"Regular" bonds	Certificates	Convertibles	Totalt
Floating rate	**61.0%**	15.9%	0.4%	43.0%
Fixed rate	38.0%	**83.6%**	**98.2%**	56.0%
Other	1.0%	0.5%	1.4%	1.0%

Table 10: Overview of types of bonds and types of interest payment chosen

Table 10 illustrates that certificates and convertibles often have a fixed coupon rate while ”regular” bonds tend to have a floating rate. Except for two bonds, all the convertible bonds issued in our sample had a fixed rate coupon. Across categories, the Norwegian high yield market has a pretty even split between floating rate bonds and fixed rate bonds.

3.2.3 Issued and outstanding volumes

The high yield bond volumes issued each year from 2005 until June 2010 are shown in figure 2 below. The issued volumes increased with a compound annual growth rate (CAGR) of 89.7 percent from NOK 22.5bn in 2005 to an all time high issue volume of NOK 81.0bn in 2007. After the financial crisis hit in 2008, the issued volumes declined considerably to NOK 11.75bn. The volumes issued in 2010 are volumes issued until June 30th.

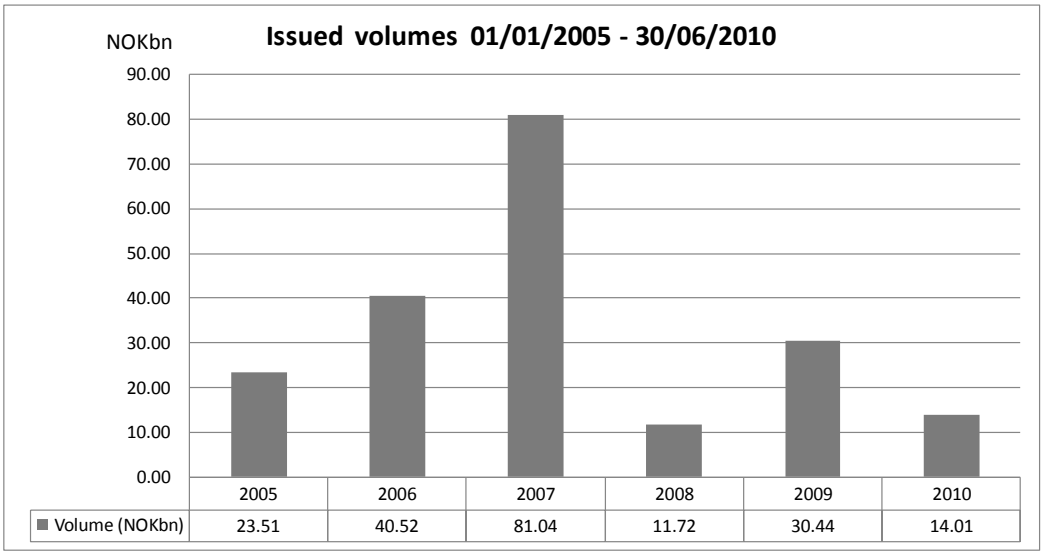


Figure 2: High yield volumes issued each year 01.01.05 – 30.06.10

Figure 3 illustrates the size of the Norwegian high yield bond market measured by outstanding high yield bond volumes in the same time period. From 2005 to 2007, outstanding volumes increased by a CAGR of 85.9 percent from NOK 41.5bn to NOK 142.3bn. From 2007 until 2010, the outstanding volumes have been relatively stable in the range of NOK 137.4bn (2010) and NOK 150bn (2009).

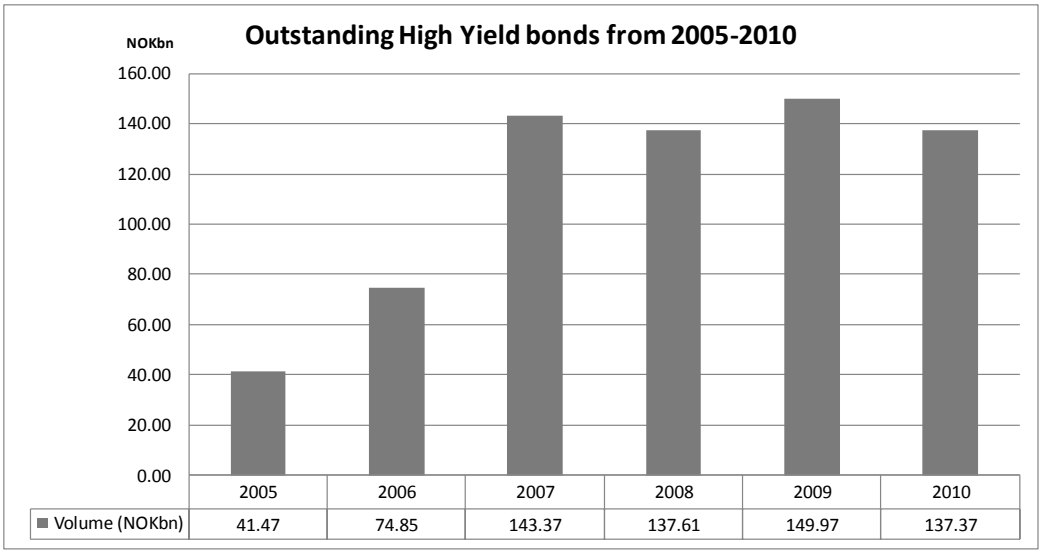


Figure 3: Volumes outstanding in the Norwegian high yield bond market 2005 – 30.06.2010 (NOKbn)

3.2.4 Maturity profile as of June 30th 2010: outstanding volumes

Figure 4 illustrates the maturity profile of the outstanding high yield bonds in our sample from 2008 until 2015. In 2012 almost NOK 50bn will mature. This is close to double the volume that matured in 2009 and 2.4 times what is expected to mature in 2011.

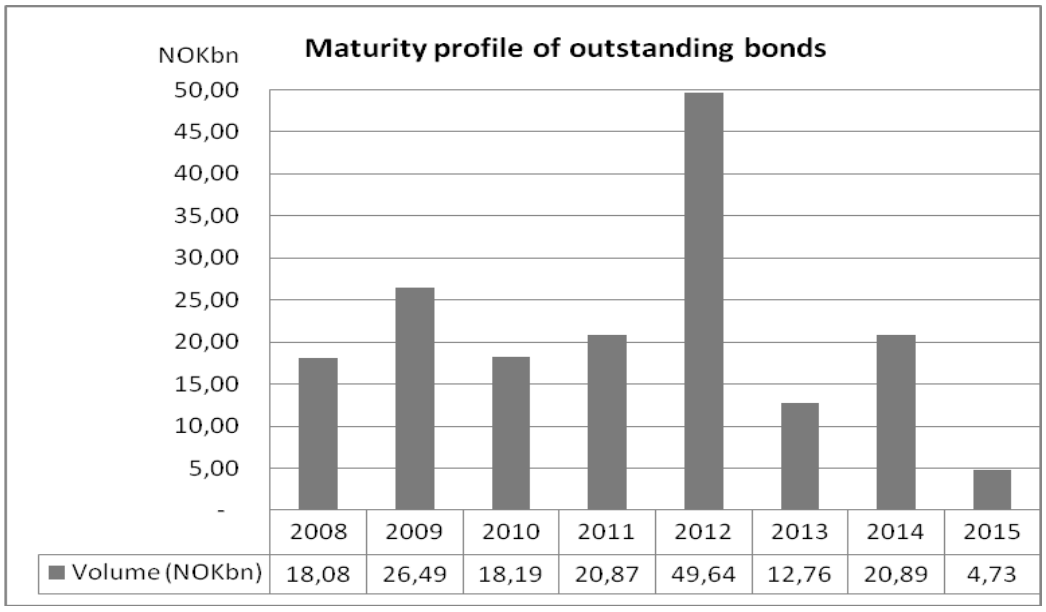


Figure 4: Maturity profile in the Norwegian high yield bond market 2008 - 2015(NOKbn)

3.3 Identifying bonds involved in credit events

In total, 138 out of the 534 bonds in our sample were identified as having been involved in at least one credit event during the time period covered in our thesis. In order to identify bonds involved in a credit event(s), several sources of information were used. From previous research performed by Pareto Securities (Håvik 2009: *Credit – All you ever need to know)* and

a list of companies involved in defaults presented by Norsk Tillitsmann in Finansavisen (Finansavisen, 19.08.10), several companies were identified. Both sources focused on the time period from September 2008. To complete the list, we searched through loan documents on all bonds within our sample in the Stamdata database. These documents included loan documents, summons to and reports from bondholders' meetings, amended agreements and other miscellaneous communication between the issuer and the bondholders.

3.3.1 Credit event categories

Before analyzing the 138 bonds identified, we distinguished between bonds involved in different credit events in line with Moody's definitions of default. This definition is presented in the theory section. The bonds categorized as restructured correspond to bonds involved in the first and/ or the third definition of credit events, while bonds categorized as liquidated have been involved in the second type of credit event. The remaining bonds had complied with all commitments and were categorized as "as intended".

When categorizing bonds as restructured, we distinguished between two types of restructurings. At one extreme, the outcome of a restructuring may be a single covenant being waived due to non-compliance. As a result, only terms in the loan agreement is renegotiated. "Restructured - renegotiated terms" include restructured bonds were the entire principal is upheld. This includes restructurings where maturity is extended, as well as interest rate payments or the bond's priority within the capital structure being altered. In addition, changes of covenants and carve- outs were included in the category. At the other extreme, the restructuring may be in the form of a debt to equity conversion. The bonds categorized as "restructured - other" includes bonds where a percentage of par was written down, a debt to equity swap took place, (parts of) the bond was converted into a new bond issue and/or (parts of) the bond was repaid in an early repayment. If a company filed for bankruptcy, we classified its bonds as "liquidated". We distinguished between cases where the proceedings are finalized and cases where proceedings are ongoing. When calculating recovery rates for the bonds identified above, many issues needed to be discussed in order to ensure consistency. In the appendix under the section "data" our approach when calculating recovery rates is described.

4. Findings: the Norwegian high yield bond market (2005 – June 2010)

We have structured our findings into three sections. In the first two sections we present findings related to defaults as well as recovery rates for the Norwegian high yield bond market in the time period covered. In both sections we compare some of our results with corresponding findings presented in the theory section. Finally, other noteworthy lessons learned are presented. These are observations that we perceive as interesting, but have not investigated further due to the fact that they are beyond the scope of this thesis.

4.1 Defaults and default frequencies

In this section we present an overview of the number of companies and bonds in our sample involved in defaults. Secondly, default frequencies from 2005 to June 2010 are computed and compared to corresponding global default frequencies. Thirdly, the percentage of bonds having complied with all of its commitments and those involved in at least one credit event during the time period covered are presented. Next, we present vintage default frequencies for the volume issued each year in the period from 2005 – 2009. Finally, we identify the percentage volume of bonds in our sample maturing between 2010 and 2015 which have been involved in at least one credit event as of June 30th 2010.

4.1.1 Issuers and bonds involved in defaults

As described in the data section, the final Norwegian high yield bond sample covered in the thesis comprises 198 identified companies having issued 534 bonds in total. Out of these, 80 of the 198 identified issuers (40.4 percent) have issued one or more bonds involved in credit events before June 30th 2010. These issuers are presented in table 11 below, while the final high yield bond sample is presented in section 6.3 in the appendix. Total number of bonds identified as having been involved in a credit event is 138 out of the total sample of 534 bonds (25.8 percent). Bonds identified as being involved in a credit event are shown in table 17.

Industrial	Petrojack ASA	Saga Oil ASA
Camo ASA	Petrolia Drilling ASA	Transeuro Energy Corp
Kverneland ASA	PetroMena ASA	**Property**
Peterson AS	PetroProd Ltd	Estatia Resort Property AS
TMG International AB	PetroRig III Pte Ltd	Hansa Property Group AS
Mining	Proserv Group AS	IBB Byg AS
Crew Gold Corp	Rem Offshore ASA	**Renewable Energy**
Wega Mining ASA	Remedial (Cyprus) Plc	Umoe Bioenergy ASA
Oil Service	Reservoir Exploration Tech. ASA	**Seafood**
Ability Drilling ASA	Scan Geophysical ASA	Aker Biomarine ASA
Bergen Group AS	Seabird Exploration Ltd	Austevoll Seafood ASA
Bergen Oilfield Services AS	Seametric International AS	Codfarmers ASA
Bluestone Offshore Pte Ltd	Sevan Marine ASA	Domstein ASA
Cecon AS	Skeie Drilling & Production ASA	Krill Seaproducts AS
FPS OCEAN AS	Songa Floating Production ASA	**Shipping**
Equinox Offshore Accom. Ltd	Songa Offshore SE	Aker American Shipping ASA
Fairstar Heavy Transport NV	Thule Drilling ASA	Belships ASA
Havila Shipping ASA	TTS Marine ASA	Club Cruise Entert. & Travel. N.V.
Marine Accurate Well ASA	Valhalla Oil & Gas AS	Delphin Kreuzfahrten GmbH
Marine Subsea AS	Viking Drilling ASA	Eitzen Chemical ASA
Master Marine ASA	Ziebel AS	Eitzen Maritime Services ASA
Monitor Oil PLC	**Oil and gas**	Golden Ocean Group Ltd
Mosvold Supply Plc	Aladdin Oil & Gas Company ASA	Hurtigruten ASA
MPF Corp Ltd	Artumas Group Inc	Svithoid Tankers AB
MPU Offshore Lift ASA	Front Exploration AS	**Technology**
Neptun Marine Invest AS	Interoil Exploration and Prod. ASA	Apptix ASA
Nexus Floating Production Ltd	Malka Oil AB	Ignis ASA
Nordic Heavy Lift ASA	NOR Energy AS	Tandberg Data ASA
Oceanlink Ltd	Norse Energy Corporation ASA	Tandberg Storage ASA
Oceanteam ASA	Norwegian Energy Company ASA	

Table 11: Issuers involved in at least one credit event during the time period covered

4.1.2 Default frequency

S&P has performed research on default frequencies within the global high yield bond market from 1981 to 2009 (see table 4). Based on our sample, we computed the corresponding default frequency for the Norwegian high yield bond market from 2005 until June 30th 2010. Default frequency was computed by dividing the number of credit events recorded each year by the outstanding bonds at risk the same year. This is in line with how S&P calculates their default frequencies. Table 12 below illustrates our findings, in addition to global default frequencies for the corresponding period performed by S&P. In 2005 and 2006, default frequencies in the Norwegian high yield bond market were less than 1 percent and lower than the comparable numbers for global default frequencies. From 2007 to 2009, the default

frequencies in the Norwegian market surpassed the global default frequencies. In addition, the default frequencies in the Norwegian market of 10.8 percent in 2008 and 20 percent in 2009 were considerably higher than in previous years. In the table, we have also included the default frequencies for the first half of 2010, which was 6 percent as of June.

Year	2005	2006	2007	2008	2009	1H 2010
Credit events recorded	1	0	8	38	74	16
Outstanding bonds at risk during year	155	244	355	353	372	267
Default frequencies in the Norwegian high yield bond market	**0,65 %**	**0,00 %**	**2,25 %**	**10,76 %**	**19,89 %**	**5,99 %**
Global default frequencies*	**1,42 %**	**1,11 %**	**0,88 %**	**3,48 %**	**9,23 %**	

Table 12: Default frequency in the Norwegian high yield bond market 2005 – June 30th 2010 (*Outstanding bonds at risk during a year was found by identifying the number of bonds outstanding each year and then subtracting the accumulated number of bonds which had been involved in credit events in previous years which were still outstanding. The credit event date used for each of the bonds is shown in table 17).*

In table 8 in the data section, the volumes outstanding in our sample within each of the industry categories "oil service", "oil and gas", "shipping", "industry" and "other" are presented. In table 13 below, we have identified the corresponding volumes within each category involved in defaults. Based on these findings we have computed both the share of total defaults each category makes up as well as each category's cumulative default frequency for the period. As the table shows, the *oil service* and the *oil and gas* industries constitutes 68 percent of the outstanding volume and 75 percent of total defaults identified. The default frequency shows that the percentage of outstanding volumes defaulted are the highest in the *oil service* sector with a 31 percent default rate. In the four remaining industry categories, the default frequencies are in the range of 18 percent to 23 percent.

Industry	Amounts outstanding (NOKbn)	Percent of outstanding	Defaulted (NOKbn)	Percent of total defaults	Default frequency
Oil Service	116,39	53 %	35,95	63 %	31 %
Oil and Gas	32,65	15 %	6,84	12 %	21 %
Shipping	24,41	11 %	4,29	7 %	18 %
Industry	17,78	8 %	3,52	6 %	20 %
Other	28,03	13 %	6,58	12 %	23 %
Total	219,26	100 %	57,2	100 %	26 %

Table 13: Volumes outstanding and defaults within each industry category (bonds outstanding in the period 01.01.05 – 30.06.10): Overview of amounts outstanding, defaults and cumulative default frequencies (in total and divided by industry)

4.1.3 Outstanding volume as intended or involved in a default

The outstanding volume during the period covered by the thesis is NOK 219bn. 74 percent of the outstanding volume has performed "as intended", while 26 percent has been involved in at least one credit event; 3.4percent has been restructured with renegotiated terms, 13 percent has been involved in other restructurings, while 9.3 percent has been involved in a liquidation (see figure 5 and table 14).

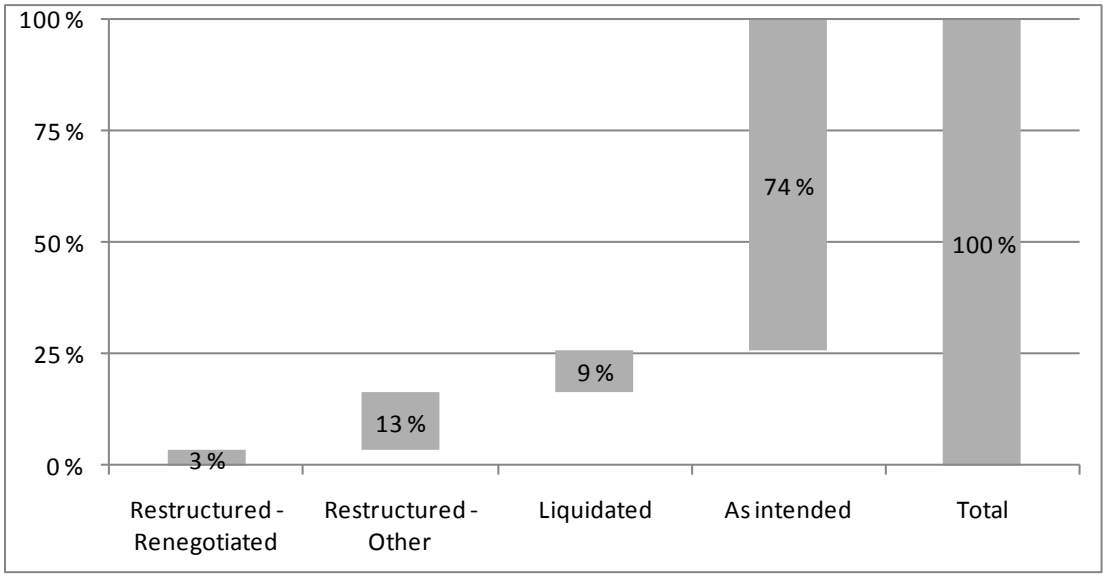


Figure 5: Overview of the cumulative percentage of the outstanding high yield bond volume in the period covered either as intended or involved in at least one credit event (distinguished by category).

Default Category	Amount Issued (NOKbn)	Percent
Restructured - Renegotiated	7,58	3 %
Restructured - Other	28,90	13 %
Liquidated	20,57	9 %
As intended	162,14	74 %
Total	219,20	100 %

Table 14: Total volume of Norwegian high yield bonds as intended or involved in a default during the time period covered (NOKbn and percent).

4.1.4 Default frequency of the volume issued each year

Another aspect we wanted to investigate was the *vintage default frequencies* of the volume issued each year in the period from 2005 until June 2010. The vintage default frequency illustrates how much of the volumes issued in a specific year have been involved in a credit event. Our findings are illustrated in figure 6 and table 15 below. The computations must be viewed as representative for the volumes involved in a credit event up until June 2010 only. The left y-axis in figure 6 measures the percent of the total volume issued in a specific year

involved in a credit event anytime before June 30th 2010, while the right y-axis measures issued volume in the same time period. As an example, in 2007 an all time high NOK 81bn was issued in the Norwegian high yield bond market. As of June 30th 2010, 45 percent of this volume had been involved in a credit event. Further, 6 percent of the volume issued in 2007 had been restructured with renegotiated terms, while 26 percent and 13 percent had been involved in another type of restructuring and liquidated.

The results tell us that when the default frequency spiked in 2008 the majority of the bonds that defaulted were the recently issued ones. The indication is that the closer to the peak of the market an issue was made; the more likely it was to default. This can be translated into saying that the bonds issued in 2007 were more risky than the ones issued in the years before. This could potentially be a sign that the market is not completely rational and that too many risky projects were given funding in 2006 and 2007.

The default rate of the volumes issued each year before 2006 was less than 7 percent. Comparing the years before and including 2005 with the subsequent years, both issued volumes (except compared to issue volumes in 2008) and the corresponding default rates differ considerably. Between 30 and 45 percent of the volumes issued in 2006, 2007 and 2008 have been involved in credit events.

In table 15, the volumes involved in a credit event are divided both into the three categories of default used and by the year of issuance. All the bankruptcies covered were issued in 2006, 2007 and 2008. A comparison of the “quality” of bonds issued in different years is difficult for the later issue years, seeing as how the final status of loans is not yet determined by June 2010. All bonds issued in 2010 have performed as intended as of June 2010.

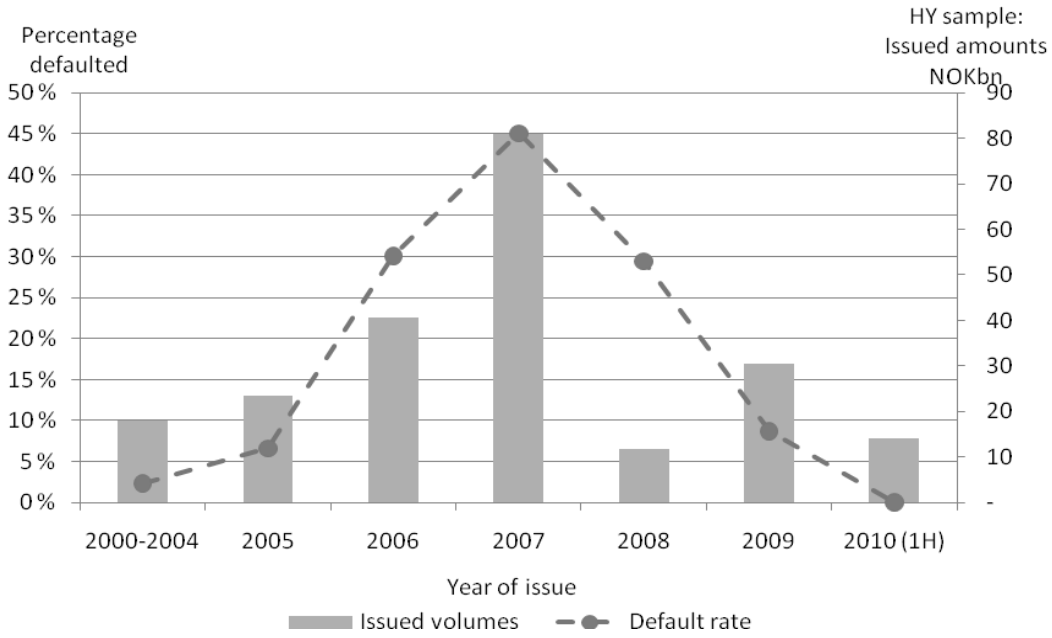


Figure 6: percent of the volume issued in the period from 2000 until 2010 which had been involved in a credit event by June 2010. The left y- axis measure the percent of total volume issued in a specific year involved in a credit event, while the right axis measure issued volume each year in our sample.

Issued Volumes NOKm	Total volume issued	Volume issued involved in credit event	Restructured - Renegotiated	Restructured - Other	Liquidated
2000-2004	17956	419	119	300	0
2005	23514	1554	34	1520	0
2006	40521	12190	1217	2642	8331
2007	81041	36505	4826	20792	10887
2008	11723	3454	350	1752	1352
2009	30436	2654	987	1667	0
2010 (1H)	14005	0	0	0	0
Total	219197	56775	7533	28673	20570

Percent Each Year	Total volume issued	Volume issued involved in credit event	Restructured - Renegotiated	Restructured - Other	Liquidated
2000-2004	100 %	2,3%	1 %	2 %	0 %
2005	100 %	6,6%	0 %	6 %	0 %
2006	100 %	30,1%	3 %	7 %	21 %
2007	100 %	45,0%	6 %	26 %	13 %
2008	100 %	29,5%	3 %	15 %	12 %
2009	100 %	8,7%	3 %	5 %	0 %
2010 (1H)	100 %	0,0%	0 %	0 %	0 %
Total	100 %	25,9%	3 %	13 %	9 %

Table 15: Defaulted volumes by issue year and category of default (NOKm, percent)

4.1.5 Average NOK issue size of tranches categorized as either "as intended" or "defaulted"

We also investigated whether the average size of the tranches involved in a credit event differed from the average tranche size of the tranches which had not been involved in such events. As described in the theory section, issue size has not been found to be a significant determinant of recovery. The average tranche size of the bonds in our sample involved in a default was NOK 344.5m, while the average size of the tranches classified as "as intended" were NOK 353m. The difference was not significant on a 5percent alpha level. As a result, we cannot claim that the size of an issue affects the likelihood of it defaulting.

4.1.6 Maturity profile as of June 30th 2010: outstanding volume and credit events

Figure 4 in the data section presents the maturity profile of the outstanding high yield bond loans in our sample until 2015. As the figure illustrates, the volumes maturing are of significant size, especially in 2012, when almost NOK 50bn of the outstanding volume matures.

Earlier, we identified all high yield bonds outstanding as of January 1st 2005 until June 30th 2010 involved in a credit event. We have used these findings to identify and distinguish between outstanding volumes maturing between 2010 and 2015, which have been involved in credit events and those which have not (named "as intended"). We have further distinguished between cases where the credit events have been renegotiations, other restructurings or liquidations. Our findings are presented in figure 7 and table 16 below.

As table 16 shows, 43.7 percent of the amount maturing in 2012 has been involved in a credit event as of June 2010. The percentage can be further divided into 11 percent being renegotiated, 14.3 percent being restructured and 18.4 percent being liquidated. We chose to include the liquidated volumes as many of these claims are still outstanding. In 2013, 45.2 percent of the volume maturing has been involved in a credit event, while for the remaining years the same percentages are in the range of 5.9 percent and 26.7 percent. Our findings show that 2012 differs both in terms of the volume maturing and in terms of the percentage of the volume which has already been involved in a credit event.

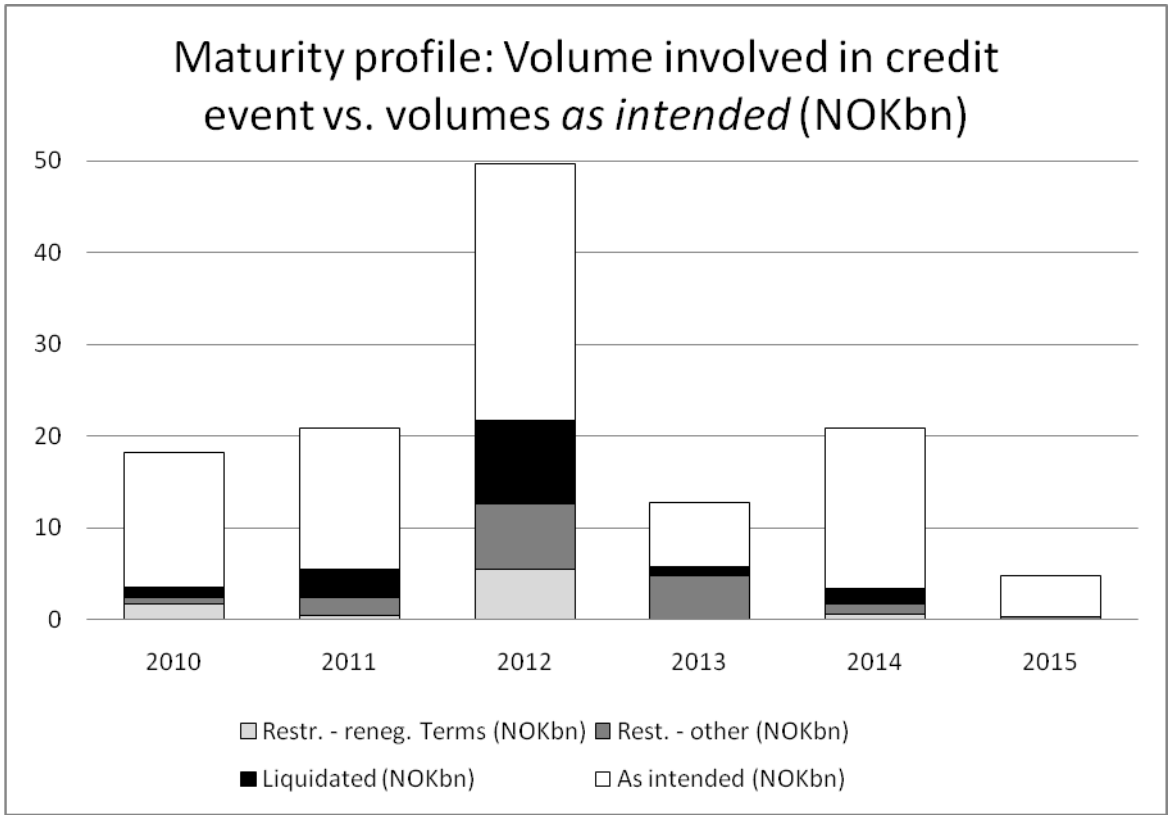


Figure 7: Maturity profile as of June 30th 2010 either as intended or involved in a credit event

The amount of bond debt maturing in 2012 is much higher than ever seen in the Norwegian high yield market. What is even more interresting is that the volume of claims due in 2012 that has previously been involved in a credit event surpasses the total volume of bonds maturing in both 2010 and 2011. An overview of the number of loans within each category can be found in the appendix. In total, 124 bonds involved in at least one credit event either mature between 2010 and 2015 or are still in ongoing liquidation proceedings as of June 2010. This constitutes 89.9 percent of total bonds identified in our thesis involved in credit events.

