EARNINGS MANAGEMENT UNDER IAS 19

An analysis of the extent to which entities alter assumptions when accounting for employee benefits before and after the amendment of IAS 19

Bachelor's thesis in accounting, spring term 2014
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ABSTRACT

The amendments to the existing standard IAS 19 published in 2011 changed the requirements concerning the reporting of defined benefit plans for public entities applying IFRS, effective as of January 2013 with full retrospective application. The revised standard from 2011 prevent earnings management through the deferring and concealment of some actuarial gains and losses, but still leave scope for professional assumptions concerning the determination of the discount rate. The purpose of this thesis is to study the extent to which earnings management occurs when accounting for defined benefit plans, before and after the amendment of IAS 19. A multiple regression analysis has been carried out in two different parts, where two different samples are used. We have limited our scope to Nordic entities in part one, and entities from all over the world listed on markets regulated by ESMA in part two. The uniform criterion for the included entities in both parts is the reporting in accordance with IFRS for defined benefit plans. Part one process the corridor approach in order to discuss circumstances before the amendment of IAS 19, and part two process the discount rate in order to discuss circumstances both before and after the amendment as well as its effects on one of few factors still possible to manipulate. We have selected three independent variables that represent a selection of entities' incentives to manipulate earnings, namely leverage, deficits in pension plans and profitability. Our major findings indicate that earnings management did occur to a certain extent under the previous standard, and that the amendment seems to have decreased the use of earnings management when accounting for defined benefit plans. Our suggestions on further research on the subject is an analysis of the standard with regard to earnings management, carried out with additional or entirely different earnings management incentives such as ownership structure, management's bonus scheme and degree of corporate governance.

Keywords: IAS 19, defined benefit plans, earnings management, the corridor approach, discount rate

CHAPTER OVERVIEW

1. INTRODUCTION

Pension accounting is an area where managers are required to exercise judgment and rely on estimates, and is known to be very complicated as the needed assumptions are based on future circumstances that are of an unsure nature. Each entity has a pension liability to its employees that is to be paid in the future, which requires that said entity reserve resources in order to be able to cover the liability when it is settled. This can be carried out through either defined benefit plans where plan assets are used and thus generate interest, or through defined contribution plans where fixed amounts of money are set aside at the end of each period. In this thesis we will exclude defined contribution plans, and focus entirely on defined benefit plans.

The amendments to the existing standard IAS 19 published in 2011 changed the requirements concerning the reporting of defined benefit plans for published entities applying IFRS, effective as of January 2013 with full retrospective application. The previous regulation enabled entities to defer actuarial gains and losses to forthcoming periods - a method referred to as the corridor approach. Actuarial gains and losses arise from changes in actuarial assumptions, required when determining the size of the pension liability, the expected return on plan assets and discount rate. The assumptions have to be made for certain demographic- and financial factors such as life expectancy, average salary increase and staff turnover. In addition to this is the fact that the estimated- and actual returns on plan assets were reported differently: the expected net earnings from plan assets affected the result, whilst the actual gains and losses were reported under other comprehensive income (a thorough declaration of the components when accounting for defined benefit plans will follow in chapter two). This created a possibility to distort the result, known as earnings management.

The purpose of this thesis is to study the extent to which earnings management occurs when accounting for defined benefit plans, before and after the amendment of IAS 19.

The revised standard from 2011 prevent earnings management through the deferring and concealment of some actuarial gains and losses, but still leave scope for professional assumptions concerning the determination of the discount rate. As the amendment is effective as of January 2013, the subject is highly relevant and timely. Previous research on the subject have focused on the extent of earnings management in pensions accounting under IAS 19 (1998), as this enabled possibilities to manipulate results through the accruing of actuarial gains and losses through the applying of the corridor method, explained

thoroughly in chapter 2.1. Most of the research conducted earlier has processed the adoption of SFAS 87 in USA for entities following the US GAAP, which is similar to IAS 19 (2011) in many ways. This study will complement this research with new data collected after the amendment of IAS 19, with focus on two different aspects on earnings management in accounting for defined benefit plans. The first part process the change in restatements for entities that used the corridor approach as previously deferrable gains and losses now have to be recognized in the primary financial reports, and the second part process the discount rate where there's still scope for assumptions and thus earnings management.

