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Bank debt vs corporate bond choice and its effect on company value: Evidence from bank debt refinancing in the Nordic countries

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Abstract

Corporate bond market has rapidly grown in the recent years in the Nordic countries, a region where companies have historically relied on bank debt to finance corporate activities. Nevertheless, the effect of the corporate debt choice on company value has not been clearly understood. We analyse a sample of 48 corporate bonds issued to refinance bank debt in 2002-2012. By conducting an event study we look for abnormal returns associated with the bond issues. On average, bank debt refinancing by corporate bonds is associated with -1.27% abnormal returns over 4 day event window. When conducting cross-sectional analysis of returns, we find support that the growth opportunities are positively associated with the benefits from corporate bond issuance. In addition, the companies being closer to financial distress experience positive effects on company value when refinancing bank debt with corporate bonds.

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1. Introduction

After the breakout of the global economic crisis, the patterns and trends of financial markets have changed a lot and still keep evolving. Corporate financing is becoming a very challenging issue and therefore the financial managers of companies need more than ever fully understand the implications of each financial decision, in particular in terms of ultimate corporate objective – shareholder value.

Corporate debt financing in the Nordic countries historically has been a very straightforward matter. The region has always been dominated by banks as the main providers of corporate funding. In 1980s the banking sector in the Nordics rapidly grew due to the real estate bubble in the Northern Europe, which consequently was followed by a banking crisis in the early 1990s. The aptitude of Nordic countries in managing banking crisis helped the Nordic banks come out of the crisis much stronger than before. Their further development was fuelled by the availability of local bank funding in the form of savings and pension fund assets, which in turn provided plenty of resources for financing corporate activities.

Despite the global crisis, the Nordic banking sector still remains among the strongest and soundest in the world. There are however many challenges going forward. As a result of very many bank failures all over the globe, the regulation of the financial sector is prone to become tighter. Riskier exposures would have to be backed by higher capital buffers, capital requirements would become greater and more of assets would have to be held in highly liquid, low-yielding form. Consequently bank lending would become scarcer and more expensive, creating additional challenges in the Nordic corporate debt financing. As a result, corporate bond markets have rapidly evolved. In 2012 more than 43 billion EUR were raised to finance corporate activities in the Nordics. The amount of money raised via corporate bonds has rapidly expanded over the last 10 years, increasing by more than 11% a year since 2002.

Now when the financial managers of companies have a wider choice of the tools for raising capital, it is of utmost importance to understand the consequences of debt choice. Given that the ultimate goal of any manager should be the maximization of shareholder value, it is necessary to understand how the choice of corporate debt influences the total value of a company.

There have been many theoretical arguments that try to explain the positive and negative effects of either private bank debt or public fixed income securities. Bank debt is characterized by higher level of monitoring. It makes managers exert more effort, provides greater control and decreases the costs of information asymmetry when pricing corporate debt. Bank debt is also more concentrated and therefore the costs of restructuring are lower if a company enters financial

distress. The concentration of private lenders allows building long-term relationships and gives more strategic flexibility when a company wants to pursue its growth opportunities.

On the other hand, shorter maturities and tighter covenants of bank debt may prevent firms expanding to their full potential. Bonds therefore provide more managerial discretion and financial flexibility. This financial flexibility also implies lower probability of financial distress. In addition, companies may issue public debt to signal their good quality and therefore decrease the cost of borrowing. All in all, the theoretical arguments do not provide a clear answer why any of the debt types should be preferred. The empirical evidence also has not been conclusive and appears to be region-specific.

This paper fills a gap in empirical corporate finance research since the effect of the choice of corporate debt on the company value has not been researched in the Nordic region before. This study uses the sample of 48 bond issues that have been used to refinance bank debt. As an event study, the stock price around the announcement date is observed to measure the effects of bond issuance as an exogenous shock. Since the rapid development of bond market over the last few years, only now there is a sufficient sample to conduct the analysis. Mere 5 years ago the sample would consist of only 14 such observations. Such a rapid expansion has rarely been seen in any other region of the world, therefore the analysis of the Nordics is particularly interesting to aid future managers' decision making.

This study in a nutshell intends to address a very practical issue. When a CFO of a Nordic company faces a need to raise debt financing, it is important to understand how any of the choices affects the shareholder value. The research attempts to understand which companies benefit more from substituting bank debt with bonds and which companies are better off by remaining with private lenders. Also other practitioners of finance would be much more insightful, e.g. investment bankers advising their clients whether to issue a bond or a syndicated loan, stock analysts on issuing their buy/sell/hold recommendations etc. Our study intends to shed the light on these issues in the Nordic context.

The research is organized as follows. Section 2 describes the historical patterns and the present trends of corporate debt financing in the Nordics. Section 3 points out the recent changes in the regulatory environment. Section 4 provides the relevant theoretical and empirical background. Section 5 describes the hypotheses and the methodology used to test them. In Section 6 we present the results of our empirical research and section 7 we discuss the identification issues and alternative explanations. Section 8 concludes with the main findings and suggestions for further research.

2. Corporate debt financing landscape in the Nordics

The Nordic countries – Sweden, Norway, Denmark, Finland and Iceland- have traditionally relied upon banks to finance corporate activities. After going through a crisis in early 1990s Nordic banking sector has become one of the soundest banking systems in Europe (except the Danish banks which suffered another banking crisis in 2008). Nevertheless, the issuance of corporate bonds has rapidly developed over the last decade. In 2012 the total principal amount raised by corporate bonds was 43.03 billion EUR, with implied CAGR of 11.2% per annum since 2002.

2.1. Sweden

Long history and attractive pricing has determined that bank loans are the main debt financing source of Swedish companies. According to the Sveriges Riksbank (2011), bank loans (both bilateral and syndicated) account for approximately 78% of total debt financing for an average Swedish corporation. Major differences do exist depending on the size of the company. Larger companies more extensively use bonds (28.5% of total debt financing) and syndicated loans (16%). Smaller companies rely more on bilateral bank loans, which account for 80% of total corporate debt. Meanwhile, bonds and syndicated loans each contribute mere 9%.

Majority of the outstanding amount of bank loans to Swedish companies are provided by Swedish credit institutions. According to Statistics Sweden (2011), they financed 85% of total bank debt financing in Sweden. Lending market experienced rapid expansion in the years 2003 to 2007 due to favourable market conditions. Most of these loans had to be refinanced during 2012-2014, thereby creating large demand for debt financing over a concentrated time period. This need was particularly large for smaller companies as their average maturity of bank loans was significantly lower than for larger corporations. All these factors led to rapid expansion of fixed income capital markets in Sweden.

Over the last decade the total principal amount of Swedish corporate bonds issued has risen 12.8% per annum, from 4.52 billion EUR in 2002 to 15.04 billion EUR in 2012. High-yield bond market was virtually non-existent prior to 2008, and since then it has rapidly developed from 1.49 billion EUR in 2009 to 8.53 billion EUR in 2012. Companies with low credit ratings have argued that one of the main reasons for such a growth is that the cost of bank loans offered to them has significantly increased, in particular for longer maturities. In addition, many Swedish corporates have entered capital markets, both to achieve lower cost of capital and diversify the sources of financing.

2.2. Norway

Although historically Norway has been the largest bond market in the Nordics, most of corporate debt financing is still done by banks. According to Norges Bank (2012), bank loans account for approximately 70% of total debt for non-financial companies. Fixed income capital market instruments still account for only about 12% of total corporate debt.

The contraction in corporate lending in Norway was to a large extent absorbed by the capital markets. During 2002-2012 the annual principal amount of corporate bonds raised in Norway has grown from 5.88 billion EUR in 2002 to 13.68 billion EUR in 2012. Although the annual growth rate in volumes is 8.8%, lower than the Nordic aggregate, Norway has experienced a staggering annual growth in the number of issuers by 20% per annum – from 38 to 236 in 2002-2012. It could indicate that many medium sized companies have substituted bank loans for financing in the capital markets.

High yield bond market has become a significant source of capital for Norwegian corporations, in particular for medium and smaller size companies. Major share of the high-yield bonds serve project financing or asset financing purposes. Since 2010 more than 70% of total principal amount and more than 95% of total number of issues have been in high-yield sector.