Maturity profile	2010		2011		2012		2013	
As intended/ involved in a credit event (as of 30.06.10)	*mNOK*	*%*	*mNOK*	*%*	*MNOK*	*%*	*MNOK*	*%*
As intended (volume)	14 634,9	80,5 %	15 300,5	73,3 %	27 938,2	56,3 %	6 994,4	54,8 %
Involved in a credit event (volume	3 552,5	19,5 %	5 566,7	26,7 %	21 703,1	43,7 %	5 769,5	45,2 %
Type of credit event								
Renegotiated (volume)	1 672,3	9,2 %	450,0	2,2 %	5 466,1	11,0 %	100,0	0,8 %
Restructured (volume)	805,2	4,4 %	1 983,4	9,5 %	7 098,1	14,3 %	4 697,6	36,8 %
Liquidated (volume)	1 075,0	5,9 %	3 133,3	15,0 %	9 138,9	18,4 %	971,9	7,6 %
Total (volume)	**18 187,4**	**100,0 %**	**20 867,2**	**100,0 %**	**49 641,4**	**100,0 %**	**12 763,9**	**100,0 %**

Maturity profile	2014		2015		Total	
As intended/ involved in a credit event (as of 30.06.10)	*MNOK*	*%*	*mNOK*	*%*	*MNOK*	*%*
As intended (volume)	17 508,3	83,8 %	4 455,1	94,1 %	86 831,3	68,3 %
Involved in a credit event (volume	3 378,6	16,2 %	279,3	5,9 %	40 249,9	31,7 %
Type of credit event						
Renegotiated (volume)	651,8	3,1 %	-	0,0 %	8 340,3	6,6 %
Restructured (volume)	1 126,8	5,4 %	279,3	5,9 %	15 990,5	12,6 %
Liquidated (volume)	1 600,0	7,7 %	-	0,0 %	15 919,1	12,5 %
Total (volume)	**20 886,9**	**100,0 %**	**4 734,4**	**100,0 %**	**127 081,2**	**100,0 %**

*Table 16: Maturity profile as of June 30th 2010 either as intended or involved in a credit event (NOKm, percent) *A list of the number of loans within each category can be found in the appendix*

4.2 Recovery rates

In this section, findings regarding recovery rates for all the bonds identified as being involved in credit events during the time period covered are analyzed. The first part of the section is structured in line with determinants of recovery presented in the theory section. When documenting each credit event we registered a set of events determined by us to be either in place or not. In the second part, we have investigated how these factors are related to recovery rates and even more important whether any of these company traits can be used to explain the recovery rates realized. In the last part, our results regarding other findings on recovery presented in the theory section are analyzed.

4.2.1 Determinants of recovery

Determinants of recovery investigated in the thesis are analyzed below. These are security class (seniority), industries, time of incorporation and size of issue.

Due to lack of information, we did not consider the following determinants: *debt cushion*, initial default event, tangible assets relative to intangible, time spent under bankruptcy, time of issue, the effect of bank debt, rating and asset fungibility.

4.2.1.1 Recovery – Security class

The main goal of our thesis was to compute ultimate recovery rates for the 138 bonds identified as having been involved in credit events. We used a reporting format from Moody's covering default and recovery rates as a template for the compilation of data needed to be gathered for this purpose (exhibit 13 p.13, Moody's Default and Recovery Rates 1920-2007). Our findings are shown in table 17 below. The table summarizes the recovery rates computed for the 138 defaulted bonds in our sample. We presented the recovery rates of the bonds by assigning them to one of three columns based on the security class of the individual bond. Further, the table includes information concerning the issuer, the default category, the date of the first credit event, par outstanding at the time of default, as well as amount initially issued for each of the bonds.

When computing ultimate recovery rates, we were unable to gather necessary data to compute recovery rates for all the defaulted bonds in our sample. The bonds without a calculated recovery rate have been marked as n.a. in the table under their corresponding security class. The average issue size of the bonds we were able to compute ultimate recovery rates for was NOK 499m, while the corresponding average issue size of the bonds marked as n.a. in the table was NOK 190m. We attribute this to the fact that large issues are more liquid in the secondary market. As a consequence, the recovery rates dependent on trading prices were more often available for the larger issues.

In section 6.11 in the appendix, we have computed proxies for recovery rates based on trading prices for bonds under ongoing liquidation proceedings. These recoveries are not included in further recovery analysis. Section 6.12 in the appendix summarizes all bonds categorized as ongoing liquidation where partial repayments have been made.

Issuer name	Default category	Sr. Sec.	Sr Unsec.	Subord.	First credit event	Par amount (mill) at default	at issue	
Aker American Shipping	RR		70.0%		25/02/09	860	700	NOK
Apptix	[3] RR			n.a.	08/10/07	34	34	NOK
Belships	RR		n.a.		29/05/09	100	100	NOK
Bergen Group	[3] RR	64.0%			11/06/09	250	250	NOK
Bergen Group	[3] RR	66.5%			11/06/09	400	400	NOK
Bergen Oilfield Services	[3] RR	n.a.			31/08/09	200	200	NOK
Cecon AS	RR	n.a.			21/05/10	10	10	USD
Cecon Shipping	RR	25.0%			05/11/08	100	100	USD
Domstein	[3] RR			n.a.	06/12/07	50	50	NOK
Eitzen Chemical	RR		60.0%		27/08/09	25	25	USD
Eitzen Chemical	RR		60.5%		27/08/09	490	490	NOK
Eitzen Maritime Services	RR		n.a.		04/03/10	300	300	NOK
Eitzen Maritime Services	RR	n.a.			04/03/10	100	100	NOK
Equinox Offshore	RR	82.5%			14/07/10	34	34	USD
Fairstar Heavy Transport	[3] RR	n.a.			19/02/09	150	150	NOK
Hansa Property	RR	40.0%			05/02/09	400	400	NOK
Havila Shipping	[3] RR		n.a.		22/12/09	300	300	NOK
Ignis	[3] RR	n.a.			20/03/07	40	40	NOK
Ignis	[3] RR	n.a.			20/03/07	40	40	NOK
Interoil Exploration	RR	100.0%			04/05/09	115	125	USD
Peterson AS	RR	50.0%			30/03/09	385	385	NOK
Petrolia Drilling	[3] RR		n.a.		27/11/02	183	119	NOK
Rem Offshore	RR		85.0%		15/05/09	250	250	NOK
Sevan	RR	101.5%			25/06/10	870	870	NOK
TTS Marine	RR		n.a.		17/06/09	500	500	NOK
Aker Biomarine ASA	RO		98.0%		23/03/10	750	750	NOK
Aladdin Oil And Gas	RO		66.5%		12/07/10	38	65	NOK
Aladdin Oil And Gas	RO	63.6%			07/08/09	50	50	NOK
Aladdin Oil And Gas	RO	75.3%			12/07/10	28	28	NOK
Arthumas Group	RO		21.0%		25/06/09	64	10	USD
Arthumas Group	RO		21.0%		25/06/09	35	35	USD
Arthumas Group	RO		20.1%		25/06/09	70	70	USD
Austevoll Seafood	RO		94.8%		19/03/09	1,000	1,000	NOK
Bluestone Offshore	RO	58.9%			31/08/09	70	71	NOK
Camo	RO		n.a.		15/05/09	35	35	NOK
Codfarmers	RO		n.a.		08/07/09	100	150	NOK
Crew Gold Corp	RO		93.4%		24/11/09	122	150	NOK
Crew Gold Corp	RO		87.3%		03/03/09	1,320	1,320	NOK
Crew Gold Corp	RO	80.2%			03/03/09	66	325	NOK

Issuer name	Default category	Sr. Sec.	Sr Unsec.	Subord.	First credit event	Par amount (mill) at default	at issue	
Crew Gold Corp	RO	79.8%			18/02/09	50	50	USD
Front Exploration	RO	n.a.			29/06/09	22	22	USD
Golden Ocean	RO		30.0%		05/03/09	200	200	USD
Hurtigruten	RO		n.a.		13/01/09	150	150	NOK
Interoil Exploration [3]	RO		98.2%		06/04/10	20	20	USD
Interoil Exploration	RO		98.2%		06/04/10	100	100	NOK
Krill Seaproducts	RO	n.a.			16/03/09	345	345	NOK
Kverneland ASA	RO		n.a.		01/02/08	525	525	NOK
Kverneland ASA	RO		n.a.		01/02/08	200	200	SEK
Malka Oil	RO		21.2%		27/02/09	60	60	USD
Malka Oil	RO		21.2%		27/02/09	20	20	USD
Maracc	RO	28.9%			10/07/09	120	120	USD
Maracc	RO			9.1%	10/07/09	80	80	USD
Maracc	RO			8.9%	10/07/09	30	30	USD
Marine Subsea	RO	43.0%			01/10/09	111	130	USD
Marine Subsea	RO	38.0%			19/10/09	136	170	USD
Marine Subsea	RO		29.0%		19/10/09	390	390	NOK
Master Marine	RO			17.8%	18/06/08	472	472	NOK
Master Marine	RO	58.3%			02/10/09	60	60	EUR
Neptun	RO	104.9%			31/08/07	125	125	USD
Nexus Floating Prod	RO	76.1%			17/06/09	175	175	USD
Nexus Floating Prod	RO			13.9%	17/06/09	75	75	USD
Nor Energy AS	RO	n.a.			05/12/08	25	25	USD
Norse Energy Corporation	RO		99.5%		17/12/09	287	200	NOK
Norse Energy Corporation [2]	RO		89.0%		17/12/09	75	50	USD
Norse Energy Corporation [2]	RO		n.a.		17/12/09	9	9	USD
Norse Energy Corporation [2]	RO		n.a.		17/12/09	27	153	NOK
Norse Energy Corporation [2]	RO		n.a.		17/12/09	18	18	USD
Norwegian Energy Compar [3]	RO	76.8%			03/11/08	2,300	2,300	NOK
Norwegian Energy Compar [3]	RO	73.2%			03/11/08	500	500	NOK
Oceanlink	RO		n.a.		08/06/10	150	150	NOK
Oceanteam ASA [2]	RO		35.5%		18/03/09	800	800	NOK
Petrolia Drilling	RO	92.0%			13/12/05	230	230	NOK
Proserv [4]	RO	38.0%			18/06/09	250	269	NOK
Reservoir Exploration Tech [1]	RO		54.0%		26/11/07	400	400	NOK
Reservoir Exploration Tech [1]	RO		54.0%		31/03/09	165	165	NOK
Reservoir Exploration Tech [1]	RO		54.0%		01/04/09	293	279	NOK
Reservoir Exploration Tech [1,2]	RO			32.9%	04/12/09	140	140	NOK
Reservoir Exploration Tech [1]	RO		90.4%		04/12/09	19	19	USD
Saga Oil	RO		5.6%		11/07/08	100	100	NOK
Seabird	RO		n.a.		12/03/09	200	200	NOK

Issuer name		Default category	Sr. Sec.	Sr Unsec.	Subord.	First credit event	Par amount (mill) at default	at issue	
Skeie Drilling & Productior	[3]	RO	32.6%			23/09/09	165	165	USD
Skeie Drilling & Productior	[3]	RO	27.9%			23/09/09	165	165	USD
Skeie Drilling & Production		RO			10.6%	23/09/09	660	1,320	NOK
Skeie Drilling & Productior	[3]	RO	35.8%			23/09/09	165	165	USD
Songa Offshore		RO		81.7%		29/06/09	125	125	USD
Transeuro Energy	[2]	RO		49.1%		13/11/08	15	15	USD
Umoe Bioenergi		RO	n.a.			25/04/08	85	85	USD
Valhalla oil&gas		RO	9.8%			31/12/08	100	100	NOK
Wega Mining		RO		25.1%		26/03/08	400	400	NOK
Ziebel		RO			n.a.	19/02/10	17	15	NOK
Ziebel		RO			n.a.	19/02/10	6	35	NOK
Ziebel		RO			n.a.	19/02/10	12	11	NOK
Ziebel		RO			n.a.	19/02/10	88	118	NOK
Club Cruise		L	n.a.			26/11/08	64	112	NOK
Club Cruise		L	n.a.			26/11/08	80	100	NOK
Club Cruise		L	n.a.			26/11/08	210	210	NOK
Delphin		L	n.a.			28/02/08	120	120	NOK
Estatia		L	0.0%			17/12/08	69	125	NOK
FPS-Ocean DP Producer		L	n.a.			18/12/08	75	75	USD
FPS-Ocean DP Producer		L	n.a.			18/12/08	210	420	NOK
IBB Byg		L		n.a.		07/10/08	110	110	NOK
Monitor Oil		L	n.a.			22/10/07	50	50	USD
MPU		L			0.0%	30/06/08	110	110	USD
MPU		L	3.5%			20/06/08	715	715	NOK
Nordic Heavy Lift		L	58.5%			26/05/09	115	115	USD
Scan Geophysical		L			0.0%	29/06/09	203	203	NOK
Scan Geophysical		L	78.6%			20/03/09	60	60	NOK
Seametric		L	n.a.			23/09/09	60	60	USD
Songa Floating ASA		L			n.a.	10/02/10	19	19	USD
Svithoid Tankers		L		n.a.		13/10/08	200	150	NOK
Tandberg Data		L			n.a.	06/03/09	21	21	NOK
Tandberg Data		L			n.a.	06/03/09	17	17	NOK
Tandberg Storage		L		n.a.		08/07/08	42	42	NOK
Tandberg Storage		L	n.a.			08/07/08	15	15	NOK
Thule Drilling		L	n.a.			31/03/08	130	130	USD
Thule Drilling		L	n.a.			31/01/08	9	9	USD
Thule Drilling		L	n.a.			25/05/07	40	40	USD
TMG Internationa		L			n.a.	25/02/08	154	154	NOK
TMG Internationa AB		L			n.a.	25/02/08	80	80	NOK
Viking drilling		L	n.a.			26/02/08	204	204	NOK
Viking drilling		L	n.a.			26/02/08	88	88	USD

Table 17: Recovery rates distinguished by security class for the defaulted bonds in our

Table footnotes:

1: The 14-day share price lag gives a much higher recovery than would be the case if bondholders kept their shares for an extended period.
2: Warrants were a part of the compensation; however have not been included in the recovery
3: See section 6.13 in the appendix. These bonds have later been repaid after the credit event.
4: Recovery for Proserv is based on one of two restructuring options. The vast majority chose the equity swap proposal instead of the cash proposal. This is the one used to calculate recovery.
5. RR is notation for "Restructured- Renegotiated", RO is notation for "Restructured – Other" and L is notation for "Liquidated"

In the appendix under "Description of issuers in default", information regarding each of the 80 companies identified as being involved in credit events during the time period covered is presented. Each case describes the company's operations, what led to the credit event(s), the process of solving the default and the outcome of the default.

16 of the bonds identified as being restructured have been either called or redeemed during the time period covered in the thesis. As discussed in the data section in the appendix, we have computed recovery rates that reflect the trading price post default to isolate the effect of the credit event. If we were to base the recovery on what was eventually repaid at maturity, other factors not related to the credit event such as the macroeconomic environment would affect our data. The counterargument is that the post default trading prices may be based on low trading volumes, and as such they may not be a good approximation. In our view the post default trading prices is what best reflects the effects of the credit events. An overview of restructured bonds that was later repaid in full can be found in section 6.13 in the appendix.

Based on the recovery rates presented in table 17, we computed the volume weighted average recovery rates for the defautled bonds in our sample under each security class. As shown in table 18 below, recovery rates were on average higher for senior unsecured bonds compared to senior secured ones. The result is not in line with what one would expect, since recovery in our sample on average are higher for a lower ranked security class. Therefore, we investigated why the senior unsecured bonds on average provide bondholders with a higher recovery. It is important to bear in mind that the results may be due to selection; for instance that companies issuing bonds without security in assets have a different risk profile. One assumption may be that the companies issuing bonds with security are companies which are percieved as more risky. As a result, the bondholders demand security in the company's assets when investing in these bonds.

The table below also includes research performed by Moody's concerning ultimate recovery rates. As shown, our findings are in line with Moody's research on ultimate recovery for 2008. When considering Moody's research for the time period 1987 – 2008, the results are the opposite, and more in line with the results one would expect over time. Moody's sample comprises corporate bonds, both investment grade and high yield. Since our sample exclusively consists of high yield companies it could be argued that these recovery rates are not directly comparable. However, as described in the theory section; Moody's have shown that there is no correlation between recovery rates and ratings. Based on this fact, we argue that it is reasonable to compare the findings.

	Volume Weighted Recovery rate	Loss Given Default	Number of Observations	*Moody's ultimate recovery* *2008*	*1987-2008*
Senior Secured	57.3%	42.7%	31	*51.10%*	*63.60%*
Senior Unsecured	61.7%	38.3%	29	*76.80%*	*46.20%*
Subordinated	9.9%	90.1%	8	*9.3% **	*28.90%*
All	53.2%	46.8%	68		

* Sr Subordinated

Table 18: Volume weighted recovery rate for different security classes, number of observations, as well as research performed by Moody's regarding ultimate recovery rates. Source: Moody's: Corporate Defaults and Recovery Rates 1920-2008

To determine whether the differences between the average volume weighted recovery rates for each security class are significant, we used a t-test. In table 19, information regarding the tests conducted are described. We conlcude that recovery rates for senior secured and senior unsecured bonds are not significantly different, while the volume weighted average recovery rate for the subordinated bonds are significantly different from the recoveries for the two other security classes.

Alternative Hypotesis	**One/Two-sided test**	**Alpha level**	**Degrees of freedom**	**Rejection limit**	**Test value**	**Significance**
Sr Secured different from Sr Unsec.	Two	5%	60	$t_{0.05,50}$=2.009	1.20	No
Sr Secured higher recovery than Subordinate	One	5%	39	$t_{0.05,40}$=1.684	5.94	Yes
Sr Unsec. higher recovery than Subordinate	One	5%	35	$t_{0.05,40}$=1.684	6.28	Yes

Table 19: Testing significance of our findings related to security class

To gain an appreciation of the variability in recovery rates within each security class we made an illustration of all the observations in each category presented in figure 8 – 10 below. The horizontal line in the three figures represents the security class average. The

observations in the category are illustrated by vertical columns. One would expect that recovery at large is determined by which type of security class a bond belongs, however, the figures below show that this is not the case. As recovery within each security class differs greatly, it becomes apparent that the security class is only one of many determinants for recovery and thus it is easy to see why the difference in recovery between the first two security classes is not significant. When determining recovery, one should also focus on these other factors and not just the security class in isolation. Below, we have investigated other determinants for recovery rates.

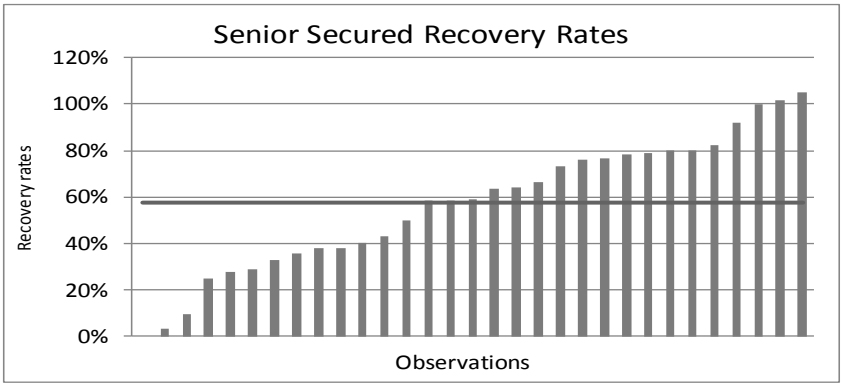


Figure 8: Observations and average recovery for defaulted senior secured issues

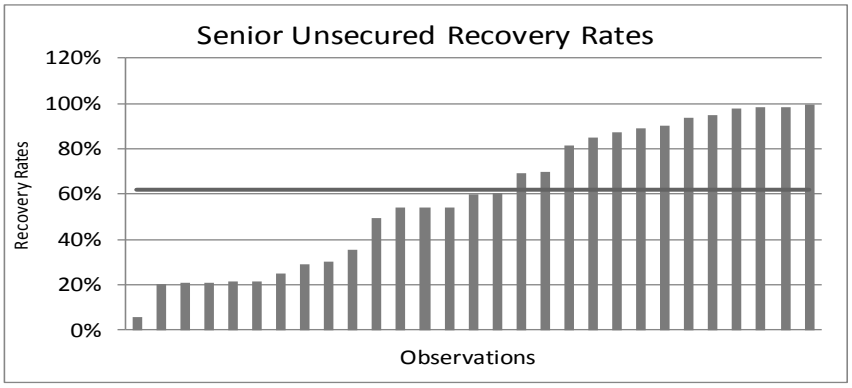


Figure 9: Observations and average recovery for defaulted senior unsecured issues

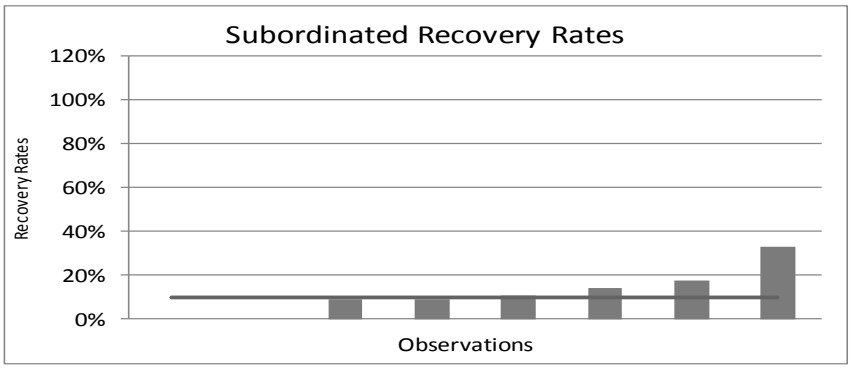


Figure 10: Observations and average recovery for defaulted subordinated issues

4.2.1.2 Recovery by industry

As shown in table 20, there is great variability in recovery rates between industries. In the US this has been proven to be a significant factor in explaining recovery. All issuers that we calculated recovery rates for were given the industry tag "oil service", "oil and gas", "shipping" or "other". Included in the *oil service* category are rig owners, supply companies, FPSO-companies, etc. The *oil and gas* industry tag is exclusively for exploration and production companies. Companies included in the *other* category are shown in table 23.

Our first observation is that fully 17 of 18 Oil & Gas sector companies had been restructured. We were able to calculate recovery rates for 34 companies in the *oil service* category and 18 companies in the *oil and gas* category. 53 percent of the bonds issued by *oil service* companies are senior secured bonds, while 67 percent of the *oil and gas* companies have issued senior unsecured bonds. We have speculated that senior unsecured bonds may be issued by companies considered less risky due to factors such as existing cashflow and less leverage. One could therefore speculate that *oil and gas* companies are considered less risky than *oil service* companies. However the risk profile for the companies within each industry varies a lot, so we are not able to make any conclusions on the matter.

Industry recovery rates

	Sr. Sec.	Sr. Unsec	Subord	Total
Oil Service	50.2%	57.1%	9.9%	43%
Oil and Gas	79.3%	47.1%	n.a.	67%
Shipping	n.a.	48.1%	n.a.	48%
Other	58.7%	85.0%	n.a.	79%
Total	57.3%	61.7%	9.9%	

Table 20: Volume weighted recovery rates by industy and security class

Number of observations

	Sr. Sec.	Sr. Unsec	Subord	Total
Oil Service	18	8	8	34
Oil and Gas	6	12	0	18
Shipping	0	4	0	4
Other	7	5	0	12
Total	31	29	8	

Table 21: Corresponding to the table above this table shows the number of observations in each industry, split by capital structure

The results observed in the *oil service* industry are very similar to the overall results with slightly higher recovery for senior unsecured bonds. Because it is the largest sector, we

attribute the aggregated findings to this category. The fact that the overall results will resemble the results of this category is in line with what one would expect.

As for *oil and gas* we can see that security is important. Recovery is much higher for secured than unsecured senior bonds. Overall, companies within the *oil and gas* industry have a high average recovery of 67 percent. Average recovery rates are the highest for the category named *other.* In table 23 the companies within the *other* category are presented. In addition, senior unsecured bonds have higher recovery rates than the senior secured ones. The companies within the *other* category have an average recovery of 79 percent. Many of these companies have a long history and most of them could be called traditional industries.

We used two-sided t-tests to determine whether average recovery rates for each of the four industry categories above differ. As table 22 shows, only recovery rates for *oil service* and *oil and gas* as well as *oil service* and *other* are significantly different.

Alternative Hypotesis	One/Two-sided test	Alpha level	Degrees of freedom	Rejection limit	Test value	Significance
"Oil Service" different from "Oil and Gas"	Two	5%	52	$t_{0.05,50}=\|2.009\|$	4.63	Yes
"Oil Service" different from "Shipping"	Two	5%	38	$t_{0.05,40}=\|2.021\|$	0.20	No
"Oil Service" different from "Other"	Two	5%	46	$t_{0.05,50}=\|2.009\|$	5.46	Yes
"Oil and Gas" different from "Shipping"	Two	5%	20	$t_{0.05,20}=\|2.086\|$	-1.10	No
"Oil and Gas" different from "Other"	Two	5%	28	$t_{0.05,30}=\|2.042\|$	1.50	No
"Shipping" different from "Other"	Two	5%	14	$t_{0.05,15}=\|2.131\|$	1.77	No

Table 22: *Testing significance of our findings related to industry categories*

Categorized as other		
Apptix	Aker Biomarine ASA	Wega Mining
Bergen Group	Austevoll Seafood	Estatia
Domstein	Camo	Tandberg Data
Hansa Property	Codfarmers	Tandberg Storage
IBB Byg	Crew Gold Corp	TMG Internationa AB
Ignis	Krill Seaproducts	
Peterson AS	Kverneland ASA	

Table 23: Companies categorized as other

4.2.1.3 Time of incorporation

As described in the theory section, our hypothesis is that the companies involved in a credit event were established later than the ones that performed as intended. In total, 80 issuers were identified in our sample as having been involved in defaults. We were unable to

determine the year of establishment for four of the companies. Consequently, we tested the hypothesis based on 76 observations. We observe that the average year of establishment for the companies involved in a credit event was 1996. This is 12 years after the average year of establishment for the companies issuing bonds performing as intended.

A few of the companies were founded during the 19th century while most were founded between 1990 and 2007. This skewed the distribution and as such the median may be a more appropriate indicator. As shown, the average and the median tell the same story.

Year founded	**Involved in a credit event**	**No credit event**
Observations	76	107
Average	1996	1984
Median	2005	1994
StDev	23.0	32.8

Table 24: Year established: Companies in the high yield bond sample

From the distribution we see that the majority of issuers with credit events were founded in 2005, 2006 and 2007. As for the companies with no credit events most issuers were founded between 1980 and 2004.

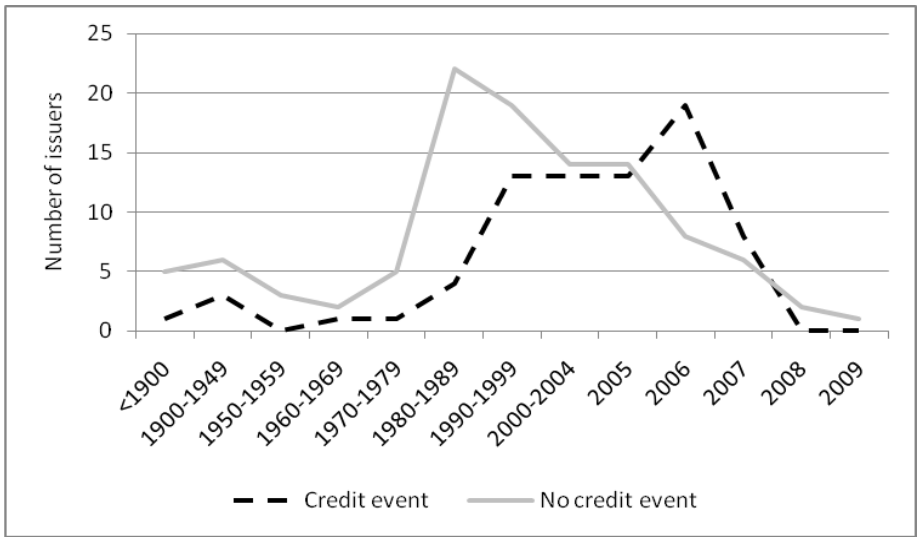


Figure 11: Number of issuers as intended/ involved in a credit event in different time periods

Following this chain of thought we decided to look into whether there are differences between the different types of outcomes from the credit event. Are liquidated companies typically younger than the ones that managed to survive with only renegotiating new terms?

As we can see in table 25 below, the most drastic type of a credit event, a liquidation (as shown in table 26), has the "youngest" issuers, with an average start-up year of 2003. For the least drastic type of credit event, "restructuring - renegotiation of terms", the issuers are typically much older. The average founding year for this category is 1991, i.e. a 12 year difference.