Our main research questions are: to what extent did earnings management occur during the previous version of the standard, and to what extent does it still occur? In order to answer these questions, a multiple regression analysis will be carried out where two different samples are used. Part one is based on a sample containing solely Nordic entities, whereas part two is based on a sample containing entities from all over the world, with securities listed on markets regulated by ESMA (the European Securities and Markets Authority). The uniform criterion for the included entities in both parts is the reporting in accordance to IFRS with defined benefit plans. Our study will focus on the variables we hypothesize are used in order to manipulate earnings within the accounting for defined benefit plans, being actuarial gains and losses (part one), and different combinations of the discount rate and the expected rate of return (part two). The selection of independent variables included in the analysis represent entities' incentives to manage earnings, limited down to deficits in pension plans, leverage and profitability. We hypothesize that entities managed earnings under the previous version of the standard, and that this still occur through the manipulation of the discount rate under the amended version. Our findings support the former prediction as the amount of restatements was significantly correlated with several earnings management incentives as well as the latter, but with indications not as extensive.

The rest of this paper follows as: chapter two contains a presentation of the institutional setting where the amendment of IAS 19 and actuarial assumptions are discussed, chapter three contains a presentation of factors and previous research building up to our hypotheses, chapter four provides a presentation of the research design, chapter five contains a presentation of the research results, and in chapter six a concluding discussion of the results is presented.

2. INSTITUTIONAL SETTING

IAS 19 regulates both defined benefit plans and defined contribution plans, but as this paper only discusses the former, our focus will be solely on that. In order to overcome the complexity of the accounting for defined benefit plans, a clarification of its components will follow.

COMPONENTS OF DEFINED BENEFIT PLANS

Component	Definition
PBO, Projected benefit obligation	The projected liability that is to be paid out in the future, based on demographic and financial assumptions such as life expectancy, average increase of salaries and employee turnover.
Net defined benefit liability	A deficit in the pensions plan, arising when the projected benefit obligation exceed the fair value of the plan assets.
Net defined benefit asset	A surplus in the pensions plan, arising when the fair value of the plan assets exceed the projected benefit obligation.
Discount factor	The rate at which the PBO is discounted. The discount factor is determined by reference to a *High Quality Corporate Bond (HQC bonds),* mainly bonds that are rated as "AAA" or "AA" by a recognized rating agency, and the estimated time until the deficit is to be paid. The latter generally makes entities' discount rate differ from each other as it is based solely on assumptions. Differences in countries' HQC bonds are also common. The higher discount factor the smaller recognized liability, and thus higher risk.
Actuarial gains and losses	Remeasurements of the return on plan assets and/or changes in actuarial assumptions, such as financial assumptions (e.g. market expectations, expected salaries and salary increases), mortality assumptions and staff turnover expectations. Changes in those create actuarial gains and losses and are reported in other comprehensive income, consequently not affecting the comprehensive income (profit or loss).

Expected return on plan assets	One of the components in IAS 19 (2008), recognized in profit or loss for the actual period and indirectly reflecting the risk of the pensions plan.
Service costs	The contributions to the projected liability arising from employees' hours of labor during the current period.
Net interest	The discount rate multiplied with the current value of the net defined benefit liability (asset), creating an interest expense (income). In other words: an interest cost arises from a deficit in the pensions plan, and an interest income from a surplus in the pensions plan.
Pensions plan gains and losses from settlements	Gains or losses from the termination of a pension liability (when the pension is paid out to an employee). Gains arise when the amount paid fall below the projected liability, and losses when the amount paid exceed the projected liability.

The complexity lies in the assumptions, as they are to estimate circumstances several decades in advance. An in-depth explanation of assumptions of this kind, referred to as actuarial assumptions, will follow in chapter 2.2.

