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Hedging Disclosure and its impact on firm's value.

A study on hedging disclosure in Sweden.

Master Thesis in Corporate and Financial Management

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Abstract

Title:	Hedging disclosure and its impact on firm's value. A study on hedging disclosure in Sweden.
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Five key words:	Hedging premium, Foreign Exchange exposures, Sweden, IFRS, Disclosure
Purpose:	This study researches the impact of hedging disclosure on the hedging premium.
Methodology:	Quantitative approach using multiple regression analysis.
Theoretical Perspectives:	The theoretical framework gives an overview over risk management in general and the value creation effect of hedging, followed by an outline of empirical research on disclosure and the advantages of improved disclosure to a firm.
Empirical foundation:	The paper is based on a Sample of 193 companies listed on the Swedish stock market of which 115 were identified as hedgers and 78 as non-hedgers.
Conclusions:	In conclusion, it was found that the level of IFRS requirement compliance for the Swedish listed firms assessed within our sample is lower than expected, especially considering the fact that IFRS is a mandatory listing requirement of the Swedish stock exchange. In our study, we also found an indication for a positive impact of good hedging disclosure on the hedging premium. Based on our initial model, when firms comply with IFRS requirements at the 90% threshold and provide about 60% additional information while controlling for accessibility of the information provided, the increase in the hedging premium was found to be around 4.10%. In addition, contrary to what we expected, controlling for IFRS compliance at 90% threshold, additional disclosure did not create a higher premium on firm's value than IFRS.

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1 Introduction

Previous empirical research has developed many theoretical frameworks to explain the motives behind risk management and provide evidence that hedging does add value to the firm. However, the effect of disclosure on firm value has often been researched separately and the effect of hedging disclosure on the hedging premium is still largely untested today. This provides us with an opportunity to bring these two areas together, adding on to prior research undertaken within these fields. This paper aims to bridge the theoretical gap between the risk management and transparency research by testing if risk management disclosure has an effect on the hedging premium. We use foreign exchange risk as a proxy for risk management in line with previous research. Our sample consists of 193 non-financial Swedish firms listed on the Stockholm Stock Exchange in 2009 from which 115 were classified as Hedger and assessed for their disclosure according to IFRS criteria as well as additional criteria defined to identify good disclosure company.

1.1 Background Information

In Miller and Modigliani (1961), they argued that risk management is irrelevant under their assumptions of the capital market. However, in reality, the M&M propositions do not hold since the existing market conditions are not frictionless.

Moving forward, many other researchers have hypothesized the invalidity of the M&M theorem and state that risk management does add value to the firm. For example, Myers (1977) and Froot et al (1993) have proposed that risk management helps to reduce the conflict among equity and debt holders. In other papers such as Smith and Stulz (1985), argued that risk management lowers the cost of financial distress and in Graham and Smith (1999), they argued for the tax incentives as a motive for risk management. However, while these studies have indicated theoretical frameworks for the motives behind risk management, they have not provided evidence for the impact on firm's value as a result of risk management activities.

Allayannis and Weston (2001) were the first to provide some evidence of the impact of risk management on firm value. In their study, they focused on the use of currency derivatives mainly used to hedge foreign exchange risk as they argued that currency derivatives are the most commonly used derivatives for firms and also, foreign exchange risks are usually a common risk factor across firms. Basing upon their findings and methods, other researchers

reported additional findings on the impact of risk management on the firm value. However, the majority of these studies focus either on regions, industries or if the firms choose to hedge currency, interest rate or commodity price risks. For example, in Jin and Jorion (2004), they found that among the US oil and gas producers, hedging do not result in a positive premium on the firm value. In contrast Carter, Rogers and Simkins (2005) found in their study of the US airline industry that, when the firms hedge their jet fuel, there is a corresponding premium observed for the firm value. Nain (2005) on the other hand, observed that the premium theory is only valid when the firm decision to hedge is compared with the general trend in the industry.

While there are a large number of research covering risk management, its underlying factors and the impact on firm's value, the research on transparency has only been covered on a theoretical basis. In Forssbaeck and Oxelheim (2006), they argued that the concept of transparency is a relatively new phenomenon, recently receiving scientific interest. They found that there was only 32 instances of the word 'transparency' appearing in published working papers in the National Bureau of Economic Research (NBER) between the years 1974-2005 with the bulk of them appearing after 2000 in tandem with the major corporate scandal such as Enron and Worldcom.

Basing upon the concept of information asymmetry, it was largely assumed that the more the firm discloses information to the public, the more symmetrical information becomes between the firm and the stakeholders. For example, Leuz and Wysocki (2008) provided some insights that the more the firm discloses its information, the lower the estimation risk and the less the investors have to guess about the firm. Most of the research on transparency provided explanations as to how transparency can be value creating for the firm but less evidence is found on the exact premium provided by additional transparency.

To date, Muller and Verschoor (2008) is the only study, which tested if risk management disclosure creates value in the firm. They aimed to test the hypothesis if there exist a positive relationship between the foreign currency derivatives disclosure (proxy using FRS13) and the firm's currency exposure.

Yet, despite the wealth of existing literature on transparency, there are still no studies that test the relationship between risk management disclosures on the firm's hedging premium. This provides us with an opportunity to look into this specific area and provide some evidence if good hedging disclosure does impact the hedging premium.

1.2 Introduction to the Swedish Economy

For a small and open economy such as Sweden, Swedish firms are highly active in the international trade arena. A remarkably high proportion of Swedish firms is involved in exporting activities and is dependent on external trade (Greenaway et al, 2005). This indicates that these firms are exposed to a high level of macroeconomic factors such as foreign exchange risks, interest rate risks and commodity price risks. In addition, the volatile nature of the Swedish Kroners makes Swedish firms exceptionally more susceptible to the risk of foreign exchange fluctuations than other companies in the European Union, which shares Euro as the common currency. For example, Nydahl (2001) studied the effects of volatility of exchange rate on the firm value in Sweden. He found that 26% of the Swedish firms in his sample are exposed to a high degree of foreign exchange risk and that the use of derivatives is negatively related to the degree of exposure.

In Alkeback and Hagelin (1998), they found that 52% of nonfinancial firms engage in derivatives usage in Sweden as compared to 39% in USA. Some of the factors that have been raised in support of this finding includes the fact that Sweden being a small open economy, is more active in the international trade arena therefore Swedish firms have a higher level of exposure to foreign exchange risks in comparison to firms in the USA. Moreover, the interest rates in Sweden are more volatile motivating the use of derivatives to hedge the price risks. While US firms have had a longer history of derivative trading, the derivatives market in Sweden is less mature. Interestingly, their findings also pointed out significant evidence that Swedish firms tend to hedge a larger proportion of their balance sheet in comparison to the firms in the USA.

Alkeback, Hagelin and Pramborg (2004) did a recent follow up survey from Alkeback and Hagelin (1998) and found similar trends. They found that 59% of Swedish firms uses derivatives in 2003 and most firms use derivatives to manage their foreign exchange risks. This indicates that risk management use has increased in Sweden as firms try to reduce their exposure to macroeconomic factors such as foreign exchange. In 2003, Swedish firms tend to use derivatives to manage their contractual commitments, a stark difference from the balance sheet hedge results obtained in 1996. The authors suggest that this indicate evidence for Swedish firms becoming more similar to the firms in other countries with respect to this factor.

From a separate study by Hagelin (2003), he examines a sample of Swedish firms use of currency derivatives and the determinants of the firms' hedging decisions. The research aims to study the difference between currency derivative usage for managing translation and transaction exposure. From his research he found that larger Swedish firms tend to use currency derivatives more than small firms supporting the theory that fixed costs is a barrier to derivatives usage. Observations from the multivariate tests he conducted, also indicated that Swedish firms tend to use currency derivatives to manage their transaction exposure to manage translation exposure for the purpose of increasing the firm value.

Therefore based on the analysis of previous research, the Swedish market provides a perfect environment to test if risk management disclosure does impact the hedging premium as the nature for the economy generally allows comparability of foreign exchange risk management among the firms due to a overall high level of exposure.

1.3 Research Areas

Based on the analysis above, we have established that there is a gap in current research whereby the effect of risk management disclosures on the firm value has not been touched upon. In this paper we aim to bring together these two topics and provide some insights on the inter-relatedness of a more transparent risk management disclosure and the firm's value.

This paper aims to look into these specific areas as follow:

- To what extent do Swedish firms comply with IFRS requirements?
- Does good hedging disclosure impact the hedging premium?
- Is there a managerial implication for the type of information revealed by the firm?

1.4 Delimitations

One of the most important delimitation on our research is whether the firms hedges or speculate in their hedging positions. This information is not readily available and limited; especially more so since our study is based on information from databases and companies' annual reports as such the outreach to such information is weak. In addition, in our coding method, we were unable to assess if the firm is providing a true picture of their risk management activities and if information provided in their annual report are of good quality. Therefore, we based our study on the information provided within annual report as it is, without assessing the quality or completeness of the information provided.

1.5 Structure of the paper

The structure for this paper is as follow: In Section 2, we discuss previous empirical studies regarding the topics of risk management and transparency. We will also discuss previous research regarding transparency and disclosure. In Section 3, we discuss our methodology, data and model for our research. In Section 4, we provide our empirical findings and in Section 5, we provide our analysis and discussions regarding our findings. Section 6 concludes this paper.

2 Literature Review

In this section, we present the theoretical framework underlying the two topics, which are of interest in our study. We will first present the framework and findings concerning risk management in general before presenting the empirical research behind disclosure and transparency. Finally, at the end of this section, we would frame our hypotheses according to the research findings.

2.1 Theoretical frameworks behind risk management motives

According to the Miller and Modigliani (M&M) theorem, the value of the firm is not affected by any risk management decisions undertaken by the firm (Miller and Modigliani, 1961). In the theorem, M&M made 4 bold assumptions regarding a frictionless market environment:

- There is a perfect capital market whereby there are no transaction costs, no taxes and no bankruptcy cost.
- There are no information asymmetries and every player has equal access to the same and identical information on market prices.
- Firms' investment decisions are taken as given and are not influenced by financing decision (capital structure irrelevance).
- Firms and individuals are also able to issue the same securities under the exact same terms to the market. (Culp, 2002)

Therefore according to these assumptions above, financial and risk management policies will not affect the value of the firm (Culp, 2002) and financial decisions of the management will not create value for the firm if it does not affect either the firm's ability to operate or it's future investment decisions (Hillier et al, 2009). In addition, it is also implied that if derivatives products are fairly priced then the net present value (NPV) of any risk management project will be zero and hedging does not add value (Culp, 2002).

However, most of these assumptions stated above are clearly unrealistic and do not hold in the real world. In reality, due to the existence of market friction, risk management can add value to the firm due in the 4 different ways as listed below:

- Tax incentives of risk management
- Reducing managerial aversion through risk management
- Reducing cost of financial distress within firms
- Underinvestment problem and risk management

2.1.1 Tax Incentives of Risk Management

Taxes exist in the real world and this adds friction to the capital markets and taxes also distort earnings of the firm. One of the potential advantages of hedging is through increasing the value of the firm by reducing the volatility of cash flows for the firm. Smith and Stulz (1985) have previously indicted that volatility is expensive for firms with convex tax functions. Under their analysis, they argued that hedging is beneficial if it results in an after tax income that is more concave. With this in mind, corporations facing a convex tax schedule will choose to hedge in order to minimize their tax liabilities and maximize their cash flows. In Graham and Smith (1998), they hypothesize that firms facing a convex tax function are more likely to hedge to reduce their tax liabilities and reduce the volatility of their taxable income.

On the other hand, a different research by Graham and Rogers (2002), hypothesize that there are two tax incentives in relation to hedging, (i) to increase the firm's debt capacity and (ii) for interest tax deductions when the firm faces a convex tax schedule. They argued that according to Leland (1998), hedging helps to reduce probability of financial distress and/or increase the stability of income resulting in increases in debt capacity and this in turn increases interest deductions and reduces tax liabilities. Similarly, Graham and Smith (1998), found statistically significant evidence that suggest firms hedge to increase their debt capacity and interest deductions, which results in lower tax liabilities.

2.1.2 Reducing cost of financial distress with risk management

Smith and Stulz (1985) argued that hedging helps to reduce the volatility of cash flow and therefore probability of financial distress hence increasing firms' value. Through reducing the volatility of cash flows it helps to predict the level of liquidity within the firm in ensuring it has enough funds to meet its obligations. Contrary to the assumptions made by M&M (Miller and Modigliani, 1961), bankruptcy cost is not zero and in fact, it can be very costly to a firm. Therefore, through hedging, firms can seek to reduce the probability of defaulting by ensuring a smoother earnings profile, which can maintain the liquidity demands of the firm and ensure that the covenants do not become binding. Hedging also potentially results in a stronger ability to increase debt capacity, this leads to an increase in the present value of tax shield of debt interest payments.

In the study by Graham and Smith (2002), they found consistent evidence to prove that firms hedge in response to large expected cost of financial distress. However their results found

inconsistent evidence for hedging in response to past distress. In a separate study by Punanandam (2008), he argued that when a firm faces financial distress, shareholders engage in ex-post hedging activities even though they had no initial commitment to do so. As such, shareholders trade off the risk-shifting argument to limit their risks as a result of financial distress. In his study, he found that there is an inverted U-shape between financial distress costs and hedging and a non-monotonic relationship between leverage and the hedge level. Howton and Perfect (1998), on the other hand, found that there is a positive relationship between the use of hedging and the expected financial distress.

2.1.3 Reducing managerial aversion through risk management

Previous literature on agency cost reflects the potential conflict between managers and stakeholders. From a shareholders perspective, the agency theory states that management acts as an agent for the shareholders and should take on decisions that will maximize shareholders value. However, there is potential conflict that might not influence this behavior. Smith and Stulz (1985) also stated that management needs to be given proper incentives or else they will not maximize shareholders value. They went on to state that that managers tend to hedge more when transaction costs decreases because hedging actually increases the manager's expected end period wealth. Therefore, managers with a concave compensation function tend to hedge more to reduce the firm's cash flow volatility. Hedging, as argued by Smith and Stulz (1985), allows managers to undertake variance-increasing positive NPV projects that increase the value of the firm.

In a study done by Graham and Rogers (2002), they found that the coefficient on the delta of the amount of the CEO's stock and options to be positively related to risk management. This is also consistent with the findings by Knopf, Nam and Thorton (2002), which found that firms tend to hedge more as the sensitivity of management's stocks and option portfolio relative to the stock prices increases. In a different study by Tufano (1996), he found that managers who hold more gold options tend to manage less gold price risk and vice versa. These finding suggests that managerial risk aversion does influence the hedging policies in the firm.

2.1.4 Underinvestment problems and risk management

According to Culp (2002), when there exist a potential conflict between debt and equity holders, risk management can be valuable to address such conflicts so that the monitoring

costs of ensuring that management preserve stockholder value. Myers (1977) stated that one of the results from a potential conflict between debt and equity holders is under-investment. This is the also known as the debt overhang problem and the asset substitution problem. In the presence of a firm's capital structure (violation of the MM assumption), when the firm is highly leveraged, then the firm might choose to pass up on a positive NPV projects because the financing for these projects are too costly. Equity holders also might refuse to take on positive NPV projects because the benefits from those projects tend to go to the hands of the creditors (Jensen and Meckling, 1976). Therefore in these situations, undertaking a risk management activity can help the firm to ensure that its leverage does not impede future investments.

The underinvestment problem can also be analyzed from a general framework developed by Froot, et al (1993). Under their framework, they argued that risk management can increase firm's value as it allow the firm to ensure it has sufficient cash flow to undertake positive NPV projects. A firm's value is created through undertaking positive NPV projects. However, these projects can only be undertaken if the firm has sufficient internal cash flows since external financings are costly and these internal cash flows are also susceptible to disruptions by external risk factors such as interest rates and exchange rates. Therefore, they argued that through ensuring that these risks are controlled, the firm could continue to undertake positive NPV projects in the future.

According to a study by Mian (1996), he found that firms tend to hedge more when there is a large presence of investment opportunities and the underinvestment problems aggravates the deviation of a firm's market value from growth options rather than from assets in place. In a separate study by Bartram (2000), he stated that a firm with high leverage might end up taking on risky projects (asset substitution problem) in line with the theoretical framework presented by Jensen and Meckling (1976). Therefore, through corporate hedging, firms could aim to reduce the agency costs if it reduces the riskiness of investment projects. The importance of reducing riskiness can be traced back to the cost of borrowing as the lower the perceived risk of the projects, the lower the interest rate and less stringent the covenants demanded by creditors.

Grezy, et al (1997) found that firms with an extensive risk exposure are more likely to engage in a higher level of hedging and a factor underlying this finding is that firms use derivatives to reduce volatility in their cash flows for future growth opportunities. Also, in

Nance et al (1993) they found that the more growth options a firm has in their investment opportunities, the more they engage in hedging. In addition, Gay and Nam (1998) also found evidence that there is a positive relationship between growth opportunities and the firm's value and this effect is more pronounced for firms with low cash stocks and whose investment opportunities are less correlated with their internal cash flow.

2.2 Evidence of hedging premium in firm's value

The first empirical study testing for a direct relationship between hedging and the firm's value was done by Allayannis and Weston (2001). In their study, they used a sample of 720 large non-financial US firms between 1990 and 1995. Within their sample, they focused largely on a subsample of firms, which are exposed to foreign exchange rate risk through the sales from foreign operations and compared them with firms, which have similar exposure level. They analyzed the difference in the firm's value depending on whether the firms hedge their foreign currency risks or not, using Tobin's Q as a proxy for firm's value. Their study found that there is significance evidence to prove that hedging does result in a higher firm value, on average, firms that are exposed to exchange rate risk and hedge this exposure are given a 4.87% premium than firms that do not hedge their exposures.

The next study complementing the findings of Allaynnis and Weston (2001) was a separate study done by Carter, Rogers and Simkins (2005). In their study, they analyzed the effect of hedging jet fuel within the US airline industry and its impact on the firm value. The authors hypothesize that since jet fuel costs are hedge-able, airlines, which are aiming at expansion, should indicate a positive relationship of firm value and jet fuel future price hedge. Through hedging jet fuel prices, airlines are able to manage the volatility of cash flow and therefore improve the value of the firm. From their study, they found that jet fuel hedging has a positive relationship with the value of the airline. The hedging premium of 10%, which they obtained, was however, larger than the premium found by Allayannis and Weston (2001).