	Liquidated	Restructured	Renegotiated
Average	2003	1995	1991
Median	2005	2005	1999
Observations	22	32	22
StDev	6.6	27.4	26.0

Table 25: Average issue year for companies in each of the three default categories

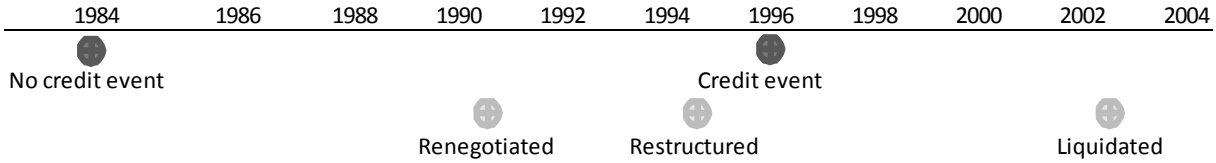
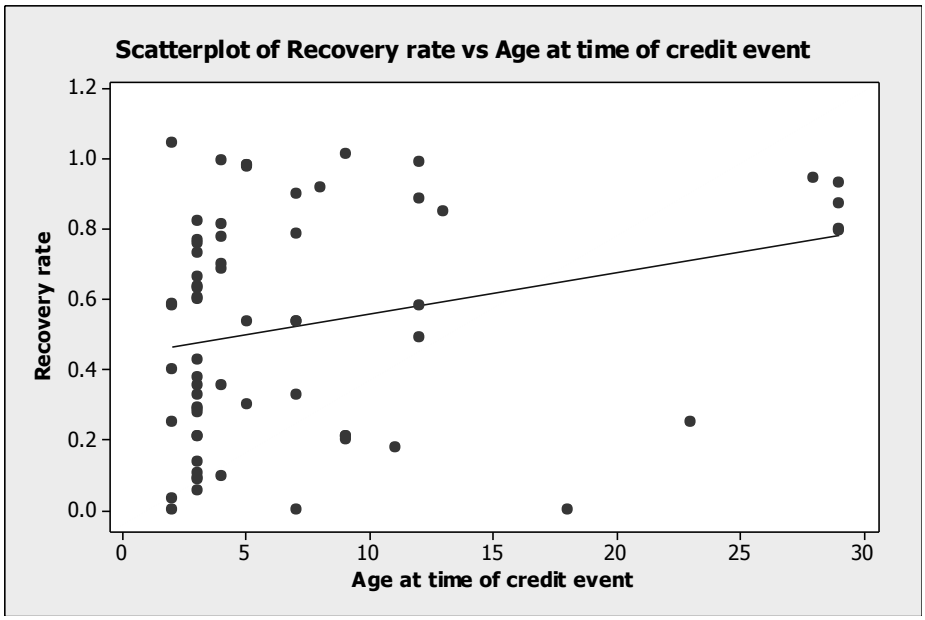


Figure 12: Average year of establishment for different categories

In addition to affecting the default frequency, we wanted to explore whether the age of the company could affect recoveries.

We measured the age of the issuers as the year of default minus the year of incorporation. We regressed the recovery rates on the age of the company at the time of default. The results shown below in a regression expression and a scatter plot show a positive correlation between age and recovery rates. The results are significant at an alpha level of 5 percent given the p-value of 2.9 percent. The interpretation of the regression is that recovery is expected to be 44.4% plus 1.17% for each year the company has been in operation. This result explains 5.8% of the variation in recovery rates according to the R^2 adjusted.

This result could be less robust than indicated by the R^2. Four out of five observations with more than 25 years in operation are from the same company, Crew Gold. This means that these influential data points with high recovery does not fulfill the criteria of independent observations. Nevertheless our findings support the hypothesis that older companies have proven their business model and therefore can be considered less risky both in terms of loss given default and default likelihood.



There are five outliers (four visible points) in the scatterplot. These influential points are one Austevoll Seafood bond and four Crew Gold Corporation which had recovery rates in the 79%-95% range

Regression Analysis: Recovery rate versus Age

```
The regression equation is
Recovery rate = 0.444 + 0.0117 Age

66 cases used, 46 cases contain missing values


Predictor      Coef   SE Coef     T      P
Constant    0.44369   0.05393  8.23  0.000
Age        0.011660  0.005229  2.23  0.029
S = 0.311306   R-Sq = 7.2%   R-Sq(adj) = 5.8%
```

**One observation was removed*

4.2.1.4 Recovery by size of issue

We sorted all the bond tranches by their size at issue and displayed below the corresponding recovery rates. No pattern is apparent.

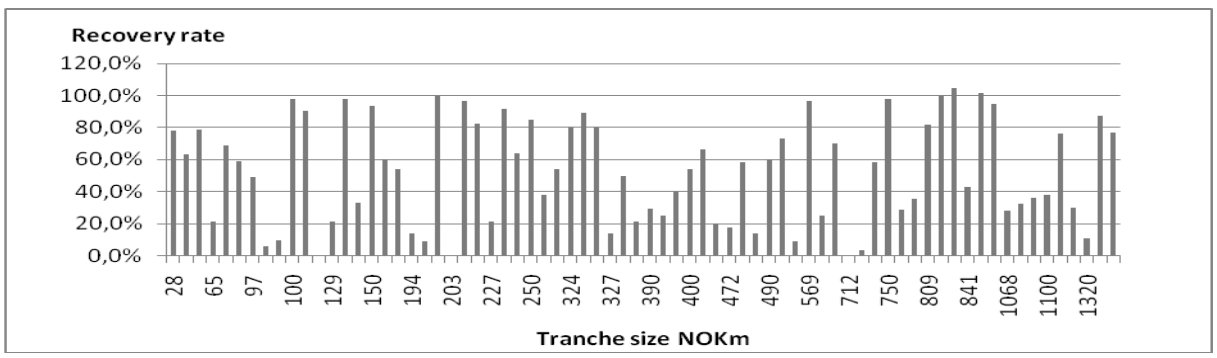
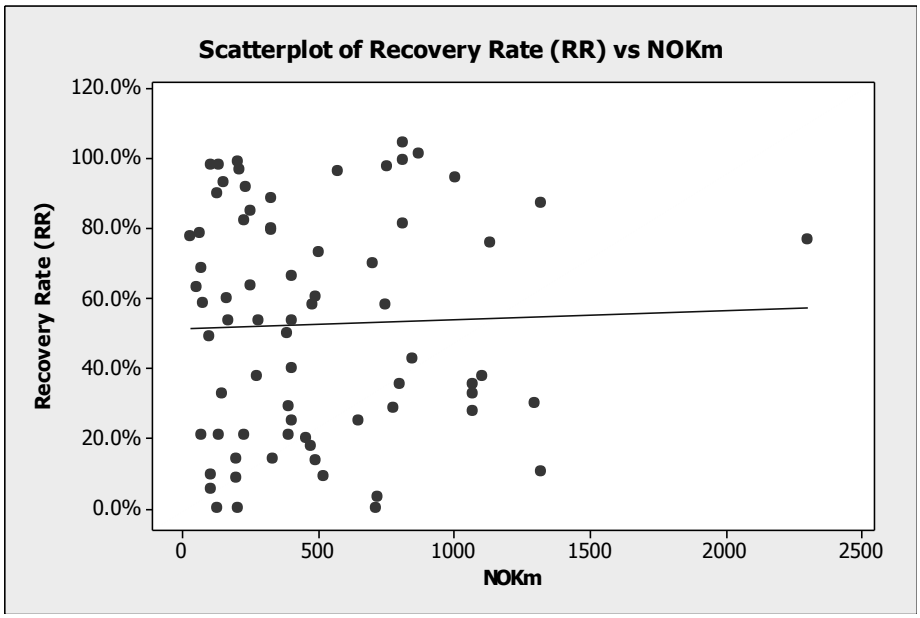


Figure 13: Recovery rates sorted by size of the issued tranche. Sorted from smallest to largest.

The regression below confirms that there is no significant correlation between the size of a tranche and the ultimate recovery rate. This is supported by a p-value of 0.79 and a R^2 of 0.1 percent.



**The outlier in the scatterplot is Norse Energy Corporations NOK 2300m bond.*

Regression Analysis: Recovery Rate (RR) versus NOKm

The regression equation is
Recovery Rate (RR) = 0.515 + 0.000025 NOKm

Predictor	Coef	SE Coef	T	P
Constant	0.51511	0.05958	8.65	0.000
NOKm	0.00002486	0.00009322	0.27	0.790

S = 0.324838 R-Sq = 0.1% R-Sq(adj) = 0.0%

4.2.2 Other determinants of recovery

4.2.2.1 Volume weighted average recovery rates under each default category

Table 26 illustrates the volume weighted average recovery rates under each default category. Based on the number of observations shown in the table, volume weighted recovery rates for "restructured – renegotiated" was 70 percent, "restructured – other" was 53 percent and "liquidated" was 20 percent.

Default category	Volume weigthed	# of observations
Restructured - Renegotiated	70%	12
Restructured - Other	53%	50
Liquidated	20%	6

Table 26: Volume weighted average recovery rate under each of the default categories

We used one-sided t-tests to determine whether the volume weighted average recovery rates for each default category were significantly different. An example of how we performed the testing of significance of our findings is presented in section 6.14 in the appendix. In table 27, information regarding the tests conducted is described. Based on the results from the three tests performed, we conlcude that the differences in recovery rates amongst the categories are significant. The difference between "Restructured – Other" and "Liquidated" are significant despite the low number of observations in the "Liquidated" category.

Our findings regarding recovery being lowest for "liquidated" and highest for "restructred-renegotiated" are in line with our expectations. This expenctation was based on the fact that the companies that end up in a liquidation tend to be companies with severe difficulties. Those that go through renegotiations tend to be companies with minor issues. It could be companies that simply had trouble getting refinancing in a dried up credit market in 2008 and 2009. Further, the fact that the recoveries are significantly different between the bonds within each of the categories supports our decision to use three default categorizaties.

Alternative Hypotesis	One/Two-sided test	Alpha level	Degrees of freedom	Rejection limit	Test value	Significance
"Restructured - renegotiated" higher than "Restructured - Other"	One	5%	62	$t_{0.05,50}$>1.676	3.08	Yes
"Restructured - other" higher than "Liquidated"	One	5%	56	$t_{0.05,50}$>1.676	3.17	Yes
"Restructured - renegotiated" higher than "Liquidated"	One	5%	16	$t_{0.05,15}$>1.753	3.88	Yes

Table 27: *Testing significance of our findings related to default category*

4.2.2.2 Other determinants of recovery

When documenting each credit event we registered a set of events we determined to be either in place or not. These were factors like whether the assets held by the company were proprietary or standardized, whether they had unfunded projects ongoing, whether they had incurred larger cost overruns, and so on. The evaluation of these factors is a result of the

information we had available through loan documents and other reports about the company around the time of default.

We wanted to see how these other factors related to recovery rates and more importantly whether any of these company traits can be used to explain the recovery rates realized.

In our first study, compiled in table 28 below, we used our data to see the frequency of the different traits for the different default categories. The percentages in the table are not recovery rates; they represent the proportion of companies in a category that possess a certain trait. We wanted to see if the traits recorded for liquidated companies differ from companies that went through a simple renegotiation of the bonds terms or other restructurings.

	Restructured - Renegotiated	**Restructured - Other**	**Liquidated**
# of observations	*26*	*68*	*44*
Refinancing	23%	29%	27%
Remaining funding	15%	40%	64%
Cost overruns	15%	18%	39%
Project delays	15%	35%	48%
Propriatary technology	4%	15%	27%
No established operations	12%	34%	45%

Table 28: Frequency of other determinants within the different default categories

This compilation yielded many interesting findings: We can see that the liquidated companies differ a lot from those in the two restructuring categories. As shown in table 26, liquidation is the most dramatic type of default while a renegotiation of terms can be said to be the least dramatic in terms of recovery. Liquidated companies have more often experienced problems related to funding of projects, cost control and ability to deliver projects on schedule. In addition many of the liquidated companies had no established operations. The high frequency of all these traits is due to many of the liquidated companies fitting into a profile of startup single asset company, often based upon proprietary technology.

Many of the same differences can be seen when comparing renegotiated companies to companies with farther reaching restructurings. Very few of the renegotiated companies

have proprietary technology, few have had issues with cost control and delivering projects on time.

As a whole we view these results as an indication that the market is well functioning. The companies that are liquidated, i.e. don't get a second chance, are those that have shown inability to deliver on time and cost. These companies were also companies that had started a large project without being fully financed. They relied on the ability to access financing as the project progressed. In a better market environment many of these companies could potentially have gotten a second chance. Most of the projects that had merit were sold to third parties giving decent recoveries while most projects recovered little or no value.

Since the results above provided fascinating insights we wanted to see how the traits are represented for the bonds with high, low and medium recoveries. We chose the 68 available recovery rates and looked at the traits for three categories. The third with lowest recovery rates were 23 bonds with recoveries from 0 percent to 33 percent. The second third, "Medium Recovery", were 22 bonds with recoveries from 33 percent to 70 percent. The last category was the third with the highest recoveries.

Table 29 shows the frequencies of traits for the three categories of recovery rates. In addition to the 68 observations used, we also have available the 17 observations in section 6.11 in the appendix that are based on trading prices. These observations are mostly either very high or very low and the results we get by not including them are somewhat less articulated. Nevertheless most of the findings are significant with only 68 recoveries used.

	Low recovery	**Medium Recovery**	**High Recovery**
Recovery	*0%-33%*	*33%-70%*	*>70%*
# of observations	*23*	*22*	*23*
Refinancing	33%	22%	62%
Remaining funding	67%	35%	14%
Cost overruns	46%	9%	5%
Project delays	63%	26%	33%
Propriatary technology	25%	22%	10%
No established operations	67%	35%	10%

Table 29: Frequency of other determinants for different levels of recovery

We can see that some of the trends become very clear. For example in defaults with low recoveries two thirds of the companies had no established operations. These are startup companies with a project, many times based on proprietary technology. We can also see that very few companies, (9 percent and 5 percent) with medium and high recoveries experienced cost overruns. This was not the case for the ones with low recovery; here close to half of the companies experienced cost overruns. The same trend is seen for project delays, underlining the fact that the companies with low recovery are startup companies building a single asset.

The companies which were refinanced are companies that communicated that their defaults were due to an inability to refinance. These were cases where the bond debt had been planned to be replaced by a new issue as a part of a long term capital structure choice. When these companies were unable to secure refinancing from the bond market it often resulted in default. We can see that these companies are overrepresented in the category for high recovery. This is as expected since this trait displayed a context where the company was fundamentally sound, but had issues to secure financing in a dry bond market.

Further we wanted to investigate the specific effect of each trait of the recovery rates. We used the same 68 observations as above. The tables below show the average recovery from companies possessing a certain trait at the time of default. On the right is the average recovery for the companies that did not possess the same trait.

	Project delays	No known project delays
Average recovery	41%	61%
St Dev	31%	30%
# observations	28	40

Table 30: Average recovery rates for companies possessing the trait "Project delays" and those who don't

	Cost overruns	No known cost overruns
Average recovery	25%	60%
St Dev	23%	30%
# observations	14	54

Table 31: Average recovery rates for companies possessing the trait "Cost overruns" and those who don't

	Proprietary technology	No proprietary technology
Average recovery	41%	55%
St Dev	30%	32%
# observations	13	55

Table 32: Average recovery rates for companies possessing the trait "Proprietary Technology" and those who don't

	Remaining funding	No known remaining funding
Average recovery	34%	65%
St Dev	27%	29%
# observations	27	41

Table 33: Average recovery rates for companies possessing the trait "Remaining funding" and those who don't

The tables 30-33 above all show traits typical for single assets startups. We can see that the average recovery is especially noteworthy for companies with cost overruns compared to companies without. The recovery for companies without is more than double of the ones that had incurred cost overruns. This indicates that cost overruns are often linked to the destruction of company values. The increased cost is seldom recovered in higher asset values.

	No established operations	Established operations
Average recovery	33%	64%
St Dev	26%	29%
# observations	26	42

Table 34: Average recovery rates for companies possessing the trait "No established operations" and those who don't

These findings are interesting when seen in light of the effect the age of a company has on recovery rates and default frequencies. Recoveries for defaulted startups are slightly higher than half of the recovery of the companies with established operations.

	Refinancing	No refinancing
Average recovery	61%	48%
St Dev	36%	28%
# observations	26	42

Table 35: Average recovery rates for companies possessing the trait "Refinancing" and those who don't

As noted above, when refinancing is communicated as the main reason for the default the recoveries tend to be higher. This is a result of the fundamental business more often being solid compared to cases where other issues than refinancing has been the main reason for the defaults.

To determine whether our findings concerning other determinants and recovery rates are significant, we performed a t-test with regard to each of the six other determinants. Table 36 summarizes information concerning the tests performed and our findings. As shown, all of the test values proved significant.

Alternative Hypotesis	One/Two-sided test	Alpha level	Rejection limit	Test value	Significance
"Project delays" give lower recovery	One	5%	t>1.676	5.97	Yes
"Cost overruns" give lower recovery	One	5%	t>1.677	7.27	Yes
"Proprietary tech." give lower recovery	One	5%	t>1.678	2.62	Yes
"Remaining funding" give lower recovery	One	5%	t>1.679	9.50	Yes
"Established operations" give higher recovery	One	5%	t>1.680	9.43	Yes
"Refinancing" give higher recovery	One	5%	t>1.681	3.75	Yes

Table 36: Testing significance of the results regarding other determinants identified

4.2.3 Other findings on recovery rates

In the theory section, other findings on recovery comprised *correlation between default rates and loss given default* and *distribution of recovery rates*. In order to be able to perform the former study regarding correlation, a number of cycles need to be compared. As a result, we did only investigate the distribution of recovery rates in the Norwegian high yield bond market represented by our sample. Findings regarding the distribution are presented below.

Looking at the distribution of recovery rates we wanted to see if they had the bimodal distribution found in other studies known for their concentration of observations close to 0 percent and 100 percent. We created two distributions, one where we simply counted the number of recorded recovery rates within every recovery category. The other was issue size weighted where the accumulated distribution totals 100 percent. The intervals used for the categories were 10 percent.

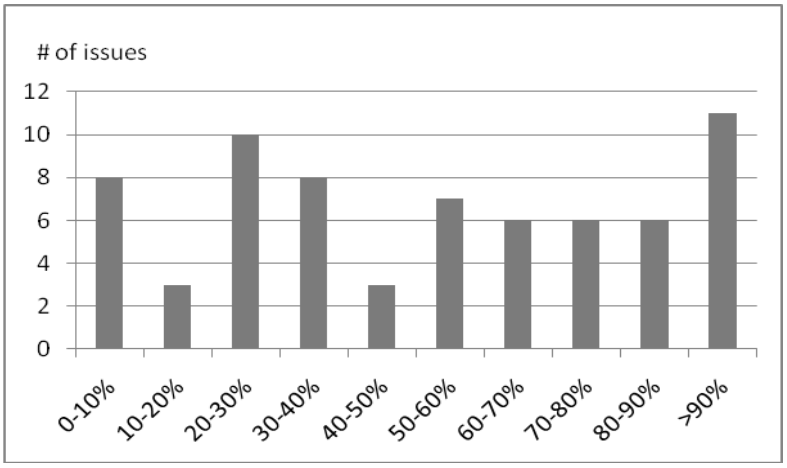


Figure 14: Distribution of recovery rates based on the number of recoveries within each 10% category.

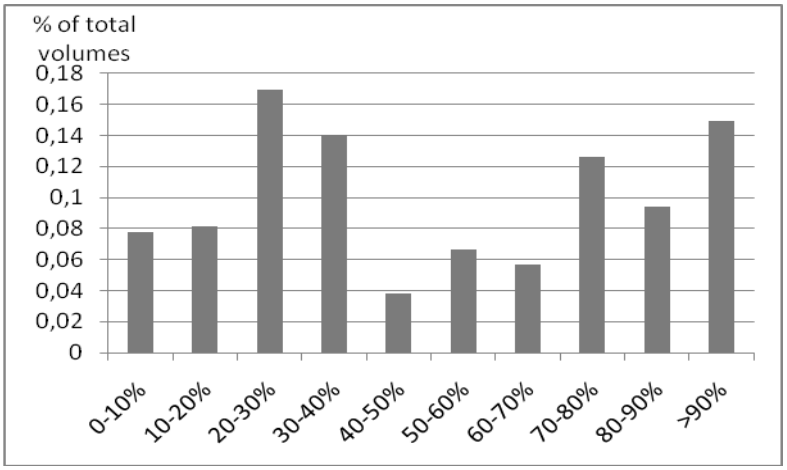


Figure 15: Distribution of recovery rates based on issue size.

The distributions came out more uniform than expeced. The tendency towards bimodality was clearer in the issue size weigthed distribution. Nevertheless these results on their own would not support a theory of the bimodal distribution of recovery rates. It is only when we interpret these in light of other findings that the pattern becomes visible.

Few observations with low recovery rates may be a result of many liquidations not being resolved yet. Included above are only ultimate recoveries. Trading prices for liquidated

issues were not included since recovery rates for companies in ongoing liquidation proceedings based on trading prices only can be considered proxies for ultimate recovery rates. 7 out of 15 companies in ongoing liquidation proceeding had recoveries of less than 10 percent. When these are eventually added to the sample once the cases are out of bankruptcy we would expect to observe more ultimate recoveries in the 0-10 percent range. Therefore one explanation as to why we are not able to find a clear bimodal distribution could be that the cases still in bankruptcy "conceal" many of the low recoveries.

As for the other end of the distribution; the reason for fewer than expected high recovery rates may be explained by companies left out of the sample due ongoing liquidation proceedings. Several of these defaults have already yielded large partial repayments (see section 6.12 in the appendix).

4.3 Other noteworthy lessons learned

4.3.1 What existing shareholders retain in a restructuring

We looked at those cases where bondholders agreed to convert their debt to equity at a value lower than par. Theory dictates that for this to happen, the par value of the debt must be higher than the value of the assets. If this is the case, the equity should have no value and bondholders should receive 100 percent equity ownership of the company.

For many reasons this is not the case in practice. These reasons can be speeding up the process or encouraging shareholders to take part in an issue of new equity. Existing shareholders seem to retain an ownership stake of 5 percent or more. It could be interesting to look at why this is happening.

In table 37 below we have included debt to equity swaps and how much of the equity is retained by the "old" shareholders. We can see that in the case of Artumas and Crew Cold Corp. bondholders were not satisfied with the original proposed debt to equity swap and new proposals with less equity retained for existing shareholders were approved. In Proserv, Wega Mining and Transeuro existing shareholders have retained more than 10 percent ownership.

Name	Restruct. Approved (Date)	Ownership share for existing shareholders post restructuring	New equity raised by existing shareholders	Comment
Aladdin Oil and Gas	Jul-10	5.4%	Yes	
Artumas	Jun-09	1.2%	No	4.6% in original proposed solution
Crew Gold Corporation	Nov-09	5.0%	No	25%-29% in original proposed solution
Malka Oil	Feb-09	8.3%	Yes	
Marine Accurate Well	Jun-10	2.5%	Yes	
Proserv	Jun-09	15.8%	Yes	Based on pre restructuring estimates (incl. employees)
Resevoir Expl. Tech.	Apr-10	5.2%	Yes	Based on the 2nd restructuring round
Saga Oil	Jul-09	6.5%	No	Some working capital was raised
Transeauro	Oct-09	54.2%	No	
Umoe Bioenergy	Oct-09	8.0%	Yes	Umoe Invest and Umoe As controlled 85.6% of equity and 62% of bonds berfore the restructuring
Valhalla	Apr-09	4.9%	Yes	
Wega Mining	Nov-08	11.5%	Yes	
Average		**10.70%**		
Average (ex Transeuro)		**6.75%**		
Median		**5.94%**		

Table 37: Companies where solution involved a debt to equity conversion

4.3.2 Solidarity and collaboration among bondholders

As figure 1 illustrated, a company may either resolve financial distress through reorganization or liquidation. If a company experiences financial distress, senior secured bondholders may threaten to declare the bond to be in default and for the company to be liquidated if they perceive that such a solution will result in a higher recovery. Despite this fact, we have seen that only nine percent of the outstanding bond volume in our period covered has been liquidated. Further, after analyzing the different solutions approved in greater detail, we have discovered that in certain cases bondholders with lower priority have incurred a significant recovery rate, even though bonds issued by the same company with higher priority have recovered less than 100 percent.

In a meeting with Karianne Bruland and Ola Nygård from Norsk Tillitsmann, we were told that within the Norwegian high yield bond market there is a sense of solidarity and collaboration among bondholders representing bonds with different priority. As a result, bondholders do not compete as intensely as one would expect. In most cases, bondholders representing tranches of different priority collaborate in order to reach a solution.

A liquidation may be both more costly and time consuming than a restructuring. In addition, recovery may be reduced further if assets are sold in a fire sale process. As a consequence, in most cases recovery may be higher in a restructuring. Therefore, bondholders may have a short term motive to collaborate. An interpretation may be that bondholders collaborate in order to resolve the distressed situation through a restructuring and thereby avoiding depreciation of assets value through a fire sale. For instance, asset values depreciated considerably after the financial crisis hit in September 2008. Bondholders would probably increase their recovery rates if they were able to agree to a solution which would let the company continue operating until the market recovered. On the other hand, the motivation may be caused by longer term considerations; the size of the Norwegian high yield bond market is limited. Bondholders know that it may be in their best interest to avoid overriding bondholders representing subordinated claims since the probability is high that they will meet again in a similar situation in the future where the tables may have turned. In this sense, the bondholder's intention may be to try to work out a solution all bondholders are satisfied with.

4.3.2.1 Examples:

In the restructuring of *Marine Accurate Well* the holders of a senior secured bond received shares worth approximately 30 percent of the bond's principal. Despite the senior bondholders taking a significant loss the bondholders in two subordinated tranches recovered approximately 10 percent of their bonds' par value.

When the restructuring process of *Skeie Drilling & Production* was successfully completed in July 2009, three senior secured bonds each recovered between 27.9 percent - 35.8 percent of par, while the holders of the subordinated unsecured convertible bond recovered 10.6 percent of par.

In October 2008, *Tandberg Storage* completed a restructuring of the company's two bond loans. 70 percent of the senior secured bond loan was converted to equity recovering 90 percent, while the remaining 30 percent continued as a bond. In terms of the senior unsecured bond loan, 30 percent of par was converted to equity recovering 90 percent, 30 percent continued as a bond, while the remaining 30 percent was written down.

4.3.3 Stock price reaction

Another aspect of the restructuring we found interesting was how slowly the market reacted to the news of a restructuring in some cases. In several cases it took a very long time for share prices to adjust to the post restructuring trading level.

Below in figure 16 – 18 we have provided some examples of this behavior. Seemingly it takes some time for the market to price in the dilutive effects of debt to equity swap. We indicate the share price development in percent of the conversion price.

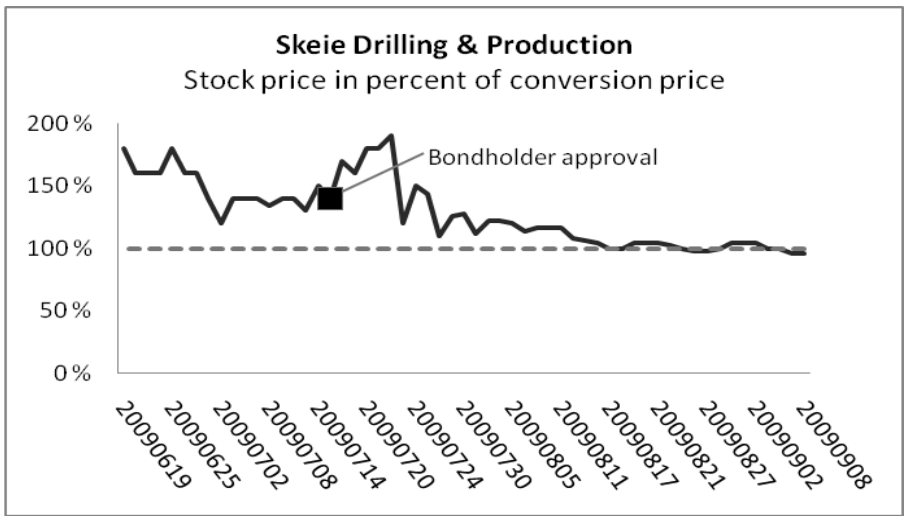


Figure 16: Stock price in percent of conversion price, Skeie Drilling & Production

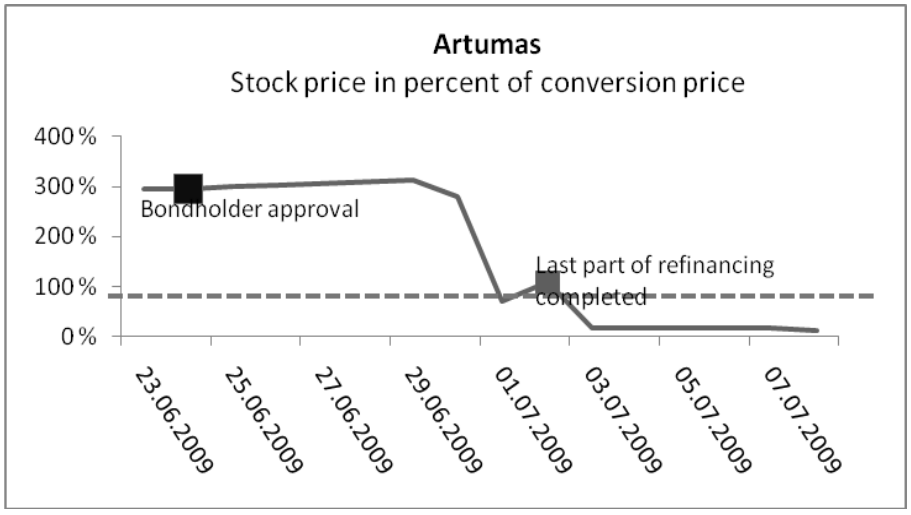


Figure 17: Stock price in percent of conversion price, Artumas

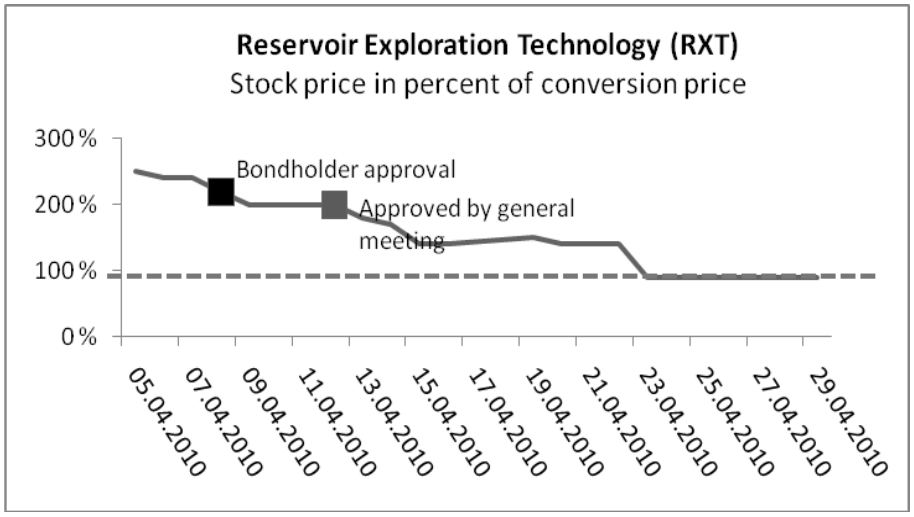


Figure 18: Stock price in percent of conversion price, RXT

Looking at Skeie Drilling & Production it took nearly a month from the bonds were converted until the shares had adjusted to the conversion price. The conversion price was also the price paid when new equity was raised as a part of the restructuring.