2.1 THE AMENDMENT OF IAS 19

As of January 2013, IAS 19 (2011) is mandatory for all entities applying IFRS with full retrospective application. The previous options for reporting actuarial gains and losses were narrowed down to one directive, with one single way of presenting them in the financial reports. The amendment was carried out in order to accomplish a more uniform accounting regulation with the US GAAP, and because of the need of increased transparency of the financial reports. The IASB find this approach simpler and representative of the underlying values. After the amendment the reporting of pension obligations will be more understandable and comparable. (IFRS 2011)

Before the amendment, IAS 19 (1998)

Actuarial gains and losses did not have to be recognized immediately. As a result of this, an asset or liability in the statement of financial position didn't necessarily have to reflect its true value. Different options for presenting actuarial gains and losses made comparisons among different entities hard, and the ability to conceal these gains and losses made the reporting confusing and deceptive. The difference in the reporting of *expected* return on plan assets and *actual* return on plan assets was misleading as the former was to be reported in profit or loss and the difference between the two in other comprehensive income,

here on after referred to as OCI. As the OCI do not affect the reported earnings in profit or loss, entities could report an over-optimistic expected return on plan assets and thus increasing the comprehensive income without having do adjust the profit or loss downwards if the actual return on plan assets turned out to be less than expected.

The accounting options for the components in the previous version of the standard were as follows:
Service costs – *recognized in profit or loss the actual period*
Interest cost – *recognized in profit or loss the actual period*
Expected return on plan assets – *recognized in profit or loss the actual period*
Actuarial gains and losses – *a) Recognized in profit or loss the actual period*
b) Recognized in OCI the actual period
c) Deferred through the corridor approach
(IFRS 2011)

The corridor approach enabled entities to defer actuarial gains and losses to future periods, as they were first recognized when the cumulative unrecognized amount exceeded 10 % of the greater of the present value of the projected pension liability and the fair value of the plan assets at the beginning of the period. The part exceeding the corridor was then amortized linearly in the expected remaining working lives of the entities' employees participating in the pensions plan. (KPMG 2011) Through the corridor approach, entities could recognize an asset even though there was a deficit in the defined benefit plan. Gains and losses could also be recognized even though they derived from past periods, which created a direct possibility to smooth results. As a result of this, entities could report different revenues and costs deriving from their defined benefit plans, even though their defined benefit obligations were identical. (IFRS 2011)

After the amendment, IAS 19 (2011)
The corridor approach is removed – entities can no longer defer actuarial gains and losses. The components when accounting for defined benefit plans were reworked and divided into service cost, net interest and remeasurements.
After the amendment, a surplus in the defined benefit plan has to be recognized as a net defined benefit asset and a deficit as a net defined benefit liability. The net interest replaced the earlier interest cost on the defined benefit obligation and interest income on expected rate of return on plan assets, and is determined by multiplying the discount rate by the net defined benefit liability/asset. By this approach the entity will report a financing expense when there is a deficit in the pension plan, and a financing income when there's a surplus.

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Service- and finance costs have, as described above, to be included in profit or loss for the current period. Changes in actuarial assumptions (now referred to as remeasurements) have to be reported as they occur in OCI, and will consequently never be reclassified to profit or loss. The reporting of remeasurements in OCI is a direct response to concerns regarding the misleading effects of year-to-year fluctuations of a long-term liability. By reporting it in the OCI entities' annual profit or loss will not be affected directly, but information must be given about each component's share of the OCI in disclosures. (IFRS 2011)

The impact of the new amendment will be that most entities' employee benefit expense will increase (PwC 2013), and the OCI and the net assets in the statement of financial position will fluctuate more on a year-to-year basis. Entities that applied the corridor approach in previous periods, and entities with an earlier reported gap between expected return on plan assets and the discount rate will be affected to the most extent. (KPMG 2011)

2.2 ACTUARIAL ASSUMPTIONS

As mentioned earlier, the complexity in the accounting for defined benefit plans lies in the actuarial assumptions. This because a large amount of estimations, both demographic and financial, must be made in order to determine the size of the pension liability and the period by which it shall be discounted. Demographic estimations being for example employee turnover, average salary increase and life expectancy, and financial estimations being the discount rate. Changes in those create actuarial gains and losses (as of January 2013 reported as remeasurements), as a result of the pension liability decreasing or increasing. According to the standard the assumptions must be neutral in the sense that they should be prudent but not excessively so, and mutually compatible in the sense that they should be realistic. This is achieved by reflecting the economic relationship between factors like inflation and discount rate.