Nain (2005) studied the effect of hedging on the firm value through a different technique. He argued that the existing wealth of research on hedging and value creation neglects the consideration of the firm's incentive to hedge. In his study, Nain (2005) used an illustrative Cournot-Oligopoly model (game theory) approach to motivate his analysis. He hypothesized that in an industry where most of the players are unhedged, then the product prices for the players will co-vary with the costs and the profit volatility of cash flows will be low. However, the hedged players will experience constant costs as well as constant prices

therefore making the eventual profit volatility higher than their unhedged counterparts. When the industry constitute a large number of players who hedged, then the unhedged firms will face a more volatile profits than its hedged counterparts. Therefore, Nain (2005) argues that the value creation resulting from hedging is depending on the actions of the competitors within the industry. In his paper, the results indicated that when the industry in general does not hedge, then the results of a depreciation of 10% in the external value of the currency of a firm results in an overall inflation of 1.8% however when 50% of the industry hedged, then the overall inflation is only 0.9%. This indicates that the sensitivity of the industry price to exchange rate improves when significant of the players within the industry hedges. In addition, Nain (2005) also reported evidence that hedging premium exists only when the majority of the industry players engage in hedging activities. When the firm chooses to remain unhedged while the majority of its competitors hedged, then the firm tends to suffer a value discount.

A study by Kim et al (2006) found that non-operationally hedged firms tend to engage in more financial hedging relative to their level of foreign exchange risk exposure and contrary is true for operationally hedged firms. They also found that regardless of whether the firm uses operational or financial hedging, the effect of valuation is the same, an increase in firm value. Their analysis indicated that when a firm uses financial hedging, the average premium on firm value is 5.4% and this premium ranges from 4.8%-17.9% if the firm uses operational hedging.

In Allayannis, Les and Miller (2007), they found that controlling for additional variable - corporate governance, the premium is higher on the firm's value. In their study, they used several proxies for internal and firm specific corporate governance and through their analysis they found that for firms with strong internal corporate governance, the firm's valuation is higher. This study provides evidence that risk management adds value to a firm however this hedging premium is only present when there is a strong presence of corporate governance.

Clark and Judge (2008) in their study looked at the different hedging strategies that a firm can adopt (such as debt-based, derivatives, swaps, etc) and their impact on the Q values. Their findings indicated that foreign exchange derivatives strategies contributed to a 14% increase in the firm value while debt-based strategies do not yield any statistically significant results. When looking at the overall results, the size of premium for hedgers is around 12% and when looking specifically at the various hedging strategies, the results range between

11-34%. Their findings yielded higher results than those in Allayannis and Weston (2001) and Nain (2005).

Moeller and MacKay (2007) looked at the value of corporate risk management from the point of view of firm's revenues and costs and the input prices. They argued that hedging adds value only when revenue function is concave in product prices or when costs are convex in product prices. They studied the nonlinearities of revenue and costs and its impact on the second and higher moments of the input as well as output prices. Their results indicated that by hedging concave revenue, the premium obtained is 2-3%. When they validate their results by including additional variables such as real options, vertical integration and diversification, they obtained similar results and this indicates that the market reward firms for hedging when the hedge creates value and penalize firms for hedging if the hedge destroys firm value.

In a separate study by Jin and Jorion (2004), they studied a sample of 119 US oil and gas producers between the period of 1998 – 2001. Contrary to other studies on value creation and risk management, their study did not yield similar results. They found that although hedging reduces the sensitivity of the firm's stocks to oil and gas prices, hedging does not result in higher firm value. They provided some explanations for their results and argued that within the oil and gas industries, investors can easily identify the exposures to oil and gas prices therefore there is presence of information symmetries. Therefore, they take positions in oil and gas firms simply to gain exposures to oil and gas prices. When the firm hedge, the investors loses their exposure and as such they do not provide a premium on the firm value. This indicates that hedging is only value creating in certain industries and not for all.

2.3 Previous studies on financial disclosure

2.3.1 Transparency influencing the cost of Capital

Leaving behind the theoretical world of M&M (Miller and Modigliani, 1961) and therefore their assumption of symmetric information in the market, asymmetric information becomes a critical factor in adding friction within the corporate world. The most basic explanation of the underlying adverse selection problem is given in Akerlof's market for lemons (1970) where he describes that due to a lack of transparency, buyers are not willing to pay more than the minimum price for a low quality product, as they are unable to assess the quality of the offered product. Myers (1984) and Myers and Majluf (1984) applied this concept to the

capital markets by developing the Pecking Order Theory. Based on the assumptions that investors believe a firm will only issue equity when its equity is overpriced. As such, since investors are unable to tell the true quality of the stocks, they are only willing to pay a minimum amount for the securities. This indicates that there is a discount on the security offered. Therefore, firms will not issue their securities unless they are overpriced to avoid a discount on their securities, a term known as the pooling equilibrium. Investors knowing this will only pay the minimum amount for securities offered, resulting in the separating equilibrium. The Pecking Order Theory also conceptualized this adverse selection problem by placing equity at the end of the chain to indicate the risk avoidance of investors and firms.

Research on estimation risk showed that there could be a possible link between disclosure and estimation risk. Leuz and Wysocki (2008) researched on previous empirical findings regarding estimation risk, which, states that, the lower the disclosure the higher the estimation risk. In other words, estimation risk proposed that the less an investor know, the more he is expected to estimate. They found in agreement with previous empirical studies decreasing assessed covariance of a firms cash flow in comparison with other firms when quality or precisions of information increases, moving the firm's cost of capital closer to the risk free rate. In another study by Lamberz et al. (2007b), it is argued that the information effect applies to all covariance terms, therefore only the firm specific variance term could be diversified away by investors in liquid markets. This findings support the impact of transparency on a firm's cost of capital.

In a separate study by Francis et al (2007), they investigated the relationship between cost of capital, earnings quality and voluntary disclosure using a sample of 677 firms in 2001. Their study provides a strong point for consideration while analysing the assumption of estimation risk done by Leuz and Wysocki (2008) which does not take earnings quality into account. Earnings quality refers to the fact that opaque financial accounting or earnings management would depress the quality of disclosure. In their study, Francis et al (2007) found that when conditioned for earnings quality, the effect of disclosure on the cost of capital is significantly reduced hence indicating that the effect of disclosure on cost of capital strongly hinges on the quality of the disclosure. However, Hribar and Nichols (2007) and Liu and Wysocki (2007) found that the accruals quality measure used by Francis et al. does not distinguish between the reporting activities and the properties of its operating processes. Therefore, they

find the relation between accruals quality and cost of capital as used by Francis et al. (2007) to fall short in their robustness test.

The transparency factor have also been addressed by regulations, first of all through accounting standards such as International Financial Reporting Standards (IFRS) and US General Accounting and Audit Practices (GAAP) in addition to the wealth of corporate governance codes available to guide additional disclosure. Subsequently, information disclosure is also addressed internally through companies' public and investor relations. According to Oxelheim (2006), research on transparency was mainly undertaken after the year 2000 indicating the influence of accounting scandals like Enron and financial crisis's on the demand for greater disclosure. Therefore, we have observed that accounting standards and governance have been strengthened post-scandals. For example, the Sarbanes Oxley Act (2002) in the US was enacted to mandate companies to release more information as well as amendments made to IFRS and US GAAP, which require additional disclosure made by the firms. These thus aid to create a greater convergence level within the international standards. However, in comparison to research on transparency, research relating to the effects of information asymmetry on the cost of capital (e.g. Demsetz, 1968) has started much earlier.

The above analysis indicates that the fundamental concept of transparency and disclosure has been around a long time masquerading as the problem of information asymmetry. In Oxelheim (2008) he argued that the concepts of transparency and information asymmetry are essentially the same, albeit appearing in different terms. The term transparency was only coined after the post-scandal of Enron and Worldcom in 2001 where the demand for more information and disclosure became more apparent.

In a study done by Karamanou and Nishiotis (2009), they showed that by using a return based study they found some evidence of a decreasing cost of capital for firms that voluntary applied the International Accounting Standards (IAS). Furthermore, they also stated that a further reduction of cost of capital was found when there was a mandatory introduction of IFRS. Karamanou and Nishiotis (2009) reasoned that by using a return based study they would overcome the measurement error when calculating the cost of capital. They referred to their measurement error for implied cost of capital as stated by Easton and Monahan (2010) who in their findings argued that the model developed by Fama and French (1997) using the Capital Asset Pricing Model (CAPM) to measure the rate of return resulted in a standard error of the industry expected rate of return estimates of more than 3 percent. Hail

and Leuz (2004) also referred to the model developed by Fama and French (1997) as a major limitation when they evaluated the effect of cross listings on the cost of capital. This indicates that a return based study might be more accurate and reliable in measuring the cost of capital and based on the analysis above, the voluntary application of IAS does result in a lower cost of capital.

Schrand and Leuz (2009) elaborated on the argument of the influence of former accounting scandals in their paper that studied the relation between corporate disclosure and the cost of capital using the example of the "Enron shock" and its influence on the cost of capital in an event study. Through the use of an exogenous shock (the "Enron shock"), Schrand and Leuz (2009) mitigated the problem of omitted variable resulting from cross-sectional studies. Using a sample of 1,868 firms available in COMPUSTAT, they found that corporate disclosure for investor information and the cost of capital are building one of the fundamental relations in finance and accounting. In their study they found consistent results as Diamond and Verrecchia, (1991); Easley and O.'Hara, (2004); Lambert et al. (2007), which indicated that there is a negative relationship between increased information quality and the cost of capital. The more information quality there is in the disclosure, the lower the cost of capital charged to the firm.

Additionally, there are also other research papers, which argued that higher quality information is a method for firms wanting to achieve a lower systematic risk and expected returns. Schrand and Leuz (2009) argued that firms with increasing cost of capital would tend to increase their level of disclosure. The approach used to measure increased disclosure within their paper is mainly quantitative and based on pages filed within financial reports. However, they also introduced the qualitative element through the ratings of different sections of the annual report according to importance as well as if the additional information revealed is required or not by the Securities Exchange Commission. Furthermore, complementary interim disclosure is found have improved, as a response to increased capital cost and higher financing needs. They found that upon the Enron shock, firms responded by increasing the disclosure in both the interim and annual reports. The beta shock was also found to be associated with increased firm disclosure after the Enron shock.

Botosan (1997) performed an industry specific test, limiting her sample to one industry and did a research on the effect of disclosure on the cost of equity capital. Acknowledging the

limitations of CAPM, she included empirical proxies such as number of analyst following the firm, beta, market value, book value of assets, PPE, sales, number of employees and disclosure score (D-score) in her regression model to assess the impact of increased disclosure. Botosan (1997) computes the D-Score based on the level of voluntary information provided on background information, summary of historical results, key non-financial statistics, projected information and management discussion and analysis. Using the above-mentioned criteria, Botosan (1997) found in her study that increased disclosure helps to reduce the cost of capital for companies with comparable low analysts' coverage. When the firm has a lower number of analysts following it, then the effect of forecast information and key non-financial statistics disclosure becomes more pronounced. She also found that when the firm has a higher number of analysts following it, then the disclosure of historical information is more important for the firm to obtain a lower cost of capital.

In addition, the study of Leuz and Wysocki (2008) supported the argument by Botosan (1997) above by stating that when a lesser known firms disclosure more it allows investors to be more aware of the firms and hence widen the investor base. This will also help firms to reduce the cost of capital and improves the risk sharing effect. They also found this effect to be more pronounced among large firms with more analyst and investor coverage. In addition, they argued that if the investor base is small, the arbitrage effect will be large since some investors know of these stocks which other investors does not know. When these firms increase their level of disclosure then the former investors will benefit from an arbitrage of a higher firms' value. This supports the general consensus that more disclosure helps to increase the value of the firm.

A follow up study by Botosan and Plumlee (2000) concluded that the cost of capital improvement depends on the type of disclosure. They argued that by increasing the amount of information reported in the annual report, firms would benefit by obtaining a lower cost of capital by approximately 1% (obtained by taking the difference between the most and least transparent firms). In addition, when firms are more transparent in other company publications the difference in the magnitude of effect increased to approximately 2%. They also additionally found some evidence supporting the claim of management that more timely information increases cost of capital. They concluded that by aggregating across different types of disclosures might lead to a biased conclusion and loss of information.

Lang and Lundholm (2001) studied a sample of firms that used increased disclosure within a 6 months time frame before their equity offerings with the aim of increasing their stock performance. They found that within this time frame, an increase in the level of disclosure was followed by large price declines after the offering, while companies following a long term strategy of high disclosure level experience only minor price declines when announcing the equity issue. However, Lang and Lundholm (2001) conclude that this short term "hype" could imply a lower cost of capital for companies following this strategy. He argued that firms following a long-term disclosure policy would not face any unusual returns behavior while firms following the short-term disclosure policy would face consistent negative returns. This indicates that disclosure could aid to a momentary reduction to the cost of capital upon equity offering.

In a more specific approach relating to management disclosure of hedging, Reynolds-Moehrle (2005) argued that the disclosure of hedging, signals to the market that transitory shocks are not influencing earnings and therefore earnings become a more transparent measure of the results of operations. Reynolds-Moehrle (2005) stated that firm obtains a more transparent value creating activities by eliminating the transitional shocks and noise through a more thorough hedging disclosure. Therefore, she claimed that associated with increased earnings predictability there will be an increase in information of earnings surprises, and also an increase in the earnings response coefficients.

In a study done by Sapra and Sinn (2007), they argued that when a firm cannot credibly communicate the hedge-able portion of their risk exposure, then a more transparent disclosure would distort the firm's hedging activities. They emphasized that distortions depend crucially on (i) firms' information quality about their project types and (ii) the market's prior beliefs about whether or not firms have hedge-able projects. They argued that only if both criteria above are at a high level then there would be more speculation in the economy than socially optimal. If they are low, Sapra and Sinn (2007) found that there is under-hedging relative to the social optimum level in the economy. They also concluded that at the average disclosure quality level, increase disclosure tends to result in excessive speculation engaged by the firm.

Beretta and Bozzolan (2004) developed a framework for analyzing the firm's risk communication. They argued that in information disclosure, what is important is the content

that the firm discloses instead of how much information they provide. In previous empirical studies, many researchers used quantity as a proxy for disclosure. Beretta and Bozzolan (2004) criticized this method by indicating that quantity is not a satisfactory proxy because the methodology used does not take into consideration the richness of the information disclosed. They underlined the importance of the narrative component in financial reports to clarify and validate quantitative measures as well as to elaborate on value drivers and the risk faced and subsequently the expected impact on future profits. Another important element they found is the degree of forward looking disclosure available for investors in line with the findings from Francis and Schipper (1999) which states that the more onward looking the information provided by the firm, the more important it is for investors. Following the guidance from CICA and ICAEW, Beretta and Bozzolan (2004) defined risk disclosure as the communication of information that includes the firms' strategies, characteristics, operations and other external factors that could potentially affect the future performance of the firm. The framework proposed within the paper consists out of four dimensions: the content of information disclosed; the economic sign attributed to expected impacts; the type of measures used to quantify and qualify the expected impacts; (the outlook orientation of risk communication) and the managerial approach to the management of risk. Due to a lack of academic research on contents and semantic properties Beretta and Bozzolan (2004) refer to guidance from professional bodies as AICPA (1994), CICA (2001), FASB (2001) and ICAEW (2002) as well as on research on risk assessment and analyses. The content of disclosure proposed is narrowed down to the following categories: strategy, company characteristics (financial structure, corporate structure, technological structure, and organization), business processes as well as environment around the company (PESTEL[1]). Furthermore, they also considered the dilution of the disclosure through its accessibility within the annual report, which Beretta and Bozzolan (2004) are refer to information "hiding the needle in a haystack". From their study, they have proven that both industry and size effect does not influence their proposed framework and index measures as it focuses on disclosure quality and not quantity. The core finding of the paper is that quality and richness of the information disclosed is more important than quantity. Beretta and Bozzolan (2004) further remark that an investor's strategy for risk disclosure analysis should have an influence on companies' disclosure. Also, they noticed that risk disclosure is also dependent on the environment the firm is operating in.

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[1] PESTEL indicates Political, Economic, Societal, Technological, Environmental and Legal structure surrounding the firm.

Muller and Verschoor (2008) researched on the value relevance of Foreign Currency Derivatives (FCD) hedging disclosure of European non-financial firms and found that firms mainly use FCD for hedging and non-speculative reasons. Contrary to other studies, they did not find strong effects of disclosure on the firm's value. Instead, they found statistically weak effects of derivatives disclosure. They provided some explanation for their findings and reasoned that either manager used FCD only to hedge a small portion of the currency risk in an unsystematic way or the investors making systematic errors when assessing the impact of FCD disclosed by the firm and the firms' initial risk exposures.

In addition, Cooke (1992) also provided some evidence in his study that there is an industry effect of how much a firm should disclosure and the effects of disclosure on the firm value is industry-dependent. For example the high level of R&D disclosure in the pharmaceutical sector is dictated by the investors need for information to invest within that industry. Therefore the content of the disclosure is dependent on the industry-specific criteria. Firms, which disclose information, that are not relevant will not obtain a higher value.

2.3.2 Optimum Disclosure Level

As discussed in the previous section increased transparency aims at decreasing information asymmetry and therefore a reduction in the risk premium. The main counterbalance points mentioned by Hermalin and Weisbach (2007) are the direct costs of disclosure as well as cost arising due to the possibility of losing competitive advantage to rival firms. This is in line with the arguments set forth by Graham et al (2005) where they stated that the main barrier to increase voluntary disclosure are the concerns regarding revealing too much information for the benefit of competitors and the fear that they might not be able to keep up with the disclosure practice in the future. They went on to state that managers tend to reveal bad news at a faster rate than good news in order to maintain their credibility and promote a more transparent reporting although under some circumstances this might not be possible (to allow for deeper analysis and interpretations). They also found that for poorly performing firms, they tend to delay releasing bad news in comparison to healthy performing firms. These are again in line with the findings of Francis et al (2007), which indicate that firms with high earnings quality provide more voluntary disclosure.

Oxelheim (2008) reinforces previous empirical studies that supported the view that the lack of transparency results in information asymmetry between those who has the information (management) and those who need the information (investors). Theoretically, this gap in the knowledge of information tends to result in a premium on the cost of capital and a lower valuation for the firm. Upon the downfall of major corporations such as Enron and Worldcom, it was wrongfully assumed that the more information the company discloses, the better it is. However, Oxelheim (2008) argued that the more information an investor receives, the higher the possibility that he might be drowned in the information he obtained and therefore resulted in the investor being confused. As such, he argued that there should be an optimal point where the information disclosed is sufficient and beyond this point, additional information only seeks to confuse the receiver of that information. This optimal point also includes the point where additional information beyond this point might reveal competition-sensitive information free for the firm's competitors. Therefore, firms' management has to balance the different perspective and considerations to ensure that neither too little nor too much information is disclosed to the public.