In the case of RXT and Artumas the shares eventually traded below the conversion price for bondholders, giving recoveries of less than 100 percent. For RXT new equity was a part of the restructuring plan approved by bondholders. The new equity would be raised at the conversion price of 0.1NOK. The number of shares post restructuring would be 14 times the number of shares before. Still it took two weeks from the plan was accepted by bondholders until the shares had adjusted down to the equity issue price level.

We are not in a position to claim that this is a result that holds in general. Nevertheless we found it noteworthy as similar behavior presented itself in many of the restructurings. Therefore the market efficiency related to restructurings in the Norwegian market is something that could be studied.

5. Conclusions

5.1 Summary and main conclusions

The purpose of this thesis has been to identify and analyze defaults and recovery rates in the Norwegian high yield bond market. The time period covered has been bonds outstanding as of January 1st 2005 until June 30th 2010. In addition to analyzing defaults and recovery rates, we have also provided a short summary of other noteworthy lessons learned while working on the thesis.

The final sample consisted of 198 companies having issued 534 bonds. 40.4 percent of the companies and 25.8 percent of the bonds identified have been involved in defaults. Of the total outstanding volume of NOK219bn, 74 percent has performed "as intended", 3 percent has been "restructured- renegotiated", 13 percent has been "restructured - other" and 9 percent has been "liquidated" during the time period covered. Default frequencies between 2005 and 2007 were on average less than 1 percent, while the corresponding frequencies for 2008 and 2009 were approximately 11 percent and 20 percent respectively. The default frequency was highest within the *oil service* category (31 percent). In total, *oil service* and *oil and gas* accounted for 75 percent of the total outstanding volume involved in defaults. 45 percent of the volumes issued in 2007 (NOK 81bn) has been involved in at least one credit event during 2008 – 1H 2010. In 2012, a record volume of NOK 49.6bn bonds matures. 43.7 percent of the volumes maturing in 2012 has been involved a default so far.

We performed tests to determine whether findings related to recovery rates were significant. Significant determinants of recovery were *time of incorporation, default category*, project de*lays, cost overruns, proprietary technology, remaining funding, established operations* and *refinancing*. *Issue size* was not a significant determinant of recovery. In some cases, only parts of the determinants analyzed proved to be significant; in terms of *security classes*, only recovery for the subordinated bonds were significantly different from the recoveries of the two other security classes. When analysing *recovery within industries*, only recovery rates for *oil service* and *oil and gas* as well as *oil service* and *other* were significantly different.

Other mentionable lessons learned while working on the thesis concerned former shareholders retaining more than one would expect of the share capital after a debt to equity conversion, solidarity and collaboration among bondholders, as well as some inefficiencies relating to equity pricing around the time of default. These observations should be further researched.

When emphasizing the different findings covered by the thesis, we have found that the Norwegian high yield bond market has many traits of a well functioning one. Despite high default rates in 2008 and 2009, recovery levels are comparable to what has been found in international studies. In addition, companies tend to get a chance to solve their problems before they end up in bankruptcy. We make this claim after observing that companies that have had issues with cost overruns, delays and other severe issues end up in bankruptcy more often. One strong counter argument is the fact that so many of the issues made in 2006 and 2007 have been involved in some kind of a credit event. This tells a story of a market that may have been overheated in 2006 and 2007.

If we had more time and resources available, it would be interesting to investigate the remaining determinants of recovery presented in the theory section. Furthermore, we would also be able to broaden the scope of the thesis by including recovery and defaults before January 1st 2005. If the scope of our thesis had been broader, it would also be interesting to cover the following: the game theory involved reaching a restructuring agreement, the relative pricing of equities and bonds as well as some market inefficiencies. Finally, it would be interesting to survey market participants to get an understanding of how they implement default and recovery data in the pricing of fixed income instruments with credit risk.

5.2 Criticism

The short amount of time covered limits the conclusions we can draw. The inability to study the market over a complete cycle makes the study of default rates less relevant. Therefore our focus has been primarily to find recovery rates which are much less affected by the macroeconomic environment. Still, a correlation between default rates and loss given default has been identified by Moody's (Moody's 2004: Determinants of recovery) and the findings may therefore only be applicable to a boom/bust market experienced in 2005 through 2009. The notion that recovery rates are higher in a normal market than under an

economic downturn may render some of the results inapplicable to a “normal” market situation.

With few existing studies looking at the high yield bond market we found that it was difficult to narrow the scope of our thesis. We felt the need to cover many of the basics and therefore we spent much time creating a comprehensive overview of the market. This was in line with the task assigned by Pareto Securities, who primarily wanted a complete overview of the defaults and recovery rates.

We have few observations of recovery rates for liquidated companies. Bankruptcy proceedings take time. As a result, many of the defaults cannot be included since the recovery is still uncertain. This has clearly made us unable to include many interesting data points since recovery in these liquidations tend to be pretty polarized with several cases where we expect no recovery at all.

The amount of work necessary to understand the credit events and their solutions and to make accurate calculations of recovery rates, have limited the capacity to do such things as acquiring balance sheet information for the private companies at the time of the credit event. Another source of information that would have been helpful, which we were not able to acquire, was the internal ratings made at the time of the bond issue by the issuance manager (brokerage house).

Also there is limited research available on the topic of ultimate recovery rates. The research of ultimate recovery rates exclusively covering the high yield market is even more limited. Much of the research is either trading price based or performed on bonds with a wider range of ratings; often including everything from Investment Grade to distressed securities and even bank debt. The absence of robust benchmarks is therefore a limitation when comparing the results of the Norwegian market to other markets.

The fact that all of our other determinants of recovery were significant is a sign that we chose to look at only the “obvious ones”. We should have included less obvious factors such as “bank debt in place”, “country of operation” and “average age of management” in an attempt to find other determinants of recovery that were not as easily predictable.

6. Appendix

6.1 Definitions

Bankruptcy: A company is bankrupt when it is unable to meet its debt obligations (insolvent). Bankruptcy proceedings deal with the liquidation of an insolvent debtor's assets, where the debtor after the proceedings is relieved from further liability.

Carve out: Carve out is a term used differently in a bankruptcy context than in a regular business context. Usually the meaning is that one sells an asset or minority stake in a subsidiary. In a bankruptcy context it is often used to describe what happens to the security of a bond when bank financing is used in a restructuring or bankruptcy. When the bondholders must accept a lower lien security because new debt gets assigned the first lien, a carve out has occurred. This can happen voluntarily when bondholders accept that the only way to refinance is to use bank debt that demands strong asset security (Levin 1998).

Certificate: A certificate is a source of short term financing for the issuers. These are bonds with time to maturity of less than a year when issued.

In the US, **Chapter 7** and **Chapter 11** proceedings are bankruptcy options under the Bankruptcy Reform Act. In terms of a company in bankruptcy, Chapter 11 proceedings govern the process of reorganization of the company, while Chapter 7 governs the process of a liquidation. The Chapter 11 proceedings are perceived as the most complex and often most expensive bankruptcy option.

Compound annual growth rate (CAGR): CAGR = $(V_t/V_0)^{(1/t)}$-1. For a specific time period CAGR is defined as the year-over- year growth rate of an investment.

A **coupon** is the term of the interest rate paid to bondholders on a fixed income security. The *interest rate* is the rate that is charged or paid by a company when borrowing money. The interest rate is often expressed as an annual percentage of par.

Covenants are contractual provisions in a bond loan agreement protecting the bondholders by requiring or forbidding certain actions to be conducted by the borrower.

Floating interest rate: When the rate is floating, the interest rate is determined by a reference rate like LIBOR or NIBOR plus an interest rate margin.

High Yield: All bonds rated below investment grade. They are also referred to as "speculative grade bonds" or "junk bonds".

Investment Grade: A bond issue rated BBB- or above (see rating scales in table 2). The practical application of the term is that some investors, like banks or pension funds, may only be allowed to invest in investment grade bonds due to the fact that their default risk is considered to be low.

Lien: a term used to describe a legal claim against someone else's property as security for the payment of debt. The terms 1st lien and 2nd lien are often used to refer to the ranking amongst liens if there is more than one party that holds a legal claim on an asset.

Liquidation is defined as the process of terminating or dissolving a business. In a liquidation process, assets are sold to repay claims. The shareholders will be entitled to what remains after debt and other claims are settled.

Negative pledge clause: a provision in a contract which protects lenders by prohibiting the borrower to provide other lenders with security interests in any of its assets unless the former lenders are given the same priority.

A **partial forced conversion** takes place when a borrower uses its right to call either parts of a convertible security or parts of a bond with a call option against the will of the holders.

Payment in kind (PIK): a bond which gives the borrower the option to either make coupon payments in the form of additional bonds or in cash (during a specified period of time).

Principal: In regard to a bond, the *principal* is the amount borrowed. If installments are paid on the bond, principal refers to the borrowed amount which remains unpaid.

A loan is **refinanced** if proceeds from a new loan are used to pay off the existing loan. The new loan is usually provided with the same collateral as the loan being refinanced.

Restructuring: involves a company's debt, operations or structure being considerably modified. In a debt restructuring terms in the bond loan agreement may be altered to make the company's debt burden more manageable and to increase the probability that the company will be able to repay the debtors in the future.

S**ecurity:** a property or an asset owned by a company pledged as collateral in a loan agreement.

A **tranche** is a class of debt security issued as part of a single bond issue. A bond may be made up of several tranches being released at different points in time. For instance, a company may issue a NOK 100m bond in two tranches of NOK 50m.

Trustee: A trustee is either an individual or an organization managing and investing assets on behalf of another party. In the bond market, one of the main objectives of the trustee is to ensure that all the terms and conditions associated with a loan agreement are met by the issuer.

6.2 Determining the sample

Exclusion criteria	Number of tranches excluded	Issues example 1	Issues example 2
Bank bond tranches	11,599	Fokus Bank	BN Bank ASA
Utility bond tranches	1,370	Agder Energi AS	Statnett SF
Finance bond tranches	2,293	Landkreditt	Eksportfinans ASA
Public sector tranches	3,069	Oslo kommune	Lillehammer kommune
Tranches issued by government owned companies	270	Entra Eiendom AS	StatoilHydro ASA
Local government guaranteed tranches	210	Oslofjordtunnelen AS	Levanger Rådhus AS
Matured before 2005	723	Raufoss ASA	Elkem Aluminium ANS
Foregin credit Institutions	7	Svensk Exportkreditt AB	General Electric Capital Corp.
Bonds with less than NOK 30m outstanding	62	Safetel ASA	Lappland Goldminers Ab
Tranches determined to be Investment Grade by Pareto	921	Olav Thon Eiendomselsk.	Vesta Forsikring AS
Total number of tranches	**21,156**		
Number of tranches in the final high yield sample	**632**		
Number of bonds in high yield sample	**534**		

Table 38: Tranches excluded in order to determine the high yield sample

6.3 Final Sample

We identified 198 issuers and 534 bonds in our high yield sample. Below is a list of the issuers:

Aberdeen Eiendom Holding AS
Ability Drilling ASA
Aker American Shipping ASA
Aker ASA
Aker Biomarine ASA
Aker Drilling ASA
Aker Floating Production ASA
Aker Invest II KS
Aker Solutions ASA
Aladdin Oil & Gas Company ASA
Altinex ASA
APL ASA
Apptix ASA
Arrow Seismic ASA
Artumas Group Inc
Atlantic Oilfield Services Ltd
Austevoll Seafood ASA
Avantor ASA
B&H Ocean Carrier Ltd.
Banetele AS
Bassdrill Alpha Ltd
BB Finans ASA
Belships ASA
Bergen Group AS
Bergen Oilfield Services AS
Blom ASA
Bluestone Offshore Pte Ltd
Bluewater Holding B.V.
Bonheur ASA
Borgestad ASA
BW Gas ASA
Camillo Eitzen & Co ASA
Camo ASA
Cecon AS
Club Cruise Entert. & Travel.
Codfarmers ASA
Color Group AS
COSL Drilling Europe AS
Crew Gold Corp
Davie Yards ASA
Deep Ocean ASA
Deep Sea Bergen Invest AS
Deep Sea Supply AS
Delphin Kreuzfahrten
Det Norske Oljeselskap ASA
Didon Tunisia Ltd
DNO International ASA
Dockwise Ltd.
DOF ASA
Dof Subsea ASA
Domstein ASA
DSB
Eastern Drilling ASA
Eastern Echo Holding Plc
Eidsiva Rederi ASA
Eitzen Chemical ASA
Eitzen Maritime Services ASA
Electromagnetic Geoservices AS
Eltek ASA
Ener Petroleum ASA
Enovation Resources Ltd
Equinox Offshore Accom. Ltd
Estatia Resort AS
Fairstar Heavy Transport NV
Farstad Shipping ASA
Fjellstrand AS
FPS OCEAN AS
Fred Olsen Energy ASA
Frigstad Discoverer Invest Ltd
Front Exploration AS
Frontier Drilling ASA
Frontline Ltd
Geopard A/S
Glamox ASA
Global Geo Services ASA
Global Rig Company ASA
Golden Ocean Group Ltd
Grieg Seafood ASA
Hambo Ab Oy
Hansa Property Group AS
Havila Shipping ASA
Heritage Oil Corp
Hexagon Composites ASA
Hurtigruten ASA
I.M. Skaugen SE
IBB Byg AS
Ignis ASA
Interoil Exploration and Prod. ASA
J. Lauritzen A/S
KCA DEUTAG Offshore AS
Kragerø Fjordbåtselskap AS
Krill Seaproducts AS
Kverneland ASA
LK Holding I AS
London Mining Plc
Lotos Exploration and Production
Malka Oil AB
MARACC - Marine Accurate Well ASA
Marine Harvest ASA
Marine Subsea AS
Marine Subsea Cyprus Holding Ltd
Master Marine ASA
Metallkraft A/S
Monitor Oil PLC
Mosvold Drilling Ltd
Mosvold Supply Plc
MPF Corp Ltd
MPU Offshore Lift ASA
Nattopharma ASA
Neptune Marine Invest AS
Nextgentel Holding ASA
Nexus Floating Production Ltd
NOR Energy AS
Nordic Heavy Lift ASA
Nordic Mining ASA
Norgani Hotels ASA
Norse Energy Corp. ASA
Norske Skogindustrier ASA
Northern Offshore LTD
Norwegian Air Shuttle ASA
Norwegian Energy Company ASA
Norwegian Property ASA
Ocean Heavylift ASA
Ocean Rig ASA
Oceanlink Ltd
Oceanteam ASA
Odfjell SE
Onetwocom AB (publ)
PA Resources AB
PA Resources Norway AS
Peterson AS
PetroBakken Energy Ltd
Petrobank Energy and Resources Ltd.
Petrojack ASA
Petroleum Geo-Services ASA
Petrolia Drilling ASA
PetroMena ASA
Petrominerales Ltd
PetroProd Ltd
PetroRig III
Polarcus Ltd (Cayman Islands)
Primorsk International Shipping Ltd
Prosafe SE
Rem Offshore ASA

Remedial (Cyprus) Plc	Solstad Rederi II AS	Viking Drilling ASA
Renewable Energy Corporation ASA	Sølvtrans Rederi AS	Villa Organic AS
Reservoir Exploration Technology ASA	Songa Floating Production ASA	Visma ASA
Rocksource ASA	Songa Offshore SE	Vmetro ASA
Roxar ASA	Standard Drilling ASA	Volstad Maritime AS
Rubicon Offshore Holdings	StepStone ASA	Wega Mining ASA
Safetel ASA	STX Europe AS	Wilh. Wilhelmsen ASA
Saga Oil ASA	Subsea 7 Inc.	Ziebel AS
Scan Geophysical ASA	Svithoid Tankers AB	
Scandinavian Airlines System	Synnøve Finden ASA	
Sea Production Ltd	Tandberg Data ASA	
Seabird Exploration Ltd	Tandberg Storage ASA	
SeaDragon Offshore Ltd	Telio Holding ASA	
Seadrill Ltd	Thule Drilling ASA	
Seadrill Norge AS	TMG International AB	
Seametric International AS	Transeuro Energy Corp	
Sevan Drilling AS	TTS Marine ASA	
Sevan Marine ASA	Umoe Bioenergi	
Siem Industries Inc	Umoe Industri AS	
Sinvest ASA	Valhalla Oil & Gas AS	
Skeie Drilling & Production ASA	Vann AS	
Software Innovation ASA	Venture Drilling AS	
Solstad Offshore ASA	Viken Fibernett AS	

Table 39: Final high yield bond sample

6.4 Managers

Financial institutions acting as lead managers on the bonds included in the high yield sample:

Bond Lead Manager	Amount issued	Percentage
Pareto	91,181,181,304	41.8%
ABG Sundal Collier	29,301,411,376	13.4%
DNB NOR	28,008,363,844	12.8%
Fearnleys	12,262,719,938	5.6%
NA	12,028,145,902	5.5%
First Securities	12,006,797,688	5.5%
Nordea	11,919,987,028	5.5%
Arctic Securities	6,483,173,170	3.0%
SEB Enskilda / Merchant Bar	4,460,626,529	2.0%
BNP Paribas	3,314,109,656	1.5%
Danske Bank/Fokus	2,794,737,916	1.3%
Deutche Bank	1,331,563,563	0.6%
Carnegie	1,274,001,000	0.6%
Fondsfinans	823,667,678	0.4%
Terra	501,148,000	0.2%
Kaupthing	446,716,194	0.2%
Glitnir	125,000,000	0.1%
Sparebank 1 SR Bank	115,000,000	0.1%
Total	**218,378,350,786**	**100.0%**

Table 40: Managers in the Norwegian high yield bond market

6.5 Bonds determined to either be investment grade or irrelevant

Issuers determined to be investment grade or high yield bonds determined to be irrelevant (due to size) by Pareto Securities (removed from final sample).

Bankenes Betalingssentral AS	Norges Statsbaner AS	Tine SA
A.P. Møller - Mærsk A/S	NorgesGruppen ASA	Vasakronan AB
Aker Solutions ASA	Norsk Hydro ASA	Veidekke ASA
Amfi Eiendom ASA	Norsk Rikskringkasting A/S	Veipakke Salten A/S
Askøybrua AS	Northern Logistic Property ASA	Vesta Forsikring AS
B2 Holding ASA	Nortura SA	Vestnes Energi AS
Boligutleie Holding II AS	Norwegian Property ASA	Wintershall Norge ASA
Broström AB (publ)	NP Nydalen ASA	Yara International ASA
BSA Kontoreiendom AS	Nygårdstangen A/S	Applied Plasma Physics AS
COOP Norge SA	OBOS Forretningsbygg AS	EDB Novit AS
Det Norske Veritas AS	Olav Thon Eiendomsselskap ASA	Emisoft AS
EDB Business Partner ASA	Orkla ASA	Epocket Solutions ASA
Eiendomsspar AS	Oslo Bolig og Sparelag	Fesil ASA
Elkem AS	Oslo Vognselskap AS	Finansnettnorge AS
Entra Eiendom AS	Overkommandoen AS	Goodtech ASA
Entra Kultur 1 AS	Posten Norge AS	Haugesund Avis A/S
Fellesdata A/S	Raufoss Industripark I AS	Hvistendahls Rederi AS
Felleskjøpet Agri BA	Reitan Eiendom AS	Ibistic AS
Fjell Vatn Avløp og Renovasjon AS	Reitangruppen A/S	Impact Europe Group Aktiebolag
Fjellinjen AS	Rieber & Søn ASA	Infocare ASA
General Electric Capital Corporation	Schibsted Finans AS	Investra ASA
Handelseiendom II AS	Selvaag Gruppen AS	Lappland Goldminers Ab
Hotelleiendom i Sverige AB	Skanska Norge AS	Lexmed ASA
Industrivärden AB	St. Olavs plass 5 KS	Marineprovider ASA
Jotun A/S	Stadshypotek AB	Multiwave Geophysical Company AS
Kollektivtransportproduksjon AS	StatoilHydro ASA	Noral ASA
Kongsberg Gruppen ASA	Stavanger Eiendom Holding AS	NorMar ASA
Kungsleden AB (publ.)	Steen & Strøm ASA	Novel Diagnostics ASA
Kværner ASA	Stord Kommunale Eigedomsselskap AS	Oslo Shipholding AS
Linstow AS	Stor-Oslo Lokaltrafikk AS	Sagex Petroleum ASA
Linstow Eiendom AS	Subsea 7 Inc.	Sonitor Technologies AS
Merino KS	Tekågel Invest 411 A/S	Tinde ASA
Moelven Eidsvold Værk AS	Telenor ASA	Voss of Norway ASA
Møllergruppen AS	Telenor Communications AS	Wyndmore N.V.
Nedre Romerike Vannverk IKS	TGS Nopec Geophysical Company ASA	
Nor Property Holding AS	Thon Holding AS	

Table 41: Companies categorized as investment grade by Pareto Securities

6.6 Bonds outstanding in the sample within each industry category

Industry	Amounts outstanding (NOKbn)	Percent of total outstanding
Fishery	3,96	2 %
Industry	17,78	8 %
Mining	4,07	2 %
Oil and Gas	32,65	15 %
Oil Service	116,39	53 %
Property	3,78	2 %
Pulp and Paper	8,69	4 %
Shipping	24,41	11 %
Telecom/IT	2,66	1 %
Transportation	4,87	2 %
Total	219,26	100 %

Table 42: Bonds outstanding in the sample within each industry category

6.7 Volume outstanding in the sample and corresponding defaults within each industry category

Industry	Amounts outstanding (NOKbn)	Percent of total outstanding	Defaulted (NOKbn)	Percent of total defaults	Default frequency
Fishery	3,96	2 %	1,55	3 %	39 %
Industry	17,78	8 %	3,52	6 %	20 %
Mining	4,07	2 %	3,61	6 %	89 %
Oil and Gas	32,65	15 %	6,84	12 %	21 %
Oil Service	116,39	53 %	35,95	63 %	31 %
Property	3,78	2 %	0,64	1 %	17 %
Pulp and Paper	8,69	4 %	0,39	1 %	4 %
Shipping	24,41	11 %	4,29	7 %	18 %
Telecom/IT	2,66	1 %	0,40	1 %	15 %
Transportation	4,87	2 %	-	0 %	0 %
Total	219,26	100 %	57,19	100 %	26 %

Table 43: Bonds outstanding in the sample and corresponding defaults within each industry category

6.8 Maturity profile 2010 – 2015: Number of loans maturing

Maturity profile	2010	2011	2012	2013	2014	2015	Total
As intended/ involved in a credit event (number of loans) (as of 30.06.10)	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
As intended (loans)	44	49	59	22	36	10	220
Involved in a credit event (loans)	23	32	48	12	7	2	124
Type of credit event							0
Restructured - reneg. terms (loans)	9	3	16	1	2	0	31
Restructured - other (loans)	9	12	19	8	4	2	54
Liquidated (loans)	5	17	13	3	1	0	39
Total (number of loans)	**67**	**81**	**107**	**34**	**43**	**12**	**344**

Table 44: Number of loans maturing between 2010 – 2015 categorized as intended or involved in credit events

6.9 Data: Considerations taken when calculating recovery rates

Ultimate - or trading price recovery rates?

As described in the theory section, the first consideration when calculating recovery rates is whether to look at the *ultimate recovery rate* or the *trading price recovery rate.*

Ultimate recovery rate is the most applicable to investors holding defaulted securities after the credit event. For many investors like pension funds that sell their holdings in the event of a default the trading price received is most relevant. Trading price recoveries are easily calculated compared to ultimate recovery rates, but the data can be difficult to acquire if the defaulted bonds are illiquid.

The argument as to why one would use ultimate recovery rates is first and foremost their accuracy. The liquidity argument is one that is especially relevant to the Norwegian market where trading in many of the smaller capitalization bonds is limited. Illiquidity may make it difficult to establish a correct post default trading price (Smithson, Wiley and Sons 2003). The accuracy and the number of defaulted bonds without available price data was the key factor in choosing to calculate ultimate recovery rates.

Par value or amount claimed

A second consideration is what the amount recovered should be compared to. On the one hand you could calculate recovery in percent of par value; on the other hand recovery could be calculated in percent of the total claim held by bondholders. The total claim includes both interest rate payments and "penalty rate" – an addition to the interest rate activated by a credit event. The Norwegian standard is that interest payments or coupons are increased with 500bp following a default. When determining which approach to use, we had to consider both theoretical and practical arguments. A claim which has been inflated due to penalty rates and a lengthy process could be viewed as the correct legal claim. The penalty rate represents a period after default where the risk has increased for bondholders and consequently the claim is reasonable. A counter argument may be that penalty rate clauses are put in place to secure that the bondholders get the largest piece of the pie as possible.

In theory, computing recovery rates in percent of total claim are the most accurate. In practice, it proved difficult to establish the exact claim held by bondholders in many cases,

for instance due to the fact that the exact time of recovery and default was difficult to establish. In addition, we had access to limited available information regarding accrued, unpaid interest and penalty rates. In our case using the simplification of calculating recovery in percent of par was necessary.

Example concerning par value or amount claimed: Scan Geophysical

Scan Geophysical filed for bankruptcy on 29 of June 2009. The assets pledged by the loan security were sold and a partial repayment was made to the bondholders in a NOK 60m bond. The total repayment was ~NOK 56 million. The total claim consisted of the face value of NOK 60m and NOK 17.3m in accrued interest. Recovery in percent of the total claim was 56/(60+17.33=72.4 percent. Due to the arguments made above the (partial) recovery rate we calculated was in percent of the face value or 56/60= 93.3 percent.

Discounting the recovered amount

The recovered values in a default can be employed and earn a return once it is received, so the time value must be taken into account to compare recoveries.

When Moody's calculate ultimate recoveries in their ultimate recovery database they use the last interest payment before the credit event as the point in time they discount the recovery back to. The interest rate they choose is the individual bond coupon or interest rate paid before default *(Moody's Ultimate Recovery Database FAQ).* In our case, we use the credit event as the point in time. This would typically be a bondholders meeting, a missed payment or a declaration of bankruptcy. The reason is that this information was more easily available than the date of the last interest payment. We chose to discount all the recoveries where settlement took place more than one month after the initial credit event.

When discounting we use the pre-default interest rate or coupon. This should represent a risk adjusted rate relevant to the issue. We recognize that convertible bonds have lower coupons due to the upside provided by the warrants. Discounting by the coupon may not be comparable to the coupon of a regular fixed rate bond.

Example regarding discounting the recovered amount: Marine Accurate Well

Marine Accurate Well's first credit event took place when they postponed interest payments in July of 2009. About one year later the final solution was accepted when bondholders received shares for their bonds. The value of these shares would have implied 30 percent, 10

percent and 10 percent in recovery for the three bonds without discounting. We discounted the recoveries back 341 days to the initial credit event with the pre default coupon rates for each bond. This gave us recoveries of 28.9 percent, 9.1 percent and 8.9 percent.

Availability of trading prices

Even when calculating ultimate recovery rates we have to use trading prices to compute some of the recovery rates. The reasoning is that in credit events where the bond continues there is no payment in the form of cash or stocks that can be assigned a specific value. For example; when changes are made to the covenants in a bond loan agreement the par value is upheld and the bond will still be outstanding until maturity. The trade level of the bond is determined to be a better proxy for recovery rates than using 100 recovery recovery. This is in line with the methodology used by Moody's when calculating ultimate recovery rates.

We used price data from Pareto Securities' monthly corporate bond reports from January 2004 until August 2010. The reports stated the trade levels for bonds in percentage of par at the end of each month. The reports we had access to did not include all the bonds in our sample. As a result, we did not have the necessary data to compute recovery rates for all of these bonds. We decided not to compute recovery rates for the bonds involved in a solution dependent on trading prices when the necessary price data was not available and thus we omitted these bonds from our recovery data. Table 45 describes the number of bonds we excluded from our calculations. As the table shows, we had access to 50.5 percent of the trading prices necessary to compute recovery rates for bonds where (parts of) the solution included (a percent of) par outstanding.