2.3. Denmark

Corporate debt financing in Denmark is dominated by banks even more than in the other Nordic countries. According to the National Bank of Denmark (2012), aggregate bank indebtedness of Danish non-financial companies increased from 77.6 billion EUR in 2002 to 136.7 billion EUR in 2012. These numbers dwarf the 34.9 billion EUR raised in fixed income capital markets over the same period. The average bank lending margin to corporate sector widened from approximately 2% in 2008 to slightly over 4% in 2012, which might serve as an incentive to raise more capital by issuing debt securities. As a result in corporate bond market in Denmark over the last decade the total principal amount issued grew by 13.1% a year. In 2002 Danish corporates issued 1.72 billion EUR in bonds. By 2012 this figure had reached 3.16 billion EUR. The number of issues however has remained almost unchanged and has mostly fluctuated between 12 and 27 per year.

2.4. Finland

Similarly to the other Nordic neighbours, companies in Finland rely mostly on banks to finance corporate activities. According to the information on the aggregate liabilities of non-financial Finnish companies provided by Statistics Finland (2012), there were 179 billion EUR of corporate loans outstanding in the third quarter of 2012. The amount of outstanding bonds was only 30.6 billion,

however the figure has been rapidly expanding - since 2002 the amount of outstanding bonds has grown by 91%.

Since 2002 the annual amount of principal amount raised via capital markets has grown 11.5% per annum. Similarly as in Denmark, Finland has not experienced expansion in the number of issues, i.e. the average Finnish company bond has significantly grown over the last decade. In 2002 Finnish corporates raised 2.84 billion EUR in bond markets. In 2012 this figure had risen to 8.39 billion EUR. In particular the bond markets have developed since the eruption of the financial crisis. In 2008 the amount of bonds issued by the companies of Finland was only 348 million EUR.

3. Changes in the regulatory environment

Financial industry has undergone significant changes since 2008 onwards. Many of the structural flaws have been realized and understood better, including better assessment of risk and discovering more potential pitfalls for the security of financial system. In response to the financial crisis there is a mounting pressure to increase the regulation of financial industry. The most significant changes target banking and insurance sectors. In addition, the EU regulations are changing the operational aspects of financial industry.

3.1. Basel III

In response to the recent financial crisis and in order to prevent future crises, the Basel Committee on Banking Supervision is in the process of implementing Basel III, an expansion of the previous regulatory framework Basel II. The change in banking regulation will have a profound impact on the dynamics of bank lending and consequently on the capital markets. The priority of the new proposal is to strengthen the capital adequacy rules. Banks will be required to hold more common equity, Tier 1 capital as well as capital conservation buffers. In addition Tier 2 capital instruments will be harmonised and national regulators will be allowed to impose discretionary countercyclical buffers. On top of that, many countries impose additional measures complementary to Basel III. For example, according to Sveriges Riksbank (2011), systemically important Swedish banks have an additional core Tier 1 capital add-on. As a result, the core Tier 1 capital requirement for the four largest Swedish commercial banks would extend to 10% from January 2013 and 12% from 2015. At the end of the transition period Swedish banks in aggregate would face capital requirements that are 5 percentage points higher than for most other European banks.

Basel III is expected to decrease the volume of bank loans and increase the required lending margins of banks. Swedish Financial Supervisory Authority (2010) expects the required lending margins will increase by 13-16 basis points for Swedish banks within 4 years after transition.

Although the estimated impact might appear minor, during the last several years companies are more often mentioning the need to diversify the sources of funding as one of the main reasons behind the issuance of corporate bonds.

3.2. Solvency II

The Solvency II Directive is an EU Directive that codifies and harmonises EU insurance regulation. The directive has been approved by the European parliament and will come into effect in 2014. The main concern of Solvency II is the amount of capital that EU insurance companies must hold to minimize the risk of insolvency. The directive will implement a framework for a new risk-based solvency requirement by introducing an economic approach to the valuation. In Solvency I, the capital adequacy is based on insurers' requirement to hold a fixed margin based on the size of the commitments to cover all risks. Solvency II regulation introduces risk-sensitive measure and changes emphasis from fixed-value to market-consistent valuation approach.

The Solvency II directive is expected to have negative effects across the bond markets. Solvency II will lead to higher costs for the risk that insurance companies incur when holding long-term bonds. Under Solvency II bonds with lower credit rating carry heavier capital charges, thus discouraging insurance companies from investing in high-yield bonds. As a result, the demand for long-term corporate bonds most likely will drop. Solvency II is much more in a preliminary state as if compared with Basel II. Thus the exact effect of the directive, albeit profound, still remains uncertain.

3.3. MiFID II

The revised version of Markets in Financial Instruments Directive (MiFID) was released in October 2011 and is commonly named MiFID II. The original MiFID was introduced in 2007 with the intention to restructure the financial markets, bring down trading costs per transaction, reduce bid-ask spreads, facilitate faster trading times and abolish the concentration rule for national exchanges. MiFID II expands the former regulatory framework from equities to all non-equity previously unregulated asset classes and into markets where centralized bid-offer markets and pre- and post-trade transparency did not exist before. The directive has significantly impacted the way OTC trading is conducted. The corporate bond market now is subject to the enforcement of full post-trade transparency concerning issuers, volumes, prices, maturities, currencies and coupons of all trades. Since the liquidity of Nordic corporate bond markets is low, MiFID II regulations are likely to raise interest among both issuers and investors in the corporate bond issues. Nevertheless, some institutions, for example Sveriges Riksbank (2011), have argued that in small markets, like in the Nordics, increased transparency may result in unfavourable prices for market-makers which in turn

may decrease their activity in the market. Consequently, there actually might be an adverse effect on the market liquidity. Upcoming years after full implementation of MiFID II in the Nordic countries will show the final impact on the development of corporate bond market.

4. Literature review

4.1. Theoretical background

There exist various theories that attempt to explain the capital structure of companies. Since the observed corporate financing patterns are very diverse, there has been a significant effort devoted to explain all the determinants. Various theories examine the debt choice in the context of information asymmetry, agency costs of debt, renegotiation aspects, managerial discretion and several others.

Leland and Pyle (1977), Diamond (1984), Fama (1985) and Boyd and Prescott (1986) have stated that banks can conduct monitoring more efficiently than public investors. Therefore firms with higher information asymmetry will tend to borrow privately and firms with lower information asymmetry would prefer public debt. Such a choice would thus optimize borrowing costs for each type of companies. As found by Krishnaswami et al. (1999), the cost of debt associated with information asymmetry can be reduced by issuing debt privately. On the other hand, Diamond (1991) and Rajan (1992) have hypothesized that the relation between debt source and firm quality is not monotone. Similarly to the earlier models, they predict that the firms of highest quality would borrow publicly while medium quality firms would borrow from banks. Consequently they argue that for companies with low credit quality the benefits of bank monitoring would be less than the associated costs. As a result the low credit quality borrowers would issue public debt.

Myers (1984) has hypothesized that the firms facing high costs of asymmetric information would use external financing sources only when internal funds are insufficient. When external funds are required, the firm would issue the safest securities first, i.e. those whose value is distorted least when inside information is revealed to the public. That implies preference of debt over equity. Since private debt is more informed through careful screening and monitoring and additionally is mostly senior (Welch, 1997) and collateralized (Rajan and Winton, 1995), it is expected that this type of financing would be preferred for a given level of information asymmetry between the external market and the firm. Thus the firms with higher degree of information asymmetry and higher probability of default will issue private debt before public debt. When the degree of asymmetry diminishes, the debt choice would be determined mostly by other factors such as transaction costs, the flexibility of covenants (Gilson and Warner, 1998) and credit quality (Diamond, 1991).

Berlin and Loyes (1988) and Chemmanur and Fulghieri (1994) have hypothesized that the sources of funding are the function of the borrower's prior probability of default and the lender's ability to make an efficient liquidation decision. Thus the firms with high and low credit quality are predicted to use public debt, while the firms with medium credit rating would use bank financing. In general, the regulatory environment provides banks with higher flexibility of renegotiation than public investors. That suggests that the borrowers with higher ex-ante probability of default would find more rational to finance themselves privately. For example, the Trust Indenture Act of 1939 in the US stipulates that firms are obliged to receive unanimous consent of public bondholders in order to amend any material terms of the bond indenture. Such requirements may cause significant holdout problems for publicly held bonds. Gilson, John and Lang (1990) have found that the firms with higher proportion of bank debt to total debt have higher probability of out-of-court debt restructuring.