In order to be able to regulate the liability in the future, plan assets are used. These assets should ensure that there are sufficient funds in order to pay the obligation, determined through the Project Unit Credit Method. The method help determining the present value of the defined benefit plans, but as well as for the determination of many of its other components, this require several assumptions. As the liability is not to be paid out in the near future, the pension obligation must be calculated at a discounted value. The discount rate is not only used to determine the present value of pension obligation, but also to determine the cost of labor and the net interest on plan assets. The assumptions can be made by the entity itself, but if needed the entity can employ a qualified actuary to aid with the calculations. (Marton, Lumsden, Lundqvist & Pettersson 2013)

In order to research both the effects of the amendment of IAS 19 and the extent to which entities still use earnings management, we've divided our hypotheses into two parts - part one being 'the corridor approach' and part two being 'the discount rate'. Part one focus on earnings management in relation to the conditions before the amendment. As the corridor approach is removed as of January 2013, the previously hidden profits or losses will appear as restatements in entities' financial reports for year 2013. A change in the value of restatements representing previously deferred actuarial gains and losses over the two years (before and after the amendment's effective date) that's above average can be interpreted as an indication of the previous use of earnings management. Part two focus on earnings management both before and after the amendment, and in relation to one of few factors within accounting for defined benefit plans that still involve actuarial assumptions - the discount rate. If the discount factor change significantly as a result of the amendment, this can also be an indication of the use of earnings management.

3. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Earnings management is a very wide subject, which have resulted in most of the research focusing on its extent concentrated to specific variables. The research is very extensive, with findings sometimes contradicting each other. In order to keep our focus on pension accounting we have limited our scope to previous research carried out on variables directly relevant to our thesis. The following research findings process earnings management when determining the expected rate of return on plan assets, thus being relevant to our thesis as it is included in two of our dependent variables in part two.

In this thesis we use the following definition of earnings management:

"Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the entity or to influence contractual outcomes that depend on reported accounting numbers".
(Healy and Wahlen, 1999)

Bergstresser, Desai and Rauh (2006) found in their study several reasons why entities use earnings management in determining the expected return on plan assets, with one reason being management opportunism. They argue that

entities make more aggressive assumptions when preparing for a firm acquisition, when issuing equity and when management has the opportunity to exercise stock options. If entities have to report a loss, if they expect a decreased result, or if the earnings growth is below the industry average, there is also a tendency to use aggressive assumptions.

Hsu, A, Wu, C and Lin examined if financial distress risk and ownership structure can affect the assumptions for future salary growth and expected rate of return on plan assets. They concluded that entities tend to increase the value of their pension assets by increasing the expected rate of return and reduce the value of pension liabilities by reducing the expected salary growth.

Asthana (2007) searched to find whether managers use the expected return on plan assets to manipulate earnings in order to influence entities' value. He found evidence that they do: entities may use the expected return to affect earnings per share when they are under pressure to achieve performance goals. The difficulty in the pensions accounting and the extent of assumptions allows management to make discretionary assessments. Thus, aggressive assumptions can occur when estimating the expected return.

Amir and Gordon (1996) have also studied if management follows the standards given, or if they are either too conservative or too aggressive in their assumptions. They established that entities with large post-retirement benefits obligations and highly indebted entities are more aggressive in their assumptions. They discovered that the entity's specific situation, such as the leverage ratio, the amount of post-retirement benefit obligations, the occurrence of the reporting of deviating results and pensions plan amendments are related to the degree of conservatism when making assumptions.

3.1 EARNINGS MANAGEMENT FACTORS
In this section we present our dependent variables that we hypothesize are being used in order to manage earnings.

3.1.1 The corridor approach
Entities with actuarial losses deferred through the corridor approach have in previous periods reported a result higher than that if the actuarial losses were to be recognized in profit or loss. As a result of IAS 19 (2011) the actuarial losses for entities using the corridor before the amendment have been reclassified and addressed in remeasurements, resulting in actuarial gains and losses now reported as they occur in OCI.