	Restructured - Renegotiated terms	Restructured - other	Liquidated	Total
Number of bonds with specific solution	25	68	45	138
Number of bonds with corresponding trading prices	13	31	20	64
Number of bonds where (% of) par still outstanding after approval	25	41	45	111
Number of bonds with (% of) par outstanding after approval and trading prices	12	24	20	56
Percent of bonds with (% of) par outstanding as part of solution and corresponding trading prices	**48,0 %**	**58,5 %**	**44,4 %**	**50,5 %**

Table 45: Available trading prices

Example of why a recovery rate of 100 percent could be misleading:

In November 2009, the bondholders of the two outstanding Nexus Floating Production bonds approved a restructuring proposal. 38.8 percent of the issued amount of the subordinate unsecured bond loan would continue as a bond. By the end of December 2009, the bond traded at 9 percent of par. If we did not have access to the bond's trading price, computing recovery based on the assumption that the outstanding bond loan recovered 100 percent of par would be very misleading.

Other considerations when computing recovery rates

In specific cases, we had to take other considerations into account. These were related to debt to equity conversions, installments being paid prior to default, amounts held in escrow accounts, other costs, one time payments, increased coupons/interest rates, buyout below par, partial redemptions under bankruptcy proceedings and early repayment (call). Each of the considerations is described below with corresponding examples.

Debt to equity conversions

When bondholders agree to convert their bonds into shares we need to find the value of those shares to determine how much is recovered. This means that the price of the shares following delivery to bondholders represent the value they can secure by unloading the shares. But in many cases it is more problematic. For one, liquidity may be very limited for smaller capitalization companies, especially during a default when there is a lot of uncertainty as to the future of the company. Secondly, many companies are not listed.

In many instances a debt to equity conversion is one element in a larger restructuring effort. Often, the conversion will be done simultaneously with an equity issue to raise new capital. The price paid for this equity is a good benchmark for the value of the shares received by bondholders if the size of the issue is significant. Also if the private placement is vital to ensure the liquidity of the firm the price may not reflect the value of the complete equity base. We found the issue price to be a good proxy when we did not have secondary market trading prices. When both prices were available we preferred to use the trading prices.

Trading may be limited and the trading prices are often volatile at the time of a restructuring. In some cases it may take time for the market to fully digest the consequences of a restructuring which is an argument to why one should introduce a time lag. Secondly,

selling pressure that does not reflect the fundamental valuation may occur if bondholders are not mandated to hold on to the shares. On the other hand, if we wait too long, events unrelated to the credit event may affect the equity value. We chose to use 14 days between the actual debt to equity conversion and the date used to determine the equity value. We made a few exceptions when circumstances called for it.

Example of timing of trading price: Crew Gold Corporation

As part of Crew restructuring its bond portfolio December 29th 2009, 2,031,528,184 new common shares became tradable on the Oslo Stock Exchange. The shares were floated due to five bonds being converted into shares. The share price closed at NOK 0.6, and the new shares issued represented 95 percent of total shares outstanding. A month later, Endavour Financial Luxemburg SARL acquired 37.88 percent of common shares outstanding. That day, the share price increased 25 percent. The reason for the share price increase January 28th was unrelated to the credit event. Therefore, we used a share price before this event.

Example of equity issue price Marine Accurate Well

As part of restructuring of the capital structure the company performed a NOK 215.6m equity issue at a price of 0.45 NOK per share. The equity raised through the issue was significant as the shares issued made up more than 40 percent of the post restructuring share capital. The value paid by willing investors of NOK 0.45 therefore provided a good basis for calculating the recovery on the converted bonds.

Installments prior to default

Another consideration is whether early repayment or installments paid before the time of the credit event should be included in the recovery calculations. In the credit default swap (CDS) market, recovery rates are computed based on a bond's actual principal balance outstanding at the time of the credit event, not the initial face value of the bond (Markit and Creditex). To calculate recovery consistently with this definition, a bond's actual principal balance outstanding at the time of the credit event is used as the par value of a bond.

Example regarding installments prior to default: Club Cruise

At the time of Club Cruise's default and liquidation there were three bonds outstanding. Club Cruise had successfully made installments on two of these bonds prior to the default. For their NOK 100m senior secured bond a NOK 20m installment had been completed before the

default. In the liquidation, assets were sold and another NOK 52.8m have been returned to bondholders so far. The NOK 80m outstanding and not the NOK 100m initial par value was used as the basis for calculating the recovery rate.

Amounts held in escrow accounts

The use of escrow accounts is common practice for many newbuild projects. This is an account controlled by a third party by which funds cannot be released without the consent of both parties. This amount would typically be released as certain milestones are achieved.

We view escrow account as preventive measures set in place by investors to reduce risk. Therefore we determined that amounts recovered by escrow accounts are a part of the recovery, since it is a risk reducing feature employed by lead managers and bondholders.

Example concerning amounts held in escrow accounts: Viking Drilling

For two of the Viking Drilling loans most of the funds from the bond loans were held in escrow accounts when the company filed for Chapter 11. For two of the bonds repayments of more than 95% of the principal have been completed as escrow funds were returned.

One time payments and increased coupons/ interest rates

For the bonds that have been renegotiated the bondholders have accepted new terms that often represent increased risk to the bondholders. This could be extended maturity, a carve-out of the bond security or other undesirable changes. These changes are often coupled with a benefit to the bondholder to increase the likelihood of them accepting the change. This could take the form of increased interest rate margins, it could be a onetime payment or it could be that the bond will mature at a premium to par.

To the bondholder this means that if everything goes as planned the cash flow from the bond will increase. The question is whether this should be taken into account when calculating recovery. In our view these payments should be viewed as a payment to offset the increased risk of the bond following the changes made and therefore not be taken into account.

Example of onetime payment: MPF

MPF bondholders in a USD 150m bond accepted a carve out of their 1st lien security against a onetime compensation of 8 percent of par. Post carve out, the bondholders were left with

a 2nd lien security and a USD 235m claim ahead of them. There is no doubt that the risk to bondholders was significantly higher after the carve out and as such this was not taken into account when determining the recovery rate.

Example of increased margin: Bergen Group

When Bergen Group extended the maturity of their NOK 400m bond they increased the floating rate (NIBOR) margin from 4 to 8 percent to compensate bondholders. The increased interest rate payments were not taken into account when determining the recovery rate as we view this increase to reflect the higher risk the bondholders were exposed to after the extension.

Buyout below par

In some cases we never see an actual credit event before the bond is restructured. Some distressed securities will have a high expectancy of default priced into the trading price. It can therefore trade well below par before credit event occurs. In some instances a large investor could offer to buy the majority of the bonds at a discount to par value. When a majority of the bondholders accept, they have decided as a group that receiving the price below par is the best option to them. This is often an alternative to a formal restructuring where the bondholders agree to a reduced par value. Even though the bonds are never in a technical credit event before the restructuring, the investors have received a recovery through the buyout below par and the reality is that the bond has been restructured. In these cases we look at the price received for the bonds as the relevant recovery rate.

Example of buyout below par: Golden Ocean

In 2009, a market adjusted equity ratio covenant in Golden Ocean's bond loan agreement was in breach. This event could trigger a cross default in terms of the company's remaining financing. On March 4th, Hemen Holding Ltd offered to purchase 66.67 percent of the outstanding bond loan. If the offer was accepted, the company proposed to summon to a bondholders meeting where the covenant in breach would be proposed to be removed. The price offered was 30 percent of par plus accrued interest. The offer was accepted on March 5th 2009. On the 17th March, the proposal to remove the covenant was approved by the bondholders. As a result, the bondholders accepted Hemen Holding's offer recovered 30 percent of par. This was used as the recovery rate.

Partial redemption under bankruptcy proceedings

Bankruptcies can be lengthy and as a result some liquidations will still be ongoing years after the default occurs. In some instances this is because the sale of assets is difficult and time consuming. In other cases assets are sold and bondholders receive a partial redemption while awaiting the sale of the remaining assets. Further, the remaining assets may be difficult to sell and the bankruptcy will remain "open" in other cases. In some cases where it is very likely that no more value will be recovered, we have used the partial redeemed value to calculate the ultimate recovery rate (after discussions with Norsk Tillitsmann). In other instances where it is uncertain whether there is more value to be recovered we use trading prices as a proxy or do not calculate any recovery rate.

Example of partial redemption under bankruptcy proceedings: Petromena ASA

In May 2009, Petromena's three rig owning subsidiaries filed for Chapter 11 protection under the U.S. Bankruptcy Court. The holding company had two bonds outstanding of NOK 2bn and USD 300m with three rigs as security. 8 June, 30 September and 1 December 2009, the rigs were sold. On September 29th, the US Bankruptcy Court ruled that USD 125m remitted from the subsidiary owning the first rig to be sold should be paid out to the NOK 2bn bondholders as partial repayment. On April 29th 2010, the bankruptcy estate released funds for a partial repayment of the NOK 2bn bond and the USD 300m bond of USD 201.6m and USD 242.7m respectively. As of November 9th 2010, 70.1 percent of par of the NOK 2bn bond loan has been repaid. The Petromena bankruptcy is not fully resolved and the partial recovery rate is not included in the recovery rate data set.

Early repayment (call)

We observe that several bonds that were restructured during the period in 2008 and 2009 when available capital was scarce have later been called. We assume that this is because many of the issuers who got extended maturity due to inability to refinance had to increase interest rates / coupons to get bondholders to agree to the added risk of extending the maturity. Many such issues would typically be called at a premium to par once refinancing became an option again. We chose to look at these events as unrelated to the restructuring. The fact that they are called at a premium to par after the solution is approved is in our view not a part of the credit event and should therefore not be reflected in the recovery rate.

Example of early repayment (call): Bergen Oilfield Services

Bergen Oilfield Services extended the maturity of their bond with 13 months in August of 2009. To enable a deal with the bondholders, the interest rate was increased with 500 basis points (5 percent) from 7 percent to 12 percent and the bond was to mature at 109 percent of par. The solution had a clause that it could be called at 105% of par in June of 2010, half a year before the extended maturity. Bergen Oilfield exercised their call and repaid the bond at 105 percent of par. In this case we would use a trading price after default instead of the call price. In this case such a price was not available and no recovery rate was calculated.

6.10 Determinants of recovery not included in findings

"Debt cushion" and "the effect of bank debt"

To calculate the debt cushion determined to be significant by Moody's we needed access to information on all the sources of financing used by the issuer. Shareholder loans, bank debt, employee claims like retirement funds and even equity were in many cases not public information. Many of the issuers covered were private companies that did not disclose this information. Due to the same reasoning the effect of bank debt was not studied either.

Initial default event

We attained information of every credit event and the initial cause. In the majority of the cases the initial credit event will be when the bondholders meeting accept some kind of restructuring or renegotiation of the terms. We found that these were highly nuanced and that categorizing them into comprehensive categories like "pre-negotiated restructuring" or "covenant breach" would be very time consuming. Also in some cases the information of the initial credit event was unknown and the first available information was what happened in the solution approved by bondholders. We determined that if we were to be able to spend enough time to properly study the other determinants this one would have to be excluded.

Tangible assets relative to intangible

As described in the theory section this is calculated by looking at the percent of total assets classified as property plant and equipment. This would require balance sheet information from the time of the credit event. This was not available for the majority of the unlisted companies.

Time spent under bankruptcy

The number of cases from our time period that have fully emerged from bankruptcy is very limited. Due to the low sample size we determined not to explore this.

Ratings

The vast majority of the companies in our sample are not rated by any major credit rating agency. Looking at both ratings at the time of issuance and the time of default could be of interest. But the only ratings that exist for the Norwegian bond issues are internal ratings performed by the issuance managers (brokerage houses). These are not recorded systematically and they are not updated through the lifetime of the bond. In addition some issues are never rated. We determined it to be an insurmountable task to get a hold of these internal ratings.

Asset fungibility

We tried to incorporate asset fungibility into the set of other determinants such as "proprietary assets". Any complete study of this topic was determined to be outside the scope of the thesis as we felt a quick categorization of the "fungibility of the assets" would introduce a lot of subjectivity. Further, we did not have a complete understanding of the asset base of all the companies to be able to determine how standardized and/ or commoditized they are.

6.11 Recoveries for bankruptcies based on trading prices

We had access to trading prices for some of the bonds in ongoing bankruptcy proceedings. To compute proxies for ultimate recovery rates, we discounted the last available trading prices from August 2010 for the bonds in question. Table 46 shows our findings. The recovery rates are not used in the subsequent recovery analysis, due to the fact that they are only considered being proxies.

Issuer name	Default category	Sr. Sec.	Sr Unsec.	Subord.	First credit event	Par amount (mill) at default	at issue	
Petro Rig III	Liquidated	69.7%			03/04/09	1,600	1,600	NOK
Petrojack	Liquidated	82.3%			30/11/09	275	500	NOK
Petrojack	Liquidated	98.2%			30/11/09	110	200	USD
Petrojack	Liquidated	12.2%			11/12/09	200	500	NOK
PetroMena ASA	Liquidated	82.5%			16/01/09	2,000	2,000	NOK
PetroMena ASA	Liquidated	37.5%			16/01/09	264	300	USD
PetroProd	Liquidated	20.6%			20/07/09	126	150	USD
PetroProd	Liquidated	9.6%			19/12/08	185	185	NOK
PetroProd	Liquidated			0.1%	20/07/09	750	750	NOK
Remedial	Liquidated	55.5%			28/09/09	210	210	USD
Tandberg Data	Liquidated		5.6%		10/03/08	151	155	NOK
MPF	Liquidated	0.0%			09/05/08	150	150	USD
MPF	Liquidated	0.4%			04/09/08	75	75	NOK
FPS Ocean	Liquidated			0.4%	18/12/08	175	175	NOK
Ability Drilling	Liquidated		9.9%		13/05/09	450	450	NOK
Viking drilling	Liquidated	14.0%			26/02/08	51	51	USD
Viking drilling	Liquidated	14.1%			26/02/08	194	194	NOK

Table 46: Trading prices used as proxies for bonds under ongoing liquidation proceedings.

6.12 Partial repayments

Some of the "liquidations" where the recovery in the table is n.a. there have been some large partial repayments. These are listed in table 47 below. They are not included as ultimate recovery rates since the proceedings are ongoing. In some cases there may be more assets for sale and more values to be distributed.

Issuer name	Default category	Sr. Sec.	Sr Unsec.	Subord.	Comment
Club Cruise	Liquidated	66.0%			Sale of secured assets
Petro Rig III	Liquidated	66.70%			Sale of secured assets
Petromena	Liquidated	70.10%			Sale of secured assets
Petroprod	Liquidated	20.20%			Sale of secured assets
Petroprod	Liquidated	10.80%			Sale of secured assets
Viking drilling	Liquidated	96.9%			Amount held in ESCROW
Viking drilling	Liquidated	96.6%			Amount held in ESCROW

Table 47: Bonds where partial repayments have been made, amount recovered in percent of par from the repayment and a description of where the recovered amount came from.

6.13 Recovery in percent of par at maturity

Issuer name	ISIN number	Recovery in table 17	Recovery of par at maturity	Comment
Apptix	NO0010291446	n.a.	100,0 %	Repaid at maturity 2 years and 1 month after credit event. Repaid at 100% of par plus accrued interest
Bergen Group	NO0010379365	64,0 %		1 year and two months after credit event
Bergen Group	NO0010395502	66,5 %		1 year and two months after credit event
Bergen Oilfield	NO0010428352	n.a	105,0 %	Repaid at maturity 8 months after credit event
Domstein	NO0010232622	n.a	100,0 %	Repaid at maturity 6 months after credit event
Fairstar Heavy Transport	NO0010425523	n.a	103,0 %	Repaid at maturity 5 months after credit event
Havila Shipping	NO0010534563	n.a	107,0 %	Called 7 months after credit event
Ignis	NO0010299902	n.a	100,0 %	Buyback one year after credit event
Ignis	NO0010299910	n.a	101,0 %	Redeemed one year after credit event
Interoil Exploration	NO0010325350	98,2 %	100,0 %	Early redemption 6 months after credit event. Repaid at 100% of par value plus accrued, unpaid interest
Norwegian Energy Company	NO0010379068	76,8 %	103,0 %	Called 1 year after credit event at 103% of par plus accrued interest
Norwegian Energy Company	NO0010379076	72,3 %	103,0 %	Called 1 year after credit event at 103% of par plus accrued interest
Petrolia Drilling	NO0010085574	n.a.	156,7 %	100% of par converted to equity at maturity 3 years and 3 months after credit event. Conversion price of NOK 22,34 per bond
Skeie Drilling & Production	NO0010353683	32,6 %	106,0 %	Redeemed 1 year and 2 months after credit event at 106% of par plus accrued unpaid interest according to clause 10.4 in loan agreement (before deduction of anticipated costs)
Skeie Drilling & Production	NO0010356009	27,9 %	104,6 %	Redeemed 1 year and 2 months after credit event at 104,6% after deduction of anticipated costs
Skeie Drilling & Production	NO0010378045	35,8 %	104,6 %	Redeemed 1 year and 2 months after credit event at 104,6% after deduction of anticipated costs

Table 48: Recovery in percent of par at maturity

6.14 Example of testing significance of findings

We want to test whether means of recovery rates for companies with cost overruns are significantly lower than for companies with no cost overruns. We use a t-test for determining the significance of the difference between means. The test takes into account that we do not

know the real variance only the observed one. It also takes into account that we do not have the same number of observations in the two groups.

H_0: $\mu_{CO}=\mu_{NCO}$

H_1: $\mu_{CO}<\mu_{NCO}$

Assumptions for the test we use are:

Homogenity of variance: There is uncertainty whether this is a good assumption in this case. If cases with significant cost overruns often have very low recoveries they may have a lower variance than the other group.

Normality of difference between means: It is because of the Central Limit Theorem that we can use this test. It says that the mean difference between two distributions is normally distributed even though the distributions of the two populations are not normal. We know that the distributions of recovery rates are uniform of bimodal. The central limit theorem will not work with a small number of observations. And the test will be more robust the more observations we have.

Random observations: Since the entire population of recovery rates has been included the observations must be said to be random. Some observations are from the same company and thus they are not completely independent.

Independent groups: The two groups are assumed to have no effects on each other. No correlation between them.

Decision rules:

Use alpha level of 5%

One tailed test

Degrees of Freedom=$N_{co}+N_{nco}-2 = 66\approx50$

Reject H_0 if t>= 1.676 (found by using t-table for 60 degrees of freedom)

Input

	CO	NCO
X	0.25	0.6
S^2	0.23	0.3
N	14	54

Test value:

$$t = \frac{\text{Xnco} - \text{Xco}}{\sqrt{\frac{(\text{Nnco}-1)\text{Snco}^2 + (\text{Nco}-1)\text{Sco}^2}{\text{Nnco}+\text{Nco}-2} * (\frac{1}{\text{Nnco}} + \frac{1}{\text{Nco}})}}$$

$$t = \frac{.60 - .25}{\sqrt{\frac{(54-1).30 + (14-1).23}{54+14-2} * (\frac{1}{54} + \frac{1}{14})}}$$

$$t = \frac{.35}{\sqrt{\frac{18.89}{66} * (\frac{1}{54} + \frac{1}{14})}}$$

Conclusion

t=7.27 which is greater than 1.676. Therefore we can reject H_0 and say that the mean of recoveries for companies with cost overruns is significantly lower than for companies without cost overruns.

6.15 Description of issuers in default

As shown in table 11, we have identified 80 companies having issued one or more bonds which have been involved in one or more credit events. Below, we have provided a brief summary of all the cases identified. The cases are sorted alphabetically according to whether the bond(s) in question has been restructured - renegotiated, restructured – other or liquidated. The cases include a brief presentation of the issuer and its operations, in addition to an explanation of why the credit event(s) occurred and how they were solved. In total, we have identified and computed ultimate recovery rates for 138 bonds being involved in credit events. The computations are summarized in table 17. A list of the sources we have used to gather information about each case is presented later in the appendix. Moody's has provided a somewhat similar overview of corporate issuers rated by the agency which have defaulted in 2006 and 2007.

Restructuring - Renegotiated terms

Aker American Shipping

Aker American Shipping was founded by Aker ASA in 2005, the company is now called American Shipping Company owns and leases vessels for operation between US ports. The company is a part of the Aker group of companies. They have one NOK 700m callable bond outstanding. It was issued in 2007 and will mature in 2012.

In the proposed solution Aker American Shipping proposed to change a covenant and to make all interest payments until maturity as payment-in-kind (added to principal). This was done to improve the liquidity of the company. The solution was approved by the bondholders in February of 2009.

Apptix ASA

Apptix was founded in 1997. The company has operations in the US, Asia and Europe and provides hosted communication services for the business segment. In December 2005, the company issued a NOK 33.5m subordinate unsecured convertible bond. On October 8th 2007, the bondholders approved to extend the maturity date with two years until 2009 and to extend the conversion period. The extended bond was treated as a new issuance.

Belships

Belships is a dry bulk shipping company. They have established operations through their 50 percent ownership in Elkem Chartering, a chartering company that operated more than 20 supramax and handysize vessels in 2008. In the summer of 2007 Belships ordered 5 supramax size bulk tankers from the Yangzhou Dayang yard in China. The total cost of this newbuild program was about USD 200m. Due to a weak bulk cargo market and poor access to capital Belships had no ability to meet their funding requirements through cash flow from operations. Therefore, in the first months of 2009 Belships sold the contracts for two of the vessels, thereby reducing the newbuild capital expenditure commitment to USD 118m. The three vessels all had 3-year charter contracts upon delivery. On top of selling two of the unfinished vessels, the company renegotiated the terms for its NOK 100m bond through implementing a new payment schedule. On the original maturity date 40 percent of par would be repaid, a year later additional 30 percent of par and the remainder two years later in July of 2013.Belships was also given the option to make coupon payments (in kind) as additional bonds with the same maturity. As compensation bondholders would be repaid 103 percent, 105 percent and 107 percent of par for the respective installments. The terms were accepted by the bondholder meeting in May of 2009.

Bergen Group

Bergen Group was founded in 2007 when Bergen Yard Holding acquired 19 offshore and marine related companies. The company's strategy was to focus its efforts more towards offshore and technology. Two senior secured bonds of NOK 250m and NOK 400m was issued in the second half of 2007 as part of the financing for the acquisitions.

These bonds have been renegotiated twice. The first time was when the group applied for listing on the Oslo Stock Exchange in 2008. One of the requirements for listing is to be fully financed for the next 12 months. The maturity date was 5th of November 2008 for the NOK 400m bond. This was moved to 6th of July 2009 to accommodate the requirement. In the weeks before the new maturity the terms were renegotiated again, now involving both bonds. The company intended to refinance the bonds with bank debt, but was unable to due

to the credit market. Also, Bergen Group risked becoming in breach with an equity ratio covenant.

Bondholders held security in the subsidiaries of Bergen Group. One of these, BG Hanøytangen, would have to be "carved out" for Bergen Group to be able to secure financing. The proposal that was adopted by the bondholders meeting was one where maturity for the NOK 400m bond would be extended to August 2010 and the interest margin was increased from 400bps to 800bps. Also; covenants would be changed and the bondholders could choose between either warrants or maturity at a premium to par (108 percent for the NOK400m and 104 percent the NOK250m). The bonds were successfully repaid in 2010.

Bergen Oilfield Services

Bergen Oilfield Services is a Norwegian offshore seismic survey company. They provide seismic vessels, data acquisition and data processing. The company was established in 2006 and has since refurbished three seismic vessels that are operated and fully owned by the company.

The acquisitions and refurbishment of the vessels was financed by a mix of equity, bank financing and a NOK 200m bond. The bond loan was intended to mature in the end of 2009, but due to delayed and increased cost of refurbishing combined with a seismic market with falling rates and low utilization, they were not able to generate the projected cash flow necessary to redeem the bond.

Since capital for refinancing was not easily available the bondholders were presented with a proposal to change the terms of the loan. The bondholders accepted a 13 month extension of the maturity. As compensation the interest rate margin was increased with 500bp and the loan was to mature at 109 percent of par. The bond was eventually called at 105 percent of par during the summer of 2010 (before the new maturity).

Cecon

Cecon is located in Arendal, Norway. The company ordered three large offshore construction vessels from Davie Yards in Quebec, Canada. The yard struggled financially and as of September 2010 they had still not been able to find an industrial investor or other solution to restructure the business. This has delayed delivery as work has seized at the yard. In addition, cost increases of more than USD 60m for the vessels being built have also been incurred.

Cecon has a USD 100m bond loan that had security in the vessels. In January of 2009 Cecon lost their USD 200m loan facility with DnB NOR. This put pressure on both the company and the yard that was already having financial issues. Export Development of Canada, the equivalent of Norway's Eksportfinans then decided to find a complete solution for both Cecon and Davie Yards. The solution that was agreed to in April of 2009 was a USD 200m

loan facility from Export Development of Canada that stepped ahead of the bond loan, effectively a carve-out of the bonds security.

There is still remaining funding needed to complete the three vessels. Remaining funding in addition to the USD 200m provided by EDC was estimated at USD 70-80m in April of 2009. One additional source of financing proposed in combination with the EDC financing was Eksportfinans. They would provide financing, given that they rank ahead of the bond loan and pari passu with the EDC loan. This was rejected by bondholders in April of 2009. In the end of 2008 Cecon missed their first coupon payment and incurred a penalty margin of 5 percent p.a. At the end of the time period covered the company was in a pressured situation with poor liquidity, and still struggled to make coupon payments on time.

Domstein

Domstein is a Norwegian fishing company based in Måløy, Norway, founded in 1991. Domstein proposed a half year extension of the maturity of their NOK 50m subordinated convertible bond. The coupon was increased from 8 percent to 10 percent for the extended duration of the bond. The bondholders meeting accepted the proposed solution and the new maturity date was set to June 30th of 2008. The bond was successfully repaid on the maturity date.

Eitzen Chemicals ASA

Eitzen Chemicals was founded in 2006 and is part of the Eitzen Group. The company operates within the chemical transportation industry, with petrochemical and related cargo. The fleet comprises 83 vessels. As of October 2006, the company had issued two bonds totaling approximately NOK 650m.

According to the second quarter results in 2009, the company was in breach with the value adjusted equity ratio covenant (minimum 30 percent) in its bank loan agreement. A financial restructuring of the capital structure in regard to the bank loan, bonds and equity was proposed September 21st. In terms of the bond loan agreements, the proposal included a postponement of both an upcoming interest payment and the maturity date of the loans, as well as amendment of specific covenants. In return, the bondholders would receive an up-front fee of 0.75 percent after a new equity issue was successfully completed, and a back-end fee of 1.25 percent of the outstanding loans on the Moratory Expiry Date. The bondholders approved the proposed renegotiation of terms September 29th 2009. In addition, the bank loan amendments were approved and new equity of NOK 84m was raised in a private placement December 14th 2009.

Eitzen Maritime Services ASA

Eitzen Maritime Services is a Norwegian company operating in the international shipping industry established in 2006. The company is part of the Eitzen Group, and through its subsidiaries EMS Insurance Brokers and EMS Ship Supply, it provides maritime service

offerings to ship owners. The company's operations mainly involves technical ship management, vessel crewing, ship supply and insurance brokerage. As of September 2009, the company had three bonds totaling NOK 650m outstanding.

In 2009, results from the ship management division were negatively impacted by both restructuring costs and write-down of goodwill. Further, the ship supply division delivered results weaker than expected due to weakening of shipping markets. By the end of 2009, the company was in breach with covenants for two of its bonds. Long term, the company was confident in regard to its business plan. Short term, upcoming installments, two bonds totaling NOK 400m maturing in 2010 and other credit facilities needed to be amended. A temporary waiver of the financial covenants in breach until May 31st 2010 was proposed. In compensation, the bondholders involved were proposed a waiver fee equaling 5 percent p.a. of the outstanding bonds for the period the covenants were in breach. The proposal was adopted by the bondholders May 7th 2010.

Equinox Offshore

Equinox is a company that purchased two ro-ro vessels and is in the process of converting them into ARV's. An ARV is an accommodation and repair vessel. One of the two units being converted at Sembawang Shipyard in Singapore is completed but has not been able to secure a contract.

The refurbishing was financed in part by a 20 percent fixed rate bond issued in September 2009. This USD 34.4m bond was restructured in the summer of 2010 due to higher than expected completion costs and inability to secure a contract for the vessel upon delivery.

The restructuring included a one year extension of the maturity from October 13th 2010 to October 13th 2011. In addition the company would get a loan from the yard in the form of a reduced completion payment. The yard would get a 1st lien security of the vessels indicating a carve-out of the security bondholders had. The third element in the restructuring was a USD 30-35m private placement. The proposed restructuring was accepted by the bondholders meeting in July of 2010.

Fairstar Heavy Transport

Fairstar was incorporated and took delivery of two semi-submersible heavy lift vessels in 2005. With poor availability of financing sources and lower rates in the offshore heavy lift market Fairstar found themselves with little liquidity in the fall of 2009.

On August 24th Fairstar Heavy Transport proposed to extend the maturity from October 12th 2009 to March 1st 2010. The bond would the mature at 103 percent of par. The proposal was accepted by bondholders and the bond was paid in full at the maturity date.

Hansa Property group

Hansa Property is a real estate company established in 2007 through four acquisitions of property projects in Oslo, Bergen, Stavanger and Tønsberg. The company has a residential focus but also some commercial real estate under development.

After being in breach with covenants, Hansa Property Group received acceptance for a change in the terms of their NOK 400m senior bond loan. The interest rate margin was halved from 4 percent to 2 percent and the maturity was moved from November 2010 to November 2011. Several financial ratio covenants were changed or set aside. The changes were accepted on April 1st 2009 conditional upon Hansa raising NOK 250m in new equity capital. The equity issue was successfully completed in May of 2009.

Havila Shipping

Low utilization of Havila's vessels that were operating in the spot market combined with spot rates below operating costs created losses for Havila in the summer/fall of 2009. Due to this market development they were not able to comply with the leverage ratio covenant.

Bondholders accepted to change the terms of the covenant on December 22nd 2009. Their compensation was an interest margin increase from 10 percent to 10.5 percent. The NOK 300m bond had later been called and refinanced by a NOK 500m bond issue.