Managerial discretion is another important aspect to consider. Since banks and other private lenders have more concentrated holdings and access to information, they are able to exert much larger influence on management than public debt holders. Thus Denis and Mihov (2002) hypothesize that managers with low equity ownership will tend to avoid such scrutiny by issuing public debt. On the other hand, managers with high equity ownership stakes will seek to issue private debt. Firstly, their ownership stake provides them incentive to choose the security that maximizes the total value of the firm. Thus, if private debt is the optimal choice, such managers are more likely to make the optimal choice than managers with low ownership stake. Secondly, managers with higher equity interest possess greater control, which decreases the effect of external pressures by debtholders.

Myers (1977) predicts that firms which are financed with risky debt can sometimes forego projects with positive net present value and thus reduce the total value of the firm. He implies that supporting continuous and flexible relationship with the lender can help avoiding this problem. Consequently the firms are more likely to build such a relationship with banks and other types of private lenders than with public bondholders. Private debtholders are normally much more concentrated and thus face lesser free-rider problems than bondholders. That suggests that the firms with higher growth opportunities will prefer bank and other private debt to public debt. In addition, the firms that possess proprietary, firm-specific information (normally information on future cash flows) are characterized by higher information asymmetry and would thus prefer issuing private debt to minimize the costs of such adverse selection (Yosha, 1995; Hadlock and James, 2002). Adverse selection problem is more relevant to firms with higher growth opportunities, since they can more easily substitute low-risk projects with riskier ones (Myers, 1977). Thus, firms with higher growth options in their set of investment projects will tend to issue debt privately (Krishnaswami et al., 1999). This choice is exacerbated by the firms' lifecycle and credit quality. The

close monitoring and the covenants associated with bank debt reduce the cost of debt for small firms that are early in their lifecycle and typically have higher growth opportunities, but which have not managed to build their credit quality yet (Berger and Udell, 1998). Firms in early lifecycle create credit reputation through bank loans and later use this reputation to access public debt market (Diamond, 1991).

However, other research argues that greater constraints of bank debt can be value reducing. The tighter covenant restrictions and shorter maturities of bank loans can prevent managers from investing in projects with positive value (Smith and Warner, 1979; Perry and Taggart, 1988; Barclay et al., 1995). Under these arguments, public debt is superior to private bank debt since it provides greater financial flexibility, defined as the capital structure's ability to support activities at low transaction and opportunity costs (Higgins, 1992). In addition, investment banking professionals often claim the stricter restrictions of bank debt that force the companies to issue public debt (Yago, 1991).

4.2. Empirical evidence on debt choice

Several researchers have attempted to determine empirically what the determinants of corporate debt choices are. The main area of interest has been the characteristics of either public or private debt issuers, thereof drawing conclusions with respect to various hypotheses. Indirectly the conclusions can be inferred about the effect of a certain debt type choice on the company value.

Not surprisingly, a significant portion of the research has been conducted in the United States. Julio et al. (2008) used a sample of nearly 15'000 bond issues in the US during the period 1971-2004. Their findings conclude that short-term debt is more likely to finance R&D, while long-term debt tends to be used for capital expenditure financing. As a result, consistent with Diamond (1991), short-term issuers are more likely to be larger, have lower fixed asset ratios, stronger growth opportunities and more cash holdings than otherwise similar issuers of long term debt. On the other hand, Barclay and Smith (1995b) and Stohs and Mauer (1996) have found that larger, less risky firms tend to have debt with longer maturity. These papers found mixed evidence that debt maturity is inversely related to growth opportunities. Guedes and Opler (1996) found that larger firms with investment grade credit rating tend to raise financing at both the long-term and short-term debt maturity spectrum, while risky firms seem to issue debt securities with intermediate maturities. This conclusion is in line with Diamond (1991) argument that risky firms would not issue short-term debt due to the risk of inefficient liquidation. Since bank debt tends to be of shorter maturity than public bonds (Gilson and Warner, 1998), the maturity could be an important aspect of corporate financing choices. Indeed, Julio et al. (2008) conclude that short-term debt issuers have stronger growth

opportunities as measured by book-to-market ratio. Consistently with Myers (1977) and Barnea et al. (1980), such choice allows minimizing potential agency problems.

Another research focusing on the US was carried out by Arena (2010). The study focused not only on public vs. private debt choices but also made a distinction among various types of private debt. The sample covers 33'663 debt issues during the period 1995-2003. In contrast with Denis and Mihov (2003), who claimed that high quality firms would be likely to issue public debt and low credit quality firms would issue private debt, Arena's research found more complex relationship when more fractured debt types and several rankings of firms are introduced. According to the study, high credit quality firms prefer public bond offerings. These issuers are also more likely to have higher growth opportunities as measured by market-to-book ratio. In addition, such firms are less prone to suffer free cash flow agency problems, thereby they are in less need to be monitored by banks or other private debt investors in order to reduce the costs of borrowing. Good quality firms raise financing via traditional private debt offerings since the cost of flotation prevent them to minimize cost of debt. Moderate quality firms extensively use bank loans and poor credit quality firms prefer to issue 144A (private securities placement for qualified institutional investors) debt. These firms are characterized by higher probability of bankruptcy, lower credit rating and higher likelihood of net loss in the preceding year. Consistently with Denis and Mihov (2003), private debt issuers tend to have lower credit ratings than public debt issuers, even when controlling for firm specific characteristics. This might imply that the issuance of public bonds could be value enhancing.

Fan et al. (2011) conducted an international study of corporate debt financing patterns. The paper covers 39 countries and samples 36'767 firms over the period 1991-2006. The main conclusion of the research is that the country in which the firm is domiciled is a more significant determinant of corporate financing patters than the industry affiliation. Consequently, the main determinants of capital structure choices are likely to be country level institutional factors – legal environment, tax policies and the importance and regulation of financial institutions. Therefore it is very important to conduct the study of the debt financing choice impact on company value at the regional level. The research of Fan et al. shows that the firms from countries with larger banking sectors have shorter maturity debt. Banks tend to have short-term liabilities and therefore have comparative advantage to finance short-term debt. In contrast, pension funds and insurance companies have long-term assets and therefore have preference to invest in long-term assets. As a result, firms in countries with larger banking sectors would use more of shorter maturity bank debt, whereas firms in countries with larger pension fund assets would use more long-term bonds. In addition, firms in countries with developed government bond markets have lower debt ratios and shorter maturity debt, demonstrating that government bonds tend to crowd out long term corporate debt. These

important findings suggest that corporate debt financing patterns are not only determined by companies themselves but also by the supply of funds within the financial markets.

Another interesting study has been done in Taiwan by Yu et al. (2008). The research covers 3'453 debt issues during 1991-2000. In Taiwan it has been found that public debt issuers are significantly older, more reputable and much larger than private borrowers. However, there appears to be no evidence that more profitable firms with higher growth opportunities would issue more public debt. The tendency for a company to issue bank debt is positively related to the anticipated future performance. The observed reasons for employment of bank debt are in line with the expectations of the study – firm size, debt repayment coverage, collateral coverage and future growth all positively affect the usage of bank financing. However, the evidence for issuing public debt is highly inconsistent with most of the previous findings. The main explanation provided by the authors is that banks in emerging countries are the primary lenders, while the public debt market serves the role of the lender of last resort. Consequently firms with higher debt capacity utilize bank debt as much as possible, and the public debt markets are used when all other capacities have been exhausted. These findings underline the importance of supply-driven factors across various geographies when assessing the impact on company value.

4.3. Observed effects on company value

The theoretical implications of corporate debt financing choices yield inconclusive results whether such distinction has any impact on company value. Both public debt and private debt choices have arguments for value enhancing effects. Furthermore, since any such implications are likely to vary across different regions, there are still large gaps for research. Some researchers have attempted to quantify the stock market reactions after making corporate debt financing choices.

The study conducted by Gilson and Warner (1998) analysed 164 junk bond issues in the US that have been used to refinance the existing bank debt. They cover time period from 1980 to 1992. The authors find that substituting bank debt with junk bonds yields -0.8% abnormal return over the two day window around the announcement day. If the proceeds are completely used to repay bank debt, the abnormal return is -1.1%. The stock market reacts more favourably to the exchange of junk bonds for bank debt when firms have higher growth opportunities and they are closer to breaching contractual covenants of the bank debt, i.e. when the benefits of enhanced flexibility are the greatest. The authors did not find any evidence that the negative reactions may have been caused by reduced bank monitoring or any other possible explanation.