As mentioned in previous chapters, the amended IAS 19 has to be applied with full retrospective recognition. In accordance with IAS 8 (Accounting policies, Changes in Accounting Estimates and Errors), the financial statements shall, if retrospective recognition is required, reflect conditions as though prior ways of accounting never occurred (except to the extent that it is unfeasible). Differences that arise from such changes are referred to as restatements. (IFRS, 2012) As the values previously deferred through the corridor approach will be classified as restatements and recognized in profit or loss in the period of the change and those to come, the value of the restatements for the corresponding periods will reflect the values previously deferred through the corridor approach. By using the value of restatements related to the accounting of defined benefits we can formulate our initial hypothesis:

H1: *Entities with incentives to manage earnings used the corridor approach*

3.1.2 The discount rate
IAS 19 specifies that the discount rate must be determined using the market yields on the accounting day of high quality corporate bonds (HQC bonds). If there is no HQC bond that fairly reflects the underlying financing and when there is no working market for such bonds, the IFRS have decided to allow government bonds to be used for discounting the projected obligation instead. This is frequently the case in recent years, as the amount of HQC bonds decreased substantially after the financial crisis. (IFRS, 2013)

The discount factor can vary among entities as a result of the supply of HQC bonds, the allowance of government bonds, and the extent of the assumptions required. Government bonds may have different maturities, and thus requiring their interest rate to be extrapolated to the yield curve for other bonds. And as a result of the assumptions related to the discount rate, it can vary among entities even though they pursue their business in the same country. This makes the discount factor one of few components of the accounting of defined benefit plans through which it is still possible to pursue earnings management.

The determination of the discount rate is important as it have a great impact on the pension liability. An increase (decrease) in the discount rate decreases (increases) the present value of the pension liability and the reported pension costs. According to Glaum (2009), the present value of pension liabilities increases or decreases by 15 percent as the discount rate changes by one percent.

In several countries, there has been a big debate about which discount rate is appropriate to use. The standard requires the discount rate to be equal to the risk free rate on high quality corporate bonds, but according to Swinkels (2011)

entities deliberately select a higher discount rate than the risk-free, which may generate effects such as the present value of the pension liability being reduced. This does in turn lead to a surplus in the pension plan. Research also show that entities may select the discount rate that best benefit them after comparing situations when changing the discount rate. (Obinata, 2002)

To manage the information given to the stakeholders, entities may also use the discount rate as a tool for manipulating the numbers. Entities choose to do this mainly to hide their financial problems from its stakeholders, especially investors. This in order to prevent stakeholders from believing that the deterioration of the entity's financial position is likely when a reduced funding occurs. (Bodie, Light, Morock & Taggart, 1987)

Researchers claim that entities choose a discount rate that's too high in order to reduce pension costs and pension liabilities. In a sample of 214 companies, Godwin (1999) examined the actuarial assumptions that were made by the entities between year 1987 and 1996, and came to the conclusion that entities with deficits in the pension plan selected a discount rate that was above average for the sample, while the discount rate for companies with surpluses was below average. He established that the discount rate for entities with deficits was higher than entities with surpluses in nine of the ten years. Thus, the entities used the discount rate as a tool to influence the pension plan.

The expected rate of return on plan assets was one of the components in the accounting of defined benefit plans under previous standards, and by being reported in profit or loss (in contrast to the actual rate of return on plan assets, being reported in OCI and thus only described specifically in disclosures) the assumptions had a direct impact on the entity's comprehensive income. The different presentations of the two created, as mentioned earlier, a possibility to manipulate the result. However, as of IAS 19 (2011), the expected rate of return is equal to the discount rate. An expected rate of return that exceeded the discount rate can indicate an over-optimistic view on the return on plan assets, and thus earnings management. It has been found that entities used the expected rate of return more frequently to affect for example earnings per share when they were under pressure to achieve performance goals, which resulted in aggressive assumptions (Asthana, 2007).