Ignis

Ignis was founded in 1990. They had two NOK 40m senior bonds outstanding in 2007 when they wanted to issue an additional NOK 70m bond to finance the purchase of Datametrix AS, who like Ignis provides IP-based communication solutions. On the 20th of March 2007 the existing two bondholder groups accepted the new issue and as compensation for doing so they received an increase in the coupon of 0.5 percent and a 1.st priority pledge of the shares in Datametrix AS. Both bondholder groups accepted.

In September of 2007, a few months after the purchase, Ignis decided to grow their IP business by financing with bank debt. The only way to get bank financing was for the bondholders in the NOK 40m bonds to give up their 1.st priority pledge. Both bondholder groups accepted downgrading their 1.st priority security to 2.nd priority. This was accepted against receiving compensation in the form of increased interest, an upfront fee and an adjusted conversion price. Both bonds were repaid successfully in 2008.

Peterson AS

The company Peterson develops, produces and distributes paper and packaging solutions for the European market. The company has 13 factories in Norway, Sweden and Finland organized in three subsidiaries; Linerboard, Emballasje and Packaging.

The company issued a NOK 300m senior secured bond in June of 2006. The loan was increased with NOK 85m later in 2006. After the increase the bond had a 1st Lien security of

NOK 300m and a 3rd lien of NOK 50m in the production assets, intercompany leases, plants and properties.

In the start of 2009 the company reported that it had been affected by lower demanded volumes and sinking prices resulting in a liquidity shortfall of NOK 150m. Petersons main bank relation, DnB NOR would help to finance this gap, provided that bondholders agreed to changing the terms of the bond loan. The following proposal was presented; make the 2009 interest payments as payment in kind (new bonds), extend maturity from 28th June 2010 to the 27th June 2014 and let DnB NOR make financing with working capital security.

The bondholders organized a bondholder committee representing a more than the required 2/3 of the votes. After some time they came to the following agreement with DnBNOR and the company: The maturity was to be extended two years until the 28th of June 2012 and the loan will mature at 120 percent of par, also the interest rate will be increased to 7 percent above NIBOR. Furthermore, dividend restriction covenants, free cash flow covenants and intercompany transactions covenants were implemented. The working capital financing was accepted by the bondholders. Peterson could call the loan at 100 percent before June of 2010, at 110 percent before June of 2011 or at 120 percent before June of 2012. The plan was accepted on June 4th 2009. Eventually the company was able to refinance the bond and the bond loan was called under a year after the new terms were accepted at a price of 100 percent.

Sevan Marine ASA (Sevan)

Sevan is a Norwegian oil service company founded in 2001. The company builds, owns and operates offshore installations constructed based on in-house design and technology. The company's activities comprise floating production, drilling and topside and process technology. In October 2007, the company issued a senior secured NOK 870m bond loan.

On May 3rd 2010, Sevan entered into a letter of intent with E. On Ruhrgas UK E&P Limited regarding negotiations of the FPSO Sevan Voyageur potentially being used as the production unit for the Huntington field. For the FPSO unit to be employed, upgrades and investments of USD 230m were necessary. On June 8th, the company informed that it had agreed on a term sheet with ING Bank N.V. in terms of long term financing for the unit. The term sheet comprised a secured bank facility of USD 230m for FPSO Sevan Voyageur which would replace the company's existing 1st lien USD 150m financing. June 25th, a bondholder meeting for the NOK 870m bond loan was held in order to determine whether the loan agreement should be amended to allow for the company to finalize and enter into the bank facility and the charter contract. The proposal included increasing the carve-out amount from USD 150m to USD 230m, revised amortization prices and increased coupon margins. The bondholders approved the proposal, and their recovery rate was 101.5 percent after.

Rem Offshore (Solstad Rederi)

The Norwegian supply company Rem Offshore was founded in 1996. In 2009, a 49 percent equity stake was held by Solstad Offshore, the Remøy group of companies had a 40 percent holding and the rest was held by minority holders. Solstad and Remøy decided to split the company between them. As a part of this transaction the borrower of Rem Offshores NOK 250m would have to be changed. Changing the borrower is a technical credit event and it is an action that cannot be completed without the approval of the bondholders.

Bondholders in the NOK 250m agreed to the change of the borrower from Rem Offhore to Solstad Rederi II (a subsidiary of Solstad Offshore). As compensation bondholders received a payment of 1 percent of par and they were also given the option to redeem 20 percent of the principal at the time of the split. The approval was given on May 15th 2009 and the change of borrower was implemented in September of 2009 after some delays.

TTS Group ASA (TTS) (Named TTS Marine until December 2009)

TTS is a Norwegian company established in 1966. TTS operates in the global marine and oil and gas industry designing, developing and supplying equipment. The company's three divisions are marine, energy and port and logistics. TTS operates within six segments; drilling equipment, dry cargo handling, port and material handling, marine cranes, deck machinery and services. May 2007, the company issued a bond loan of NOK 500m.

In 2008, the company faced both low liquidity and the probability of breaching a covenant in the bond loan agreement. The financial crisis and subsequent worsening of the rig market led to the problems. In addition, a dispute with Ability Drilling which involved an outstanding amount of NOK 100m and upcoming payments of NOK 70m contributed. In the first quarter of 2009 the company incurred a net loss of NOK -136.4m. In order to strengthen its financial position and flexibility, an equity issue of NOK 252m and a restructuring of both a bank facility and the bond loan were proposed. On June 17th 2009, the bondholders approved a proposed restructuring of the bond loan. The restructuring involved amending the maturity date and the repayment schedule, change the interest rate and to include a new covenant. In addition, an equity covenant was proposed to be waived. The share issue was completed on July 21st 2009.

Restructuring

Aker Biomarine ASA

Aker Biomarine is a Norwegian integrated biotechnology company founded in 2005. The company's operations comprise harvesting and krill processing. In May 2007, the company issued a bond loan of NOK 750m.

In 2010, the company communicated that its level of leverage was perceived too high for a start- up company. From 2005 to 2009, net profits were negative, and the company needed additional liquidity for both working capital and general corporate purposes. Initially, both the bond loan and a short term loan of NOK90m would mature in May 2010. On March 23rd 2010, the bondholders approved to renegotiate the terms of the bond loan agreement. By May 2010, the refinancing of the company's capital structure was completed. New equity of NOK 631m was raised. NOK 510m of the new equity was used to repay debt, of which NOK 445m was used to repay the part of the bond loan which was held by Aker ASA. The renegotiated terms for the remaining NOK 305m comprised the maturity being extended with three years, a call option added and an increased margin. Further, specific covenants were removed and default provisions were altered. The bondholders recovered 98 percent of par after the restructuring was completed.

Aladdin Oil & Gas Company ASA (AOG)

AOG is a Norwegian oil and gas E&P company founded in January 2006. The company owns and develops eight licenses through two wholly owned subsidiaries in Ukhta and Orenburg, Russia. Main activities comprise acquisition, exploration, development and operation of oil and gas properties. As of November 2009, the company had issued three bonds totaling NOK 143m.

Due to underfunding for a longer period, AOG was unable to fulfill its investment objectives in the licenses. The lack of funding was partly due to the company Venatino not fulfilling its obligation to subscribe new shares for NOK 154.8m which it had committed to in August 2008. On July 20th 2010, the bondholders approved to convert the three bonds to shares in the company. New equity of NOK 30m was raised. The conversion ratio implied that the senior secured callable bond redeemed a recovery rate of 78.1 percent, while the senior secured and the senior unsecured bonds redeemed a recovery rate of 68.9 percent and 63.6 percent respectively.

Artumas Group Incorporated

Artumas is an independent oil and gas exploration and production company founded in 2000 with over 25 thousand square kilometers of license acreage in the Rovuma Basin on the border between Tanzania and Mozambique. Extensive seismic surveys and a number of exploration wells were undertaken to develop the presumed gas rich assets both on- and offshore. The company had trouble monetizing their assets through sales or farm outs. Since there was no access to refinancing, the company did not have sufficient cash to meet maturing unsecured debt of USD 115m maturing in 2009, 2010 and 2012. The company also needed funding to be able to complete upcoming drilling activities they had committed to.

As a solution a debt for equity swap leaving 4.6 percent of the equity to existing shareholders was suggested. This would leave a debt free balance sheet, which was deemed necessary to attract new capital. Holders making up the majority in all three bonds joined

forces and presented a counter proposal where existing shareholders would be left with 1.2 percent of the equity. In addition the immediate capital requirements would be met by issuing a new convertible bond as opposed to issuing new equity. The counter proposal was accepted by the bondholder meeting in June of 2009. The trading price of the shares after the swap indicates recovery in the 15-20 percent range for bondholders.

Austevoll Seafood ASA (Austevoll)

Austevoll is a Norwegian integrated pelagic fishery and seafood company established in 1981. The company operates through subsidiaries and associated companies. Its fishing vessels have licenses in Norway, Chile and Peru. March 2007, the company issued a senior unsecured NOK 1bn bond loan.

On March 10th 2009, the company proposed a restructuring of the bond loan in order to provide for a more balanced amortization profile. In the initial loan agreement, the bond loan would mature in March 2010. On March 19th 2009, the bondholders approved to an early redemption of the bond. The redemption would be settled 30 percent in cash and 70 percent in the form of three new bonds (payment- in- kind). The amount of each bond would be NOK 100m, NOK 300m and NOK 300m with maturity profile in 2010, 2011 and 2012 respectively. Accrued, unpaid interest would also be redeemed. The bondholders were compensated with increased interest coupon and a new dividend clause in the bond agreements. Their ultimate recovery rate was 94.8 percent.

Bluestone Offshore

Bluestone Offshore is an integrated geotechnical survey company providing a complete solution for organizations requiring seabed data and sampling. Soil tests and analysis are performed by Geolab Services Pte Ltd, a wholly owned soil investigation laboratory with over 20 years experience. The company started its operations in 2007 and later the company issued a bond in May of 2008 to raise capital for the conversion of PSV Topas to a deepwater geotechnical drilling vessel to be used in seabed evaluation operations. The vessel was scheduled for delivery in the end of 2008. The vessel was delivered in March of 2009. In addition to the delay much of the equipment and the vessel itself were not performing as it should have. As several problems with the vessel occurred it did not commence work again before August of 2009. Both maintenance costs and lack of cash flow due to yards stays in 2009 left the company with almost no cash and several maturing liabilities and debt payments. The company was not able to secure financing independently and they were not able to sell the vessel. The solution that prevailed was that GC Rieber Shipping and HiTech Vision bought the company and restructured it. As a part of this restructuring bondholders received 60 percent of par in value for their bonds.

Camo

Camo Group has three operating groups and works in a range of business areas from IT to engineering. Camo defaulted on their NOK 35 million convertible bond when they were not

able to pay interest in December of 2008. A solution was presented to bondholders that included selling two business units, changing the equity ratio covenant and postpone the interest rate payments until maturity. The two business units included their US subsidiary that provided Indian IT consultants within the US. This unit was to be sold back to its founder. In addition Proteans, another subsidiary would be sold if Camo could not raise equity through a rights issue. As compensation to the bondholders for the changes the strike price of the warrants would be reduced and the bond would also mature at a premium to par. The solution was accepted by the bondholders in May of 2009.

A year later the Proteans subsidiary that had not been sold, was proposed sold again to enable CAMO to partially repay the bond. The remainder of the loan would get an extended maturity date. The solution was approved in June of 2010.

Codfarmers ASA

Codfarmers is a Norwegian company established in 2002. Its operations comprise cod farming activities outside of Bodø in Norway, as well as production and sale of farmed cod and associated by- products. On November 28th 2007, the company issued a NOK 100m senior unsecured convertible bond.

In 2008, the company experienced delays and cost overruns. In addition, prices declined due to oversupply and low demand. The company communicated that it would be short of cash during 2010 and having problems redeeming the bond in 2011. June 30th 2009 a restructuring plan was proposed in order to reduce leverage and improve the liquidity situation. The plan included a forced conversion of 50 percent of the bond into new shares at a price of 69 percent of par value. The maturity date would be extended for the remaining bond. Further, future interest payments would be paid in cash or new bonds (payment in kind). The proposal was conditional upon a minimum of NOK30m in new capital being raised from a private placement and a loan from Innovasjon Norge of minimum NOK 30m. The proposal was approved by the bondholders on July 8th 2009.

March 2010, the company communicated the need to improve its cash position, which was NOK 0.9m. It initiated a refinancing process with stakeholders other than the bondholders. The company was unable to pay interest in cash before the refinancing was in place. In order to avoid a possible default situation, it proposed on May 25th to pay the upcoming interest with additional bonds.

Crew Gold Corporation (Crew)

Crew is a Canadian company founded in 1980 with gold mining operations in Guinea, West Africa. In 2009, the company divested its mining projects in the Philippines and Greenland and its processing facility in Canada. As of February 2009, the company had five bonds totaling NOK 545.8m and USD 251.9m outstanding.

During 2009, Crew experienced production delays in Guinea. On August 20th, the company proposed a financial restructuring in order to be able to meet upcoming bond obligations and to strengthen both its balance sheet and solidity. The restructuring comprised new equity being raised, as well as a restructuring of the bond agreements. Parts of the bonds would be converted to shares providing the bondholders with 53 percent of the shares outstanding after the conversion. The bondholders in the 2004 bond loan did not approve of the proposed restructuring.

On November 13th 2009, a revised restructuring plan was proposed where only the terms for the bonds differed. The new proposal included conversion of 80 percent of each of the 2004, 2005 and 2009 bonds and 50 percent of the 2006 bonds to shares. The outstanding amount on each bond remaining after the conversion, as well as accrued, unpaid interest, would be rolled into a new NOK and a new USD bond with extended maturity dates. The 2004, 2005 and 2009 bonds would be second priority. The restructuring was conditional upon the resignation of two out of five of the board of directors, and completion before 1 February 2010. The restructuring was approved on November 25th, and completed on December 10th 2009. Post restructuring, the bondholders held in total of 91.8 percent of the outstanding shares. Recovery rate for the bondholders was in the range of 93.4 percent and 79.8 percent.

Discover Petroleum

Discover Petroleum is an E&P company that was established in 2005. Their efforts are directed at licenses in the northernmost commercial areas of the Norwegian continental shelf. They hold several licenses and one operator ship.

In 2009, the company had significant committed expenditure related to two exploration wells, electromagnetic surveys and administrative costs. Discoverer Petroleum was not able to raise enough capital to meet all of these commitments and repay their bond debt in 2009. Therefore a restructuring plan was proposed where a “partial forced conversion” of NOK 62.7m of the USD 22.3m (NOK 141.6m) senior secured bond would be converted into shares. As a second element in the restructuring was that several of the interest payments would be made as “payment in kind” through additional bonds.

The bondholders meeting accepted the restructuring proposal on June 29th 2009, which was conditional upon the company raising new equity capital from existing and new shareholders. NOK 79.4m was raised at the conversion price.

Golden Ocean Group Ltd (Golden Ocean)

Golden Ocean is a shipping company based in Bermuda operating in the dry bulk market. In 2004, the company was demerged from Frontline Ltd. The company’s wholly owned subsidiary Golden Ocean Management manages the fleet, which mainly consists of Capesize and Panamax vessels. In December 2007, the company issued a USD 200m senior unsecured

bond. As of October 2010, the company owns eleven vessels, of which nine is built in the period between 2008 and 2010.

From fall 2008 and into 2009, freight rates in the dry bulk sector declined considerably. As a consequence, the market value of the company's fleet deteriorated and a market adjusted equity ratio covenant in the bond agreement was in breach. This event could trigger a cross default in regard to the remaining financing. To continue operating, Golden Ocean needed to conduct a financial restructuring involving both a reduction in financial commitments and additional funding.

On March 4th 2009, the company's largest shareholder, Hemen Holding Ltd indirectly controlled by John Fredriksen, launched a conditional offer to purchase 66.67 percent of the outstanding bond loan at an offer price of 30 percent of par plus accrued interest of the bond's face value. Hemen Holding announced that it would summon to a bondholders meeting proposing to remove the covenant which was in breach if the offer was accepted. The offer was accepted on March 5th. In return, the bondholders were offered a fee of 0.5 percent of the nominal amount. The proposal of renegotiation of terms in the loan agreement was adopted by the bondholders on March 17th. On April 2nd 2009, the company raised USD 110m in a private placement. Hemen Holding was allocated 40 percent of the shares. The company's equity share remained almost unchanged after the placement. Golden Ocean reached an agreement with the yards which reduced the newbuilding program by USD 350m. Further, terms in various other syndicated loan agreements were altered. The company completed its financial restructuring successfully. The bondholders selling bonds to Hemen Holding recovered 30 percent of par.

Hurtigruten

Hurtigruten is a cruise line operating in Norway. It has a 115 year history with ties back to several steam boat companies. During the fall of 2008 the company faced critical liquidity issues. To meet the challenge they implemented a plan including boosting sales, cutting costs, divesting non-core assets to reduce debt. Financial elements of the plan included closing a NOK 300m credit facility from DnB NOR and Nordea, extending installments in a NOK 3.3bn secured debt to a bank syndicate, extending maturity on the NOK 150m bond and raising new equity.

The plan to extend the maturity of the bond was actually a choice to the bondholders. They could: A – accept extension of the bonds maturity with 36 months or B – be allotted shares worth 50 percent of the bond and receive bonds in a new bond for the remaining claim.

The plan was accepted by bondholders and shareholders on February 13th of 2009. New capital was raised and maturities extended. In retrospect those who chose solution B that received shares of 1 NOK each would have been well off as this marked the low point for the share price.

Interoil Exploration and Production ASA (Interoil)

Interoil is a Norwegian oil and gas E&P company founded in September 2005. The company is either operator or license partner in eight licenses onshore Peru and Colombia, as well as a license offshore of Ghana. Main activities comprise acquisition, exploration, development and operation of oil and gas properties. As of June 2007, the company had three senior bonds totaling USD 145m and NOK 100m outstanding.

Due to unfavorable market conditions, the company failed to pay an installment of USD 10m due on the senior secured USD 115m bond loan on May 5th 2009. The bondholders did not approve of postponing the installment and the bond was declared in default. A standstill agreement was agreed upon, however, cancelled on January 15th 2009 since the company was unable to remedy the situation.

A restructuring of Interoil's capital structure was completed in September 2010. On September 3rd the senior secure bond loan was redeemed in full, including both accrued interests and costs related to the previous enforcement process. The unsecured bonds were refinanced into a combined new bond, while NOK 324m in equity and NOK 90m in bank facilities were raised successfully. Recovery rates for all the bondholders were between 98.2 percent and 100 percent.

Krill Seaproducts

Krill Seaproducts is a krill harvesting company that built the vessel MS Thorshøvdi based on their proprietary technology. The vessel, originally a dry cargo vessel, was converted at Fiskerstrand Verft in Norway. In the building process large cost overruns was incurred, and the complete vessel costs were more than 50 percent higher than estimated when the building process commenced. The cost overruns were estimated at NOK285 million resulting in unfunded remaining capex of more than NOK 300 million. The funding situation left the company unable to pay interest on its NOK 345m floating rate bond in March of 2009. A proposed plan was introduced. A large part of the required additional funding was secured through existing shareholders that invested in a convertible bond. The company also signed a term sheet with innovation Norway for a NOK 100m loan. Nevertheless the solution failed as the company could not secure NOK 80m in financing from a third source. The final restructuring solution was approved in May 2009 and included NOK 25m in a new equity issue, a new NOK 25m bond issue, NOK 50m in new equity from existing shareholders and the NOK 100m from Innovation Norway. As for the existing bondholders, NOK 245m of the 345m claim was converted to a zero coupon perpetual bond. The remaining NOK 100m would be given new terms, including that they had to accept a security carve-out of NOK 180m, they also had to forfeit any interest rate claims for 2009, maturity was extended by two years to December 2012, as compensation the margin was increased from 5.5 percent to 18.8 percent.

After the refinancing mid 2009, the vessel was delivered on estimated time and budget in December 2009. The vessel has commences harvesting Antarctic krill near the South Orkney Islands.

Kverneland

Kverneland is in the business of selling agricultural machinery and related services. Due to a challenging business cycle and financing environment the company decided not to pursue any major capital intensive strategies in the summer of 2009. Instead they wanted to pursue a passive strategy and repay 50 percent of the outstanding bonds before maturity with surplus cash. Through this restructuring of the business to a more defensive one, the bondholders also accepted to extend the maturity of the remaining principal with two years.

At the time of restructuring (June 2009) Kverneland had a bond with a NOK 525m tranche and a SEK 200m tranche. They also had subordinate debt to some of the major shareholders totaling NOK 150m. After the restructuring, the SEK tranche was SEK 100m, and the NOK tranche still NOK 525m. The 525 mill NOK tranche post restructuring included 50 percent of existing bondholders (NOK 262.5m), 70 percent of the subordinated shareholder loan (NOK 105m) and NOK 157.5m of new investors. As a result; total debt was reduced with NOK 150m and SEK 100m.

Malka Oil

Now operating under the name Petrogrand, Malka Oil is an oil production company with operations in the Tomsk Region in Siberia, Russia. They have a license with three oil fields covering a total of 1800 km^2. The company was hit hard in the aftermath of the financial crisis as they sell their oil in the domestic Russian market where prices were as low as 30 percent of global oil prices in the first months of 2009. The company was severely hit by lower revenues due to the price decline, and lower production than anticipated. As it became obvious that additional capital could not be raised, a plan with three stages was employed. A payment plan with Russian suppliers was negotiated, a cost cutting program was initiated and a debt restructuring was set into effect. In February 2009 a restructuring involving a debt for equity swap took place. The bondholders received shares for 83.3 percent of the company. Following this, a private placement towards existing holders was performed leaving bondholders 41.7 percent of the company post equity issue. The capital was raised at 0.07 SEK per share indicating a ~20 percent recovery for bondholders. The existing share capital was left with 8.3 percent of the company post restructuring.

Marine Accurate Well (Maracc)

Maracc is a single asset company building a semi-submersible well intervention rig, the Island Innovator, equipped to do operations under harsh North Sea conditions. The rig is being built at a COSCO shipyard in China. In July 2009 Maracc was not able to make interest rate payments, and made a deal with bondholders to postpone the payments. In June of 2010 the company had not been able to secure a contract for the rig upon delivery

scheduled. The unit was then estimated to be ready for operations during the first half of 2012 after some project delays. The capital raised at the time of the restructuring was USD 290m of which USD 120m is in a secured bond and USD 110m was raised through two unsecured subordinated bonds. After making some revisions to the necessary equipment, the project cost increased, and the remaining funding needed to be raised was estimated at USD 260m. The company did not believe that it would be possible to raise this amount without doing a restructuring of the existing capital structure. Securing bank, bond or export financing has not been possible so an equity issue was the proposed funding source since it was considered that selling the asset would give very little recovery, even to secured claims. To attract investors a restructuring had to be done.

The final solution was accepted in June of 2010 by a majority of the bondholders in all three bonds. It was a debt to equity swap for that included all the bonds. The existing shareholders were left with 2.5 percent of the company. When valuing the shares at the issue price for new equity, the recovery was 28.9 percent of the principal for the secured senior bond and 9.1 percent and 8.9 percent for the convertible bonds.

Marine Subsea

The 2006 startup Marine Subsea, is an *oil service* company with two well intervention vessels under construction. In addition to these newbuilds Marine Subsea also own several new barges that are in operation outside West-Africa.

In October 2009 the company had remaining funding of USD 230m for the next 12 months. The proposed restructuring solution was approved in October 2009. It was put in place to enable export financing to cover the remaining funding. The restructuring included bondholders in three different bond issues. The two forward rate note bonds totaled USD 245.6m and the convertible bond was one of NOK 390m. The proposal was that they would receive payment of accrued interest in cash, while exchanging their bonds for a new one with a 10 year time to maturity and 9 percent (later increasing to 12 percent) interest. As a part of the solution the new bond would have a 2nd lien security in the two vessels under construction to enable 1st lien security for the export financing. The bondholders also had to approve that 25 percent ownership of the two workover vessels was given to Songasol as consideration for taking the vessels on long term contracts. The proposed solution was accepted by bondholders in October 2009.

Master Marine

Master Marine was founded in 1997. They were building two jack-up vessels at Drydock's Graha Shipyard in Indonesia. These vessels are jack-up rig designs that have the ability to move on its own. These units are primarily used in the installment of offshore windmills and in decommissioning of offshore structures.

In the summer of 2008 Master Marine changed maturity of its NOK 420m bond as a part of a refinancing operation where an additional EUR 60m was raised through a new bond issue, and NOK 258.2m was raised in equity.

Approximately a year later the vessels were ¾ and 2/3 finished and they had expected deliveries in Q1 and Q3 of 2010. But the remaining funding was estimated at EUR 300m. The amount raised so far was EUR 207m. Both vessels had secured contracts upon delivery, but raising the remainder of the funding was difficult in a tight credit market.

Nordic Capital, a Private Equity company proposed a solution where they would provide EUR 130m in equity and EUR 140m in a debt facility. Nordic capital would also buy the outstanding bonds with a combination of cash and shares. Given the share price paid by Nordic Capital in the EUR 130m equity issue the recovery was 17.8 percent for the unsecured subordinated convertible bond and 58.3 percent for the senior secured bond. The solution was accepted by the bondholders in October of 2010.

Neptune Marine Invest

Neptune's USD 125m secured callable bond issued in 2006 had an installment profile with the first installment due September 2007.The bond was secured by Neptune's two drillships; the Neptune Explorer and the Neptune Discoverer. Neptune called the bond with repayment in October of 2007.

The bond would be repaid when the refinancing of the debt was complete. Due to this bondholders agreed to postpone the September installment of USD 20m until Neptune had completed the refinancing. The bond was to be called on October 1st, but Neptune was not able to complete the refinancing in time. Bondholders agreed to extend the repayment date until November 1st and the bond would then be called at 106.5 percent of par (compared to 105 percent initially). Refinancing was not completed by the November deadline. Again bondholders were given the choice to extend the repayment date and the bond was to be repaid at 108 percent of par if they approved the proposal. What came up as an issue was the fact that the bond was secured by a 1st lien security in two drillships. By the end of November one of the ships was to be employed in Venezuela. Prior to this the drillships were both located in Singapore. According to Norsk Tillitsmann enforcing the security while the ships were located in Singapore would be easier than with the ship being located in Venezuela, bondholders were informed of this ahead of their decision to delay repayment until December 14th. The situation was finally resolved when Jasper Investments made an investment in Neptune and the refinancing was resolved. This happened towards the end of November and the bond was repaid in December in accordance with the agreement with bondholders. Bondholders recovery rate was 104.9 percent.

Nexus Floating Production Ltd (Nexus)

Nexus was founded in May 2006 and supplies generic FPSOs for harsh environment. The company entered into a contract with Samsung Heavy Industries for the construction of the FPSO Nexus 1 in June 2006. March and June 2007, a USD 175m senior secured bond loan and a USD 75m convertible bond loan were issued. In June 2007, a contract was signed for the FPSO Nexus 2, however, the project was suspended with an option for the company to restart the construction at a later date due to unfavorable market conditions. Nexus 1 was completed according to schedule on July 21st 2009.

In 2009, the company was unable to employ the FPSO Nexus 1 under satisfactory conditions due to difficult market conditions. On August 24th, the company issued a USD 320m bank loan. The bondholders approved to amend the senior bond loan agreement to second lien. To meet ongoing liquidity needs, comply with bank loan covenants and cover costs in a potential lay- up situation, additional funding was needed. As a consequence, interest payments due on the bonds were deferred and an extension of the delivery date for the second FPSO for six months was negotiated with the yard. In order to comply with a bank loan working capital level covenant, the company was able to negotiate funding of an additional working capital facility. On November 11th 2009 the bondholders approved the proposed restructuring, which included the FPSO Nexus 1 to be sold, repayment of parts of the loans related to the sale and amended loan agreements. The amendments included the debtor to be changed to Nexus Ltd. The senior secured bondholders recovered 76.1 percent, while the subordinated bondholders recovered 13.9 percent after the restructuring was successfully completed

Nor Energy AS

Nor Energy is a Norwegian company founded in April 2006 targeting E&P projects in the Middle East and East Africa. In February 2007, the company issued a USD 25m senior secured convertible bond loan.

Nor Energy's main asset was a 10.5 percent ownership share in the Causeway field. As of 8 of September 2008, estimated recoverable 2P reserves had been revised down from 78mmbbl to 21.6mmbbl. On November 26th 2008, the company reported that for the field to commence production, the company's share of additional capital expenditures required was USD 15m. Due to the unfavorable financial climate, the company was unable to secure the remaining funding. In addition, expected production start was postponed until after the bond was due. In the management's opinion, selling the license share would be a better alternative than continuing developing the field. Valiant Petroleum PLC offered to buy Nor Energy's wholly owned subsidiary Nor Energy UK Ltd owning the asset for USD 5m in cash.

On March 11th 2009 the bondholders accepted an early redemption of the loan conditional on the sale being completed. In settlement on about June 4th, they received approximately

USD 4.6m. After the repayment, the loan was written down to USD 2m without any further interest payments. The amount remained as a payment claim if the first oil production from the field occurred by March 1st 2014.

Norse Energy Corporation ASA (NEC)

NEC is a Norwegian oil & gas E&P company founded in 2005. As of November 2010, production areas are mainly located in the Appalachian Basin in New York and Pennsylvania, USA. In addition, the company owns and operates pipeline systems for gathering and transmission of natural gas in the northeastern US. As of November 2009, the company had five bonds outstanding.

On November 10th 2009, the company announced that it was contemplating a demerger of its offshore E&P operations in Brazil and the US Appalachian operations into two pure play businesses. A restructuring of the outstanding bonds was a necessary step before the demerger could take place, and a restructuring proposal was approved by the bondholders on December 17th 2009. The bondholders of four of the loans changed borrower to Norse Energy Holding Inc, positioning these bondholders closer to the US assets. The Brazil business would continue being the borrower for the bond issued in 2005. Further, extended maturity dates, stricter covenants, increased interest coupons, early repayment of 15 percent of par, a new equity issue of minimum USD 50m, mandatory repayment in various scenarios and pledges over intercompany loans and shares in relevant subsidiaries were included in the proposal. The restructuring was finalized June 30th 2010.