Major portion of research in the area of debt financing choices is concerned with acquisition of bank financing and its impact on the company value. James (1987) researched the effects of bank loan and private placement announcements and compared them with public debt financing. James

reported significant positive abnormal return of 1.93% for the sample of 80 bank loans. On the other hand, in a sample of 37 private placement agreements, mostly with insurance companies, weakly significant negative abnormal return of -0.91% was found. Preece and Mullineaux (1994) examined a sample of 439 short-term loan contracts and tested whether lender identity has impact on company value. Private types of lenders (commercial banks and finance companies) were associated with positive abnormal returns. Two day abnormal return was 0.79% for banks and 1.84% for finance companies. This finding was in contrast with James (1987) whereby bank lenders would convey more positive information about the borrower than insurance companies and other private lenders. Lummer and McConnell (1989) made a distinction between new bank loans and loan renewals within an existing banking relationship. In their sample loan renewals generated significant and strong positive return, while new loans were associated with zero average abnormal return. Similar findings have been reported by Best and Zhang (1993). However, other researchers, e.g. Wansley et al. (1992) have reported insignificant differences between new and renewed loans. Lummer and McConnell (1989) argue that new bank loans should not have any information effect since obtaining private information requires time and extended interaction with the borrower. Due to a similar argument, Billett et al. (1995) do not find abnormal returns associated with the issuance of public debt securities. In addition, borrower's characteristics matter for the observed effects. Slovin et al. (1992) have reported that larger borrowers are associated with lower announcement returns since larger companies are more likely to already be under the scrutiny of several other external monitors. In addition to that, Wansley et al. (1992) have found that the impact is dependent on the complexity of the borrower. The authors argue that companies with relatively higher growth opportunities are harder to value by outsiders. They proxy this with market-to-book ratio and report evidence that bank loans are associated with elevated abnormal returns for borrowers with higher market-to-book ratios. The effect of loan renewals however is inversely related to the market-to-book ratio.

Empirical evidence therefore implies that the issuance of public securities to substitute for bank debt should be a value destroying activity. However, the rapid development of bond market in Nordic countries clearly shows that public debt must have certain beneficial aspects.

5. Methodology

5.1. Hypotheses

Neither corporate finance theory nor previous academic research provides conclusive expectation of value creation association with the issuance of corporate bonds. Billett et al. (1995) did not find evidence for abnormal returns around the time of issuance of corporate bonds. Other researchers

have approached the issue from a different perspective and analysed the impact of issuing bank loans. James (1987), Lummer and McConnell (1989), Preece and Mullineaux (1994) have all found positive effect of bank financing on the company value. In addition, the effects are likely to differ from country to country, as pointed out by Fan et al. (2011). However, the impact on company value should be much smaller when a company issues corporate bonds to replace existing bank debt. In that case one type of debt is merely substituted with another and thus any observed change in the company value results from the different characteristics of the debt types. In their study Gilson and Warner (1998) found a negative impact when junk bonds are issued to repay bank debt. The results imply that negative effect from the loss from bank monitoring outweighs the benefits from enhanced flexibility of bond issues. Following the same reasoning we state the first hypothesis:

H1: When Nordic companies issue corporate bonds to refinance bank debt, it has no effect on company value (average cumulative abnormal returns are 0).

In order to better understand the effects, we also need to test various theories behind the mechanism how the corporate debt choice affects company value. Firstly, the relation between debt choice and growth opportunities should be explored. Several researchers (e.g. Myers, 1977; Yosha, 1995; Hadlock and James, 2002) have argued that bank debt facilitates closer relationships with financiers and therefore would allow higher flexibility in project choice and help minimizing debt overhang problem. In addition, higher concentration of bank lenders would imply greater monitoring and reduced adverse selection costs. Since information asymmetry and the associated adverse selection costs are greater for high-growth companies, they should benefit more from issuing bank debt. Furthermore, the increased monitoring provided by banks should be value enhancing in itself, since debt repayment schedules would discipline managers and make them exert higher effort. On the other hand, cash flow profile of corporate bonds is much less demanding than for a bank debt. Many researchers (e.g. Smith and Warner, 1979; Perry and Taggart, 1988; Higgins, 1992; Barclay et al., 1995) have stated that this greater financial flexibility provided by the absence of debt amortization, looser covenant restrictions and typically longer maturity allows high-growth companies to fully utilise their investment opportunities and thus corporate bonds should be value enhancing. We therefore formulate the growth hypothesis:

H2: When Nordic companies issue corporate bonds to refinance bank debt, company growth opportunities are not correlated with the company value (regression coefficients for growth opportunity variables are zero)

Secondly, the relation between the choice of public and private debt must be examined in the context of strategic flexibility, in particular when a company approaches financial distress. The

profile of corporate bonds is much less restrictive, so *ceteris paribus* the default on corporate bonds should be less likely than on bank loans. So when a company experiences deterioration of performance, it could be value enhancing to substitute bank debt with corporate bonds. For a given amount of financial distress costs that would provide lower probability of bankruptcy and thus increase the value of the company. On the other hand, the lesser concentration of bank lenders allows developing closer relationships, which in financial distress would mean lower restructuring and/or bankruptcy costs. For example, Gilson, John and Land (1990) have found evidence that the companies with higher proportion of bank debt are more likely to conduct financial restructuring out of court. Such flexibility of bank debt, for any given probability of default, would imply lower cost of financial distress and thus bank debt could be value enhancing. Therefore we state the flexibility hypothesis:

H3: When Nordic companies issue corporate bonds to refinance bank debt, the proximity of financial distress does are not correlated with the company value (regression coefficients for financial distress variables are zero)

To test the hypothesis H1 we will carry out an event study for the sample of 48 Nordic companies that issue corporate bonds to refinance bank debt. In order to explore the motives of the Nordic companies for transforming their mix of public and private debt, we investigate how the economic circumstances of the companies may have determined the effect on company value. We perform the tests of the hypotheses H2 and H3 through cross-sectional analysis of abnormal stock returns around the date of issuing corporate bonds.

5.2. Data description

The data set was acquired primarily from the Bloomberg Professional database. We screened for bonds issued by non-financial companies between January 2002 and January 2013 for which the country of risk is Sweden, Norway, Denmark, Finland or Iceland. Thus the dataset includes bonds issued by Nordic issuers in non-Nordic financial markets and excludes bonds that are issued in Nordic financial markets by non-Nordic issuers. We also obtained bond prospectuses where they were available on the Bloomberg terminal. Table 1 summarizes the scale of the data set.

Table 1 - Number of bond issues and issuers in the data set

	Sweden	Norway	Finland	Denmark	Iceland	Total
Issuers	121	274	62	35	18	510
Issues	704	1222	297	171	26	2420

Afterwards, the bonds were sorted by their indicated use of proceeds. The bonds could be classified in three major groups. First group consists of bonds for which Bloomberg database did not

contain the use of proceeds information or the issuer had not disclosed it (1721 bonds). Second group consists of bonds for which it was indicated that some or all of the proceeds were intended to refinance or repay existing debt (157 bonds). Third group consists of bonds that were issued to provide funds for general corporate purposes or working capital needs (498 bonds). For the remaining 18 bond issues the purpose did not fit our research requirements. They were issued with a designated use of funds, such as construction of a vessel or developing a mine, and the proceeds could not be used for any other purpose.

To deal with the first group we had to screen the prospectuses for any mentioning of the intended use of proceeds. Some prospectuses clearly stated that the issue was for "General financing of the company". Quite a few of the prospectuses were written in the local language. Using translation software we managed to find out the use of proceeds for some bonds, otherwise we discarded them from the dataset. However, for the majority of the bonds from the third group the prospectuses were not available and we had to discard them. In total we transferred 19 bonds to the third group.

For the second group we screened the prospectuses and discarded those issues where it was explicitly mentioned that other existing bonds are to be refinanced. Of the remaining, 8 prospectuses stated explicitly the intent to refinance bank credit line or syndicated loan and thus qualified for our sample. Others did not give any more detail and we treated them the same way as the third group.

To determine if the bonds in the third group were used to refinance bank debt we analysed the company's financial statements and balance sheet around the issue date. First we looked for explicit statement in the annual or quarterly reports that the bond issue was used to refinance bank debt or syndicated loan (37 issues). If no specific use of the proceeds could be found we compared the level of short- and long-term debt at the beginning of the quarter when bond was issued and at the end of the quarter. In cases where the issue happened during the last 2 weeks of the quarter we also looked at the change over the following quarter. In addition we looked at the yearly changes in debt levels. This was done to take into account that the company might not have had adequate time to carry out the intended transactions. Then we looked for company commentary on the change in debt levels and specific evidence of bank debt substitution. This way we added 12 bond issues to our list.