2.4 Comments on Prior Research

As observed above, there are many previous studies testing the effect of risk management on the firm's value. Researchers have provided many strong theoretical frameworks and evidence however the findings are still largely contradictory and convergent. Observing the previous empirical research on risk management and value creation, we note that most studies used the same methodological approaches but the results are largely inconsistent indicating that there are additional differences such as time period, geographical coverage, industrial-factors and data sample that could provide some explanations for this observation.

When we review the literature on disclosure, we find that most of the papers covered an extensive overview of the effect of a reduction in information asymmetry by testing the effect of greater disclosure on the cost of capital and equity risk premium. The framework for analyzing risk disclosure is still limited indicating that there is potential room for further evaluation and research within this area. In addition, it was observed that there is a lack in the value creation effect of additional disclosure of the firm's hedging activities on the firm's hedging premium.

As mentioned earlier, there is no research studying the direct relationship of risk management disclosure and the firm's hedging premium. Therefore, this paper aims to work

on this theoretical gap by bridging these two sets of literature. We acknowledge that the hedging premium is present and we would like to test for the effect of an additional variable – hedging disclosure and if there is a positive relationship between this variable on the firm's hedging premium.

2.5 Research Hypothesis

Following the literature review above, we define our research hypothesis as follow:

Hypothesis 1: A firm with a more transparent risk management disclosure obtains a higher hedging premium.

We would expect a positive relationship between the firm's risk management disclosure and the firm's value consistent with previous disclosure research which states that the more transparent the disclosure, the lower information asymmetry there is and the higher the premium allocated to the firm. Consistent with previous research such as Luez and Wysocki (2008), we argue that the more transparent the disclosure, the investors are better able to understand the firm's approach on risk management and the lower the probability of misevaluation or estimation. This is value adding as it reduces the cost of capital charged to the firm. As such, the hedging premium given to firms, which practice good hedging disclosure, should be higher than those that do not.

Hypothesis 2: Investors value additional disclosure more than IFRS requirements.

In addition, during the course of our research, we also would like to test on an additional hypothesis regarding the value-creation of different types of information. We argue that IFRS compliance should be less valuable as this provides the basis for a firm's transparency and is made mandatory by the Stockholm Stock Exchange. Therefore, we would expect investors to react more positively to additional disclosure in comparison to IFRS compliance as additional disclosure indicates a more transparent company. In the event that the company does not strictly comply with IFRS requirements, voluntary disclosure should be more valuable for investors. This should be more significant in the case of a weak IFRS compliance regime.

3 Methodology

In this section, we present our research approach and coding methodology. We will also provide a detailed description of our data and sample before presenting the variables and method used for our analysis. In addition, we also provide an evaluation of the reliability and validity of the method used in our study.

3.1 Research Approach

Previous empirical research has dug into the motives behind risk management and provides evidence that hedging does add value to the firm. However, the effect of disclosure on firm value has often been researched separately and the effect of hedging disclosure on firm value is still largely untested. This provides an opportunity to bring these two areas together, adding on to prior research undertaken within these fields.

Therefore, we follow a deductive research approach, using previous empirical findings and literature review as a base, to develop a logical hypothesis regarding the disclosure effect on the firm's hedging premium. Then, empirical data observations are collected from a sample of Swedish firms to test the effect of the hypothesis formed. By integrating the theoretical framework and the hypothesis, the aim of our study is to provide some insightful evidence regarding the effect of disclosure and the hedging premium in Sweden.

In this paper, the research question we aim to test is whether a more transparent hedging disclosure of foreign exchange hedging activities creates a positive impact on the firm's hedging premium. While we are focusing largely on the level of foreign exchange hedging activities, it is important to stress that the disclosure of other risk management activities can also influence the premium imposed on a firm. However, we model our methodology based on the work of Allayannis and Weston (2001) and Allayannis, Les and Miller (2007) which states that foreign exchange risk activities could be used as a proxy for the overall risk management activities of the firm. In line with their study, we would like to isolate the most common type of risk that the firm is exposed to which is foreign exchange risk. Considering the small and open Swedish economy, it is highly probably that Swedish firms will be exposed to currency exposures in their operations therefore, using foreign exchange risk, as a proxy would allow us to obtain comparability among our sample firms. In addition, based on previous empirical studies, it was noted that most firms which undertake currency hedging also undertake other forms of hedging – interest rate or commodity prices as such we would expect that by studying foreign exchange risk disclosure would be a good proxy for the risk management disclosure as a whole.

As such in our study, we build onto the previous model developed by Allayannis and Weston (2001) but adding an additional variable to test for the effect of hedging disclosure on firm value.

3.2 Method of defining transparent disclosure

In order to analyze the transparency of disclosure in annual reports, we proposed a framework that covers the important dimensions of what we defined as a transparent disclosure. Since the Swedish Stock Exchange follows the International Financial Reporting Standards (IFRS), IFRS was used as a basis to formulate the disclosure standards in order for us to assess companies financial reporting. Specifically, we look at the requirements highlighted in IFRS 7: Financial Instruments, which governed the requirements concerning hedging activities. With this as the base, we defined a set of criteria that a firm has to meet in order to fulfill the requirements.

Additionally, we reviewed best practice reports published by accounting companies such as Ernst and Young, Price Waterhouse and Coopers (PWC) and Grant Thornton to obtain additional dimensions concerning financial disclosure. Based on the guidelines presented, we then developed an additional set of information, which firms could provide, in order to be more transparent in their hedging activities.

3.2.1 IFRS Requirements

According to IFRS 7 (Financial Instruments: Disclosures), firms are required to classify the financial instruments used according to classes of similar instruments and report them in the annual report according to two main categories – quantitative and qualitative.

From a qualitative perspective, firms are required to provide the information about the significance of the financial instruments and also the nature and extend of risks that consequent from the use of those financial instruments. Firms are also required to disclose additional information about the risk exposure of holding on the different types of financial instruments and the objectives and policies the management has for managing those risks.

In addition, firms are required to provide quantitative description regarding each hedge activity, the accounting treatment of the instruments and the nature of the risks that is being hedged. The standard requires that firms disclose the accounting treatment of their financial instruments (i.e., if they adopted fair value, cash flow hedging or other types of accounting method). With respect to market risk and foreign exchange risk, IFRS 7 also compels that

firms disclose a sensitivity analysis of the different types of market risk (interest rate, foreign exchange risk and other price risks) and how changes in these risks impact the firm.

3.2.1.1 IFRS Criteria Assessed

After assessing the requirements from the standard, we came up with 10 key criteria that the firm has to fulfill.

1. *Identification of risks that the firm is exposed to*

   This information provided should, as mandated by IFRS requirement to be similar to the information provided internally to key management. If the company disclosed some or all of the different risks within the annual report, 1 point was given to the firm. Otherwise, the firm would obtain a 0. A note of remark however is that, we are just looking out for a list of risks that the firm is exposed to and it need not be by any means, be all the risks that the firm is exposed to as a qualitative assessment would exceed the time-frame and scope of the thesis.

2. *Origin of the risks*

   If the firm provides some form of explanation as to the areas of their business environment that contributes to those risks, 1 point was given to the firm. For example, if they have identified foreign exchange risk, they need to give a corresponding explanation why are they exposed to this risk (through global sales, etc), otherwise, the firm would obtain a 0.

3. *Objective of risk management*

   This criterion seeks to assess if the firm discloses the objective of its risk management activities. 1 point was given if the firm clearly stated its goal for their undertaking of risk management activities. For example, 1 point was given when the firm states that their objective of managing their foreign exchange risk is to reduce the volatility of their earnings. If this information was not found in their annual report, 0 points will be given to the firm.

4. *Risk management policy*

   In order to score a 1, the firm needs to disclose their risk management policy as well as a description of their policy. If the firm merely states that a policy is in place without

providing additional information (i.e. too general statement), they would be given a 0. For example, a 0 is given when the firm states that they have a policy in place and their Board reviews this policy annually as this information is too vague and does not contribute to a more transparent disclosure.

5. *Percentage of exposure being hedged.*

This is important in order for investors to get an understanding what is the level of exposure left within the entity as changes in the environment will affect the firm according to the exposure left un-hedged. Therefore we would give 1 point to the firm if the firm provides us with the percentage of exposure hedged. In this criterion, the numerical breakdown was not required as mandated by IFRS 7. For example, if the firm states that they hedge between 60-80% of their exposure, this will get them 1 point.

6. *Accounting method*

IFRS mandates that the firm provide the information regarding their accounting methods used whether it is fair value, cash flow or net investments hedge accounting. This has to be stated clearly in order for the firm to receive a 1 otherwise 0 will be given.

7. *Effectiveness of hedging*

IFRS mandates that if the firm uses cash flow hedge accounting, it is necessary that the firm disclose the effectiveness of their cash flow hedge in their reporting. If this was disclosed, 1 point was given to the firm. The regression analysis calculating the effectiveness was not required to score a 1, as mandated by IFRS requirements.

8. *Type of risk hedged*

 IFRS states that the firm needs to provide some information regarding the nature of the risk that is being hedged. In order to score a 1 for this criterion, the company had to disclose the type of risk being hedged e.g. transaction or translation. If this was not disclosed, the firm will be given 0.

9. *Amount*

Furthermore, a criterion for the amount hedged was assessed in line with the requirement from IFRS. In order to score 1 point in this criterion, it was required that the firm

publishes the numerical amount that they hedged. If the gross figure of the amount hedged is not given, we would award 0 points to the firm.

10. Sensitivity Analysis

1 point was awarded if the firm provides a sensitivity analysis for its foreign exchange risk. For example, we would award 1 point if the firm mentioned that an X% change in the Swedish Kroners would impact the Net Income by Y%. If this was not given, 0 points will be awarded.

3.2.2 Additional Criteria

In our methodology, we have also identified additional criteria, which supplement the IFRS requirement to measure more transparent disclosure which allows investors to better comprehend the foreign exchange risk management activities of the firm. We have based the selection of the following criteria according to guidelines advised by major accounting firms. In our selection, we have focused on the most critical information that should be disclosed to provide investors with an opportunity to assess the complexity and effectiveness of the firm's hedging strategy. We have also balanced the mix of both quantitative and qualitative analysis to ensure that the criteria selection is not biased towards a certain type of disclosure. We would expect that a good mix of both qualitative and quantitative analysis is necessary to cater to the varied types of investors present i.e. those with more financial knowledge might prefer quantitative while those with less might prefer more descriptive and qualitative analysis of the foreign exchange risk management activities.

3.2.2.1 Additional criteria assessed

Upon reviewing various best practices guides published, we came up with 10 additional criteria used to assess the firm's disclosure.

1. *Risk affecting the business*

This criterion requires that the company explain the impact of the risks on their business in order to score a 1. For example, exposure to the foreign exchange risk would result in an X% shift in the firm's net income. In this criterion, we assess if the firm could inform investors of the motivation behind their foreign exchange risk management. If this information was missing, the firm would be given 0 points in this criterion.

2. *Numerical breakdown of their foreign exchange exposure*

What we are looking out for in this criterion is if the firm provide a numerical figure for each of the major currencies that the firm transacts with indicating the amount of foreign exchange risk that they are exposed to. With this information given, the firm will be given 1 point, otherwise 0 points for non-disclosure.

3. *Duration of the hedge*

If this information regarding the maturity or term of the hedge is provided, 1 point is given to the firm. This criterion was chosen based on the best practices guidance from big accounting firms, which state that this criterion is useful in order for investors to get an understanding of the quality of the hedge (Grant Thornton, 2009). For example, 1 point is given when the firm states that the exposures are usually hedged for 6-9 months. Otherwise, 0 points is given.

4. *Type of products used during the hedging process*

Therefore, if the company disclose that they use futures, swaps, forwards or options 1 point will be given. This criterion is included to provide investors with additional information regarding the hedging management so that the investor can better access the risk management of the firm. If there is no indication on the type of products used, 0 points is given to the firm. It is to be noted that this criterion does not aim to assess if the firm disclosure all the products used or provide partial information of the products used. It is beyond our study to assess if the firm discloses all the products used and this criterion aim to test only if the firm provides indication as to some of the types of the products used.

5. *Breakdown of amount hedged per product*

This criterion allows the investors to understand the hedging activity of the firm. In order to obtain 1 point in this criterion, the firm has to provide an analysis that gives a breakdown of the amount hedged per product used. For example, the firm has to state XXX kroners were hedged using forward contracts and YYY kroners were hedged using swaps agreement. If the firm does not provide this information, 0 points will be given.

6. *Breakdown of positions; i.e. nominal vs.. gross nominal value of the hedge*

   Based on best practices guide, it was noted that this information although not mandated by IFRS provide investors with a better understanding of the hedge positions. By disclosing the breakdown of positions in each currency, the firm will allow investors to better understand its hedging activity. In order to score 1 point, the firm needs to disclose a numerical breakdown of the gross position in each currency which the firm hedges and if this is not provided, 0 points will be given.

7. *Numerical figure of the net exposure of risk transfer*

   Under this criterion, the firm will score 1 point if they disclose the numerical figure of the firm's net exposure level after taking into account the hedging activities. Consistent with the best practice guide, accounting firms argued that this is a follow up from IFRS requirements where firm only need to provide the gross amount hedged and not the net position. This criterion allow investors to understand the net position of the risk that the firm is exposed to and make a better assessment of the firm's health. If this is not given, 0 points will be awarded.

8. *Effect of hedging activities on financial items.*

   If the firm states explicitly in their analysis, which are the relevant financial items, affected and what are the effects, the firm will be given 1 point. For example, if the firm states that the hedge caused XXX kroners increase in the net profit, 1 point will be given. If this information is missing, 0 point will be awarded.

9. *Method behind the sensitivity analysis.*

   Although not specifically required by IFRS, many accounting firms pointed out that firm's should disclose their assumptions and methods underlying their analysis. In Ernst & Young (2007), they indicated that the assumptions and methods underlying the analysis are important to reconcile this information with the overall risk exposure of the firm. Therefore, in order to score 1 point, the firm needed to explain the method used to compute their sensitivity analysis. A point to note however, we do not analyze the quality of the method as that is out of the scope of our study.

10. Monitoring the effectiveness of its hedging policies

This is to complement the information regarding the firm's risk management policy. It provides the investor with an understanding if the firm does indeed carry out additional actions post-hedging. This is argued to provide investors with the assurance that companies do monitor their activities and take necessary actions to deal with any discrepancies. 1 point is given to the firm if this information is provided.

3.2.2.2 Accessibility

Furthermore, we have also included an additional criterion, which involves the accessibility of information within the annual report. This was considered to be important, based on earlier studies of transparency (i.e. Beretta and Bozzolan, 2004; Botosan et al, 2002) which have often included accessibility of the information as an important component of disclosure. As argued by Beretta and Bozzolan (2004), if the reader has to search through many narrative pages of reporting in order to find the information he needs, the reader might lose appreciation for the information published. They argued that this is akin to searching for a "needle in a haystack" where the information is too dispersed and unorganized thus making the information communication more difficult to appreciate and comprehend. Logically, the more accessible the information, the more valuable the information should be for the investors. In order to score 1 point for this criterion, the firm needs to provide the required information clearly and link the relevant sections to where the information could be found.

3.2.3 General remarks regarding method used

Points were only given for the information provided. Due to scope and timeframe of thesis as well as a lack of internal data it was not possible to assess the quality of information disclosed by the companies. Therefore, the assumption made in our study is that the information provided within the annual reports for the various criteria listed above, would represent a reliable image of the firms activities. Furthermore, variances in the quality of the financial reporting could be seen throughout different annual reports. However, this difference in quality was not taken into account as long as the information discussed was provided as this is beyond the scope of our study.

Following this approach, we hoped that this study is able to assess to a certain extent the effectiveness of the IFRS compliance regime in Sweden. Nevertheless, due to the scope of

our paper, this is only limited to the IFRS compliance of foreign exchange financial instruments and risk reporting.

3.3 Disclosure model used in this study

In order to measure the impact of disclosure on firm value, a model for a good disclosure firm was outlined through the combinations of the three assessed areas i.e. IFRS component, Additional Information component and Accessibility component.

To measure the impact of IFRS Criteria a threshold of 90 percent was chosen. If the firm meets or exceeds this level of disclosure, 1 was given for this component and if the firm fulfilled the IFRS requirements to a lower degree, 0 will be awarded. We have established the threshold at 90 percent according to our assumption that mandatory IFRS disclosure would have to be followed in order to provide a comprehensive overview and to fulfill the listing requirements of the Swedish Stock Exchange. Therefore, in order to correctly assess the strength of IFRS compliance in Sweden, we chose a strict threshold level.

The second element for the model was built on the firm's fulfillment of additional criteria. In order to measure the impact of the degree of additional disclosure a threshold of 60 percent was chosen. Firms are given a 1 if they meet or exceed the percentage of disclosure and a 0 otherwise. The threshold was set at a comparable low level in order to include a sufficient number of companies within the good disclosure sample. We have picked only the most relevant 10 additional criteria, which were advised by major accounting firms to be useful for investors. As such, we would like to measure how well do Swedish firms perform in providing a detailed account of their hedging activities. In a second step, to separate the most transparent firms from the least transparent ones, additional models were tested in order to control for significant characteristics.

The third component, which has to be fulfilled, is the accessibility criterion. For this component, the scoring was previously explained in paragraph 3.2.2.2. Firms would obtain 1 point if the information provided is accessible within the annual report. This component was chosen in line with the arguments for its importance in transparency research i.e. Beretta and Bolozzan, 2004; Botosan et al, 2002.

Therefore, in summary, a firm would be deemed as a good disclosure firm if it were able to fulfill all 3 components adequately.

Good disclosure company			
IFRS criteria	Additional criteria	Accessibility	Number of firms
90 percent fulfillment	60 percent fulfillment	Fulfilled	16

Table 1: Summary of model used in this study

3.4 Data

Consistent with Botosan (1997), data concerning disclosure is derived from the firms' annual reports as the annual report is deemed the most important disclosure tool used by companies to inform investors in detail. Botosan (1997) however found a limited importance of the annual report for companies followed by a high number of analysts. Therefore, data concerning analyst coverage was retrieved from the news agency Reuters in order to control for the effects of analyst coverage on the overall disclosure of the firms. Furthermore, secondary data concerning the sample firms' key figures were obtained through DataStream. Considering the time frame of the thesis, surveys as well as interviews to collect additional information and opinions on a disclosure level perceived as optimal were disregarded as unfeasible, especially considering the fact that a high percentage of companies within the sample would have to be approached to generate a significant result. Therefore, research of accountancy/consultancy firms was used as a practical complement to scientific research papers on the topic of the paper.