Norwegian Energy Company ASA (Noreco)

Noreco is a Norwegian oil and gas E&P company founded in 2005 with operations on the Continental Shelves of Norway, Denmark and the UK. Main activities comprise acquisition, exploration, development and operation of oil and gas properties. July 2007, the company issued two senior secured callable bonds totaling NOK 2.8bn.

During the second half of 2008, the outbreak of the financial crisis and the following volatility in the market challenged the company's market adjusted equity ratio covenant. 3 November 2008, the bondholders approved to amend the bond loan agreements. The market adjusted equity ratio covenant was deleted. In compensation, 20 percent of par was to be repaid at 100 percent of par value in an early redemption on November 13th. On October 19th 2009 the company exercised its call option in relation to both of the bonds. The bonds were repaid at 103 percent of par value plus accrued interest on November 30th. The two senior secured bonds recovered 76.8 percent and 73.2 percent after the restructuring was completed.

Oceanlink Ltd

Oceanlink Ltd is a subsidiary of First Olsen Ltd owned by Bonheur ASA and Ganger Rolf ASA. The company's fleet comprises four anchor handling tug supply vessels (AHTS vessels) and

five reefer vessels. In July and August 2007, the company issued a NOK 150m senior unsecured bond.

In 2010, Oceanlink experienced considerable financial problems due to unfavorable freight levels, high bareboat charter obligations and extensive costs related to repairing of the two supply vessels Ocean Viking and Nobleman. During 2009 and the first half of 2010, First Olsen Ltd had contributed with funding to keep operations going. The owner communicated that further funding would not be committed unless all creditors participated. On May 28th, the company only had sufficient funds to support financial commitments the current month. Unless the shareholders and all financial creditors agreed upon a solution no later than 9 June, the company threatened to file for bankruptcy and stated that unsecured creditors probably would end up with zero recovery.

On June 8th, the bondholders adopted a restructuring proposal. The restructuring took place on July 12th and involved a repayment of 10 percent of the principal, 40 percent of the principal and all accrued, unpaid interest being written off and the remaining 50 percent of the principal continuing as a bond with extended maturity and without interest payments.

Oceanteam ASA

Oceanteam is a Norwegian offshore service company founded in 2005. The company's operations involve chartering of four construction support vessels, a barge vessel and two fast support vessels, in addition to rental services. June 2007, a senior unsecured NOK 800m bond loan was issued, of which NOK 370m was used to redeem a senior secured bond loan. The latter was earlier renegotiated to allow for a carve out and a parent company guarantee of maximum EUR 35m of bank debt.

In 2009, the company experienced low liquidity levels due to both delayed delivery date for the time charter CSV North Ocean 102 and unforeseen losses from its renewable cable installation projects. Further financing of EUR 30m was needed. Part of the new funding was covered by sale of shares in the company's ship owning subsidiary North Ocean 103 KS. Raising new equity was not a viable option because of the company's high leverage. Interest payments due in both March and June in regard to the bond were postponed until June 30th. June 29th, the company proposed to amend the bond agreement. As a consequence of reduced revenue from the sale of the shares in the vessel owning subsidiary, the amount of debt outstanding needed to be reduced. The proposal was to extended maturity in compensation for new warrants and an increased margin, in addition to conversion of 52.5 percent of the amount outstanding including accrued, but unpaid interest to new shares. After the write- down and the share issue, the bondholders would own 61.9 percent of all shares. The bondholders approved the proposal on July 7th, and the recovery rate after the restructuring was 35.5 percent.

Petrolia Drilling ASA (Petrolia)

The Norwegian oil services company Petrolia was founded in March 1997. Through its subsidiaries, the company owns, charters and invests in drilling vessels for offshore, deepwater oil and gas exploration and development projects. On December 31st 2009, the company owned 100 percent of the oilfield services company Petrolia Services AS, 50 percent of Venture Drilling AS and 30 percent of Deepwater Driller Ltd. In addition, the company owned 39.95 percent of Petrojack ASA (declared bankrupt on March 5th 2010). Before Petromena ASA was declared bankrupt on December 21st 2009, the company owned 51.5 percent of its shares.

On September 12th 2005, the company issued a senior secured bond loan of NOK 230m. In the loan agreement, the bondholders were provided with a put option (right of prepayment) if a maximum leverage event occurred. The maximum leverage amount was NOK 280m or NOK 380m if at least the same amount as the increased debt between NOK 280m and NOK 380m in new equity was raised. On November 29th and December 12th 2005, the company raised NOK 124m in equity. On December 13th 2005, the company incurred a financial obligation of NOK 173.5m after it entered into a forward contract with delivery of shares in Petrojack ASA on February 15th 2006. In the loan trustee's view, outstanding gross debt after the transaction was NOK 403.5. Consequently, the company's financial indebtedness exceeded the maximum leverage amount of NOK 380m. On December 27th, the company reduced its obligation from NOK 173.5m to NOK 99.5m by redeeming 34 percent of the shares in the forward contract.

On February 1st 2006 the bondholders approved a revised maturity date between February 13th and February 17th 2006 at 92 percent of par. The repayment was conditional upon new financing of minimum NOK 330m being in place no later than on February 17th 2006. NOK 500m was raised in a new senior unsecured bond loan issued on February 14th, and the NOK 230m bondholders recovered 92 percent of par.

Proserv

Proserv Group is an engineering group of companies with focus on the oil and gas industry providing decommissioning, subsea, maintenance and other services. The company is divided into Proserv Offshore and Proserv Technology. They issued a NOK 250m bond in 2007. In 2009 the company had seen three years of debt financed acquisitions as a growth strategy. The results in 2008 and 2009 did not meet expectations and in 2009 the company did not have sufficient cash flow to service their debt. The company had to make some large changes in the capital structure to avoid insolvency.

In June of 2009 the company proposed that bondholders could have their bonds redeemed early at 25 percent of par value, or convert their bonds into shares at a price indicating 38 percent of par in recovery. This price would be affirmed by an equity issue by shareholders.

The trustee noted that a shareholder loan would be converted at 100 percent of par. Nevertheless, the bondholders meeting accepted the proposed solution.

Reservoir Exploration Technology (RXT)

RXT 's business is the acquisition of multi-component seafloor seismic data. They have had activities in Nigeria, the Caspian Sea, the North Sea, the United States Gulf of Mexico and Brazil.

The debt burden proved too big for RXT. They have been through two restructurings. During the first restructuring in the end of 2009 they had 5 outstanding bonds. The two convertible bonds were converted into shares, which reduced the debt burden with more than NOK 200m. The remaining bonds were given new terms that that postponed the maturity date by two years. Also changes to the covenants were made.

In April of 2010 a second restructuring took place. The company needed capital and performed a NOK 240m equity issue at a price of 0.1 per share. Bondholders agreed to write off 40 percent of their claims and were given the option of converting their remaining 60 percent into shares at the same price. If all bondholders chose to convert they would have 65 percent of the company post equity issue. The new equity would get 30 percent and the existing shareholders would be left with 5 percent of the company. The existing shareholders include the bondholders from the first restructuring. If they sold shares right after the conversion they would have recovery of 92 percent and 34 percent, but after the second restructuring their recovery was ignorable. Again for the bondholders that converted into shares in the second restructuring; for them to realize the 60 percent recovery they would have to sell at 0.1NOK per share the share only traded at this level for some 4-5 days post restructuring, and has traded down since.

First Restructuring

ISIN	**Short name**		**Shares outstanding post restructuring**
NO0010503394	RXT ASA 09/13 FRN USD C CONV		98457842
NO0010302201	RXT ASA 06/11 5,00% SUB CONV		46826687
Existing shareholders			192472426
New equity			79680463
			417437418
Former bondholders post restructuring: total amount of shares outstanding			**34.8 %**
New equity			19.1 %
Existing shareholders			46.1 %
Total shares outstanding		**#**	**100.0 %**

Table 49: Equity share after first restructuring of RXT

Second restructuring (given full conversion)

ISIN	Short name		Shares outstanding post restructuring
NO0010368285	RXT ASA 07/13 FRN P/C		2400000000
NO0010403546	Reservoir Exploration Technology ASA 07/12 FRN Call		990000000
NO0010477763	RXT ASA 08/15 10,00%		1760000000
Existing shareholders			417437418
New Equity PT2			2400000000
Total shares outstanding			7967437418
Bonds converted in second restructuring			**64.6 %**
Bonds converted in first restructuring			**1.8 %**
New equity pt2			30.1 %
Existing shareholders			5.2 %
Total shares outstanding		**#**	**100.0 %**

Table 50: Equity share after second restructuring of RXT

Saga Oil

In October 2005, Saga Oil ASA was established by a group of Norwegian and Russian business partners. The company's operations comprised E&P projects in Russia. The Russian company Promgeotek LLC which owned the 94 km^2 Rodinovsky license in the Orenburg Region, Russia was acquired in October 2005.

SAGA Oil was not able to refinance their NOK 100m bond that matured in the summer of 2008. A restructuring was attempted including considerable efforts to sell assets. When such a sale did not materialize the company proposed to restructure the company by converting both bond debt and shareholder debt into equity to clean the balance sheet. In addition working capital would have to be raised.

There was very little trading in the stock after the restructuring was approved in July of 2009. The first trade above NOK 10 000 was at share price 0.05. Shortly after, it traded down to 0.01-0.02 where it has been traded since on minimal volume. The recovery that was possible to realize was therefore minimal it was in the range of 5-15 percent but the volumes traded did not give the large holders the ability to sell so real recovery is assumed to be even less. Canadian Canoel Oil made a bid for Saga Oil (now Oren Oil) in July of 2010 for NOK 1m.

ISIN	Short name		Shares outstanding post restructuring
NO0010322233	Saga Oil ASA 06/08 Fixed Call		831,751,851
	Other creditors		259,922,245
	Old shareholders		75,334,464
Bondholders			**71.3 %**
Other creditors			22.3 %
Existing shareholders			6.5 %
Total shares outstanding		**1,167,008,560**	**100.0 %**

Table 51: Equity share post debt to equity conversion, Saga Oil

SeaBird Exploration Limited (Seabird)

SeaBird was founded in 1996 and provides geophysical seismic services for the oil and gas E&P industry worldwide. SeaBird's operations include modeling, feasibility studies, survey planning as well as acquisition, processing and interpretation of seismic data from 2D, shallow water 2D/3D and ocean bottom 4C/4D services. As of February 2007, the company had two bonds totaling NOK 600m outstanding. The NOK 200m bond was due in June 2009.

On March 3rd 2009, the company proposed a restructuring plan and NOK 61.8m of new equity was successfully raised in a private placement. Further, raising a minimum amount of USD 5m in new bank funding was proposed. The proposed restructuring of the NOK 200m bond involved an extended maturity date, lifting of a negative pledge, a split and partial early redemption of 25 percent of the principal at 100 percent of par value plus accrued interest. Further, the bondholders would receive a put option involving early repayment of the bonds in cash at 55 percent of par plus accrued interest. The proposal was approved by the bondholders on March 12th. The exercise period for the put option ended on April 28th, and 46 percent of the bondholders exercised their option.

Skeie Drilling & Production ASA (Skeie D&P)

Skeie D&P is a Norwegian oil service company founded in September 2006. The company owns three ultra harsh environment jack-up D&P rigs under construction at the Keppel FELS shipyard in Singapore. The rigs were scheduled to be delivered in the third and fourth quarter of 2010 and in the second quarter of 2011. Operating revenues would not be earned until the first rig was delivered. As of July 2007, the company had four bonds totaling NOK 1.32bn and USD 495m outstanding.

On April 17th 2009, the company reported an increase in total capital expenditures and funding requirements of USD 170m. A restructuring of the capital structure was proposed in order to avoid insolvency, however, the bondholders did not approve of the terms in the proposal. A revised proposal was approved on June 8th after a group of bondholders in the three secured bonds engaged its own financial advisor and negotiated with the company. The proposal included a reduced write down of the bonds and compensation for deferred interest payment the subsequent 18 months.

On July 5th 2009, the restructuring was successfully completed, involving deferred delivery dates of the rigs in the range of four to six months, an equity issue of USD 85m, a write-down of 97 percent of existing equity and a debt reduction. The senior secured bonds with maturity in February 2013, March 2013 and July 2013 were partly written down, and recovered 35.8 percent, 32.6 percent and 27.9 percent of par respectively, while the bondholders of the convertible bond received a recovery rate of 10.6 percent. In addition, the secured bondholders were compensated for postponement of interest payment the next

18 months with new bonds of USD 50m which were converted to shares totaling 33 percent of total shares outstanding.

Songa Offshore

Songa Offshore is an offshore drilling company operating 6 semi-submersible rigs and one drill ship that was founded in January of 2005.

In the summer of 2009 it had become evident that the company would not be able to redeem their USD 125m bond maturing in June of 2010.

A restructuring was performed in June of 2009. The USD 125m senior unsecured convertible bond was converted into shares and a new bond with longer time to maturity and higher interest. As a part of the restructuring a private placement was completed at the conversion price of NOK 23.7 per share. The new bond traded at 95 percent f par the month after issue. In combination the indicated recovery for the bondholders was 81.7 percent.

Transeuro Energy Corp (Transeuro)

Transeuro was founded in 1996 and is a Canadian oil and gas E&P company with main activities in Canada, Ukraine, Armania and Papua New Guinea. On November 13th 2007, the company issued a senior unsecured bond loan of USD 15m.

On July 14th 2008, Transeuro and Rohöl- Aufsuchungs AG (RAG) engaged in a joint venture agreement to develop Transeuro's assets in Ukraine. RAG withdrew from the agreement on October 31st 2008 and the operations were suspended. Transeuro incurred an unexpected preliminary shortfall of cash after the withdrawal and was unable to meet upcoming interest payments. On December 15th the bondholders approved to postpone the second interest payment in 2008 and interest payments in 2009.

On July 10th 2009 the bondholders approved a restructuring proposal. The company proposed to purchase the Subsidiary Share Pledge security from the bondholders for a one off cash payment of USD 3m and 20m new warrants, to convert the bond into common shares at CAD0.2/ share, as well as settling the above mentioned interest payments with common shares. The approval was conditional upon a minimum amount of equity being raised and other creditors accepting the proposal. On October 2nd 2009, the company requested to waive the condition of additional equity being raised, as it was perceived unlikely that the amount of funds would be raised within the agreed time frame. The bondholders approved the proposal. On October 29th 2009, the cash, shares and warrants was distributed to the former bondholders as planned. The share price ended at CAD0.093 that date. The bondholders' recovery rate was 49.1 percent of par.

Umoe Bioenergi ASA (Umoe Bioenergi)

Umoe Bioenergi was founded in 2006 and its operations are located in São Paulo, Brazil. The company has 32.900 ha of arable land reserves and produces bioethanol from sugarcane.

June 2007, the company issued an USD 85m senior secured bond loan. October 2009, Umoe Invest AS and Umoe AS controlled 85.6 percent of the company's share capital and approximately 62 percent of the company's bond.

Due to cost overruns, additional funding of NOK 350m was needed in the first half of 2008 to continue developing the company's projects. The bondholders approved twice to waive certain covenants in the bond agreement to allow for additional debt and equity to be raised. Through October, cost overruns increased further. The required funding was raised through a bridge loan by Umoe Invest which was to be settled in new shares. Umoe Invest' ownership share after the settlement would result in a change of ownership event and trigger a put option in the bond agreement. On November 21st, the definition of a change of control event was altered and upstream intra group loans were approved by the bondholders.

From November 2008 until August 2009, the company obtained funding through shareholders loans, mainly from Umoe Invest, of NOK 325m. In the first half of 2009, the company incurred operating losses of NOK 143.4m, due to construction delays, cost overruns, lower ethanol prices than expected and unfavorable weather conditions. The company experienced liquidity problems and did not generate enough cash to meet financial obligations due from mid- October. In addition, the company did not generate enough cash to fulfill upcoming capital expenditure and working capital requirements. By the end of 2010, it was estimated that additional funding of NOK 250m was needed. The company did not own assets which could serve as collateral for increased debt, and attracting new equity was perceived as difficult.

On September 30th 2009, a restructuring of the company's capital structure was proposed, involving both conversion of debt to equity and an equity issue. The bondholders could either convert their bonds to shares equaling 53 percent of par value plus accrued interest or redeem the bond at 45 percent of par value plus accrued interest. Umoe AS committed to extend a loan of NOK 30m to fund required liquidity for the company to continue its operations before the restructuring was completed. By privately placing new shares to Umoe As, the company would be able to repay the bondholders who chose to redeem the loan in cash. On October 19th, the bondholders approved the proposal. USD 53.2m of the bond loan was converted to shares, while USD 31.8m was to be settled in cash.

Valhalla Oil and Gas AS (Valhalla)

Valhalla is a Norwegian oil and gas company founded in March 2004 with operations in Europe and North Africa. The company issued a convertible bond of NOK 100m in March 2007.

On December 15th 2008, the company was running out of cash, and an upcoming interest payment was delayed. As of February 2009, the company's estimated cash balance was NOK 8.5m, while unpaid interest, outstanding commitments related to its licenses and funding requirements for overhead costs the next 9 – 12 months totaled between NOK 13-15m. Short term, a sale of assets was considered unlikely. Therefore, a restructuring was considered the only viable solution besides filing for bankruptcy. On March 12th, the bondholders approved to further delay interest payment in order to ensure more time for a restructuring plan to be completed. On April 15th 2009, the bondholders approved a proposed restructuring plan which involved conversion of the outstanding bond loan and accrued but unpaid interest to shares representing a total of 95.1 percent of total shares outstanding after the conversion. The conversion price per share was NOK 0.5.

Wega Mining ASA

The Norwegian holding company Wega Mining was founded in 2006. Through subsidiaries, the company's operations comprised exploration and mining activities in Canada and West Africa. The groups' main project was the construction of a gold mine in Burkina Faso, Africa. The company owned 90 percent of the Inata Gold Project which was estimated to contain probable reserves of 944,000 unses of gold in November 2008. First production was expected from April 2009. In August 2007, a senior bond loan of NOK 400m was issued.

Cost overruns of estimated USD 38m and delays related to the Inata project led to a critical liquidity situation where the company would run out of cash in mid November 2008. The company targeted to raise additional capital of NOK 300m in a private placement. Before raising new equity, a restructuring of the company's debt structure needed to be conducted. November 18th 2008, the bondholders approved converting the entire bond portfolio into equity at a conversion price of NOK 0.33 per share. The restructuring was conditional upon NOK 300m in new equity being raised. Additional equity was raised at NOK 0.15 per share. As a result, the recovery rate of the bondholders was 25.1 percent. On June 30th 2009, the company was acquired by Avocet Mining Plc.

Ziebel

Ziebel was founded in Stavanger, Norway in 2006. The company's focus is to become a significant contributor to increased recovery rates for the energy sector through downhole tools and service offerings. Ziebel has offices and operations in Stavanger (Norway), Aberdeen (Scotland), Houston, TX (USA), Muscat (Oman) and Dubai. In February of 2010 NOK 70m in new equity was to be issued in a private placement towards three existing and one new shareholder. To increase flexibility the company and the parties behind the NOK 70m in new equity wanted to convert all the company's warrants and bonds into equity. As a start-up company that purchased several companies and had plans to continue this strategy, a debt free balance sheet was considered a key part of the company's continued growth.

The restructuring was accepted by bondholders in February of 2010. Ziebel had three bonds, with a total of NOK 35.4m outstanding principal, that had strong anti dilution protection. A fourth bond with NOK 88m in outstanding principal had less anti dilution protection. The recovery was 100 percent plus accrued interest for the bonds with good protection and 70 percent plus accrued interest for the NOK 88m bond.

Liquidation

Ability Drilling

Ability Drilling was founded in February of 2006 to provide high tech onshore drilling rigs to the Middle East and North Africa. In 2007 Ability Drilling ordered several land rigs and workover rigs from Sense EDM, a subsidiary of TTS Marine. In addition to the start capital, the company raised NOK 450m in bonds and NOK 375m in equity in 2007.

In 2009 a dispute with TTS arose where Ability claimed that the rigs were not functioning as specified in the contract. Contracts for the rigs were cancelled by the operators as they did not function as intended. TTS also incurred significant delays when they worked to solve the functionality issues of the rigs. Ability claimed that this had damaged their ability to do business. Ability Drilling cancelled rig 2 ordered from Sense and filed a claim against TTS Marine, the parent company who guaranteed for payments made on the rigs. Ability drilling was forced to file for bankruptcy in May of 2009 after the conflict resulted in TTS filing a bankruptcy petition for Ability Drilling. At this point Ability presented claims against TTS for inadequate deliveries for a total of 293.5m (later increased). TTS also presented counter claims for remaining payments of NOK 240m. The conflict was settled out of court in early September of 2010 when TTS agreed to buy back one of the rigs for NOK 75m. All other claims were abandoned.

Club Cruise

Club Cruise was founded in the Netherlands in 1999. They chartered vessels to operators like Phoenix Reisen and Transocean Tours. After one of their operators was bankrupted in 2008, they also operated one vessel in the UK under the name of Van Gogh Cruises. They had difficulties in acquiring membership in the Association of British Travel Agents, therefore the company were unable to sell any cruises. Club cruise faced liquidity problems after the summer of 2008. They had maintenance capex requirements for the vessels, and had to lay-up the Van Gogh vessel. They were not able to draw on traditional financing sources and had to request for bondholders to cancel scheduled installments. They did not receive acceptance for this and shortly after the company had to declare bankruptcy.

The first mortgage, a NOK 80m loan with NOK 64m in principal outstanding was secured by the MS Van Gogh. The vessel was sold at an auction for USD 6.5m in 2009. The second bond was secured by the MS Alexander von Humboldt II. The vessel was sold for USD 12.4m in

February of 2010, and the bondholders recovered NOK 52.8m, with additional claims of NOK43.4m still outstanding. A third, NOK 210m bond was secured by several vessels. The bankruptcy process is not completed so the final recoveries are not known.

Delphin Kreuzfahrten GmbH (Delphin)

Delphin is a German cruise company. February 2007, the company issued a NOK 120m senior secured callable bond.

Due to liquidity problems, Delphin was unable to pay installments and interest on the bond loan due on February 28th and May 30th 2008. On March 7th and June 19th, the bondholders approved both amending the loan agreement and a restructuring plan involving the sale of the vessel MV Delphin. In the last restructuring proposal adopted, the loan should mature no later than on August 1st 2008 at 104 percent of par plus accrued, unpaid interest. The company was unable to sell the vessel and failed to redeem the loan on August 1st. A grace period until August 25th was granted. On September 11th 2008, the loan trustee, on behalf of the bondholder, was given the authority to enforce the security through a forced sale of the vessel if it was not sold by September 12th. On September 26th 2008, the company communicated that it was in negotiations with a company willing to buy 70 percent of the shares, conditional on the loan being redeemed in full and the loan security released. No solution regarding founding of the due amount or sale of the vessel materialized from the negotiation process.

Bondholders approved a new restructuring proposal on May 11th 2009. All accrued, unpaid interest and an acceptance fee of 1 percent of the outstanding amount should be paid on May 20th 2009 with the original coupon. Amortization and interest was to be paid in November 2009, 2010 and 2011 and the bond would mature on November 20th 2012. On November 16th 2009, the company announced that it was unable to pay more than NOK 6m of NOK 13.5m in amortization. On January 19th 2010 the company had transferred additional NOK 4m to an escrow account. On October 18th 2010, bankruptcy proceedings took place in Germany. The outcome of the bankruptcy is uncertain.

Estatia Resort AS (Estatia)

Estatia was founded in 1990 and during their last years in operation they built, sold and operated resorts and spa-centers often in combination with building vacation homes and apartments on the same properties for sale to individuals. The company had organized each project in individual subsidiaries, and established operating companies for each of them. The subsidiary of Estatia Resort, Estatia Resort Property was intended to hold all the property built in conjunction with each project that was intended for sale to individuals.

In November of 2008 they gave notice that they would not be able to make interest rate payments on their NOK 68.5 callable bond. Only one of the projects was close enough to completion that the assets had been transferred into this company. In addition to this one

project in Kragerø, three others had been started, but were not close to completion. At the time of default, the company had significant funding needs. They had also seen cost overruns and saw no possibility of getting the necessary financing.

The proposed restructuring solution to bondholders was: eliminate 50 percent of the principal and accrued interest, new maturity at 31st of December 2015, most of the interest payments will be added to the principal and not be paid out and also bondholders would receive 7.5 percent of the equity in the company. The different projects and its claims were intended to be separated from the Estatia Resort Group of companies as the parent company and guarantor had no assets. The Kragerø projects were to be transferred to Estatia Kragerø AS. The bondholders accepted the proposal.

After the restructuring in December 2008 the company was not able to generate any cash through the Kragerød operations, and therefore failed to make interest payments. The transfer of the Kragerø Assets was never successful. Default was declared in November of 2009 and any recovery for the bondholders seems unlikely as Swedbank, Fokus Bank, Glitnir and others had higher priority claims.

FPS- Ocean DP Producer AS

The Norwegian oil service company FPS Ocean AS was founded in 2005. Through its four subsidiaries, the company built, owned and operated Floating Production Systems constructed to operate in deep to ultra deep waters. Vessels were converted based on proprietary technology specially designed for well testing in deep water. In July 2006, the company acquired a Panamax shuttle tanker which it converted at Drydocks World- Dubai to a Dynamic Positioning FPSO (Deep Producer 1) ready for delivery in May 2009. In July 2008, a second vessel was acquired for conversion, a double sided Aframax tanker (Deep Producer 2). Its subsidiaries DP Producer AS and DP Offshore AS each owned the FPSO Deep Producer 1 (DPP 1) and the vessel Deep Producer 2. By February 2008, the company had issued three bonds totaling approximately USD 115m.

Conversion was delayed due to cost overruns and capacity constraints among both vendors and the yard. On December 8th 2008, the company communicated the need to raise additional USD 95m in order to complete the conversion of the DPP 1. Due to the financial crisis, the company was unable to raise the whole amount through an equity issue. Therefore, a restructuring of its capital structure was proposed. Restructuring of the bonds were approved by the bondholders on December 8th 2008, conditional upon USD 70m in new equity being raised. The company was unable to raise the targeted amount before 11 February and the announced private placement was cancelled on February 10th. On February 20th 2009, FPS Ocean and its subsidiaries filed for bankruptcy. Insolvency proceedings are currently taking place.

IBB Byg A/S

IBB Byg was established in 2007 when the companies B.B. Byggeindustri A/S, Ibco A/S and Ibco Næstved A/S merged. June 2008, the company issued a senior unsecured convertible bond loan of DKK 110m. The company targeted to be listed in 2009. IBB Byg was owned by Stones Invest, which filed for bankruptcy on September 9th 2008 after being unable to meet its debt obligations related to unsecured debt of DKK 2.5bn. On October 1st 2008, IBB Byg filed for a bankruptcy petition. The company was unable to avoid bankruptcy proceedings because it had a significant amount of receivables outstanding to its parent company. IBB Byg is currently under insolvency proceedings.

Monitor Oil

Monitor Oil is a Cayman Island registered oil and gas service company that provided oil production solutions, subsea engineering and decommissioning services. The company was listed on the Norwegian OTC list in 2006. The company set out to capitalize on maturing fields in the North Sea by providing solutions for field tie backs, floating production and decommissioning. The company was listed on the Norwegian OTC market in January of 2006. The first contract they announced was for a buoy providing subsea power downhole pumps on the Lydell Field. During the summer of 2006 Monitor Oil ordered a single lift vessel from Yantai Raffles yard in China, The cost of the hull was USD 105m and the equipment delivered by Siemens would have cost EUR37m. The vessel was intended to be used in decommissioning activities. A bid was made to ConocoPhillips to decommission the CATII platform on the Ekofisk Field.

The buoy and the single lift vessel were both based on proprietary technology. The projects were financed in part with a USD 50m secured bond. In addition, had a credit facility arranged by Credit Suisse that included a USD 120m 1.lien tranche and a USD 80m 2nd Lien.

On November 1st of 2007 the bid was rejected and on November 22 of 2007 the company went into Chapter 11 to restructure the company. The US Bankruptcy Court ruled that the company should proceed under chapter 7, i.e be liquidated.

MPF

Bermuda based MPF Corporation was established in 2006. They designed, and built a Multi Purpose Floater (MPF), which is a deepwater drilling unit, which combines the capabilities of an FPSO and a drillship.

The first unit MPF1 was ordered at the Dragados Shipyard in Spain in May of 2006. In April of 2008 MPF signed a three year contract with Petrobras. As with other proprietary designs cost overruns and delivery delays became an issue for the company. After the trouble started they were able to get bank financing from DvB Bank, but only if the bondholders in a secured USD 150m bond loan accepted to hand over the 1st lien security to the bank. Bondholders accepted the carve out of USD 235m against a onetime compensation of 8

percent of par. In addition to the carve out, the installments would be moved to the maturity date because of the delays. In addition a new USD 75m subordinate convertible loan would be issued.

After this additional cost overruns was incurred making the total price tag USD 950m (total cost overruns of USD 200m). The situation in June of 2008 was that remaining funding was USD 300m and that the company was in breach with covenants due to write downs. Also the company was trying to change fabrication yard as the Dragados yard delays would result in penalties related to the Petrobras contract. The combination of these difficulties resulted in the company filing for insolvency proceedings under Chapter 11 in September of 2008. All the company's assets were sold to Dalian Shipyard for a total consideration of USD 105m. DvB bank had provided "debtor in possession" financing of USD 20m and had senior secured claims of USD 236m.

MPU Offshore Lift ASA

MPU Offshore was founded in 2006 and had a large vessel under construction at Keppel Verolme in Rotterdam. The proprietary design was intended to be used mainly for decommissioning of offshore installations. As the work progressed cost estimates increased.