Overall, sample has 57 bond issues where bank debt is substituted with public debt. Out of those 9 were issued by a non-public company and could not be used in the study. Thus, the sample for event study consists of 48 bonds issued by 40 companies. There were 19 bonds issued by Norwegian companies, 15 by Finnish, 8 by Swedish and 6 by Danish companies.

5.3. Company financial data

To analyse the differences among companies we also collected company level financial data. In order to evaluate if high growth companies benefit more from debt replacement than low growth companies we will look at market to book ratio and several growth variables. Market to book ratio, which is calculated by dividing the market capitalization with book value of equity, is often used to categorize companies based on their expected future growth. If the ratio significantly exceeds one then it indicates that the market is pricing in a future growth of the book value. To gauge the actual realised growth of the company prior to the bond issue, we also look at the 3 year history of EBITDA, net profit, assets, sales and their growth rates.

Companies closer to financial distress should benefit relatively more from issuing bonds, thus we look at company financial data that characterises the credit quality of the company. Interest coverage ratio is one of the most often used measures to monitor the sustainability of the indebtedness of the company. It is calculated as EBIT divided by total interest expenses and shows the company's ability to generate enough profit to cover the interest expenses. Leverage, expressed as total debt divided by total assets is also a measure of the financial risk. While there are usually differences in the average levels of leverage among industries, our sample is rather uniform and consists mostly of industrial companies (41 out of 48 bond issues). For some companies public debt, through less strict covenants and longer maturities can lower the probability of bankruptcy. At the same time public debt is harder to restructure and thus the associated bankruptcy costs are higher. Leverage is one of those factors that can differentiate companies among the two outcomes. Similarly, net profit margin and EBITDA margin are often industry dependent but we also look at their change over the year prior to bond announcement. In combination they could reveal the financial soundness of a company and the resulting effect of a bond issue. Another measure of leverage is net debt divided by EBITDA. It shows how many years it would take the company to repay its debt based on the current earning capacity.

Financial distress can be characterised by several financial figures and ratios and they can differ greatly in magnitude among various companies and market situations. Since quantitative analysis not always can reveal the true condition of the company, we conducted qualitative analysis of the sample. By using our subjective judgement and for the sample of 48 companies construct a dummy variable that indicates if the bond issue has been issued when a company approaches financial distress situation and would serve as another measure of financial weakness. To decide that we looked at earnings and balance sheet dynamics of the company over the three years prior to the bond issue, as well as analysed the management discussions and strategies from annual reports and management presentations. Overall we assign 15 out of the 48 bond issues to this group.

We also look for differences in the observed cumulative abnormal returns based on the company size as characterised by the market capitalisation, book value of total assets and enterprise value. Bank loans tend to be relatively short term so an issue of a longer term bond would most likely have a stronger effect on the company value. Thus we look for differences in the abnormal returns among the bond issues based on their initial time to maturity. We use ratios of capital expenditures to total assets and intangible assets to total assets to see if the abnormal returns differ based on the capital intensity of the company. Additionally, we check if there are differences in the average realised abnormal returns between companies who issue bonds for the first time and those who already have accessed the market previously.

The collected data were mostly expressed as ratios, but where absolute values are used (such as the enterprise value) we converted the data to a common currency - euro. This was done using the European Central Bank exchange rates that were fixed on the bond issue announcement date.

5.4. Event Study

To test the hypothesis H1 we use event study methodology and determine the abnormal returns for the sample of Nordic companies' public debt issues whose proceeds are used to repay private debt. The abnormal return is defined as

$$AR_{i,t} = R_{i,t} - E(R_{i,t})$$

where $R_{i,t}$ is the actual return of stock *i* over the event window and $E(R_{i,t})$ is the respective expected normal return.

To calculate $R_{i,t}$ we use the change in the price of stock *i*, adjusted for any dividends, over a two day event window. It is possible that the announcement of the bond issue occurred late in the day or even after the close of the stock market. Thus, we add the business day immediately following the announcement date when forming the event window. If the announcement date coincides with a market holiday, only use the next business day is used as the event window. Such a period should capture the resulting stock price effects while minimising the disturbance caused by external factors. To make sure that we do not miss significant stock price reaction before the announcement or after the event window we will also analyse the aggregated cumulative abnormal returns 20 days before and after the event date.

Following MacKinlay (1997) we use the market model to determine the single security normal returns. Market model statistically relates returns of any single security to the returns of the market portfolio. Assuming joint normality of asset returns the market model is defined as:

$$R_{i,t} = \alpha_i + \beta_i R_{m,t} + \varepsilon_{i,t}$$

$$E[\varepsilon_{i,t}] = 0 \quad Var[\varepsilon_{i,t}] = \sigma_{\varepsilon_i}^2$$

where $R_{i,t}$ is the period *t* return of stock *i* and $R_{m,t}$ is period t return of the corresponding country's stock market index (OMX30 for Sweden, OBX for Norway, OMXC20 for Denmark and OMXH25 for Finland). We perform OLS regressions over an estimation period of 250 days prior to the announcement date. The estimates of α_i and β_i depend on the length of the estimation window and there is a trade-off between the accuracy of longer period estimates and the relevance of more recent sample data. The regression R^2 indicates how well the variance of the abnormal return has been reduced. In case of consistently low R^2 we would consider increasing the estimation window by adding more historical return data. Another approach is to use also the post-event window returns and thus account for gradually changing parameters over the announcement date (MacKinlay, 1997). We will employ this strategy where there is not enough historical data to form a full estimation window.

Applying the estimated market model parameters on out of sample returns we can calculate the abnormal return as the disturbance term:

$$AR_{i,t} = R_{i,t} - \alpha_i - \beta_i R_{m,t}$$

Aggregated over the sample of events we calculate the average *AR* for period *I* as:

$$\overline{AR_t} = \frac{1}{N}\sum_{i=1}^{N} AR_{i,t}$$

And the cumulative *AR* over the event window can be calculated as:

$$\overline{CAR} = \sum_{t=1}^{2} \overline{AR_t}$$

Conditional on the normality of the returns over the event window the variance of abnormal returns can be calculated as:

$$\sigma^2(AR_{i,t}) = \sigma_{\varepsilon_i}^2 + \frac{1}{L}\left(1 + \frac{(R_{m,t} - \mu_t)^2}{\sigma_m^2}\right)$$

The second part of the equation is due to the possible sampling error in the market model. For large enough observation period it can be assumed that the sampling error of the parameters becomes negligible and the variance for mean abnormal return as well as the mean cumulative abnormal return can be calculated from sample variance as:

$$VAR(\overline{AR}_t) = \frac{1}{N^2}\sum_{i=1}^{N}\sigma_{\varepsilon_i}^2$$

$$VAR(\overline{CAR}) = \sum_{t=1}^{2} VAR(\overline{AR}_t)$$

The null hypothesis is then that $\overline{\text{CAR}}$ is not significantly different from zero and can be tested using the t-statistic:

$$t_{CAR} = \frac{\overline{CAR} - 0}{\sqrt{VAR(\overline{CAR})}}$$

5.5. Regression analysis

We use multiple regression analysis for the sample of companies that issue corporate bonds to replace bank debt. A list of all variables in the regression analysis is shown in the Appendix I. To determine what effect the company characteristics have on abnormal returns we use the following main regression specification

$$CAR_i = \alpha_i + MTB_i + IntCov_i + EV_i + Maturity_i + First_i + Country_i + \varepsilon_i$$

where *MTB* is the market to book ratio, *IntCov* is the interest coverage ratio, *EV* is enterprise value which is included to control for company size. We also run regressions replacing *MTB* with other proxies for growth, such as *SalesGrowth* and *AssetGrowth,* which are year on year growth rates from the most recent reporting quarter. Similarly we run regressions replacing *IntCov* with other variables that could describe financial distress. These include the D*istress dummy* variable*, NetDebt/EBITDA* ratio*, EBITDA margin* and *change in EBITDA margin*. The last two variables should be evaluated together as EBITDA margin alone could be biased due to the industry differences in average margins.

Maturity is the number of years till the initial term to maturity of the bond and it is included to control for the positive value effects of issuing a longer maturity bond. *First* is a dummy variable which takes value of 1 if the bond is the first one ever issued by the company. *Country* represents the 3 dummy variables used to capture any difference in abnormal returns depending on the country of the issuer.