Based on this and the premise that users of the financial reports do not make use of disclosed information as effectively as the one recognized in the financial statements (Davis-Friday et al., 1999), we formulate our three hypotheses constituting the second part of this thesis:

> H2: *Entities with incentives to manage earnings report a greater difference between the expected rate of return on plan assets and the discount rate year 2012*

> H3: *Entities with incentives to manage earnings set a higher discount rate after the amendment of IAS 19*

> H4: *Entities with incentives to manage earnings report a change in expected rate of return between 2012 and 2013[1]*

3.2 EARNINGS MANAGEMENT INCENTIVES

In this section the following three paragraphs present earnings management incentives that we hypothesize will explain our dependent variables in section 3.1.

3.2.1 Pension plan surpluses and deficits

If the defined benefit plans exceed (fall below) the projected pension liability the pension plan is known to be overfunded (underfunded) that generates an interest revenue (interest expense). An underfunding can occur because of a decline in the fair value of the plan asset, through a decreased discount rate, or through an increase in the value of the liability. When there is an underfunding in the pensions plan this denotes a liability that affects earnings and cash flows negatively, both in accounting- and in economic terms. This may happen immediately after, as well as several years after the deficit arose. The deficit can also be seen in the statement of financial position. (Franzoni & Marin, 2006)

Surpluses/deficits in pension plans have an impact on the choice of actuarial assumptions. Entities with surpluses in the pension plan have a propensity to make actuarial assumptions that decrease the surplus, and this by increasing pension liabilities. Entities do this in order to avoid undesirable costs. Otherwise managers will have to grant additional benefits to their employees, and since the shareholders bear the risk of overfunding, concern among them may also arise. Entities with deficits in the pension plan have, on the other hand, a propensity to make actuarial assumptions that reduces the deficit by decreasing the pension liability. Employees also have reason to become anxious,

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[1] Expected return on plan assets 2013 = Discount rate 2013

as the entity might consider dismissing them in order to decrease the liability and thus the deficit in the pension plan. Asthana (1999) In accordance to the fact that a deficit (underfunding) in the projected pension liability affects earnings and cash flows, we predict that entities' deficit in the pensions plan affect the extent to which they use earnings management.

3.2.2 Leverage

Highly leveraged entities tend to desire positive and stable results in order to compensate the high risk that follows this kind of financing. Numerous researchers have found that the higher leverage ratio, the higher likeliness of the use of earnings management in order to increase reported earnings. This as creditors are more likely to reject highly leveraged entities' credit inquiry. (Glaum, Lichtblau & Lindemann, 2004) This is often carried out through income-increasing accruals and other income-increasing accounting choices. Although, contradictory to this is the findings that leverage increases reduce the possibility of earnings management as this often is associated with an increased monitoring by the entity's creditors, and that higher leverage require higher amortizations - leaving less free cash flow for managers to use for manipulation. Consequently, previous findings show that leverage levels and changes in such have differing impacts on entities' use of earnings management. (Jelinek, 2007)

The use of earnings management as a measure to increase revenues is also more frequent for entities that seek external financing at a low cost. Leverage ratios have been found to be positively related to the demand for external financing, but is also considered a noisy measure as some entities requires more investments than others because of their characteristics. Because of this, the optimal debt-to-equity ratios differ among entities, despite being in the same industry. (Jelinek, 2007)

According to Obinata (2000) there is no correlation between the discount rate and high leverage. However, as the sample of his study was limited down to 24 entities it is of great interest to investigate whether there is a correlation between the discount rate and leverage based on a larger and international sample. This also because previous research suggests that there is a correlation between leverage and earnings management. For example Amir and Gordon (1996), establishing that highly leverage entities tend to be more aggressive in their assumptions. However, there is also research that supports Obinata's conclusion. Park and Shin (2003) assumes that highly leveraged entites are less likely to use earnings management as they are under tight supervision by their lenders.

Previous research has found that the main reasons for earnings manipulation are to encourage investors to buy stock, and increase stock value for present shareholders. It has also been found that earnings management is more common when entities are about to break their debt covenants. As the latter is more probable when the debt-to-equity ratio increases, and because of the fact that the cost of capital increase for external financing if the entity is highly levered and report low revenues (Dechow, Sloan & Sweeney, 1996), we find this an important factor to include in our hypotheses.