3.5 Sample

The population researched within this paper consists out of Large, Midcap and Small firms listed on the Stockholm Stock Exchange at year-end 2009. At this target date 257 firms fitting this criteria were listed. The sample was limited to non-financial firms as financial firms play a different role within the market considering their business model based on financial products and their use of financial instruments are often for different reasons in comparison to corporations. This leads to the exclusion of 6 financial institutions. Further exclusions were made as a result of missing data in some of the variables required in our study (50). We have also excluded non-domestic firms (8) as we would like to measure the effect on Swedish firms to ease comparability. The above-mentioned exclusions were made, in order to generate the sample of firms operating under similar conditions.

In addition, 78 companies were identified as non-hedgers, consistent with the research of Jankensgård (2011) who performed a keyword check of the annual reports as well as phone interviews to identify non-hedgers for his research on centralized and decentralized hedging

policies of Swedish firms. The remaining sample of domestic hedging firms listed on the Stockholm Stock Exchange finally consists out of 115 companies and the overall sample constitutes 193 firms.

	No of Firms
Total Listed Firms in Swedish Stock Exchange	257
Financial Firms excluded	(6)
Firms excluded due to missing data	(50)
Foreign Firms excluded	(8)
Total Sample Size	193

Table 2: Overview of sample used

	No of Firms
Hedgers	115
Non-hedgers	78

Table 3: Breakdown of hedgers vs. non-hedgers in sample

3.6 Regression Models

The regression model we use in this study is largely based on the model developed by Allayannis and Weston (2001). However, a point to note is that some of the variables used are modified in our study to better suit the environment and firms, which we are studying. The data used in our regression model consist of a cross-sectional data whereby we study the sample over the same time period of 2009.

We have used Ordinary Least Squares (OLS) as the regression method and we ran 2 different sets of regression in order to test both our hypotheses.

$$Log\ of\ Tobin's\ Q = \ constant + \ \beta_1\ GDF_{60} + \ \beta_i\ X_i + \ \varepsilon \quad (1)$$

In the equation described above, Log of Tobin's Q is our dependent variable, GDF_{60} is our independent variable and X_i is a set of control variables which will be explained in the following section. This regression is used to test our first hypothesis concerning the impact of good hedging disclosure on the hedging premium.

$$Log\ of\ Tobin's\ Q = \ constant + \ \beta_1\ IFRS_{90} + \ \beta_2\ AD_{60} + \ \beta_i\ X_i + \ \varepsilon \quad (2)$$

In the next regression, our dependent variable remains unchanged but we modified our independent variables to be $IFRS_{90}$ and AD_{60}, which will be explained in the next section. In this regression, we have also included the same set of control variables as in the first

regression. In this regression, we are testing if additional disclosure is more value adding to the firm than IFRS requirements, consistent with our second hypothesis.

3.7 Variables

3.7.1 Dependent Variable – Firm Value

Similar to previous research on the hedging premium, we do proxy firm value using the Tobin's Q ratio. We define Tobin's Q to be (Total Book Value of Assets – Book Value of Equity + Market Value of Assets) /Total Book Value of Assets. According to previous empirical research we noted that the Tobin's Q ratio has a skewed distribution and in order to overcome this, we take *the natural log of the Tobin's Q* value, which will enable us to interpret our results in percentage form.

3.7.2 Independent Variable – Disclosure Variable

In the first regression, the variable, which we aim to test for, is the hedging disclosure as indicated by our model in Section 3.2. This independent variable takes a form of a dummy variable whereby if a firm fulfills the 3 components as stipulated by the dummy, the firm will be given a dummy variable of 1 to indicate it is a good disclosure firm. Otherwise, the firm is given a 0. In the regression results, this dummy is denoted by the variable Good Disclosure Firms (GDF_{60}).

In our second regression, as mentioned earlier, we have modified the independent variable to be $IFRS_{90}$, a binary dummy that takes the value 1 when the firm meets the 90% threshold for IFRS reporting) and AD_{60}, a binary dummy that takes the value 1 when the firm meets 60% additional disclosure threshold. This is to assess the difference impact on value created by the different components in our model.

3.7.3 Control Variables

3.7.3.1 Size

It has been empirically found that firms, which are larger, tend to engage in derivatives use that smaller firms. Additionally, the firm's value is also affected by size whereby size is expected to positively correlate due to higher economies of scale and synergies. On the other hand, size correlates negatively with firm's value whereby the larger the company the harder

it is to manage and the less transparent it becomes. Therefore, in order for us to control for the size effect from biasing our results, we include a size control variable using a proxy of *log of Total Sales.*

3.7.3.2 Leverage

We also expect that the firm's value is correlated with the amount of leverage in the firm's capital structure. In addition, consistent with transparency literature, we would expect the firm's leverage to affect the level of transparency, as a firm with a higher debt ratio will tend to disclose more due to the requirements from creditors. Therefore in order for us to control for the differences in the capital structure of the firms within our sample, we included a leverage control variable using a proxy of *Total Book Value of Debt/ Total Book Value of Assets.*

3.7.3.3 Investment Growth

In Myers (1977), he argued that the firm value is also dependent on the future investment opportunities that the firm has. Based on the literature mentioned in the prior section, we acknowledge that prior research has given some indication that firms which hedge tend to have higher investment opportunities (i.e., one of the strong motivation for hedging). Therefore in order for our results to be accurate, we included a variable to control for this. In this study, we define *Capital Expenditure as additions to Fixed Assets/Total Sales* as in Jannesgard (2011).

3.7.3.4 Profitability/ Firm's Performance

The profitability level of the firm also affects the firm's value as we would expect that the more profitable the firm is the more the firm tend to trade at a premium (i.e., have a higher Q ratio). Therefore to control for profitability, we use the variable *Net Income/Total Assets.*

3.7.3.5 Access to financial markets

Based on previous theoretical framework, we understand that the firm's ability to undertake projects is dependent on the firm's ability to get financing. If the firm forgoes some projects because they are unable to get the financing they need, then we would expect their Q ratio to remain high because they will only take on positive NPV projects. Therefore this might bias our results and to control for this, we include a dummy control variable, Dividend as done by previous studies. *Dividend will take the value 1 if the firm pays a dividend.* We would also

expect a negative relationship between Dummy and the Q ratio because when the firm pays dividends, it is less likely to be capital constrained and therefore might have a lower Q value.

3.7.3.6 Industrial Diversification

From previous research we acknowledged that there are two groups of arguments regarding industrial diversification and the firm value. One set of argument stated that industrial diversification increases the firm value while the other set argued that industrial diversification is the result of agency problems therefore reducing the firm's value. In general, much empirical evidence indicated a negative relationship between industrial diversification and the firm value Therefore in our study, we included a control variable, which involves a *dummy that takes the value 1 when the firm operates in more than one segment.*

3.7.3.7 Industrial Effects

We would also expect to see that some industrial characteristics might influence the firm's value. For example, firms within an industry that has high Q values will tend to also have a higher Q value individually. If these firms are hedgers, then we are unable to tell if these firms have a higher Q value because of hedging disclosure or if it was because they belong to a high Q industry. Therefore in order to control for this effect, we included a dummy for each of the industry according to the Global Industry Classification Standards (GICS).

3.7.3.8 Corporate Governance

A firm value is also dependent on the corporate governance and the firm's internal controls mechanisms. We would expect that a firm with stronger internal control mechanisms would use their resources more efficiently. In addition, we would also expect that a firm with stronger corporate governance will tend to be more transparent in their reporting. Therefore, in order to control for this effect on the firm value, we use 3 additional variables. Firstly, the variable *Block Ownership* is used to account for the strength of the internal controls. A firm with larger block ownership tends to have a stronger internal control mechanism. The variable *Block Ownership* is defined as the number of shares owned by non-managerial block-holders/ total number of shares and these block-holders are those shareholders who own more than 10% of the firm's number of shares. We also use an additional variable Management Shares as defined by the total number of shares held by the CEO and CFO/total number of shares to account for the degree of alignment between management and the firm's

stockholders. Finally, we have included the variable *Institutional Investors* to control for the institutional ownership in the firm ownership structure. Previous empirical studies such as Charleton et al (1998) and Fernando et al (2007) found that a higher degree of institutional investors results in a higher monitoring for the firm. This is also consistent with the theoretical argument that a higher level of institutional investors also results in a higher firm value.

3.7.3.9 Geographical Diversification

It has long been argued that geographical diversification results in an increase in the firm's value. Firms, which are able to tap on external markets out of its home market, is said to be able to increase sales and capture more customers. The more geographically diversified a firm is, the more the firm is able to reduce the volatility of its earnings and increase the stability of its cash flows. Therefore, this should increase the value of the firm. As such, we would need to include a control variable to control for the effect of geographical diversification on the firm's value, to do this we would use the ratio *foreign sales/ total sales* to proxy for this variable.

3.7.3.10   Number of Analysts following firm

Investors obtain information from a myriad of sources other than the firm's annual report. Therefore, we included an additional control variable *number of analysts following firm* to control for the possibility that investors do not react to the information listed in the annual report but rather from additional sources such as analyst reports. We have included this in both regressions. We argue that firms with more analyst coverage tend to be more well known therefore might obtain a higher Q value. It is also important to control for this because we would like to only test the impact of the firm's additional disclosure through the annual report on the firm's value and thus we have to isolate the effect of analyst coverage. By including this additional control variable, we will also be able to measure what is within scope of this paper and exclude the effect of overall reduction in information asymmetry and the effect on firm's value.

	Regression 1	Regression 2
Dependent Variable	Log of Tobin's Q	Log of Tobin's Q
Independent Variable	Good Disclosure	$IFRS_{90}$
		AD_{60}
Control Variables	Industry Effects	Industry Effects
	Access to Capital Markets	Access to Capital Markets
	Leverage	Leverage
	Industrial Diversification	Industrial Diversification
	Geographical Diversification	Geographical Diversification
	Investment	Investment
	Profitability	Profitability
	Size	Size
	Corporate Governance	Corporate Governance
	No of Analysts following	No of Analysts following
	Institutional Investors	Institutional Investors

Table 4: Summary of regression variables

3.8 Comments regarding the regression model used

Since we are using an ordinary least squares (OLS) regression model, we have to control for the assumptions governing the reliability of this method. Therefore, in this study, we have controlled for autocorrelation, heterokedasticity, normality and model specification errors. In order to control for autocorrelation, we have relied on the widely used Durbin-Watson test statistic to check for the presence of any autocorrelation in our series. The results indicated negative and our sample is free from any autocorrelation issues. Also, we have checked our sample for any presence of heterokedasticity. Heterokedasticity was present in our sample; as such we have used the White's robust standard errors to control for this issue. With regards to the issue on normality, we tested for Jarque-Bera statistic and found that our model did not meet the normality requirement. However, in line with statistical framework, since our sample is large enough (193 firms), the violation of normality is negligible and we could apply the central limit theorem (CLT) to assume for normality in sample. Lastly, we also controlled for the presence of multi-collinearity. None of the variables indicate a positive collinear relationship therefore we could argue that our regression is a stable model. We have also ran a Ramsey RESET test to check if the parameters used in our study is linear and the results showed no indication of a non-linearity present. Therefore, we assume with high reliability that the function is correctly specified for our regression model.

3.9 Validity and Reliability of Method

3.9.1 Reliability

The reliability issue concerning this study involves 2 different dimensions – the reliability of our data and the reliability of our method used in coding the criteria. We have ensured that the data used in this study was reliable as they were extracted from reliable sources such as DataStream, Reuters and annual reports. The process of excluding certain firms from our sample was also described thoroughly without any bias and randomness. As such our final sample can be deemed to be reliable. In addition, we have also ensured that our coding method was highly reliable as we have 2 different researchers analyzing each firm's annual report to ensure consistency in the coding process. During the process of coding, we have also come up with a set of standards to guide the coding process. These are done to ensure consistency and a higher degree of reliability of the method used. Finally, the OLS was also done through Eviews to ensure an optimal accuracy in terms of the calculation methods. Therefore, both our data and method used have been checked to ensure that a high degree of reliability was maintained.

3.9.2 Validity

The methodology used in this method was largely based on the model used by many other studies (such as Allayannis and Weston, 2001). Therefore while studying this topic, the method is assumed to be applicable. We have also crosschecked the use of control variables in this paper with previous studies done on this topic and found that the variables used are valid. In addition, the methodology process of coding the various criteria is also consistent with previous studies on transparency. Therefore, we have ensured that the method and process are highly valid in this study. However, a point to note is that since this study is the first of its kind – studying the relationship between disclosure and firm's value, there is no ability for us to compare or benchmark our results against any other studies. Also, the control variable – corporate governance might not be consistent across all countries due to the different corporate governance system adopted by different nations. Therefore, this might lead to our results not being that useful in certain contexts.

4 Empirical Findings

In the first part of this section, we present various descriptive statistics for our sample. In the next part of this section, we present to you the empirical findings from our coding study of the firm's annual report. Finally, in the last part of this section we will describe the regression results.

4.1 Descriptive Statistics

The total sample consists out of 193 firms listed at the Swedish stock exchange. First we present the total sample and then a comparison between hedgers and non-hedgers as well as breakdown for good and bad disclosure firms. Roughly 60 percent of the companies within the sample are classified as hedgers. In a third step we further broke down the hedgers into good and bad disclosure firms as defined by our model in Section 3.3.

The descriptive statistics for our total sample showed that companies within the sample differ significantly in their characteristics. This for example, can be seen in factors such as foreign sales ranging from 0 to 100 percent as well as in a level of institutional investors ranging from 0 to 91 percent. This indicates a difference in the geographical diversity and ownership structure of the firms within our sample. In addition, we also noted the difference in the number of analyst following the firm indicating differences in size and popularity among the firms in our sample.

	Total Sample n=193				
	Mean	Median	Maximum	Minimum	Std. Dev.
TOBINSQLOG	0.365	0.227	2.608	-0.659	0.577
HEDGER	0.596	1.000	1.000	0.000	0.492
DIV	0.632	1.000	1.000	0.000	0.483
IND	0.544	1.000	1.000	0.000	0.499
LEVERAGE	0.209	0.178	0.743	0.000	0.186
CAPEX	0.030	0.019	0.195	0.000	0.034
SIZE	6.381	6.228	8.505	4.484	0.866
FOREIGN	51.899	55.020	100.000	0.000	32.967
MGMTSHARES	0.035	0.002	0.853	0.000	0.100
ROA	-0.013	0.032	0.468	-1.558	0.233
BLOCKOWNERSHIP	26.954	22.400	141.100	0.000	22.606
ANALYST	7.062	4.000	43.000	0.000	8.671
INSTITUTIONAL	0.325	0.301	0.913	0.000	0.209
DECENTRALIZED	0.145	0.000	1.000	0.000	0.353

Table 5: Descriptive Statistics for complete sample

Separating our sample into Hedgers and non-Hedgers, it can be seen from the comparison of the descriptive statistics between the two samples, that the mean of Tobins Q is higher for Hedgers than non-Hedgers. This is in line with the findings of Allayannis and Weston (2001) in the US market but surprisingly different from the results of Pramborg (2004), which found a higher value for non-hedgers within a sample of the Swedish market. Another, expected observation is the higher exposure to foreign exchange risk of hedgers shown by the higher percentage of foreign sales made by firms within the Hedger sample. This aligns our findings with theoretical expectations that a firm exposed to a higher level of risk would have a greater motivation to hedge that risk. Another interesting observation made in this comparison is the number of Analyst following. The mean is higher for Hedger than for non-Hedger. This could be due to the larger size of hedging firms, as more Analysts tend to follow firms of international significance and generating comparably higher revenues. This is consistent with the findings in literature that size is also a factor concerning the use of derivatives, as larger firms tend to have access to a higher level of resources and expertise. Hedging firms also tend to have a higher percentage of dividends paying firms, which is a proxy for access to additional resources. Once again, we find that this result could be explained by the larger firm size within the hedging sample therefore, they are more likely to have additional resources for internal operations and dividend payments.

	Hedger n=115			Non Hedger n=78		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
TOBINSQLOG	0.366	0.303	0.491	0.363	0.111	0.689
DIV	0.678	1.000	0.469	0.564	1.000	0.499
IND	0.635	1.000	0.484	0.410	0.000	0.495
LEVERAGE	0.214	0.213	0.164	0.203	0.134	0.217
CAPEX	0.032	0.023	0.033	0.026	0.011	0.036
SIZE	6.589	6.515	0.831	6.074	5.931	0.829
FOREIGN	62.138	65.770	28.027	36.803	34.565	34.052
MGMTSHARES	0.027	0.001	0.101	0.046	0.005	0.099
ROA	0.012	0.035	0.163	-0.051	0.020	0.306
BLOCKOWNERSHIP	26.997	22.400	20.513	26.892	22.750	25.520
ANALYST	9.174	5.000	10.140	3.949	2.000	4.330
INSTITUTIONAL	0.350	0.338	0.214	0.289	0.270	0.198
DECENTRALIZED	0.243	0.000	0.431	0.000	0.000	0.000

Table 6: Descriptive Statistics for hedger vs. non-hedger

Within the Hedger group we have also isolated good disclosure from bad disclosure firms. Generally, we find that good disclosure firms have a lower value and are more diversified

and have a lower percentage of block ownership. This could indicate that there is a valuation discount potentially for non-related diversification. The comparable lower value in spite of a higher return on assets and more dividends paid could be seen as an indication for a higher level of information asymmetry. Therefore, transparent disclosure becomes more important for the firm to attract investors. This, observations strengthen when only companies (n=5) fulfilling 90 percent of the additional disclosure are observed. Companies with this highest level of disclosure are furthermore covered by fewer analysts and tend towards a decentralized hedging policy showing a mean of 0.4 for good disclosure compared to 0.236 for the rest of the sample. A finding that is only marginal for good disclosure companies found within our model was the mean for number of Analysts following, which is not significantly different. However, the median shows less variance within the number of Analyst following, indicating a common characteristic for good disclosure firms.