To test hypothesis H2 we evaluate if the coefficients of *MTB* and the other growth variables (described above) are statistically significant and different from zero. If the coefficients are positive then it means that there are stronger benefits of enhanced flexibility to be realised for high growth

companies. If instead it is negative then it could imply that the high growth companies stand to lose more in distress (has higher bankruptcy risk) as it could be more difficult to find a restructuring solution among dispersed set of bondholders.

To test hypothesis H3 we evaluate if the coefficients for *IntCov* and the other financial distress variables used are statistically significant and different from zero. That would indicate that companies closer to financial distress benefit more from private debt substitution with public debt. It is based on the notion that public debt has less strict covenants and thus allows the company more manoeuvres to restore financial order.

6. Results

This section shows the results of our empirical research performed by the event study and the regression analysis. In addition, we also show the interpretation of those results with regard to the proposed hypotheses.

6.1. Event study

We perform event study for the sample of 48 companies that issue corporate bonds to replace bank debt. For the two day event window average cumulative abnormal return is -0.52% (median is similar at -0.45%) but with a p-value of 0.38 the return is not statistically significant. Out of the 48 observations 27 showed negative cumulative abnormal returns. Thus the empirical results are more in favour of firm value decline due to the substitution of private debt with public debt.

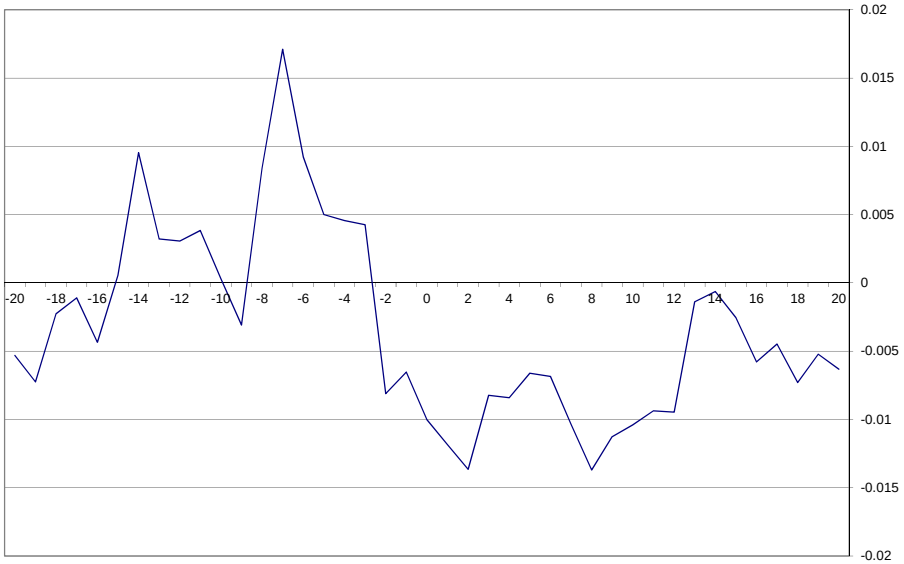


Figure 1 - Average cumulative abnormal returns 20 days before and after the announcement date

We also plot the average cumulative abnormal returns over a period of 20 days before and 20 days after the announcement date, to check if the choice of event window has been appropriate. As can be seen from figure 1, the average cumulative return has been rising initially and then started to decline 6 days before the announcement date. This could be attributed to the mean reversion as the average cumulative returns have increased almost 2.5% over the 14 day period. However, there is a noticeable sharp drop in the average cumulative returns two days prior to the announcement date. This raises a concern about possible anticipation effect, where market participants either predict the announcement of a bond issue or there has been an information leakage. It could be that on average, information about the bond issue for the sample firms has been leaked as much as six days prior to the announcement, when the cumulative abnormal returns start to decline. However, we hesitate to widen the event window that far, due to the external factors that could affect the stock price over such a long time period. Instead we choose to widen the event window to two days before the announcement date, when the sharp decline in average abnormal returns is observed. We thus continue our analysis using the wider event window and the cumulative abnormal returns associated with it. This extension appears reasonable since the Nordic corporate finance industry is relatively small if compared with the US or the UK, therefore the network among financial industry professional is much more concentrated and there are more opportunities for anticipating the announcement slightly earlier.

For the aforementioned four day event window the average cumulative abnormal return is -1.27% (median is -1.26%) and it has a weak statistical significance (p-value of 0.125). Over this event window 30 companies experienced negative cumulative abnormal returns. Thus, we are inclined to reject the first hypothesis that the issuance of corporate bonds by Nordic companies to refinance bank debt has no effect on company value.

This result is in support of the theory that on average bank monitoring is much more appreciated by shareholders than any positive effects associated with issuing corporate bonds. These results are in line with Gilson and Warner (1998) who found -0.8% return when junk bonds are issued to refinance bank debt and -1.1% in subsample where bond proceeds are completely used to repay bank debt. It is also coherent with research that has found positive effects of bank debt, e.g. James (1987), Lummer and McConnell (1989), Preece and Mullineaux (1994). Nevertheless, there appears to be high variance of the abnormal returns indicating that the issue should be investigated in more detail by conducting cross-sectional analysis.

6.2. Regression analysis

We use regression analysis for the sample of the 48 Nordic companies to shown how company characteristics affect the abnormal returns when they issue corporate bonds to replace bank debt.

While we have performed many combinations of the variables, for clarity we provide in the Table 2 separate results with different variables for growth opportunities, in the Table 3 with different measures of financial distress and in the Table 4 with other variables.

To test the hypothesis H2 we test that the coefficient for market to book ratio (MTB ratio) is different from zero. The coefficient is positive and with p-value of 0.08 it is statistically significant at the 10% level (regression 1). Thus we can reject the hypothesis H2. The result implies that the higher the growth prospects of a Nordic company, as represented by the MTB ratio, the more it benefits from replacing private debt with public debt. This result is firmly supported by the corporate finance theory. By issuing bonds companies can generally get looser covenants, extend the maturity of liabilities and avoid amortization schedules that are typical to bank debt. This gives more financial flexibility to the management and this flexibility adds most value to companies with high growth opportunities. The management can undertake more risky and illiquid projects than would be possible by using bank debt. In place of market to book ratio we also tried historical asset growth (regression 2) and historical sales growth (regression 3) variables but the results were not statistically significant. That implies that market makes clear distinction between the growth that a company has achieved in the recent years before bond issue and the future growth opportunities. So even in the case when the historical performance has been sluggish but the company has upcoming profitable investment projects, issuing a corporate bond can be value enhancing. This finding is in line with research (Smith and Warner, 1979; Perry and Taggart, 1988; Higgins, 1992; Barclay et al., 1995) arguing that the flexibility of bonds is beneficial for growth. Although other part of research favours bank debt (Myers, 1977; Yosha, 1995; Krishnaswami et al., 1999; Hadlock and James, 2002) due to smaller adverse selection costs for high-growth companies, it appears that it might be more relevant for smaller and private companies. Public companies included in our sample suffer less from such problem and thus the benefits of flexibility appear to outweigh the costs information asymmetry since, as argued by Berger and Udell (1998), private debt would be more suitable for companies that have not built their credit quality and lending reputation.

Table 2 - Results of regressions with alternative variables for growth opportunities. Regression 1 uses MTB ratio as the proxy for growth opportunities, regression 2 uses asset growth and regression 3 uses sales growth. In all regressions the four day cumulative abnormal return is the dependent variable.

Independent variables	(1) 4dayCAR	(2) 4dayCAR	(3) 4dayCAR
Variables for growth opportunities			
MTB ratio	0.0144*		
	(0.0811)		
Asset growth		0.00791	
		(0.765)	
Sales growth			-0.0381
			(0.107)
Financial distress			
Distress dummy	0.0424**	0.0327*	0.0406**
	(0.0257)	(0.0589)	(0.0195)
Control variables			
Enterprise Value	0.00367***	0.00314***	0.00415***
	(0.00806)	(0.00955)	(0.00474)
Bond Maturity	-0.00285	-0.00326	-0.00353
	(0.312)	(0.275)	(0.214)
First Bond dummy	0.000409	0.00337	0.0182
	(0.988)	(0.899)	(0.386)
Norway dummy	-0.0278**	-0.0221*	-0.00899
	(0.0180)	(0.0927)	(0.556)
Sweden dummy	-0.0491	-0.0481	-0.0480
	(0.126)	(0.162)	(0.150)
Finland dummy	-0.0274**	-0.0181	-0.0197*
	(0.0170)	(0.130)	(0.0946)
Constant	-0.0243	-0.00176	-0.00794
	(0.344)	(0.933)	(0.723)
Observations	48	46	46
R-squared	0.276	0.195	0.286

Robust p-values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 3 - Results of regressions with alternative variables for financial distress. Regression 4 uses change in EBITDA margin, regression 5 uses EBITDA margin, regression 6 uses Net Debt to EBITDA ratio, regression 7 uses the distress dummy variable and regression 8 uses interest coverage ratio as proxy for financial distress. In all regressions the four day cumulative abnormal return is the dependent variable.