What led the company into bankruptcy was that they were in the process of replacing a NOK 715m bond with bank financing from ABN Amro. Management called the bond but was not able to comply with requirements set forward by ABM Amro. So this created a large refinancing need in June of 2008. But raising equity or bond financing when presenting additional cost overruns was not possible. The company petitioned for bankruptcy on June 30th of 2008. It had two bonds outstanding, one NOK 715m and one USD 110m. The asset was just a large proprietary designed concrete hull that had few sources of alternative use.

Keppel Yard, which had EUR15m in outstanding invoices ended up buying the vessel for EUR 3.75m. The recovery ended up being 3.5 percent in the NOK 715m senior secured bond.

Nordic Heavy Lift

Nordic Heavy Lift was established in 2007. The company ordered the crane vessel Borealis from Sembawang Shipyard in Singapore. The hull would be built by a subcontractor of Sembawag in China. The vessel newbuild ran into both cost overruns and delivery time delays. USD 223m was financed though bonds and equity in May of 2007. This was slightly more than half the total project cost estimated at the time. After cost overruns the total project cost was estimated to be USD 500m. The remaining capex was therefore almost USD 300m. In the credit market post the financial crisis this proved impossible. The accepted a consideration of 40 percent of par and 18.5 percent of par in a new convertible bond that was later repaid in full. In December of 2009 the Borealis newbuild projects was sold to Acergy and the surplus cash after liquidation will go to the equity. The recovery for shareholders looks to be approximately 5 percent of the pricing at the equity issue.

Petrojack ASA

The Norwegian offshore drilling company Petrojack was founded in October 2004. In 2007, the company had approximately NOK 2.2bn in three senior secured bonds outstanding. 39.95 percent of Petojack was owned by Petrolia Drilling. As of 2007, the company owned two rigs. On January 13th 2009, the rig Petrojack II was sold to Saipem. NOK 1.1bn of the proceeds from the sale was used for a partial redemption of the bonds, where 45 – 60 percent of par was redeemed.

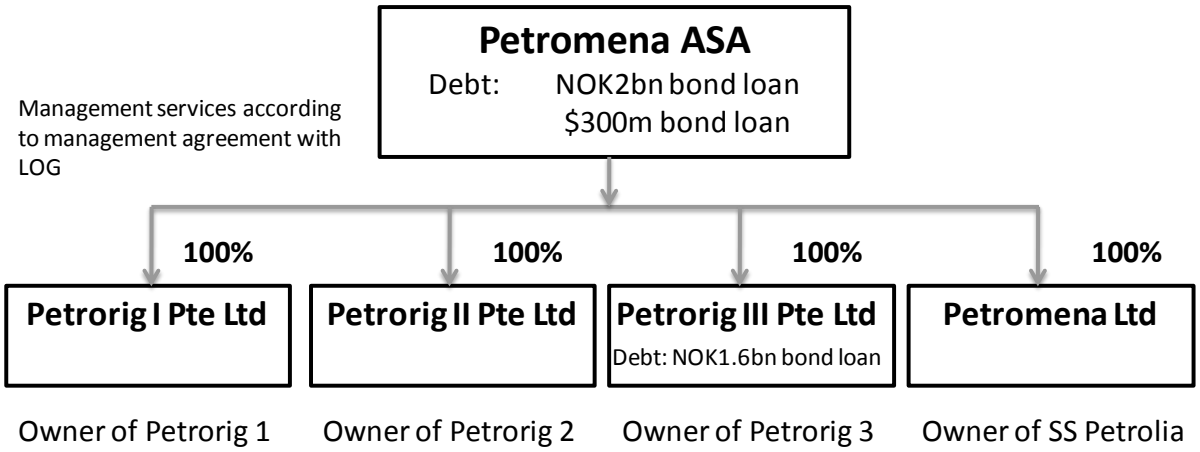
Through the wholly owned subsidiary Petrojack IV Pte Ltd, Petrojack owned the jackup drilling rig Petrojack IV which was delivered in January 2009. The rig had a five year contract with PTT E&P Public Company Ltd, providing a gross operating rate of USD 152.500 per day. In the fourth quarter of 2009, the company was unable to generate enough cash flow from operations to meet its debt obligations. As a result, it defaulted on its tax liabilities and bonds in November and December 2009. The company's book value of equity was USD -54.9m as of yearend 2009. The shareholders declined to contribute with more capital and did not approve of new capital being raised in the market. In order to resolve its immediate cash needs, it would require a release of funds from Larsen Oil and Gas Limited, the manager hired to operate the Petrojack IV rig. To ensure continued operations, sale of assets and a restructuring of bonds and other liabilities were necessary. The company estimated that the realization value from the sale of all assets was less than its creditor claims. On March 5th 2010, the company filed for bankruptcy. Petrojack is currently in insolvency proceedings, and therefore ultimate recovery rates cannot be estimated for the three bonds.

The bondholders have approved a sale of the rig to a third party buyer if net proceeds from the sale are at least USD 161m. The net proceeds will be used to repay the loans in accordance with their respective priority order; however, a sale has not been executed by November 2nd 2010.

Petromena ASA

The Norwegian holding company Petromena was founded in January 2005. The company operated in the oil service industry and was under management by Larsen Oil & Gas (LOG). Petrolia Drilling AS owned 51.47 percent of the shares outstanding as of April 2009. By 2008, Petromena had two senior secured bonds of NOK 2bn and USD 300m outstanding, while its wholly owned subsidiary PetroRig III Pte Ltd had a senior secures bond loan of NOK 1.6bn outstanding. Through four wholly owned subsidiaries, Petromena owned three ultra deepwater drilling units under construction at the Jurong Shipyard in Singapore, as well as an operating drilling rig, SS Petrolia. Expected delivery dates for the rigs were on April 30th 2009, September 30th 2009 and January 31st 2010. Before delivery, all four units had secured time charter contracts with either Petrobras or Pemex totaling USD 2,556m. Petrorig 1 and 2 was part of the security package for the NOK 2bn bond loan, SS Petrolia was part of the USD

300m bond loan's security package, while Petrorig III was part of the security package for the NOK 1.6bn bond loan. The figure below illustrates the group structure as of 19.12.08.



In December 2008, remaining capital expenditures to complete the three rigs were USD 300m per rig. Remaining funding for each rig was USD 100m after an undrawn bank facility of USD 200m per rig had been established by Loyds TSB Bank (Loyds) in 2007. Each bond agreement allowed for first priority debt of USD 200m.

During fall 2008, the company was able to negotiate a term sheet with Loyds and another bank in regard to remaining funding required for Petrorig 1 to be delivered. The term sheet comprised a bank facility of USD 300m, conditional of Loyds being released from its previous USD 600m rig facility. The new agreement would secure delivery of Rig 1, while at the same time result in a funding gap of USD 300m for each of the two remaining rigs. Both the NOK 2bn and USD 300m loan agreements were approved to be amended on January 16th 2009 to allow for an increased first priority carve-out amount of USD 100m related to Rig 1, subject to a separate subsequent agreement being in place no later than on January 30th 2009. Unless the remaining USD 100m funding of Rig 1 was in place, the NOK 2bn bondholders could trigger a default.

Negotiations of the terms in the subsequent offering was discussed under a bondholders meeting on February 6th, as a result of Petromena not accepting the terms being proposed on January 16th. The appointment of a financial advisor and a rig broker engaged by NT assisting the bondholders was proposed. Further, it was proposed that fees related to a financial advisor and a rig broker should be paid by the bondholders. On February 6th, the management communicated its intention to cooperate with both the bondholders and NT. However, it did not accept the terms from NT's financial advisor nor the bondholders engaging a rig broker. On February 12th, the informal bondholder steering committee responded to the company's statement. It informed that the company's actions so far did not reflect its stated willingness to cooperate and that the appointment of both a financial

advisor and a rig broker if necessary at a later point in time was necessary to safeguard the bondholders' interests.

On behalf of the company, a representative from the law firm Wikborg and Rein commented the committee's letter to the bondholders the same day. The reason why the company did not agree on the initial subsequent agreement was because the committee wanted to "retain and control a rig broker to exclusively market for sale the company's drilling units". On February 12th, the committee informed that "there is no suggestion that a rig broker should be retained by the trustee at this stage". Petromena stated that it would approve of the bondholders appointing a rig broker according to the purpose stated by the committee the same day. On February 18th, the proposal was adopted by all bondholders except for the bondholders of the NOK 2bn bond.

On March 11th, two separate bondholder meetings were held. In the *first* meeting, the NOK 2bn and USD 300m bondholders approved an increase of the carve- out amount for a first priority loan by USD 100m. In compensation, the bonds security packages would be increased. The *other* meeting was held for the bondholders of the PetroRig III bond loan. Previously, the shipyard had agreed to postpone an installment of USD 105m due in January 2009 related to Rig 3 until delivery. As a consequence, the company stated that additional funding was not necessary before mobilization of the rig in December. According to the NOK 1.6bn bond loan agreement, the company was to raise USD 50m in new equity by February 20th 2009 to fund the construction of the rig. The company summoned to a bondholders meeting to propose the equity requirement to be postponed both the rig did not need the additional funding and because of the difficult market conditions related to raising new capital. According to management, a likely consequence of the proposal not being adopted was the company being in breach with the loan agreement. If the company was to repay the total outstanding amount of the loan, default could be triggered by the bondholders since the company would be insolvent. If the company became insolvent, the yard had the legal right to terminate the construction contract and sell the rig. Before the subsidiary would receive any proceeds from the sale, postponed installment of USD 270m to the yard, as well as other claims and yard costs, would have to be covered. In addition, being in breach with the loan agreement would probably lead to default and insolvency in PetroRig III. This event would be an event of default under the loan agreement for the new bank facility by Loyds, which could likely lead to a default of both Petrorig I and Petromena ASA. The proposal was not adopted after only 29.52 percent of the bondholders approved it. The bondholders perceived the proposed postponement to be too long due to the uncertainty in regard to resolving long-term funding. The company was given an extended grace period to provide for the additional USD 50m of funding.

On March 20th 2009, the bondholders of the NOK 2bn was summoned to a bondholders meeting in order to approve the proposal of appointing AMA Capital Partners as financial

advisors and Bingham as legal advisor. On March 30th, the meeting was cancelled after Seadrill Ltd informed the market that it had acquired NOK 1.603bn of the NOK 2bn bond loan (80.2 percent) on March 27th 2009 for a price of NOK 1.1bn. The bond loan was secured by the two rigs scheduled to be delivered in April and September 2009. Seadrill had taken delivery of two similar rigs the last year and had two similar rigs under construction at the same yard scheduled for delivery in 2010 and 2011. In the press release, the company informed that it "might be prepared to assist the projects with senior financing and operational expertise (…) if Petromena became unable to finance the rigs or repay the amounts due according to the existing loan agreements".

On April 2nd 2009, NT declared the bonds to be in default, after more than 50 percent of the bondholders notified NT that they had declared default under their bond loan agreements. The loans were to be immediately due and repaid. Default was declared due to concerns about the company's financial stability. The bondholders targeted to maximize recovery by ensuring delivery of the rigs. Further, NT filed a claim against LOG on behalf of the bondholders of the USD 300m bond loan, after LOG stopped turning over net earnings from SS Petrolia to Petromena in February 2009. The matter was pending a resolution in the Bergen District Court. In addition, certain board members closely related to either Petromena or LOG were replaced. The same day, management rejected the existence of any default, and declared that the company would continue to operate according to approval by the bondholders meeting held on March 11th. Petromena challenged the declarations through legal actions in both Norway and Singapore to revoke the three bonds being accelerated. On April 24th, the Oslo Enforcement Court ruled in favor of NT, while the Court of Appeal ruled in favor of NT on June 30th.

On June 2nd, the bondholders of the NOK 2bn bond loan approved NT appointing financial and legal advisors, as well as to fund services necessary to maximize their recovery from the rig subsidiaries. NT informed that bankruptcy proceedings under Chapter 11 had been initiated in the US by PetroRig I Ltd, PetroRig II Pte Ltd and PetroRig III Pte Ltd.

On September 14th 2009, NT filed Petromena for bankruptcy according to enforcement instructions from the bondholders. Previously, the Norwegian Court of Appeals had concluded that NT could not file legal payment proceedings since it was not a real creditor of the claim in question. Therefore, NT had established a foundation which through its wholly owned subsidiary acquired an amount of the NOK 2bn bond loan NTM Refectio III AS (Refectio). On October 7th, the subsidiary joined the original bankruptcy proceedings. The Bankruptcy Court concluded that NT was not entitled to file in the original proceeding, but that Refectio could file for bankruptcy. However, Refectio had filed the petition in its own name without documented consent from either NT or the bondholders. Therefore, the petition was in conflict with a clause in the bond loan agreement which prevented bondholders from enforcing their own claims when it was uncertain whether the remaining

bondholders supported this action. On November 18th, the bondholders approved giving the bondholders and NT's consent for the bankruptcy filing in Refectio's name and that it was not in defiance with the loan agreement.

The deepwater drilling company Diamond Offshore Drilling Inc purchased PetroRig I on June 8th and PetroRig II on September 30th 2009 from the Shipyard for approximately USD 460m and USD 490m respectively. Petrorig III was sold to Mexico's Group R for USD 560m on December 1st 2009. On September 29th, the US Bankruptcy Court ruled that USD 125m remitted from PetroRig I Pted Ltd should be paid out to the NOK 2bn bondholders as a partial repayment.

On January 27th 2010, the NOK 2bn bondholders approved to authorize funding for a liquidator appointed by Petromena on December 19th. NOK 2.8m held by NT was divided into two loans to be used for general administrative purposes of the bankruptcy estate and to pursue rights against LOG. On April 29th 2010, the bankruptcy estates of the three PetroRig subsidiaries released funds for a partial repayment of both the USD 300m and the NOK 1.6bn bond loan. Excluding the amount retained by NT as security for future costs related to the enforcement process, approximately USD 201.6m was repaid to the former bondholders, while USD 242.7m was repaid to the latter.

Remedial (Cyprus) Plc (Remedial)

Remedial was founded in 2006. The company's vision was to build, own and operate a new type of self- propelled jack- up rig/ vessel hybrids named Elevating Support Vessels (ESVs) designed to enhance hydrocarbon production from mature wells and fields. Remedial owned two ESV's under construction at the Cosco and Yantai shipyards in China. The ESV's were designed to facilitate offshore well intervention, support and workover services for the oil and gas industry. As of 2009, the company had a bond of USD 210m outstanding.

During 2009, a funding shortfall threatened both immediate operations and delivery of the vessels. The Escrow Account was blocked and an event of default was in place when the company failed to meet interest payments on the bond on September 28th 2009. On December 11th, the bondholders approved to permit a partial release of up to USD 3m of funds held in the escrow account or to allow for a wind down of operations. On December 14th and February 12th, the shareholders and the bondholders approved a restructuring proposal comprising a rights issue, the bond loan being restructured and reduced repayments of unsecured claims. The unsecured claims comprised USD 7.2m to Swedbank and USD 2.6m to SEB Enskilda. The restructuring was conditional upon the banks accepting to receive only USD 1.5m. Swedbank did not approve of the proposal and the restructuring was not implemented.

On February 24th 2010, the company filed a petition for relief under chapter 11. The petition would allow for the construction of the ESV's to be completed and for a sale procedure

under section 363 in the US Bankruptcy code to take place. On March 10th 2010, the bondholders approved to bid for the assets as a stalking horse bidder through a newly formed entity named "Newco". The credit- bid involved forgiveness of USD 120m of debt owed by the company. The bond loan, other claims under the loan agreement and a DIP loan would be transferred to Newco. On April 9th 2010, the stalking horse bid was approved as the winning bid by the US Bankruptcy Court. The claim with Swedbank was settled on May 25th when the bank received a 2.5 percent equity share in Newco. Newco was renamed Remedial Cayman Limited. On June 22nd, the bondholders approved to receive USD 771 in Newco Bonds and 1 Newco Share for every USD 1000 bonds held. A USD 164.5m bond was issued; of which USD 162m was issued to the bondholders. The former bondholders also received 100 percent of the company's shares. Swedbank's shares were converted to USD 2.5m of bonds. The second ESV was delivered on July 7th. On October 6th, Coral Offshore Pte Limited bought the construction contract for the first ESV vessel and a related workover rig package.

Scan Geophysical

Scan Subsea was established in 2002 and had three seismic vessels on charter. Scan ordered three newbuilt vessels at ABG shipyard in India. These vessels were scheduled for delivery in 2007. But as these vessels were delayed and funding them became more difficult under the financial crisis, the company was not able to service its debt. They negotiated themselves out of the newbuild contract but filed for bankruptcy in June of 2009. This was after having tried to find a restructuring solution, but all such attempts failed. Noteholders and other debtors had to provide liquidity to expedite the sale of assets. Such a sale was performed and a partial payment equaling accrued interest and 64 percent of the principal was repaid in September of 2010 to the holders of a NOK 60m secured bond (total payment was 56 million or 93 percent of the par value). Another NOK 202.5m bond is subordinated and unsecured and will likely not see any recovery, due to the fact that all assets pledged as security has been sold without covering the entire senior claim.

SeaMetric International AS (Seametric)

The Norwegian oil service company Seametric was founded in 2000. The company's operations comprise marine heavy -lift and transportation services. On May 31st 2007, Seametric entered into two separate contracts with ESSCA Ltd in Hong Kong for the construction and delivery of two heavy transport vessels. ESSAC entered into two back to back subcontracts with the shipyard CPLEC in Panjin, China. The vessels' technology was based on a Twin Marine Lifters (TML) System developed by Seametric designed to facilitate installation and removal of heavy objects. To finance part of the construction, a USD 60m senior secured bond loan was issued in May 2007.

During 2008 and 2009, the construction progress developed unfavorably and delivery dates were uncertain. According to Seametric, the unfavorable progress at the shipyard was due to

the builder not managing the project as planned. Discussions with ESSCA and CPLEC did not bring the project back on track or secure reliable delivery dates. SeaMetric proposed a meeting with the bondholders to improve the company's negotiation powers. On September 23rd 2009, the consent to a possible cancellation of the contracts and certain covenants in the loan agreement being waived were approved by the bondholders. In compensation, they received an extraordinary prepayment of USD 6m of par at 50 percent of the par value. The construction contracts were cancelled on September 25th and claims totaling USD 288.4m towards ESSCA and CPLEC to cover refunds and compensation were made.

After the termination, Seametric initiated a bid process towards well-known yards in Asia for the construction of the two TML's and a number of TML lifting arms. Seametric proposed making a substantial upfront payment in percent of total project costs to the yard chosen. To make the upfront payment, new equity had to be raised and the remaining part of the project costs had to be financed by new debt. On November 13th 2009 the company announced that it needed to postpone interest payment due on November 25th for three months due to low liquidity. The bondholders would receive a postponement fee of NOK 923,741 in unsecured, subordinated bonds in compensation, which would be converted to shares. The bondholders approved the proposal on November 24th. On January 13th 2010, SeaMetric filed for bankruptcy. On May 26th the bondholders approved to grant NT the authority to engage advisors, conduct necessary actions during the bankruptcy process and to deduct fees and costs from proceeds payable to bondholders. The company is currently in insolvency proceedings.

Songa Floating Production ASA (Songa FP)

Songa FP was founded in 2006. The company's business model was to convert three tankers to FPSO's. After delivery, the company would operate the fleet. On August 10th 2007, a USD 19m bond was issued.

The company's subsidiary Songa Floating Production Pte. Ltd. entered into a contract with Peak Petroleum Industries Nigeria for the vessel FPSO East Fortune to be delivered in January 2009. The agreement was terminated after it turned out that the company was unable to fulfill its payment commitments. Due to weak market conditions, Songa FP was unable to employ the vessel before September 2009. The revenues from the new contract covered operating costs and interest payments on the subsidiary's bank loan. However, the company was unable to pay interest on the parent company's bond loan on February 10th 2010. In addition, the company was unable to repay the principal of the bank loan. A possible financial restructuring to secure further funding and fulfill payment obligations was explored without success. On March 17th 2010 the company filed for bankruptcy. Insolvency proceedings are currently taking place.

Svithoid Tankers

Svithoid Tankers AB is a Swedish company that was established in 2003. They had several newbuild projects at a yard in Tallinn, Estonia. They focused on product- and chemical tankers, with a strategy of only owning smaller vessels of less than 5000 dwt. These vessels would be employed on long term contracts.

Throughout most of the lifespan of the company they struggled with lower demand for their vessels than projected. They were also affected by delays and higher costs. Svithoid acquired ownership stakes in a range of vessels between 2005 and 2007. They also had two small and one medium sized tanker delivered before they had to file for bankruptcy in October of 2008 due to lack of liquidity. At this point in time they had 11 vessels in operations and five more on order. Most of the vessels were on bareboat charters and were not available for the company's claimants. Two of the newly delivered vessels were sold to their charterer. The vessel Baltic Maria was sold to Brøvig by Nordea who had security in the vessel. Svithoid had debts of SEK 962m according to their reporting three months ahead of the default. This included secured loans from both Nordea and SEB.

Tandberg Data ASA and Tandberg Storage ASA

The Norwegian holding company Tandberg Data was founded in 1979. The company supplied backup and archive solutions for small and medium sized businesses globally. In 2003, the company spun off its magnetic tape storage development group Tandberg Storage, which it again acquired in November 2008. Tandberg Data was Tandberg Storage's sole customer. As of November 2006, Tandberg Data had three bonds totaling NOK 346m outstanding. Tandberg Storage had two bonds outstanding totaling NOK 57m as of July 2008.

During 2008, both companies experienced operating losses. For Tandberg Data, additional funds were necessary to continue operations, improve liquidity and cope with an inadequate debt structure. The company restructured its NOK bond loan by converting 50 percent of the outstanding amount to equity in April. In December 2008, Tandberg Storage's capital structure was restructured. Its share capital was written down by 98.8 percent.

December 2008, Tandberg Data's senior secured Cyrus Bond loan of NOK 64.5m matured; however, the company was unable to repay the loan. The loan matured two years earlier than intended due to loan covenants in breach. The bond was secured by pledges in most of the company's assets. Tandberg Data was able to extend the maturity date for three months, conditional on a financial restructuring being successfully completed by March 31st 2009. The proposed restructuring was adopted on March 6th 2009. Due to unfavorable market conditions, lenders were unwilling to refinance the Cyrus loan, the company was unable to raise new equity, important suppliers tightened their credit terms and customers delayed payments. Tandberg Data was unable to repay the bond loan on 31 March and Cyrus Capital enforced its loan pledges. On April 24th 2009, Tandberg Data and Tandberg Storage filed for bankruptcy in Norwegian courts, and Cyrus Capital acquired the assets in

Tandberg Data. Tandberg Data's other subsidiaries continued their operations without interruption. Both companies are currently in insolvency proceedings.

Thule Drilling AS (Thule)

Thule is a Norwegian drilling company founded in February 2005. In spring 2005, the company entered into a reconstructing agreement with the Quality General Maintenance Ltd (QGM) yard in the United Arab Emirates (UAE) in regard to the capsized jackup rig Thule Power. Two additional newbuilding jackups, Thule Energy and Thule Force, were ordered from QGM in January 2006. In addition, the company owned a semi- submersible rig named Thule Phoenix.

In the second half of 2006, Thule both refinanced and increased its debt. A USD 9m secured bond was issued on January 31st 2007 with first priority in the mortgage of Thule Power. The first priority was made possible after bondholders of the NOK 250m bond loan approved to replace their existing first priority over the mortgage and the account pledge with cash collateral covering remaining interest and principal payments of the loan. The NOK 250m bond matured in May 2007. As of June 2007, the company had three bonds totaling approximately USD 179m outstanding.

A financial dispute between Thule and the yard resulted in the yard closing its gates in July 2007. The dispute was brought to court, ending in Thule's favor after almost one and a half year, and the company became the owner of the yard. The conflict led to both delays and cost overruns in regard to the company's newbuilding program, in addition to severe liquidity problems for the company.

Thule was unable to meet interest payments on two of its bonds totaling USD 170m due in March 2008. On June 27th, the bondholders approved a proposal to amend the loan agreements to allow for a new repayment schedule and other terms being altered. Further, the USD 9m senior secured note initially matured on January 31st 2008. On February 7th 2008, Thule informed that it had not been able to repay the loan at maturity. On July 28th, the bondholders approved terms in the loan agreement to be amended. In terms of all the three bonds, the bondholders approved that the bonds would be repaid when the sale proceeds from Thule Power would be received or latest on November 15th 2008.

In September 2008, the financial crisis hit, and the company experienced problems selling Thule Power which was still under construction. On November 18th, the company informed that it was unable to meet payments on November 15th. On December 16th 2008, the company proposed to sell the three rigs being built as well as the yard and the rig owning subsidiaries in Cyprus to Royal Oyster General Trading (Royal Oyster) in Dubai for USD 420m. The bondholders did not approve of the sale, and prevented the sale by not releasing the security in equipment owned by Thule.

On March 13th 2009, the company received an event of default under the USD 130m bond loan agreement. On March 24th 2009, the loan trustee took arrest in the Thule Power rig.

On April 19th 2009, 44 containers with equipment for the construction of the rigs Thule Force and Thule Energy with an estimated value of USD 19m was sold by Royal Oyster to the Iran based company Sherkat Sanayea Farasahel (SAFF). The equipment was owned by Thule, however, the company did not receive any payment. On July 31st 2009, both the USD 40m and the USD 9m bonds informed Thule of an event of default in their bond loan agreements. In August and October 2009, the bondholders received confirmation that the equipment had been sold by Royal Oyster to SAFF. One of the SAFF's customers is the National Iranian Oil Company (NIOC), a company which is on a U.S Treasury Department list of companies in which it by U.S. federal law is prohibited to do business with. A large share of the bondholders was American funds, and the bondholders agreed to not sell the bonds as long as the equipment probably was sold to Iran.

In November 2009, the company proposed to call the three bonds for USD 40m, in order to enable a transaction with Royal Oyster to take place. On November 6th 2009, the bondholders of the three bonds did not approve of the proposal. In the proposal, the bonds would be called at 26.5 percent of par for the USD 130m bond loan, 5 percent of par of the USD 40m bond loan an 5.6 percent of par of the USD 9m bond loan.

In both UAE and Norway, legal proceedings were taken in order to enforce the loan securities. NT had filed Thule for bankruptcy; however, the filing was dismissed after both the Oslo Municipal Court on April 15th 2009 and the Borgarting Court of Appeals on September 30th 2009 ruled that NT "did not have standing to sue on behalf of the bondholders". The reason for dismissing the filing was that the loan trustee's authority was formulated too generally in the bond loan agreements and therefore, Norsk Tillitsmann "had not been authorized specifically to file Thule for bankruptcy". On May 31st 2010, the loan trustee summoned to a bondholders meeting where the bondholders could approve and affirm the authorization of NT to file Thule for bankruptcy. Further, the bondholders were proposed to give "consent to the filing of bankruptcy of Thule by individual the bondholder and to affirm of the authorization of the enforcement against all guarantors of certain personal guarantees". Both the USD 130m and the USD 40m bondholders approved the proposal.

The company's outstanding debt obligation as of the annual report of 2009 was USD 275.5m. On September 16th 2010, bankruptcy proceedings took place. Default is declared for the three bonds and bankruptcy proceedings are ongoing.

TMG International AB

The Swedish company TMGI was founded in 2000. The company manufactures magnesium die- cast auto components for sub- suppliers in the automobile industry. TMGI uses a

proprietary production process called Tonsberg System which is based on hot chamber technology. In May and October 2006, the company issued two convertible bonds of NOK 153.8m and NOK 80.1m respectively.

Net income in the company's annual reports from 2000 until 2006 was negative. The financial situation gradually weakened. From March 2007 until September 30th 2007, emergency funding was provided by one of the company's shareholders and some of its loans defaulted. Additional funding and a restructuring were necessary, in order to both continue operations and as a prerequisite for an ongoing merger process with Meridian Technologies Inc to be completed. A restructuring plan was approved on February 25th 2008, however not completed, as the company was unable to raise the amount of equity which was conditional upon the restructuring being completed.

A revised restructuring plan was proposed on April 2nd 2008. Key elements were a new equity issue of minimum SEK 40m, restructuring of the bonds and extended maturity of remaining interest bearing debt (approx. NOK 60m). The bondholders for the two NOK bonds were proposed that all accrued, unpaid and upcoming interest payments were waived in exchange of TMGI shares. The compensation in shares was 30.6 percent of the face value of each NOK bond, while the settlement price would be equal to the issue price in the upcoming share issue. The principal of the two bonds would continue as convertible bonds, split into three equal tranches. The proposal was approved by bondholders on February 14th, however, the company filed for bankruptcy on May 9th 2008, before the restructuring was conducted. The company is still in insolvency proceedings.

Viking Drilling ASA

Viking Drilling is a Norwegian company that was listed on the Oslo Stock Exchanges OTC list in May of 2006. The company, which was operated out of Houston, purchased three out of service semi-submersible rigs. The rigs were to be refurbished to be put back in operation in the North Sea. The first unit they started reactivation work on was the Viking Producer. The initial cost estimate for the reactivation of the Viking Producer was USD 105m, and the rig was supposed to be "ready-to-drill" by In February of 2008 it became evident that significant additional cost increases would be incurred. Also the project would be delayed. In the end of February of 2008 the company filed for Chapter 11 bankruptcy protection as they did not find it possible to raise the USD 150m needed to finalize the reactivation project.

To recover some value the rigs were attempted sold through rig brokers and auctions. A final agreement could never be reached and in November of 2009 the company and Norsk Tillitsmann filed a liquidation plan where the assets would be transferred to a liquidating trust intended to market the assets for sale. The value of the rigs is highly uncertain and recovery should be limited for bondholders and nonexistent for equity holders.

The funding for the company was initially a ~NOK 500m equity issue and ~USD 80m (USD 50.5m plus NOK 194m) in an initial 1st lien secured bond issue. In early 2007 USD 20m in equity was issued and two new 2nd lien bonds were issued.

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