	Good Disclosure n=16			Bad Disclosure n=99		
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.
TOBINSQLOG	0.257	0.296	0.248	0.384	0.303	0.518
DIV	0.813	1.000	0.403	0.657	1.000	0.477
IND	0.625	1.000	0.500	0.636	1.000	0.483
LEVERAGE	0.233	0.281	0.130	0.211	0.200	0.169
CAPEX	0.031	0.030	0.015	0.032	0.022	0.035
SIZE	6.805	6.884	0.739	6.554	6.415	0.843
FOREIGN	61.423	62.770	24.057	62.254	67.880	28.724
MGMTSHARES	0.018	0.002	0.045	0.028	0.001	0.107
ROA	0.021	0.035	0.062	0.011	0.036	0.174
BLOCKOWNERSHIP	18.619	16.950	14.341	28.351	24.000	21.087
ANALYST	10.125	10.000	8.032	9.020	5.000	10.468
INSTITUTIONAL	0.297	0.298	0.216	0.359	0.339	0.213
DECENTRALIZED	0.250	-	0.447	0.242	-	0.431

Table 7: Descriptive Statistics for good vs. bad disclosure firms

4.2 Empirical results from data collection

A sample of 115 hedging firms listed on the Swedish Stock Exchange was assessed for their level of compliance with a number of criteria on IFRS and additional disclosure. A detailed description can be found in section 3.2.

We present in this section, the outcome of our coding method. The results show that a majority of companies fulfill a high percentage of the IFRS criteria while the additional information criteria are fulfilled to a lesser extent, i.e. an Average of 73 percent for IFRS

criteria and an average of 44 percent for additional criteria were found to be fulfilled. We observed that more complex and sensitive criteria were disclosed to a lesser degree as discussed in more detail in the following section. The presentation of the disclosed information was rated accessible for 97 out of the 115 firms in accordance with the definition of accessibility discussed in section 3.2.

4.2.1 IFRS reporting Component

For IFRS component of disclosure, the trend within the sample indicates a tendency towards less detailed and more general disclosure can be seen in the very low level of disclosing information concerning the "Effectiveness of hedging". Firms are also less inclined to provide information that is more numerical in nature or those that involves detailed internal information. This can be seen in the weaker performance around criteria such as "Percentage of exposure being hedged" and "Risk management policy".

The table below shows the number of companies fulfilling each IFRS criterion and the percentage of the sample they represent.

IFRS Criteria		
Criteria	**Number of companies**	**Percentage of sample**
Identification of risks that the firm is exposed to	115	100
Origin of the risks	113	98
Objective of risk management	87	76
Risk management policy	67	58
Percentage of exposure being hedged	68	59
Accounting method	107	93
Effectiveness of hedging	16	14
Type of risk hedged	108	94
Amount	78	68
Sensitivity Analysis	81	70

Table 8: Fulfillment of IFRS Criteria

Out of the sample of 115 companies, 25 companies fulfilled 90 percent of the IFRS criteria contributing to approximately 22 percent of the firms in the sample. Lowering the percentage to 80 percent, this increases the number of companies meeting the required threshold to 52 contributing to approximately 45 percent of the sample. From our analysis, we found only one company disclosing less than 40 percent of IFRS requirements. The distribution within the sample is shown in Table 9.

IFRS Criteria		
Percentage of Fulfillment	Number of firms	Number of firms (combined)
90	25	25
80	27	52
70	30	82
60	20	102
50	11	113
40	1	114
30	1	115

Table 9: Fulfillment of IFRS Criteria, number of firms

4.2.2 Additional Disclosure Component

The observation above that the firms tend to prefer disclosing less detailed and less sensitive criteria of the IFRS reporting is further strengthened by our findings that firms in our sample generally do not disclose additional information beyond IFRS in their annual reports. Within this component, firms generally perform badly with large deviations in the fulfillment of individual criteria assessed.

Furthermore, in line with this observation, the highest percentage of fulfillment was found for the criteria "Type of products used during the hedging process" with 90 percent of the sample providing this information while the "Breakdown of amount hedged per product" is disclosed by only 30 percent of the firms. Consistent with findings concerning IFRS Criteria, the lowest percentage is observed for "Monitoring the effectiveness of its hedging policies" with 7 percent, followed by 26 percent fulfillment of "Numerical figure of the net exposure of risk transfer". The following table shows the fulfillment level for each of the criteria defined for the measurement of additional disclosure.

Additional Criteria		
Criteria	**Number of companies**	**Percentage of sample**
Risk affecting the business	80	70
Numerical breakdown of their foreign exchange exposure	74	64
Duration of the hedge	58	50
Type of products used during the hedging process	90	78
Breakdown of amount hedged per product	35	30
Breakdown of positions; i.e. nominal vs.. gross nominal value of the hedge	49	43
Numerical figure of the net exposure of risk transfer	30	26
Effect of hedging activities on financial items	44	38
Method behind the sensitivity analysis	37	32
Monitoring the effectiveness of its hedging policies	8	7

Table 10: Fulfillment of Additional Criteria

Table 11 below shows the distribution of additional disclosure within the sample supplementing the observation of a trend towards a low level of disclosure for the firms in the sample. The majority of the firms within our sample were seen to fulfill approximately 20-60% of voluntary disclosure.

Additional criteria		
Percentage of Fulfillment	Number of firms	Number of firms (cumulative)
90	5	5
80	6	11
70	6	17
60	17	34
50	19	53
40	21	74
30	18	92
20	14	106
10	7	113

Table 11: Summary for additional criteria fulfillment

4.3 Correlation of variables used in regression

In this segment we would like to present the correlation among all the variables with our Disclosure variable and observe the results. Interestingly, we found in our test that hedging disclosure does not result in a higher firm value, in fact, the findings seems to suggest that the more the firm disclose its hedging activities, Q value is negatively impacted by approximately 5.63% and this result is also statistically insignificant. In addition, we observed that there is a negative correlation between corporate governance mechanisms (denoted by MgmtShares, BlockOwnership and Institutional) and the disclosure pattern of the firm. The findings seems to indicate that as corporate governance mechanisms increases, the disclosure level decreases. The summary for the correlation analysis can be found in Table 12 below.

Correlation Matrix	
GDF_60	
-0.0563	TOBINSQLOG
0.2476	Hedger
0.1125	Div
0.0489	Ind
0.0378	Leverage
0.0121	Capex
0.1477	Size
0.0871	Foreign
-0.0485	MgmtShares
0.0443	ROA
-0.1112	BlockOwnership
0.1065	Analyst
-0.0415	Institutional
0.0896	Decentralized
1.0000	GDF_60

Table 12: Correlation matrix

From this result, we could conclude that despite the negative correlation between firm's value and the disclosure variable, this does not indicate that there is no hedging disclosure premium as there could be other factors that could affect the covariance between the two variables. As such, this provides an indication that we would have to control for other additional factors to correctly estimate the presence of a hedging disclosure premium.

4.4 Multivariate Regression Results

In this section, we present the results from the OLS regression with the dependent variable being log of Tobin's Q. In order for us to evaluate the effect of hedging disclosure on the firm's value, we have to include all the control variables that could affect the firm's Q values as described in Section 3.6.

In addition to those control variables, we have also controlled for an additional dummy, Bad Disclosure Firms (BDF), which takes a value 1 if the firm is a hedging firm with bad disclosure practices. By doing this, we are able to test for the marginal effect of good disclosure on the hedging premium since the BDF variable controls for all hedging firms without good disclosure (ie, this measures the hedging premium in general). By default, the variable Good Disclosure Firms (GDF) will then take the value 1 if the firm is a hedging firm with good disclosure practices. As such, the co-efficient obtained will enable us to observe the marginal effect that good disclosure has on the hedging premium as the

differences between GDF and BDF indicates the premium given for good hedging disclosure practices. The result from our base model is presented below in Table 13. For a full review of our regression including industry dummies, please refer to Appendix A.[2]

Multivariate Regression Results			
Dependent variable: TOBINSQLOG			
	Coefficient	*t-ratio*	
const	1.803	5.48	***
Div	0.082	1.58	
Ind	-0.065	-1.30	
Leverage	-0.253	-1.72	*
Capex	0.997	1.48	
Size	-0.315	-6.86	***
Foreign	0.002	2.43	**
MgmtShares	-0.167	-0.82	
ROA	0.292	1.20	
BlockOwnership	-0.000	-0.06	
Analyst	0.023	4.62	***
Institutional	-0.027	-0.26	
GDF_60	0.120	1.59	
BDF_60	0.079	1.34	
R-squared	0.434		
Adj R-squared	0.364		

Table 13: Multivariate Regression Results[3]

Based on this result, we note that our model of a good disclosure firm is positively related to firm's value, however this result is statistically insignificant. A firm, which practice good risk management disclosure, yields an approximate 12.0% increase in its firm value compared to only a 7.9% hedging premium for a firm that does not practice good disclosure. This finding suggests that good hedging disclosure could potentially increase the hedging premium by 4.10% (the difference between the premium obtained by GDF and BDF). This finding provides some indication for our hypothesis and suggests that hedging disclosure impacts the hedging premium on firm's value. This premium might on first glance seem high. However, it is to note that the foreign exchange disclosure is a proxy for overall risk

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[2] We have also acknowledge that while carrying out this regression, there might be a potential endogenity issue, consistent with prior studies where there is a loop effect in the causality between our control variable, hedger and dependent variable, Tobin's Q. We have tried to overcome this problem through the Two-staged least squared regression but this results in a statistical loss of many observations and weak results. We argue that the endogeneity is not contemporaneous hence the results obtained through OLS method above are still consistent and valid.

[3] In the regression table, *** denotes significance level of 99%, ** denotes significance level of 95% and * denotes significance level of 90%.

management disclosure. It is assumed that a firm, which discloses a high level of foreign exchange disclosure, will also do the same for its other risk exposures such as interest rates and commodity prices. The adjusted R-squared is however lower in comparison to Allayannis and Weston (2001) but in line with the findings from Pramborg (2004) in his studies of Swedish firms.

Looking at other explanatory variables, we note that the result also indicates that there is a hedging premium (denoted by the variable BDF) by about 7.90% on firm's value, consistent with other previous studies. This finding is smaller than the findings from Pramborg (2004) which indicated a premium of 13.8% and lower than the findings of Allayannis and Weston (2001) which found a premium of 4.87% in the US market. We argue that the premium we obtained of 7.90% is not surprising considering the deviations obtained in other hedging premium studies. The difference in the premium we found could be attributed to the foreign exchange fluctuations in 2009, which increases the foreign currency risk faced by the firm. We therefore conclude, that based on the hedging premium found in our study, it is well in range with other studies and fits logically with the high exporting and open Swedish economy.

In addition, consistent with the findings from other studies, we also found that size and geographical diversification (denoted by the variable "Foreign") was statistically significant at 99% and 95% respectively while the variable "Leverage" was found to be statistically significant at 90%. We have included an additional variable – "Analyst" and found this to be statistically significant at 99%. We provide some explanation for this finding in the next section of this paper. With regards to the strength of statistical significance for other variables, we argue that since we are using a sample from all firm's available which meets our criteria, we have thus inevitably relaxed the requirements of statistical significance, which states that this is important in making inferences from a sample of a small size.

We have also checked for the results when the "Analyst" variable was removed to analyze the effect on our findings without this control variable. We found the following set of result as shown in Table 14 with this additional restriction.

We observed that the good disclosure firms' variable indicates a premium of 16.3% and this is statistically significant at 95% while the bad disclosure firms' variable which indicates the general hedging premium without disclosure, indicates a premium of 16.9% and this is statistically significant at 99%. This indicates that good hedging disclosure does not

contribute to the hedging premium without the "Analyst" variable and the discount is approximately 0.06%.

Observing other explanatory variables, we observe that size and geographical diversification are still statistically significant at 99% and 95% respectively. Management shares and block ownership measuring strength in corporate governance on the other hand are found to be statistically significant at 99% and 95% respectively. Based on this result, we obtained an indication that the number of analysts following the firm co-interacts with the disclosure level of the firm and well as impact the value of the firm and the removal of this variable will lead to an omitted variable bias distorting our results. We have also provided some explanation for this finding in the next section of this paper.

Multivariate Regression without Analyst			
Dependent variable: TOBINSQLOG			
	Coefficient	*t-ratio*	
const	1.184	4.49	***
Div	0.087	1.59	
Ind	-0.011	-0.22	
Leverage	-0.010	-0.07	
Capex	0.913	1.11	
Size	-0.170	-4.57	***
Foreign	0.002	2.52	**
MgmtShares	-0.402	-3.24	***
ROA	0.070	0.28	
BlockOwnership	-0.002	-1.91	*
Institutional	0.143	1.11	
GDF_60	0.163	2.08	**
BDF_60	0.169	3.01	***
R-squared	0.622		
Adj R-squared	0.578		

Table 14: Multivariate Regression without Analyst

4.5 Robustness of model

In this section, we explore the robustness of our model by changing the components of our model – namely the IFRS threshold and the additional disclosure threshold. We have chosen to fix the accessibility component as we argue that accessibility should be the bare minimum the firm should aim for in order to achieve an effective risk communication with the reader. This is also consistent Beretta and Bolozzan (2004), who argue that inaccessible information is treated less valuably by investors in comparison to more accessible information.

Specifically, in our robustness tests we looked at 7 other scenarios as listed below and observe the results to check if these results fit with our model.

Dummy	IFRS Criteria	Additional Criteria	Accessibility	Number of Firms
90/70	90% fulfillment	70% fulfillment	Accessible	12
90/80	90% fulfillment	80% fulfillment	Accessible	9
90/90	90% fulfillment	90% fulfillment	Accessible	5
80/60	80% fulfillment	60% fulfillment	Accessible	32
80/70	80% fulfillment	70% fulfillment	Accessible	16
80/80	80% fulfillment	80% fulfillment	Accessible	10
80/90	80% fulfillment	90% fulfillment	Accessible	5

Table 15: Models tested for robustness

By running addition tests to check for the results, we found that our model is consistent with our hypothesis – the more the firm discloses the more value-adding it is and the higher the Tobin's Q value. We present the results of our robustness test in Table 16 and 17. For a full overview of our regression table, please refer to Appendix B.

Dummy	90/90	90/80	90/70	90/60
Good Disclosure Firms (GDF)	0.137	0.148	0.074	0.120
Bad Disclosure Firms (BDF)	0.070	0.073	0.084	0.079
Premium (Difference)	0.067	0.075	-0.010	0.041

Table 16: Robustness Comparative Results at IFRS 90% threshold

Dummy	80/90	80/80	80/70	80/60
Good Disclosure Firms (GDF)	0.137	0.144	0.024	0.072
Bad Disclosure Firms (BDF)	0.070	0.075	0.082	0.077
Premium (Difference)	0.067	0.069	-0.058	-0.005

Table 17: Robustness Comparative Results at IFRS 80% threshold

Based on the results above, we note that the effects by changing from 90% IFRS reporting threshold to 80%, the impact of good hedging disclosure on the hedging premium (denoted by the difference in the co-efficient of GDF and BDF) is smaller. In addition, when we observe the trend of the premium as we vary the threshold level for the additional disclosure component (i.e. increasing it step-wise from 60% to 90%), a dip can be seen at 70% and the effect was the strongest at 80%. This effect remains the same when we changed the IFRS reporting threshold from 90% to 80%. These two observations indicate that there are component specific factors (specifically the relevance of IFRS reporting and additional disclosure) coming into play that could affect the size of the premium.

However, in general, we found that our model is robust to changes in our variables and therefore reliable predicting the effects of firm's hedging disclosure and the impact on firm's

value. There is a positive relationship of a hedging disclosure premium on the firm's value at higher level of disclosure and this is consistent at both IFRS reporting threshold of 90% and 80%. The findings are generally consistent with our hypothesis.

In our robustness tests, we have also run the regression with and without "Analyst" control to check for the reliability of our results. Through these tests we found that without the inclusion of the "Analyst" variable, the results do indicate consistent findings we present the robustness check in Table 18. For full overview of our robustness test regression, please refer to Appendix C & D.

Dummy	90/90	90/80	90/70	90/60
Good Disclosure	0.090	0.111	0.111	0.163
Bad Disclosure	0.155	0.164	0.184	0.169
Premium (Difference)	-0.065	-0.053	-0.073	-0.006

Table 18: Robustness check with the exclusion of Analyst variable for IFRS 90% threshold

Based on the results indicated above, we note that without "Analyst" control, disclosure impacts the firm's value negatively. This allows us to explore some explanation of why this might be the case and we will present this in our analysis section of this paper.

In all the robustness check analysis that we carried out, we noted that the signs for the other control variables remain the same and the statistical significant of some of the variables remains unchanged. For example, when "Analyst" variable is included, size, leverage, geographical diversification and analyst remains as the most statistically significant variable in all our regressions. However, when "Analyst" is removed, size, foreign, block ownership and management shares became the most statistically significant variables consistent across all the regression models. In addition, for all the regressions ran, we also found that industry dummies which provide us with the indication that the industry where the firms belong to matters. Therefore, the robustness checks have allowed us to assume with greater certainty that our findings suggest a good disclosure increases the hedging premium by approximately 4.10% among Swedish firms.

4.6 Component Specific Analysis

In addition to the robustness testing, we broke down our model to look at the separate effects of IFRS reporting and Additional disclosure on the firm's value[4]. This is in line with our second hypothesis where we aim to test if investors attach more value to additional disclosure than IFRS reporting.

When we ran this test on our base model, we found the following set of result shown in Table 19 below. The results indicate that Additional Disclosure as denoted by AD_60 variable, results in a positive effect on firm's value by 0.09% while IFRS reporting as denoted by IFRS_90 variable results in a positive effect of 3.00%. This finding is of interest to as it provides some indication that the effect of IFRS reporting is stronger than additional disclosure, inconsistent with what we expected. This result indicates a rejection for our second hypothesis and suggests that Additional Disclosure does not result in a higher premium in comparison to IFRS compliance.

Once again, we found that size and analyst are statistically significant at 99% while geographical diversification is statistically significant at 95%, consistent with our results presented earlier in this section. An interesting point to note, the variable "Capex" which represents investment growth opportunities also becomes statistically significant at 90% in this regression. When we remove the "Analyst" variable and run this regression again, the results was also consistent with earlier findings, the effect of IFRS reporting was positive but additional disclosure was negative. This indicates with more certainty the effect that analyst plays in the hedging disclosure premium.