Independent variables	(4) 4dayCAR	(5) 4dayCAR	(6) 4dayCAR	(7) 4dayCAR	(8) 4dayCAR
Financial distress variables					
Change in EBITDA margin	-0.0119				
	(0.107)				
EBITDA margin		-0.00862**			
		(0.0338)			
Net Debt/EBITDA			5.00e-05		
			(0.657)		
Distress dummy				0.0424**	
				(0.0257)	
Interest Coverage					0.0000823
					(0.607)
Growth opportunities					
MTB ratio	0.00988	0.00979	0.00257	0.0144*	0.00922
	(0.188)	(0.194)	(0.531)	(0.0811)	(0.221)
Control variables					
Enterprise Value	0.00192**	0.00204**	0.00175**	0.00367***	0.00183*
	(0.0452)	(0.0338)	(0.0493)	(0.00806)	(0.0572)
Bond Maturity	-0.00367	-0.00368	-0.00254	-0.00285	-0.00339
	(0.149)	(0.154)	(0.254)	(0.312)	(0.185)
First Bond dummy	-0.0131	-0.0143	0.0134	0.000409	-0.0154
	(0.670)	(0.636)	(0.491)	(0.988)	(0.611)
Norway dummy	-0.0228*	-0.0231*	-0.0223	-0.0278**	-0.0232*
	(0.0948)	(0.0918)	(0.171)	(0.0180)	(0.0956)
Sweden dummy	-0.0537	-0.0526	-0.0186	-0.0491	-0.0526
	(0.129)	(0.140)	(0.325)	(0.126)	(0.138)
Finland dummy	-0.0217*	-0.0219*	-0.0180	-0.0274**	-0.0226**
	(0.0626)	(0.0562)	(0.185)	(0.0170)	(0.0468)
Constant	0.0100	0.0108	0.00727	-0.0243	0.00997
	(0.585)	(0.562)	(0.733)	(0.344)	(0.574)
Observations	48	48	45	48	48
R-squared	0.192	0.194	0.185	0.276	0.184

Robust p-values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

To test hypothesis H3 we have analysed five possible variables that could imply the financial position of the company at the time of bond issue. Interest coverage ratio and Net debt to EBITDA ratios did not produce statistically significant results (regressions 6 and 8). Of the other three, statistically the most significant is the financial distress dummy variable (regression 7). The coefficient for the dummy variable is positive and with p-value of 0.02 it is statistically significant and thus we reject the hypothesis H3. It implies that the proximity of financial distress has a positive effect on the company value during private debt substitution with public debt. There are theoretical arguments for this effect. For example, companies issuing bonds can obtain less restrictive covenants and thus lower the probability of bankruptcy. Companies close to financial distress benefit relatively more from this reduction in bankruptcy risk and thus greater is the increase in the company value. This finding is in line with Berlin and Loyes (1988), Chemmanur and Fulghieri (1994) and Denis and Mihov (2003) that low credit quality forms would use public debt. There does not appear to be benefits of easier restructuring prospects of bank debt as proposed by e.g. Gilson, John and Lang (1990), at least for public companies that by construction were included in our sample. However, it must be kept in mind, as argued by Diamond (1991) and Rajan (1992), the relationship between debt source and credit quality is not linear. When larger sample of companies would be available, this issue should be researched more in detail.

The regression coefficient for EBITDA margin (regression 5) is also statistically significant, but the change in EBITDA margin is not (regression 4). EBITDA margin alone can be biased measure of financial distress because there are significant industry wide differences in average margins. Change in EBITDA margin would better reflect if the company has improving or deteriorating financial performance. Thus we are reluctant to interpret this result as evidence for or against the hypothesis H3.

The regression coefficient for enterprise value is positive and statistically significant in all of the regressions. That means that the larger is the issuing company the more it benefits from substituting private debt with public debt. This pattern corresponds to the findings of earlier studies, discussed in section 4, where it has been noted that as the companies get larger they tend to turn to public debt markets for financing. Similarly in our sample the private debt substitution with public debt by the larger companies could be interpreted by the market as a natural move and thus avoid the negative effect on company value. In addition, the size variable apparently captures the scale effects associated with issuing corporate bonds, i.e. the larger the issuer the relatively smaller are fees and expenses needed to conduct the issuing. The size of the issuer also affects its market recognition and bond liquidity which in turn can lower the yield of the bond and thus company value.

The country dummy variables for Finland and Norway have negative coefficients and in most regressions are statistically significant at 10% significance level. The coefficient for Sweden is also negative but weakly statistically significant (at 15% significance level). The construction of the regression implies that these coefficients are relative to the Denmark bond issues and thus their magnitude should be compared. All of the coefficients are negative which implies that the negative effect from private debt substitution on company value is the smallest in Denmark. The country effect is roughly the same for Finland and Norway, but Sweden seems to exhibit the most negative effect on the company value. Private debt substitution with public debt in Sweden is on average associated with approximately 5% lower cumulative abnormal returns than in Denmark and about 3% lower than in Finland and Norway. This could be attributed to the institutional environment in Sweden which historically has been even more reliant on the banking sector that the other countries in our sample. The results indicate that in Sweden market values bank monitoring and a shift away from bank financing is associated with lower company valuations. This result could imply that banks are more efficient monitors than bondholders as argued in Leland and Pyle (1977), Diamond (1984), Fama (1985) and Boyd and Prescott (1986), and therefore the "punishment" for shifting away from bank debt would be greater in the countries where bank debt is more used in corporate debt financing. As found out by Fan et al. (2011), country specific factors can be very significant in determining corporate debt financing landscape.

The variable for bond maturity is not statistically significant, but it is interesting that the coefficient has a negative sign. That would indicate that the longer is the maturity of the bond issued the more it lowers company value. This provides support for the idea that the value destruction from less monitoring outweighs the benefits of financial flexibility that a longer maturity bond can provide. The relation between bond maturity and firm characteristics in the Nordics deserves further research in future. As argued by Guedes and Opler (1996) the relation between maturity and credity quality might not be linear, as well as the impact on growth opportunities could be of question (Julio et al., 2008)

The dummy variable indicating that the bond issue is the first one for the company is not statistically significant. Thus, there is no conclusive effect on the company value if the company issues its first bond to replace the bank debt or if it simply returns to the market to do so. Although Lummer and McConnell (1989) and Best and Zhang (1993) found that for bank debt contract renewals there is a significant benefit versus the newly acquired contracts, this conclusion does not seem to be present in corporate bond market in the Nordics.

There were other variables that we tried to include in the regression but they did not show any significant results. Among them were measures of capital intensity, such as ratio of CAPEX to assets (regression 9) and Intangible assets to assets (regression 10), which theoretically could have

effect on the company value through the different levels of tangible collateral in case of a company liquidation.

Table 4 - Results of regressions with capital intensity variables. Regression 9 uses CAPEX to total assets ratio and regression 10 uses the ratio of intangible assets to total assets in order to measure the effect of capital intensity. In all regressions the four day cumulative abnormal return is the dependent variable.