3.2.3 Profitability

Research show that entities manage earnings in order to exceed three types of thresholds: the reporting of a positive result, to sustain (or exceed) previous periods' performance, and to meet analysts' expectations. The former have proved to be the predominant of the three. To meet the entity's set benchmarks have also proved to influence earnings management, both from managers' perspective as well as from the perspective of the entity as a whole. Managers can have personal gains connected to the reporting of a positive result or an increased result relative to previous periods through bonus systems, and in order to preserve the entity's stock-value analysts' earnings projections have to be met. This as investors base their decisions on information provided by analysts, and financial reports published by the entity itself. Banks can also choose to refuse giving credit to entities that do not report positive earnings. When earnings are close to an unacceptable level, the incentives to manipulate earnings upward are significant. Although when the period's benchmarks have already been met and bonuses are near their maximum level, the incentives shift to manipulations downward and the deferring of earnings, as this makes future benchmarks and thresholds easier to meet. (Degeorge, Patel & Zeckhauser, 1999)

In addition to the previously stated facts, research have found that entities are more likely to report changes specifically in net pension costs that increase its net income when they otherwise will fail their set goals - especially those that usually pass or fail their goals by small margins. Entities that would reach their goals regardless are on the other hand more likely to report changes in net pension costs that decrease its net income. This agrees with the theory that managers do smooth the net income in order to be able to report an increased result in later periods. (Blankley, Comprix & Hong, 2013)

As mentioned earlier, entities tend to use earnings management to increase its reported earnings when it otherwise will have to report a loss - especially if the margins are small. And as Obinata (2002) found, there is a correlation between the discount factors and profitability, where entities have a tendency to increase the discount rate the less profitable they are. In accordance with above-

mentioned facts, we hypothesize that less profitable entities tend to manage earnings through pension accounting.

As the incentives for deferring actuarial losses and thus reporting a higher profit/smaller loss are many, and previous research have shown that earnings management through aggressive assumptions is especially frequent for entities having to report a loss or a decreased result and entities expecting a decreased result (Bergstresser, Desai & Rauh, 2006), we will focus our hypotheses in the first section on entities using the corridor approach and thus focusing on earnings management before the amendment, and the hypotheses in the second section on differences in discount rate and the expected rate of return before and after the amendment.

4. RESEARCH DESIGN

In this thesis we use two different samples, with a primary sample (part two) that include 3807 entities from all over the world with defined benefit plans, establishing their financial reports according to IFRS and listed on markets regulated by ESMA. A subsample derived from the primary sample is used for part one, limited down to the 244 Nordic entities. This as it includes data that requires manual collection of information from financial reports.[2] The primary sample is the same that our supervisor uses in her recent paper[3] containing data from year 2012 and 2013, and the subsample from year 2012. Our sample data have been retrieved through the database Datastream. We found Datastream appropriate as a sufficient amount of data was available for all of our sought variables in the database.

In order to meet the purpose of this thesis, the most appropriate method is a quantitative study, because of the large amount of data that is to be processed. A quantitative analysis will allow us to draw conclusions based on its output, but with consideration to the fact that statistics cannot process all conditions relating to the subject. Furthermore, the data can contain errors of measurements, and the regression models can be specified erroneously. This can consequently lead up to faulty inferences. A qualitative study would not be applicable in order to research our sought correlations. We will perform a multiple regression on our data using the ordinary least squares method, OLS, after a winsorization at 5 %. This as we find OLS an appropriate method to use for our data. A winzorisation will allow us to include all values when at the same time our output will not be distorted by outliers, as they are not weighted as heavily. Each model will be tested with three levels of significance; $p<0.10$, $p<0.05$ and $p<0.01$.

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[2] The data on restatements have been collected by Emmeli Runesson
[3] From Disclosure to Recognition: The Case of "Corridor" Accounting Under IAS 19 Employee Benefits