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[4] In this regression, we have also controlled for two additional variables, Hedgers, a binary dummy that takes the value 1 if the firm hedges and 0 otherwise; and Decentralized, another binary dummy that takes the value 1 if the firm has a decentralized risk management policy and 0 otherwise. We argue that Hedger variable is important to control for the hedging premium effect and thus isolate that effect from what we would like to see, hedging disclosure impact on firm's value. In addition, Decentralized was included to isolate the effect of hedging policy (either to take on a centralized approach or a decentralized approach) on the possible effect on firm's disclosure practices.

Component Specific Regression			
Dependent variable: TOBINSQLOG			
	Coefficient	*t-ratio*	
const	1.818	4.97	***
Hedger	0.068	1.05	
Div	0.056	0.98	
Ind	-0.066	-1.27	
Leverage	-0.208	-1.40	
Capex	1.047	1.71	*
Size	-0.323	-6.22	***
Foreign	0.002	2.18	**
MgmtShares	-0.239	-0.98	
ROA	0.382	1.54	
BlockOwnership	0.000	0.30	
Analyst	0.0245	4.55	***
Institutional	-0.000	-0.00	
Decentralized	-0.002	-0.04	
IFRS_90	0.030	0.47	
AD_60	0.009	0.15	
R-squared	0.434		
Adj R-squared	0.358		

Table 19: Component Specific Regression

We have also checked for the robustness of this model by changing the threshold of additional disclosure and found the results to be consistent with earlier findings. Additional disclosure is indicative to result in higher premium at 80% and 90% threshold otherwise the premium is small or negative. The robustness test for this model is shown below in Table 20 and 21. For a complete regression analysis, please refer to appendix E-F. We have also provided some form of analysis for this finding in the next section.

With Analyst	90%	80%	70%	60%
IFRS @ 90%	0.035	0.048	0.090	0.030
Additional Disclosure	0.068	0.066	-0.066	0.009

Table 20: Comparative Robustness Results with Analyst Control

Without Analyst	90%	80%	70%	60%
IFRS @ 90%	0.049	0.037	0.086	0.028
Additional Disclosure	-0.070	-0.065	-0.147	-0.033

Table 21: Comparative Robustness Results without Analyst Control

5 Analysis and discussions

In this section we provide some analysis and discussions for the results obtained in the previous section.

5.1 Hedging Disclosure and its effect on Hedging Premium

In our correlation variable and univariate test, we found that hedging disclosure does not result in a premium on firm's value. The result from the correlation study indicates a coefficient of -0.0568, suggesting a negative relationship between disclosure and the firm's value. However, we have to stress that this result does not take into account other control variables that might affect the relationship between firm's disclosure and firm's value. Therefore, it is important to include other control variables to isolate the effects of hedging on the firm's value. As such, we argue that the result from our multivariate regression is more reasonable and reliable to observe the effect of hedging disclosure on the firm's value.

In our multivariate regression, we included most of the controls that were consistent with previous empirical studies concerning the hedging premium. Our findings indicated that for our base model, good hedging disclosure does positively impact the hedging premium and this impact is suggested to be at 4.10%. However, we included additional variables that could have an effect on the firm value – no of analyst following the firm and the percentage of institutional holdings in the company. Consistent with the literature, both these additional variables might impact the effect of the hedging disclosure variable (independent variable) on the firm's value (dependent variable) as such, we have to control for the effect that these variables might cause in order to correctly isolate the effect of hedging disclosure on firm's value.

5.2 Control Variables

5.2.1 Institutional Investors

In our tests, we have included an additional variable to proxy for corporate governance – percentage of institutional investors in ownership structure. This variable was not used in other previous studies. However, we argued that the more institutional investors there are in the ownership structure the more valuable the firm might be. This is consistent with some empirical studies, which indicated that the higher the level of institutional investors in the firm's ownership structure, the higher the firm's Q value would be. As mentioned before, institutional investors allow for better monitoring in the firm through higher governance

mechanism (Carleton et al, 1998). Therefore, we include this variable as an additional control to isolate this effect of institutional holdings on firm's value.

In addition, consistent with previous studies on transparency, we note that institutional investors might also impact the level of disclosure within the firm. Research on this topic has been divided to a certain extent. Some researchers such as Shleifer and Vishny (1986) and Carleton et al (1998) found that the more institutional investors there are, the more a firm would disclose consistent with the corporate governance theoretical framework which states that more institutional investors allow for better monitoring and higher transparency. However, other research as Sias et al (2001) and Bushee and Goodman (2007) found that institutional investors take advantage of short-term momentum whereby these investors prefer lesser information so that they could leverage on their internal information to profit from short-term earnings variations. As such, we argue that since institutional investors can affect the firm's value as well as the disclosure patterns of the firms, we have to control for this effect through the addition of this control variable in our model.

5.2.2 Analyst

Based on our regression findings, we found that the variable concerning number of analyst following (ANALYST) indicates one of the most statistically significant results with p-value being statistically significant at 99%. We also observed that as we remove this variable and ran the regression again; the disclosure does not increase but in fact reduces the hedging premium. This finding could probably indicate that this variable could be a confounding variable that might intercede the relationship between our dependent and independent variable. The omission of this variable will result in an omitted variable bias whereby the omitted variable is correlated with the error term and the independent variable. Therefore the omitted variable will also affect the dependent variable separately.

This is consistent with the findings from Botosan (1997) where she argued that when a firm has a higher level of analyst coverage, the disclosure in the annual report is less important. In addition, we argue that analysts not only have a mere publishing input also a channeling function as they process information provided by the firm into recommendations and forecasts used by investors to value their investment opportunity. As such, analyst coverage will influence the effect of additional disclosure of the firm through earnings guidance. Therefore, we will need to control for the external sources of information made available to the public in order to correctly assess the presence of a hedging premium disclosure. With

the inclusion of this variable, it ensures that our model controls for the overall disclosure and the effect of annual report disclosure is isolated from other sources of information such as analyst reports. Without this variable, our results are inconclusive if the hedging disclosure does result in a negative premium or if this result is convoluted with external disclosure factors. As such, we argue that the model with "Analyst" variable is more consistent with the aim of our study.

In addition, we also argue that a higher level of analyst coverage will affect the level of disclosure undertaken by the firm. When we observe the descriptive statistics for the good disclosure firms (Section 4.1) we note that within this sample, the firms have a higher mean for "Decentralized" dummy variable and a lower mean for "Analyst" variable. This provides us with an insight that the good disclosure firms tend to have a more complex hedging structure (activities are decentralized) and on average lower level of additional sources of information, which results in higher information asymmetry in these firms. Without the control for analyst, it could be indicative that the discounts given to the additional disclosure variable results from a complexity discount where by additional disclosure is only valuable with analyst guidance. Investors rely on analyst coverage to better understand the additional information disclosed. Referring back to Table 12, we note that there is a positive correlation co-efficient of 0.11 between good disclosure firms and number of analysts following. This provides some indication that the as the number of analyst increases, the disclosure also increases. One way to interpret this is that analyst coverage could essentially help to put the additional information into perspective therefore guiding the investors. Firms might not disclose more when there is lesser number of analysts following it as additional information without any guidance might confuse the investors therefore resulting in a complexity discount. This is also consistent with the findings from Botosan and Plumlee (2002) which state that when a firm has more channels of information (such as analyst coverage and media publications), increased disclosure leads to a much lower cost of capital than if the information channel is solely reliant on annual reports.

These could be the underlying reasons why these firms disclose more than other firms, in order to reduce the information asymmetry between the firm and their investors. Therefore this reaffirms our motivation for including "Analyst" as a confounding control variable in our model.

5.3 Is there an optimal level of disclosure?

Based on the transparency disclosure, we recognized that after some level, additional disclosure by the firm does not create value but in fact, results in value destruction. As prior literature mentioned, additional disclosure beyond a certain point results in the firm disclosing too much company specific information thus resulting in a strategic disadvantage for the firm or the information provided is too overwhelming to be appreciated by the investors. Therefore, firms face a tradeoff between reduced information asymmetry and information concerning their competitive advantage revealed to the public.

We acknowledge however, that this optimal level of disclosure could potentially exist. However, due to the limited time of our paper, we were unable to test for the optimal level of disclosure that the firm should aim for in terms of its additional disclosure. In order for us to do that, we would need to obtain more specific company information (i.e through phone interviews or survey) in order for us to correctly assess the optimal level of disclosure. Based on prior literature, the optimal level of disclosure is contingent on many factors including industry-specific factors, strategic competitive advantage and the cost of disseminating information. For example, in certain industries, revealing additional information is more beneficial while in some other industries, revealing more information results in firms losing their competitive advantage vis-a-vis their competitors. The level of disclosure for each firm should thus be catered to the individual needs and the environment surrounding the firm. Due to the time frame, these information were not made available as such, this area was deemed to be beyond the scope of our paper.

From our study, we are unable to test the maximum level that the firm should disclosure before additional disclosure results in value destruction. However, we found some indication that at 80% additional disclosure based on our pre-defined criteria, additional disclosure does result in value creation. As we can see from Table 16 and 17 above, we observe that the hedging disclosure premium is the highest at 80%. However, as the level of additional disclosure increases, the hedging disclosure premium is reduced. One of the possible explanations for this finding is that, at a lower level of additional disclosure, the firm did not provide enough information for investors to understand and appreciate the hedging activities undertaken by the firm. As such, this is consistent with the optimal level of disclosure literature whereby, if investors are only provided with partial information on the environment and nature of the hedging disclosure, they will be left more confused. This

increases the information asymmetry between the investors and the firm and as such, it is unsurprising that the firm is given a negative hedging disclosure premium. Therefore, the findings indicate that either a more detailed disclosure or a very basic overview is more appreciated by investors. As the results suggest, any level between these two thresholds (60% and 80%) could be indicative to be confusing for the investors.

5.4 Component Specific Results and Managerial Implication

Our second hypothesis was to look at the difference in premium caused by IFRS reporting and additional disclosure. As such, we broke down our base model to look at the component specific disclosure – IFRS reporting and Additional Disclosure based on our pre-defined criteria listed in Section 3.2, we found the set of results listed in Table 18 above. The result is inconsistent with our expectations that both IFRS reporting and Additional Disclosure should result in a premium on firm value. What is interesting to note is that Additional Disclosure creates a lower premium of 0.9% than IFRS reporting which yield a premium of 3.00% on firm value. This could be indicative that the Additional Disclosure variable picks up a complexity discount as investors are forced to interpret and understand the additional information provided to them.

This finding is however, consistent with our other findings that states that the higher level of disclosure results in a higher premium attached to the additional disclosure variable. Observing the findings, we found that at higher level of disclosure (80% and 90% threshold), the premium given increases. The finding also indicates that at lower level of additional disclosure, higher premium is given to IFRS reporting. An explanation to motivate this could be that at lower level of additional disclosure, investors rely more on the IFRS reporting criteria to provide them with a less complex overview of the firm's hedging activities. As mentioned earlier, at lower level of additional disclosure the result might indicate that the information given was partial and incomplete for the investors to obtain a valuable opinion on the firm's hedging activities.

We have also ran a set of test to look at the effect if the firm deviates further from IFRS requirements that is to say that the firm meets the requirements of IFRS at the 80% threshold. From this test, we found the following results as shown in Table 22.

Additional Disclosure	90%	80%	70%	60%
IFRS @ 80%	-0.043	-0.040	-0.027	-0.041
Additional Disclosure	0.117	0.151	0.040	0.048

Table 22: Robustness check for Component Specific Regression

The result obtained from this robustness test provides us with an interesting observation. We note that as firms deviate away from IFRS standard requirements (ie, reducing the threshold from 90% to 80%) in its disclosure, the effect is a negative premium on firm's value. We argue that this is consistent with our expectations that IFRS reporting act as a base for disclosure of the firm. The firm is expected to fulfill most of this requirement in order for investors to obtain sufficient insights to assess the basic hedging activities of the firm. However, when we observe the effect of additional disclosure, the premium given is higher when the level of IFRS compliance is weaker. This indicates that if firms comply with the IFRS requirements to a larger extend, investors place a higher value to the additional sources of information through the additional disclosure provided. This is in line with the information asymmetry argument whereby investors seek for any relevant information, which could allow them to have a better understanding of the firm's hedging environment.

The findings above allow us to obtain some insights for managerial implication. We observe that investors place a high value for IFRS compliance. As we look at the number of firms, which fulfilled the IFRS reporting criteria, we found that in general, Swedish firms have low IFRS compliance. Based on Table 23 below, we note that only 21.74% of our sample complies with 90% of the IFRS reporting criteria pre-defined in Section 3.2 while only 45.22% comply with 80% of the same criteria. This indicates that the level of IFRS compliance in Sweden is low. Managers should therefore look into disclosing more information to the investors as our study suggests that investors do place a premium on full compliance of IFRS. This is an important managerial implication as we have noted that the more the firms deviate from strong compliance of IFRS, the more negative premium is attributed to the firm value.

Criteria	Number of Firms (Out of 115 hedging firms)	Percentage of Sample
Meeting the 90% Threshold for IFRS	25	21.74%
Meeting the 80% Threshold for IFRS	52	45.22%

Table 23: Fulfillment of IFRS reporting Standards among Swedish firms

Based on the findings presented earlier, we also noted that as firms' deviate from a strong compliance of IFRS, additional disclosure becomes more positive indicating that investors value additional disclosure more when IFRS compliance is weaker. This is consistent with

disclosure literature whereby one of the basic aims of a more transparent company is to close the information asymmetric gap between the firm and investors. Furthermore, it shows that a low information environment allows for a stronger signaling effect of firms disclosing additional information.

In a weak IFRS compliance regime such as Sweden, the premium given to IFRS reporting is not surprising. This could be due to the fact that in such a low information environment, firms have the opportunity to signal higher transparency to the investors through IFRS compliance, in order to reduce information asymmetry between the firm and the investors.We would not expect a premium if every firm would fulfill the IFRS requirements to a large extent as this would create comparability among firms since it is a requirement for listing on the stock exchange. However, when firm deviates away from IFRS compliance, this comparability is less possible and investors thus provide a premium for those firms, which try to reduce the information asymmetry between the firm and investors.

The analysis above is consistent with an empirical study done by Daske et al (2008). In their study, they found that market liquidity and equity valuation are higher for firms after the introduction of IFRS standards. Furthermore, they found a higher positive effect for companies fulfilling IFRS requirements earlier on a voluntary basis. This could be an argument for a signaling effect within a low information environment.

6 Conclusion

In conclusion, it was found that the level of IFRS requirement compliance for the Swedish listed firms assessed within our sample is lower than expected, especially considering the fact that IFRS is a mandatory listing requirement of the Swedish stock exchange. This answers our first research question on the IFRS compliance level within Sweden. Generally, the low level of compliance could possibly suggest that Sweden belongs to a weak IFRS enforcement regime. This seems to allow firms, which comply with the IFRS requirements to generate a disclosure premium above others, which do not.

In our study, we also found an indication for a positive impact of good hedging disclosure on the hedging premium in line with our first hypothesis. Based on our initial model, when firms comply with IFRS requirements at the 90% threshold and provide about 60% additional information while controlling for accessibility of the information provided, the increase in the hedging premium was found to be around 4.10%. Varying the thresholds, we found the premium to be as large as 7.50%. It is interesting to point out that this finding only holds when the number of analyst following the firm is controlled for. Otherwise, the premium is negative or insignificant. This provides some indication that analyst coverage increases the value of the additional information provided as they provide a channel and guidance for investors to further process the disclosed information. Also our findings suggest a negative premium between 60-80% additional disclosure threshold indicating that the market values either low level of disclosure or detailed disclosure. This could be referred to the complexity discount whereby market rewards a premium for additional disclosure that is not confusing and up to a certain threshold, the information might be partial and insufficient for the investors therefore, leading to a discount instead of a premium.

In addition, contrary to what we expected in our second hypothesis, controlling for IFRS compliance at 90% threshold, additional disclosure did not create a higher premium on firm's value than IFRS. However, when we ran the test again by changing the IFRS threshold to 80%, premium awarded for additional disclosure increases. This indicates that when firms deviate away from IFRS compliance, additional information becomes more valuable as these provide the investors with the opportunity to assess the firm's risk management environment.

7 Future Research

Within our paper we have researched for the influence of hedging disclosure on the hedging premium based on a number of pre-specified criteria. The scope limitations derived from the short time frame of our thesis prevented us from covering additional areas that could be of interest within this topic.

In our study, we acknowledge that there could potentially be an optimal level of disclosure. Based on previous research, it was noted that there should exist an optimal level of disclosure whereby beyond which, additional disclosure is value destructing and leads to a discount. This is as a result of revealing company sensitive information and thus reducing the competitive advantage for the firm. In addition, based on the investors' point of view, additional disclosure beyond a certain point just serves to confuse and drown the investors without actually creating value. Therefore further research could look into testing for the optimal level of disclosure.

We also did not take into account the quality of the information provided in our study due to the time constraints. According to Beretta and Bolozzan (2004), the richness of disclosure communication and the quality of information could also affect the way the investors perceive the information. Most of the transparency research focused on disclosure in terms of the quantity of the disclosure information while neglecting the quality aspect. We observed in our study that a firm with more number of pages in their annual report does not necessarily present clear and valuable information. As such we argue that, further research should include and focus on this aspect of disclosure.

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9 Appendices

9.1 Appendix A: Multivariate regression results

The following table presents the regression results as we vary the additional disclosure threshold in our model between 60-90% while keeping accessibility and IFRS threshold constant at 90%.