Independent variables	(9) 4dayCAR	(10) 4dayCAR
Capital intensity variables		
CAPEX/Assets	0.0348	
	(0.637)	
Intangibles/Assets		0.0168
		(0.508)
Growth and financial distress variables		
Distress dummy	0.0445**	0.0413**
	(0.0370)	(0.0278)
MTB	0.0140*	0.0140*
	(0.0877)	(0.0928)
Control variables		
EnterpriseValue	0.00377**	0.00366***
	(0.0117)	(0.00784)
Bond Maturity	-0.00260	-0.00272
	(0.339)	(0.339)
First Bond dummy	0.00336	0.00199
	(0.899)	(0.942)
Norway dummy	-0.0287**	-0.0188
	(0.0221)	(0.271)
Sweden dummy	-0.0488	-0.0437
	(0.131)	(0.172)
Finland dummy	-0.0262**	-0.0196
	(0.0223)	(0.231)
Constant	-0.0292	-0.0352
	(0.311)	(0.179)
Observations	48	48
R-squared	0.278	0.281

Robust p-values in parentheses
*** p<0.01, ** p<0.05, * p<0.1

7. Identification issues and alternative explanations

To test hypothesis H1, in the event study we measure the abnormal returns of our sample companies relative to a market portfolio. The rationale for that is that when a company issues public debt to replace private debt, the total leverage of a company does not change and thus its levered beta relative to the market should stay the same. In reality not all of bond proceeds are used to

repay the bank debt as often companies also raise additional funds for other corporate purposes. Thus, the companies' financial risk as well as the levered beta relative to the market would increase. That in turn would overestimate the absolute value of our estimated abnormal returns.

Another possibility would be to look at the difference between average abnormal returns of our selected bond issues and the overall dataset of Nordic bond issues. However, we consider that the two samples are not directly comparable. Most notably because the full sample of bond issuers as a group will have much higher increase in leverage that the dataset where corporate bonds are used to replace bank debt. Also the full sample includes companies at very diverse financial positions and thus different effects of bond issue on the company value. In our sample the financial position does not play such an important role because the leverage after bond issue does not change or it changes insignificantly. Effectively our approach eliminates all other firm fixed effects that would be associated by having two groups of different companies.

To get a more unbiased estimate of the effect that debt choice has on company value one could compare the abnormal returns realised by a sample of all public Nordic companies that announce new loans and those that announce corporate bond issues. The difference in the average realised abnormal returns by these groups would reflect the value effect of debt choice. We have not proceeded with this approach because we could not find a dataset of loan announcements and could not find resources to collect it manually.

We test hypotheses H2 and H3 only on the sample of bond issues where proceeds are used to replace bank debt. The main problem with this approach is the small sample which might not allow us to capture the true effect of the financial variables on the abnormal returns. Thus the results might not reliably represent the out of sample performance of companies entering similar bond transactions in future. Nevertheless, we think that the regression could provide valuable guidance on what effect such debt substitution could have on company value at different situations.

Additionally, by construction our sample consists of only public companies. These more often are big and stable businesses, whereas companies with the largest growth potential might be small and private. However, for private companies it would not be possible to measure the change in company value and thus conduct event study around the time of bank debt refinancing. Such selection bias could undermine testing hypothesis H2. Nevertheless, among listed companies there are differences in growth patterns and therefore hypothetically the testing of H2 should be possible. On top of that, the selection of only public companies has an important positive side. The selection significantly reduces any effects on abnormal returns that might be caused by information asymmetry. Since all companies in the sample have been public before the issue, the information asymmetry between the management and outside investors is rather low. If that had not been the case, issuing a bond, which is a public security, would have serious implications in reducing

information asymmetry and that would undoubtedly have major implications on company value in the eyes of outside investors.

The regression results show that the market to book ratio is the best proxy for growth opportunities when measuring the effect of private to public debt substitution on company value. However, the meaningfulness of the ratio can differ among companies. For service companies the ratio might be significantly above 1 not because of growth opportunities but because of intangible assets, such as brand name, which are not reflected in the book value. In addition, also for companies with tangible assets, their book values might not correctly state their true value and thus distort the ratio.

Similarly, the financial distress dummy variable could best explain the effect on company value but it has some drawbacks. Firstly, it was constructed using the authors' judgement which might not be possible to replicate by the reader on out of sample bond issues. When creating the variable took into account the company's financial position as well as did qualitative analysis of their business position. While we consider that the bond investor at announcement date would have done a similar evaluation this might not always be the case. Secondly, as a dummy variable it is not scalable and thus does not allow for differentiation of companies at various levels of financial distress. However, using this approach allows capturing financial distress approaching while it still would not appear in financial statements of a company. For example, Hexagon AB, Swedish measuring technology group, issued bond in November 2009. Until that moment the company had faced its worst forecast scenarios with sales volume drop of 19% (20% budgeted) and 18% EBIT margin (20% budgeted). Despite that, the company was still in sufficiently sound financial position to service its liabilities (as measured by interest and debt service coverage ratios) and Hexagon was not threatened by financial distress. Still, the management took a very prudent approach and issued corporate bond to give the company more cash flow flexibility should the situation become worse. Thus the rationale for bond issuance was avoidance of financial distress and shareholders greeted the announcement by 3.63% abnormal return. In any case, it is clear that the relationship between financial distress and corporate bond issuance deserves more research attention. As pointed out in several previous researches, the relationship might not be linear and most probably is more complex and detailed.

8. Conclusions

From a dataset of bond issues by Nordic companies over the last decade we have selected those issues where the bond proceeds are used to replace bank debt. Since bank debt and public debt have different characteristics, such action could have a material effect on company value. To

determine the effects we have used event study methodology, which shows that issuance of corporate bonds to replace bank borrowings generates negative cumulative abnormal returns of 0.52% over a two day event window. However, a plot of average cumulative returns over 20 days before and after the announcement date reveals high probability of anticipation effect or information leakage. Extending the event window to four days, results in -1.27% average cumulative abnormal returns which is weakly statistically significant (p-value of 0.125). Based on these results we are inclined to reject the hypothesis H1, that issuance of corporate bonds by Nordic companies to refinance bank debt has a negative effect on company value.

Using the four day cumulative abnormal returns of the 48 companies as dependent variable, we performed multiple regression analysis on a number of company variables. We find that market to book ratio is positively related to cumulative abnormal returns. Rejecting our hypothesis confirms that when issuing corporate bonds to refinance bank debt, Nordic companies with higher growth opportunities experience more positive effect on company value. Our qualitatively constructed financial distress dummy variable turned out to be a statistically very significant factor affecting the company value positively. It indicates that financial distress is positively related to the realized cumulative abnormal returns, rejecting our third hypothesis.

Among other interesting findings were the different country effects and significance of size variable. Most notably, the stocks of Swedish issuers tend to considerably underperform issuers from the other Nordic countries, indicating that countries with heavier reliance on bank lending appreciate more the effects of bank monitoring. However, the variable is the authors' judgement call and thus opens an area for further research since there might be other explanations. It would also be interesting to investigate why the effect on company value is the most positive in Denmark. Some other research have found significant country-specific factors that determine the corporate debt choice, therefore the issue could be researched in detail in each of the Nordic countries.

Furthermore, our study confirms earlier results that bond issues by larger companies are associated with increasing company value, indicating that the punishment for decreasing bank monitoring is less for larger and more publicly exposed companies. In addition, the significance of size variable indicates the positive scale effects of issuing corporate bonds. Variables that would proxy the present or absent potential for collateral, such as CAPEX and intangible assets, do not appear to be significant.

9. References

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Appendix I

List of variables used in the regression analysis and their descriptions.

MTB	Market capitalisation at the announcement date divided by the book value of equity at the most recent reporting period
SalesGrowth	Sum of sales in the most recent 4 quarterly reporting periods divided by sum of sales reported 4 quarters earlier
AssetGrowth	Assets in the most recent reporting period divided by assets reported one year earlier
Interest Coverage	EBIT divided by total interest expenses during the most recent yearly reporting period
Net Debt/EBITDA	Net debt divided by EBITDA during the most recent yearly reporting period
EBITDA margin	EBITDA divided by sales during the most recent reporting period
Change in EBITDA margin	Difference between EBITDA margin at the most recent reporting period minus EBITDA margin one year earlier
Distress dummy	Dummy variable indicating if the company is approaching financial distress based on authors subjective assessment, based on financials and qualitative analysis
EnterpriseValue	Enterprise Value in million EUR
First Bond dummy	Dummy variable indicating if the bond issue is the first one for the company
Bond Maturity	Original maturity of the bond, in years
CAPEX/Assets	Ratio of CAPEX spending during the most recent yearly period divided by assets at the last reporting date
Intangibles/Assets	Ratio of intangible assets divided by total assets at the last reporting date
Sweden dummy	Dummy variable indicating if the country of risk for the issuer is Sweden
Norway dummy	Dummy variable indicating if the country of risk for the issuer is Norway
Finland dummy	Dummy variable indicating if the country of risk for the issuer is Finland