IFRS 90	Disc 60		Disc 70		Disc 80		Disc 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.803	5.475***	1.818	5.482***	1.868	5.711***	1.868	5.665***
Energy	0.150	0.490	0.170	0.542	0.185	0.599	0.181	0.595
Material	- 0.034	- 0.164	0.021	0.104	0.021	0.103	0.033	0.163
Industry	0.216	1.066	0.250	1.252	0.241	1.215	0.265	1.352
Discretionary	0.274	1.337	0.308	1.528	0.299	1.479	0.324	1.629
Staples	0.167	0.502	0.182	0.554	0.196	0.598	0.178	0.542
Health_Care	0.774	2.852***	0.770	2.867***	0.766	2.857***	0.782	2.927***
Financials	0.260	1.225	0.290	1.388	0.295	1.411	0.306	1.483
IT	0.135	0.650	0.178	0.866	0.164	0.800	0.186	0.920
Div	0.082	1.578	0.069	1.243	0.076	1.404	0.070	1.240
Ind	- 0.065	- 1.301	- 0.086	- 1.723*	- 0.090	- 1.784*	- 0.093	- 1.829*
Leverage	- 0.253	- 1.722*	- 0.264	- 1.767*	- 0.269	- 1.817*	- 0.279	- 1.865*
Capex	0.997	1.479	1.086	1.621	0.984	1.492	1.030	1.520
Size	- 0.315	- 6.860***	- 0.323	- 6.834***	- 0.331	- 7.161***	- 0.332	- 7.113***
Foreign	0.002	2.433**	0.002	2.162**	0.002	2.455**	0.002	2.356**
MgmtShares	- 0.167	- 0.822	- 0.202	- 0.986	- 0.173	- 0.857	- 0.185	- 0.918
ROA	0.292	1.203	0.352	1.440	0.328	1.343	0.344	1.391
BlockOwnership	- 0.000	- 0.062	0.000	0.112	0.000	0.196	0.000	0.241
Analyst	0.023	4.620***	0.025	4.965***	0.025	5.085***	0.026	5.161***
Institutional	- 0.027	- 0.259	0.006	0.057	- 0.010	- 0.090	- 0.010	- 0.090
GDF	0.120	1.592	0.074	0.762	0.148	1.404	0.137	1.055
BDF	0.079	1.338	0.084	1.436	0.073	1.258	0.070	1.206
R-squared	0.434		0.431		0.436		0.439	
Adjusted R-squared	0.364		0.361		0.367		0.370	

9.2 Appendix B: Multivariate regression results w/o analyst variable

The following table presents the regression results as we removed the analyst variable as a control. We have also varied the additional disclosure threshold in our model between 60-90% while keeping accessibility and IFRS threshold constant at 90%.

IFRS 90 w/o Analyst	Disc 60		Disc 70		Disc 80		Disc 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.184	4.493***	1.211	4.842***	1.147	4.472***	1.059	4.099***
Energy	- 0.158	- 0.482	- 0.170	- 0.480	- 0.196	- 0.556	- 0.211	- 0.582
Material	- 0.362	- 2.495**	- 0.364	- 2.590**	- 0.331	- 2.374**	- 0.322	- 2.272**
Industry	- 0.100	- 0.764	- 0.095	- 0.713	- 0.092	- 0.711	- 0.092	- 0.704
Discretionary	0.019	0.133	- 0.001	- 0.007	0.007	0.049	0.020	0.136
Staples	- 0.038	- 0.103	- 0.005	- 0.016	- 0.020	- 0.062	0.001	0.004
Health_Care	0.700	2.696***	0.678	2.589**	0.671	2.561**	0.667	2.523**
Financials	- 0.084	- 0.611	- 0.066	- 0.477	- 0.082	- 0.603	- 0.090	- 0.656
IT	- 0.208	- 1.471	- 0.197	- 1.380	- 0.182	- 1.281	- 0.177	- 1.233
Div	0.087	1.590	0.096	1.843*	0.084	1.494	0.073	1.255
Ind	- 0.011	- 0.219	0.017	0.343	- 0.019	- 0.382	- 0.026	- 0.499
Leverage	- 0.010	- 0.075	- 0.001	- 0.006	0.014	0.105	- 0.002	- 0.013
Capex	0.913	1.110	1.075	1.375	1.042	1.303	0.980	1.216
Size	- 0.170	- 4.566***	- 0.182	- 5.209***	- 0.168	- 4.601***	- 0.152	- 4.077***
Foreign	0.002	2.522**	0.002	2.731***	0.003	2.711***	0.002	2.571**
MgmtShares	- 0.402	- 3.240***	- 0.350	- 2.818***	- 0.342	- 2.754***	- 0.347	- 2.803***
ROA	0.070	0.281	0.112	0.462	0.132	0.525	0.163	0.645
BlockOwnership	- 0.002	- 1.914*	- 0.002	- 2.222**	- 0.002	- 1.866*	- 0.002	- 1.766*
Institutional	0.143	1.112	0.143	1.188	0.158	1.246	0.166	1.277
GDF	0.163	2.079**	0.111	1.489	0.111	1.210	0.090	0.786
BDF	0.169	3.015***	0.184	3.358***	0.164	2.894***	0.155	2.734***
R-squared	0.622		0.590		0.617		0.609	
Adjusted R-squared	0.578		0.543		0.573		0.563	

9.3 Appendix C: Robustness check at 80% IFRS reporting threshold

The following table presents the regression results as we changed the IFRS threshold to 80% while varying the additional disclosure threshold in our model between 60-90% and keeping accessibility constant.

IFRS 80	Disc 60		Disc 70		Disc 80		Disc 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.838	5.117***	1.812	5.401***	1.845	5.669***	1.868	5.665***
Energy	0.223	0.686	0.168	0.519	0.176	0.574	0.181	0.595
Material	0.035	0.152	0.040	0.193	0.005	0.023	0.033	0.163
Industry	0.283	1.259	0.269	1.322	0.229	1.153	0.265	1.352
Discretionary	0.337	1.496	0.340	1.646	0.284	1.404	0.324	1.629
Staples	0.209	0.574	0.193	0.577	0.189	0.579	0.178	0.542
Health_Care	0.852	2.918***	0.786	2.863***	0.759	2.841***	0.782	2.927***
Financials	0.312	1.340	0.297	1.397	0.277	1.327	0.306	1.483
IT	0.200	0.871	0.188	0.901	0.148	0.721	0.186	0.920
Div	0.072	1.312	0.066	1.128	0.079	1.510	0.070	1.240
Ind	- 0.083	- 1.668*	- 0.088	- 1.740*	- 0.087	- 1.736*	- 0.093	- 1.829*
Leverage	- 0.352	- 2.311**	- 0.270	- 1.768*	- 0.256	- 1.737*	- 0.279	- 1.865*
Capex	1.237	1.927*	1.063	1.500	0.987	1.509	1.030	1.520
Size	- 0.324	- 6.663***	- 0.325	- 6.869***	- 0.325	- 7.110***	- 0.332	- 7.113***
Foreign	0.002	1.726*	0.002	2.211**	0.002	2.454**	0.002	2.356**
MgmtShares	- 0.172	- 0.832	- 0.222	- 1.115	- 0.168	- 0.828	- 0.185	- 0.918
ROA	0.336	1.372	0.385	1.547	0.306	1.261	0.344	1.391
BlockOwnership	0.000	0.090	0.000	0.159	0.000	0.140	0.000	0.241
Analyst	0.026	5.311***	0.025	5.111***	0.024	4.936***	0.026	5.161***
Institutional	0.006	0.052	0.014	0.128	- 0.011	- 0.100	- 0.010	- 0.090
GDF	0.072	1.020	0.024	0.237	0.144	1.548	0.137	1.055
BDF	0.077	1.270	0.082	1.406	0.075	1.295	0.070	1.206
R-squared	0.452		0.432		0.436		0.439	
Adjusted R-squared	0.385		0.363		0.367		0.370	

9.4 Appendix D: Robustness check at IFRS 80% w/o Analyst variable

The following table presents the regression results as we removed the analyst variable as a control in the model at IFRS 80% threshold. We have also varied the additional disclosure threshold in our model between 60-90% while keeping accessibility constant.

IFRS 80 w/o Analyst	Disc 60		Disc 70		Disc 80		Disc 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.077	3.823***	1.129	4.279***	1.163	4.529***	1.059	4.099***
Energy	- 0.210	- 0.581	- 0.239	- 0.605	- 0.188	- 0.531	- 0.211	- 0.582
Material	- 0.312	- 2.080**	- 0.299	- 2.016**	- 0.347	- 2.450**	- 0.322	- 2.272**
Industry	- 0.084	- 0.593	- 0.090	- 0.636	- 0.114	- 0.857	- 0.092	- 0.704
Discretionary	0.048	0.308	0.056	0.348	- 0.041	- 0.278	0.020	0.136
Staples	0.011	0.030	- 0.096	- 0.289	- 0.048	- 0.148	0.001	0.004
Health_Care	0.676	2.491**	0.664	2.390**	0.675	2.558**	0.667	2.523**
Financials	- 0.084	- 0.580	- 0.038	- 0.263	- 0.092	- 0.652	- 0.090	- 0.656
IT	- 0.184	- 1.200	- 0.174	- 1.161	- 0.193	- 1.334	- 0.177	- 1.233
Div	0.048	0.790	0.059	1.051	0.081	1.469	0.073	1.255
Ind	- 0.010	- 0.192	0.032	0.676	- 0.025	- 0.498	- 0.026	- 0.499
Leverage	- 0.036	- 0.271	- 0.050	- 0.377	0.049	0.366	- 0.002	- 0.013
Capex	1.127	1.409	1.211	1.476	0.884	1.080	0.980	1.216
Size	- 0.154	- 3.830***	- 0.175	- 4.864***	- 0.168	- 4.648***	- 0.152	- 4.077***
Foreign	0.002	2.066**	0.002	2.308**	0.003	2.916***	0.002	2.571**
MgmtShares	- 0.378	- 2.957***	- 0.362	- 2.866***	- 0.305	- 2.570**	- 0.347	- 2.803***
ROA	0.197	0.767	0.222	0.882	0.125	0.507	0.163	0.645
BlockOwnership	- 0.002	- 1.651	- 0.002	- 1.817*	- 0.002	- 1.960*	- 0.002	- 1.766*
Institutional	0.216	1.577	0.265	2.236**	0.158	1.267	0.166	1.277
GDF	0.173	2.102**	0.093	1.157	0.105	1.250	0.090	0.786
BDF	0.148	2.623***	0.174	3.278***	0.167	2.916***	0.155	2.734***
R-squared	0.608		0.549		0.621		0.609	
Adjusted R-squared	0.563		0.496		0.577		0.563	

9.5 Appendix E: Component specific regression results

The following table presents the regression results as we look into the specific components of our model – IFRS threshold at 90% and Additional Disclosure varied between 60% - 90% thresholds. This is to observe the difference in impact created by the different component on the firm value.

IFRS 90 separated	AD 60		AD 70		AD 80		AD 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.818	4.975***	1.908	5.278***	2.009	5.803***	1.899	5.408***
Hedger	0.068	1.048	0.077	1.196	0.076	1.168	0.082	1.259
Energy	0.092	0.290	0.079	0.229	0.156	0.482	0.167	0.529
Material	0.021	0.092	0.007	0.029	0.014	0.063	0.007	0.030
Industry	0.233	1.033	0.191	0.845	0.175	0.795	0.186	0.858
Discretionary	0.312	1.379	0.271	1.195	0.279	1.247	0.272	1.237
Staples	- 0.057	- 0.170	- 0.070	- 0.222	0.034	0.102	0.030	0.087
Health_Care	0.862	2.938***	0.805	2.731***	0.852	2.966***	0.866	3.053***
Financials	0.273	1.170	0.257	1.103	0.275	1.191	0.250	1.104
IT	0.181	0.788	0.143	0.624	0.141	0.625	0.138	0.618
Div	0.056	0.979	0.074	1.326	0.083	1.652	0.088	1.683*
Ind	- 0.066	- 1.272	- 0.078	- 1.495	- 0.059	- 1.135	- 0.071	- 1.323
Leverage	- 0.208	- 1.399	- 0.195	- 1.283	- 0.267	- 1.786*	- 0.237	- 1.569
Capex	1.047	1.707*	0.840	1.210	0.567	0.809	0.612	0.869
Size	- 0.323	- 6.218***	- 0.333	- 6.344***	- 0.344	- 6.873***	- 0.326	- 6.404***
Foreign	0.002	2.177**	0.002	2.278**	0.002	2.596**	0.002	2.349**
MgmtShares	- 0.239	- 0.981	- 0.323	- 1.305	- 0.217	- 0.953	- 0.221	- 0.989
ROA	0.382	1.537	0.396	1.604	0.316	1.290	0.294	1.185
BlockOwnership	0.000	0.301	0.000	0.208	0.000	0.039	0.000	0.079
Analyst	0.024	4.546***	0.025	4.461***	0.025	4.654***	0.024	4.517***
Institutional	- 0.000	- 0.003	0.013	0.121	- 0.024	- 0.250	- 0.022	- 0.211
Decentralized	- 0.002	- 0.041	- 0.011	- 0.164	- 0.007	- 0.128	- 0.020	- 0.346
IFRS_90	0.030	0.465	0.090	1.290	0.048	0.850	0.035	0.578
AD	0.009	0.155	- 0.066	- 0.712	0.066	0.735	0.068	0.622
R-squared	0.435		0.430		0.464		0.440	
Adjusted R-squared	0.358		0.353		0.391		0.364	

9.6 Appendix F: Component specific regression w/o analyst variable

The following table presents the regression results as we look into the specific components of our model – IFRS threshold at 90% and Additional Disclosure varied between 60% - 90% thresholds while removing the analyst control variable.

IFRS 90 separated w/o Analyst	AD 60		AD 70		AD 80		AD 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.213	4.523***	1.455	6.239***	1.309	5.040***	1.325	5.200***
Hedger	0.167	2.617***	0.159	2.484**	0.166	2.573**	0.158	2.452**
Energy	- 0.165	- 0.456	- 0.107	- 0.278	- 0.112	- 0.312	- 0.116	- 0.315
Material	- 0.364	- 2.221**	- 0.361	- 2.326**	- 0.386	- 2.418**	- 0.406	- 2.541**
Industry	- 0.098	- 0.689	- 0.141	- 0.948	- 0.123	- 0.888	- 0.140	- 1.007
Discretionary	0.014	0.084	0.025	0.155	- 0.030	- 0.194	- 0.037	- 0.237
Staples	- 0.001	- 0.003	- 0.187	- 0.713	- 0.049	- 0.170	- 0.044	- 0.142
Health_Care	0.771	2.887***	0.775	2.791***	0.776	2.945***	0.778	2.899***
Financials	- 0.115	- 0.758	- 0.133	- 0.859	- 0.132	- 0.899	- 0.149	- 1.003
IT	- 0.202	- 1.319	- 0.284	- 1.838*	- 0.223	- 1.517	- 0.243	- 1.630
Div	0.129	2.365**	0.168	3.794***	0.145	2.908***	0.151	3.120
Ind	- 0.022	- 0.429	0.020	0.436	- 0.009	- 0.164	- 0.010	- 0.192
Leverage	- 0.008	- 0.060	- 0.055	- 0.429	0.048	0.340	0.050	0.367
Capex	0.468	0.567	- 0.310	- 0.415	0.281	0.335	0.237	0.295
Size	- 0.171	- 4.561***	- 0.196	- 6.202***	- 0.187	- 5.084***	- 0.187	- 5.158***
Foreign	0.002	2.668***	0.003	3.246***	0.003	3.042***	0.003	3.036***
MgmtShares	- 0.387	- 2.720***	- 0.418	- 2.643***	- 0.335	- 2.243**	- 0.354	- 2.535**
ROA	0.128	0.488	0.169	0.682	0.175	0.669	0.150	0.571
BlockOwnership	- 0.002	- 2.071**	- 0.003	- 3.538***	- 0.002	- 2.266**	- 0.002	- 2.345**
Institutional	0.101	0.772	0.054	0.532	0.083	0.666	0.079	0.622
Decentralized	- 0.020	- 0.314	- 0.033	- 0.675	- 0.016	- 0.282	0.000	0.008
IFRS_90	0.028	0.469	0.086	1.751*	0.037	0.584	0.049	0.843
AD	- 0.033	- 0.527	- 0.147	- 2.852***	- 0.065	- 0.878	- 0.070	- 0.843
R-squared	0.461		0.568		0.456		0.466	
Adjusted R-squared	0.391		0.512		0.386		0.397	

9.7 Appendix G: Component specific robustness test

The following table presents the regression results as we look into the specific components of our model – IFRS threshold at 80% and Additional Disclosure varied between 60% - 90% thresholds. This is to observe the difference in impact created by the different component on the firm value.

IFRS 80 separated	AD 60		AD 70		AD 80		AD 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.858	4.846***	1.892	4.925***	1.903	5.097***	1.827	4.820***
Hedger	0.090	1.315	0.104	1.494	0.079	1.165	0.090	1.304
Energy	0.252	0.764	0.282	0.828	0.282	0.883	0.249	0.788
Material	0.069	0.285	0.122	0.510	0.132	0.547	0.112	0.475
Industry	0.318	1.347	0.323	1.390	0.331	1.413	0.342	1.479
Discretionary	0.357	1.524	0.391	1.673*	0.377	1.616	0.383	1.671*
Staples	0.135	0.375	0.218	0.602	0.136	0.382	0.100	0.283
Health_Care	0.837	2.825***	0.834	2.816***	0.820	2.811***	0.850	2.912***
Financials	0.340	1.400	0.369	1.528	0.384	1.585	0.378	1.581
IT	0.240	0.995	0.258	1.086	0.255	1.062	0.271	1.145
Div	0.054	0.940	0.053	0.887	0.063	1.197	0.057	1.009
Ind	- 0.097	- 1.829*	- 0.105	- 1.953*	- 0.118	- 2.221**	- 0.114	- 2.120**
Leverage	- 0.296	- 1.881*	- 0.283	- 1.759*	- 0.309	- 1.978**	- 0.285	- 1.813*
Capex	1.071	1.581	0.900	1.262	0.952	1.502	0.992	1.565
Size	- 0.335	- 6.289***	- 0.348	- 6.367***	- 0.347	- 6.677***	- 0.335	- 6.280***
Foreign	0.002	1.719*	0.002	1.899*	0.002	2.332**	0.002	2.219**
MgmtShares	- 0.196	- 1.040	- 0.222	- 1.162	- 0.179	- 1.037	- 0.200	- 1.143
ROA	0.418	1.647	0.515	1.994**	0.411	1.628	0.408	1.600
BlockOwnership	0.001	0.547	0.001	0.822	0.001	0.694	0.001	0.625
Analyst	0.028	5.319***	0.029	5.528***	0.030	5.649***	0.029	5.389***
Institutional	- 0.003	- 0.022	0.010	0.087	- 0.035	- 0.325	- 0.035	- 0.316
Decentralized	- 0.016	- 0.248	- 0.024	- 0.376	- 0.017	- 0.304	- 0.025	- 0.379
IFRS_80	- 0.041	- 0.596	- 0.027	- 0.410	- 0.040	- 0.634	- 0.043	- 0.668
AD	0.048	0.730	0.040	0.400	0.151	1.745*	0.117	0.950
R-squared	0.446		0.437		0.469		0.461	
Adjusted R-squared	0.371		0.360		0.397		0.388	

9.8 Appendix H: Component specific robustness w/o Analyst variable

The following table presents the regression results as we look into the specific components of our model – IFRS threshold at 80% and Additional Disclosure varied between 60% - 90% thresholds while removing the analyst control variable.

IFRS 80 separated w/o Analyst	AD 60		AD 70		AD 80		AD 90	
	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic	Coefficient	t-Statistic
const	1.111	3.747***	1.177	3.877***	1.190	3.956***	1.195	3.941***
Hedger	0.155	2.302**	0.142	2.133**	0.157	2.373**	0.148	2.241**
Energy	- 0.148	- 0.432	- 0.196	- 0.545	- 0.158	- 0.474	- 0.175	- 0.510
Material	- 0.306	- 1.777*	- 0.325	- 1.916*	- 0.327	- 1.937*	- 0.319	- 1.854*
Industry	- 0.052	- 0.325	- 0.062	- 0.384	- 0.066	- 0.426	- 0.076	- 0.475
Discretionary	0.047	0.268	0.053	0.308	0.024	0.140	0.032	0.183
Staples	0.113	0.314	0.072	0.209	0.087	0.246	0.099	0.277
Health_Care	0.738	2.709***	0.619	2.320**	0.650	2.456**	0.641	2.379**
Financials	- 0.084	- 0.512	- 0.066	- 0.401	- 0.076	- 0.473	- 0.073	- 0.450
IT	- 0.163	- 0.958	- 0.175	- 1.042	- 0.195	- 1.188	- 0.191	- 1.144
Div	0.094	1.605	0.091	1.546	0.114	2.075**	0.097	1.713*
Ind	- 0.006	- 0.120	- 0.000	- 0.009	- 0.018	- 0.337	- 0.013	- 0.251
Leverage	- 0.026	- 0.195	- 0.048	- 0.339	0.004	0.030	- 0.019	- 0.135
Capex	1.109	1.422	1.103	1.387	1.101	1.429	1.145	1.476
Size	- 0.163	- 4.095***	- 0.176	- 4.281***	- 0.181	- 4.513***	- 0.181	- 4.388***
Foreign	0.002	2.395**	0.002	2.474**	0.003	2.840***	0.002	2.502**
MgmtShares	- 0.323	- 1.921*	- 0.346	- 2.280**	- 0.305	- 1.877*	- 0.322	- 1.976**
ROA	0.175	0.663	0.298	1.128	0.149	0.567	0.225	0.844
BlockOwnership	- 0.002	- 2.101**	- 0.002	- 1.747*	- 0.002	- 1.763*	- 0.002	- 1.645
Institutional	0.158	1.124	0.199	1.413	0.190	1.389	0.220	1.544
Decentralized	- 0.035	- 0.528	- 0.018	- 0.258	- 0.036	- 0.555	- 0.018	- 0.252
IFRS_80	0.005	0.065	0.046	0.649	0.015	0.214	0.032	0.456
AD	- 0.013	- 0.178	- 0.085	- 1.091	- 0.016	- 0.195	- 0.063	- 0.600
R-squared	0.408		0.418		0.417		0.402	
Adjusted R-squared	0.332		0.343		0.342		0.325	

9.9 Appendix I: Example of Good Disclosure Company

To provide an example of a good disclosure firm, we have chosen an abstract out of Trelleborg Group[5] Risk Management section from their Annual Report 2009. Trelleborg Group is one of the five companies in our study, which has fulfilled the 90 percent threshold of the additional disclosure criteria.

In the abstract, we note that the company has provided most of the information required in our assessment; both qualitative and quantitative. The company has provided a table defining financial risks the company is exposed to before elaborating on the effect the risk has on the business. These are in line with some of the IFRS specific criteria within our assessment. In addition, from these two-page abstract, we noted that the company has also fulfilled the pre-specified additional disclosure criteria listed in out assessment. For example, the company went on to provide information regarding the risk management policies in place as well as numerical breakdown of the exposure.

In this abstract, it is shown that all the information we require is easily accessible without us having to go through the annual report to find the information in different parts of the report. The way the report is organized guides the reader to the relevant sections within the annual report for the information required.

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[5] Abstract was retrieved from Trelleborg Group Annual Report 2009 at the company's website:
http://www.trelleborg.com/en/Investors/Reports/

Financial
risk management

As a net borrower and due to its substantial operations outside Sweden, the Trelleborg Group is exposed to various financial risks. Trelleborg's Treasury Policy sets out the framework for managing these risks within the Group. The Treasury Policy defines the financing operation's purpose, organization and distribution of responsibility and prescribes a framework for the financial risk management activities. The Board's Finance Committee reviews the Treasury Policy and proposes changes annually, or more frequently if necessary, after which the Treasury Policy is adopted by the Board.

The Group's Treasury activities are centralized in Group Treasury, an in-house bank which functions both as an operating unit and as a service organization. Group Treasury is responsible for the Group´s external bank relations, liquidity management, financial net, interest-bearing liabilities and assets as well as for shared payment systems and netting. Centralization results in substantial economies of scale, a lower financial net, a tight management of the Group's financial risks and improved internal control. The Group's Treasury Policy permits a certain level of proprietary trading in currency and interest-rate instruments. Such trading generated a profit during the year.

Risks and policies	Exposure	Comments

Risks and policies

Financing risks and liquidity risk

Financing risk is defined as the risk that the refinancing of maturing debt may be difficult or costly to arrange, thereby impeding the Group's ability to fulfill its payment obligations.

Liquidity risk refers to the risk of not being able to fulfill payment obligations as they fall due.

Policy Contracted credit facilities with a term of at least 12 months must be available in an amount equivalent to the Group's gross debt. Furthermore, the Group must maintain a liquidity reserve corresponding to at least 5 percent of its consolidated net sales. The general range for the Group's debt/equity ratio lies between 50-100 percent.

Exposure

Throughout the year 2009, the Group maintained long term contracted loans and credit facilities in an amount exceeding the total of its consolidated gross debt plus a policy liquidity reserve requirement corresponding to at least 5% of consolidated turnover.
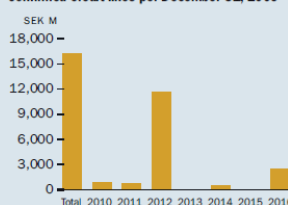
Per the end of 2009, the Group´s total financial debt amounted to SEK 9,045 M (13,639). Short term financial debt, maturing in 2010, amounted to SEK 2,529 M (2,805) and comprised short term bilateral bank borrowings in SEK 670 M (1,405), commercial paper in SEK 1,599 M (800) and the short term portion of long term debt in SEK 260 M (600). Long term financial debt amounted to SEK 6,516 M (10,834) and consisted mainly of drawings under the Group´s syndicated loan in SEK 3,970 M (7,408), bilateral bank debt in SEK 1,514 M (2,081) and outstanding bonds in SEK 1,032 M (1,345). Short term financial debt maturities are backstopped by the long term committed confirmed credit lines reported below.

Maturity term structure of the Group´s interest-bearing liabilities per December 31, 2009
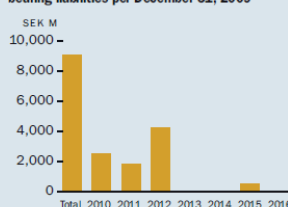
The Group´s committed confirmed credit lines comprise a syndicated loan and several bilateral revolving credit facilities. The syndicated loan, in the form of a multicurrency revolving credit and swingline facility, consists of two tranches in EUR 750 M (SEK 7,772M) and USD 600 M (SEK 4,328 M). The major part of the loan, corresponding to SEK 11,678 M, matures in March 2012 whilst the remainder (SEK 422 M) matures in 2011. The Group´s

Maturity term structure of the Group´s committed confirmed credit lines per December 31, 2009

long term bilateral revolving credit facilities comprise a EUR 30 M (SEK 311 M) facility maturing in 2011, a EUR 50 M (SEK 518 M) facility maturing in 2014 as well as two facilities totaling EUR 241 M (SEK 2,502 M) maturing in 2016. All in all, the Group´s committed confirmed credit lines totaled to SEK 16,229 M (14,236) per the end of 2009, of which an amount of SEK 11,815 M (5,453) was then undrawn.

Group's capital structure

SEK M	2009	2008
Interest-bearing liabilities (note 27)	9,045	13,639
Less: Interest-bearing assets (note 16, 23 and 25)	–676	–933
Total net debt	8,369	12,706
Total shareholders' equity	12,361	10,238
Debt/equity ratio	**68%**	**124%**

Comments

The Group has access to the money and debt capital markets both through bank lending as well as through a Swedish domestic commercial paper programme. In addition, the Group has issued bonds on a private placement basis. 3 new long term bilateral revolving credit facilities were contracted in late 2009: a EUR 50 M (SEK 518 M) facility maturing in 2014 as well as two facilities totaling EUR 241 M (SEK 2,502 M) maturing in 2016. An analysis of the Group´s financial debt instruments is presented in Note 27. The Group´s long term financial debt includes 4 bonds issued as private placements with maturities ranging from 2010 through 2015 as well as 3 long term bilateral bank term loans with maturities stretching into 2012. The backbone of the Group´s long term financial debt is, however, represented by a syndicated loan raised in 2005. Per the end of 2009, the total facility amount under this loan amounted to SEK 12,100 M (12,861) of which a portion equivalent to SEK 8,130 M (5,453) was undrawn. Of the Group´s 4 long term bilateral revolving credit facilities totaling SEK 3,331 M, one was drawn in an amount of SEK 311 M per end 2009; the 3 other facilities in a total volume equivalent to SEK 3,020 M, remained undrawn. Trelleborg´s SEK 4,000 M Swedish domestic commercial paper programme permits of issuance with tenors up to 12 months. Outstandings under the programme amounted to SEK 1,599 M (800) per the end of 2009. The remainder of the Group´s short term financial debt consisted of short term bilateral bank loans under overdraft and money market term loan arrangements totaling SEK 930 M (2,005). 2 bilateral revolving credit facilities maturing in 2010 in a total amount of SEK 500 M were completely undrawn per the year end 2009.The syndicated loan together with the 6 bilateral revolving credit facilities referred to above comprise the overwhelming portion of the Group´s committed confirmed credit lines totaling SEK 16,229 M (14,236) at the end of 2009, of which a portion of SEK 4,414 M (8,783) was then drawn. The Group´s uncommitted confirmed credit lines amounted to SEK 1,543 M (1,869) per the end of 2009, of which SEK 223 M (386) were then drawn, and are mainly represented by overdraft facilities.

The Group tracks its capital structure on the basis of several key ratios, including the debt/equity ratio. The general range for the debt/equity ratio was lowered in late 2009 to lie within the range of 50-100 percent. Largely due to strong cash flow and the 2009 rights issue, the year-end 2009 debt/equity ratio was down to 68 percent (124), which is within the revised target interval. The Group´s key ratios related to the capital structure and forecasts for the Group´s policy liquidity reserve are monitored on a monthly basis.

Risks and policies	Exposure	Comments

Foreign-exchange risk

Foreign-exchange risk is the risk of adverse impacts on the consolidated income statement, balance sheet and/or cash flows as a result of exchange rate fluctuations. Foreign-exchange risk occurs in the form of both transaction and translation exposures.

Transaction exposure

Currency flows arising when goods and services are bought or sold in currencies other than a group company´s local currency lead to transaction exposure.

Policy Group companies may hedge a maximum of 100 percent of their forecast net exposure per currency pair over a rolling forward period of 12 months as well as up to 100 percent of invoiced flows per currency pair. Projects with an order value exceeding an amount of EUR 1 M shall always be hedged.

Currency pairs with largest net flows over 12 months forward from the fourth quarter of 2009 (SEK M).

Currency pair	Net flows	Hedge	Hedge Ratio
EUR/USD *	250	0	0%
EUR/DKK	235	–61	26%
EUR/PLN	192	–100	52%
EUR/SEK	173	–32	18%
GBP/SEK	159	–	0%
DKK/LVL	151	–	0%
EUR/GBP	138	2	–1%
EUR/CZK	122	–	0%

* EUR/USD includes flows in currencies that covary with EUR and USD, such as DKK, LKR

The table shows all currency pairs whose net flows over a forward period of 12 months from the fourth quarter of 2009 are budgeted to exceed SEK 100 M equivalent. Also shown are the amounts hedged per currency pair at December 31, 2009. A positive net flow indicates that inflows exceeded outflows. For the stated forward period, the currencies with the greatest budgeted net flows are EUR (SEK 710 M equivalent), SEK (SEK –470 M) and PLN (SEK –200 M equivalent).

Trelleborg's global operations give rise to substantial cash flows in foreign currencies. Group Treasury works actively to enhance the matching of these flows, thereby reducing the Group's foreign-exchange risk and transaction expenses. At a Group level, the greater part of these flows are netted off against each other. The Group's net transaction exposure amounts to an annual value of approximately SEK 2,200 M (2,400). Decisions regarding the hedging of operating cash flows are made by the individual Business Areas in collaboration with Group Treasury which manages hedging activities centrally. All foreign exchange transactions of Group companies must be conducted in conjunction with Group Treasury, which ensures compliance with the Group´s Treasury Policy. The main instruments used to hedge operating cash flows are currency forward contracts, currency swaps and currency options.

Translation risk – Income statement

Exchange-rate movements impinge on the Group's earnings when the income statements of foreign Group companies are translated to SEK. Since the Group's earnings are to a large extent generated outside Sweden, the impact on the consolidated income statement can be substantial.

Policy The Group shall not normally hedge this risk.

Translation effects: Currency effect on income statement SEK M 2009.

Currency	Net sales	Operating profit	Net profit
EUR	1,109	27	25
GBP	–22	0	1
USD	730	3	–41
Other	285	27	15
Total	**2,102**	**57**	**0**

Upon translation of the income statements of foreign subsidiaries, exchange-rate movements positively affected the Group's operating earnings for the year by a total of SEK 57 M (neg: 69) and net profit in an amount of approximately SEK 0 M (neg: 61).

Translation risk – Balance sheet

In connection with the translation of Group investments in foreign subsidiaries to SEK, there is a risk that changes in exchange rates will affect the consolidated balance sheet.

Policy Investments in foreign subsidiaries and associated companies may be hedged in a range of between 0 and 100 percent of the investment's value (which, because of the tax effect, implies a maximum hedge ratio of 70 percent). A decision to hedge follows an overall evaluation of foreign-exchange levels and the effects on the financial net, liquidity and taxes, as well as on the Group's debt/equity ratio.

Sensitivity analysis of translation exposure in balance sheet, before consideration of possible tax effects.

Currency	Net investment SEK M	Hedging, percent	Effect on equity, if SEK 1% stronger SEK M
EUR	10,363	53%	-48
GBP	1,971	64%	–7
USD	2,478	26%	-18
Other	4,729	25%	-35
Total	**19,541**	**44%**	**-108**

At year-end 2009, the Group's net investments in foreign subsidiaries and associated companies amounted to approximately SEK 19,541 M (19,492). The net investments have increased due to changes in the capital structure and accrued profits of foreign operations which have overcompensated negative translation differences. Translation differences in 2009 amounted to SEK -454 M (1,184), calculated after hedging through loans and derivative instruments with deductions for estimated taxes. At year-end 2009, 44 percent (48) of net investments had been hedged. If SEK appreciates by 1 percent in relation to all currencies in which the Trelleborg Group has foreign net investments, there would be a negative change in shareholders' equity of SEK 108 M (neg: 102) before consideration of possible tax effects.
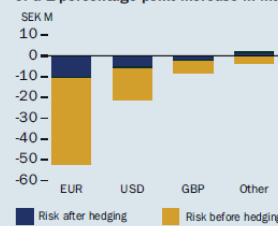

Interest-rate risks

As most of the Group´s debt bears variable interest, the Group focuses on managing interest rate cash flow risk, ie. the risk of a negative impact which market interest rate movements may have on the Group's cash flow and earnings. The impact on the Group's interest income/expenses depends on fixed-interest terms for borrowing and investments. The Group seeks a balance between the estimated current cost of borrowing and the risk of sustaining a significant negative impact on earnings in the event of a sudden, major movement in interest rates, implementing interest rate hedging as appropriate.

Policy Borrowing: The average fixed-interest term for the Group's gross borrowings, including effects of derivative instruments, may be a maximum of four years.

Investments: The average fixed-interest term for interest-bearing investments, including effects of derivative instruments, may be no longer than two years on a maximum amount of SEK 2,000 M, or its equivalent in other currencies.

Impact 2010 on consolidated interest expenditure of a 1 percentage point increase in interest rates

SEK M

Risk after hedging ■   Risk before hedging ■

Based on the Group's stock of interest rate bearing net debt per end 2009, a 1 percentage point upward shift in the EUR interest rate curve would have a negative impact of SEK 52 M (71) before hedging, reduced to SEK 10 M (41) after hedging. The impacts on consolidated interest expenditure of similar shifts in USD and GBP interest rates would be: in respect of USD, SEK 21 M (27) before and SEK 6 M (1) after hedging and, in respect of GBP SEK 8 M (9) before and SEK 2 M (6) after hedging.

As per December 31, 2009, the Group's interest-bearing debt totaled SEK 9,045 M (13,639). The average remaining fixed-interest term of the debt was approximately 15 months (6 months), including derivatives. Outstanding interest-bearing investments at year-end amounted to SEK 676 M (933), with an average period of fixed interest of approximately half a month (half a month). The Group's net interest-bearing debt amounted to SEK 8,369 M (12,706), with an average remaining period of fixed interest of about 16 months (six and a half). Based on the level of net debt at year-end, a 1-percentage point rise in interest rates in all currencies in which the Trelleborg Group has loans or investments would generate a net cost increase of approximately SEK 16 M (67) in net financial items for 2010. The Group's average net liabilities during the year amounted to SEK 10,814 M (11,316). Net interest items and net financial items, as a percentage of average net liabilities, amounted to 3.7 percent (4.8) and 3.7 percent (4.8), respectively. Outstanding interest-bearing investments are reported in Notes 16, 23 and 25. An analysis of the Group's interest-bearing debt is reported in Note 27.

Financial credit risks

Financial credit risk is defined as the exposure to the default of financial counterparties with which the Group has invested cash or cash equivalents or with which it has contracted financial instruments having a positive market value for the Group.

Policy Group Treasury shall work with banks that have a high credit rating and that preferably participate in the Group's medium and long-term financing. The Group´s Treasury Policy contains a specific counterparty regulation that stipulates the maximum level of credit risk exposure to various counterparties. See Note 28 for further information.

Since the Group is a net borrower, excess liquidity shall primarily be used to amortize external liabilities. No credit losses stemming from investments of cash or cash equivalents or financial instruments occurred in 2009. Outstanding financial credit risk exposure at the balance-sheet date is presented in Note 28.