REGRESSION MODEL COMPONENTS

Variable	Definition
ActGL	Restatements arising from the amendment of IAS 19, reflecting the value of actuarial gains and losses previously deferred through the corridor approach.
DR, Discount rate	The rate at which the PBO is discounted. The discount rate is determined by reference to a *High Quality Corporate Bond (HQC bonds)* - mainly bonds that is rated as "AAA" or "AA" by a recognized rating agency, and the estimated time until the deficit is to be paid. The higher discount rate the smaller recognized liability, and thus higher risk.
ERR, Expected rate of return	Expected rate of return on plan assets (IAS 19, 1998).
NPL(A), Net pension liability (asset)	A net pension liability equals a deficit (surplus) in the pension plan; the liability exceeds (fall below) the plan assets. Deficit = 1, Surplus = 0 (Dummy variable).
LEV, Leverage	Long term debt / (Long term debt + Market value + Preferred stock)
PROFIT, Profitability	Less profitable* = 1, Profitable = 0 (Dummy variable) *Defined in this thesis as entities with a net income below sample average.
TA, Total assets	Total assets at beginning of period.
PBO, Pension data projected benefit obligation	Fair value of the projected benefit obligation on the balance sheet date (estimation based on actuarial assumptions).
Industry	Industries divided into six different sectors: industrial, utility, transportation, bank/savings and loan, insurance and other financial. (Dummy variables)
Country	The origin of the entity divided into four countries in part one, and 43 countries in part two. (Dummy variables)

In our models we use control variables to reduce the likelihood of spurious correlation which occurs when there is a high coefficient of determination between two variables but are in fact influenced by a third variable. In this thesis we control for country, industry, the projected benefit obligation, PBO, and total assets (in order to determine the size of the entities). According to Baker et al. (2003), previous research has shown that an entity's size has an impact on the degree of the use of earnings management. The bigger the entity, the more likely it is that the entity delays its earnings. By controlling for the projected benefit obligations, we rule out differences arising from the size of the actual liability. Entities with a small PBO may not need to use earnings management, as this affects the entities' financials to a small extent nevertheless.

In order to test our hypotheses, six regression models have been formulated. Three different independent variables related to earnings management are recurring in each hypothesis, referred to as earnings management incentives. Those are leverage, net pension liability/(asset) and profitability. The last two are dummy variables in order to separate net pension liabilities (deficits in the pension plan) from net pension assets, and to be able to define entities as *less* profitable. Our controls are recurring in all hypotheses and models, and consist of total assets, projected benefit obligation, industry and country. In models 4-6 of the hypotheses three different interactions[4] are tested, including different combinations of the earnings management incentives.

In hypothesis one the dependent variable is the balance carried forward of restatements in 2011 (and thus balance brought forward in 2012), reflecting the values of actuarial gains and losses previously being deferred through the corridor approach.

$$\text{ActGL}_i = \beta_0 + \beta_1 \text{NPL(A)} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \qquad (1)$$

$$\text{ActGL}_i = \beta_0 + \beta_1 \text{LEV} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \qquad (2)$$

$$\text{ActGL}_i = \beta_0 + \beta_1 \text{PROFIT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \qquad (3)$$

$$\text{ActGL}_i = \beta_0 + \beta_1 \text{NPL(A)} + \beta_2 \text{LEV} + \gamma_1 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \qquad (4)$$

$$\text{ActGL}_i = \beta_0 + \beta_1 \text{LEV} + \beta_2 \text{PROFIT} + \gamma_2 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \qquad (5)$$

$$\text{ActGL}_i = \beta_0 + \beta_1 \text{PROFIT} + \beta_2 \text{NPL(A)} + \gamma_3 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \qquad (6)$$

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[4] $\text{EM-INT}_1 = \text{LEV} \times \text{NPL(A)}$
$\text{EM-INT}_2 = \text{LEV} \times \text{PROFIT}$
$\text{EM-INT}_3 = \text{PROFIT} \times \text{NPL(A)}$

Hypothesis two is formulated with the difference between the expected return on plan assets and the discount rate (both from year 2012 and in percent) as the dependent variable.

$$\text{ERR-DR}_i = \beta_0 + \beta_1 \text{NPL(A)} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{1}$$

$$\text{ERR-DR}_i = \beta_0 + \beta_1 \text{LEV} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{2}$$

$$\text{ERR-DR}_i = \beta_0 + \beta_1 \text{PROFIT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{3}$$

$$\text{ERR-DR}_i = \beta_0 + \beta_1 \text{NPL(A)} + \beta_2 \text{LEV} + \gamma_1 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{4}$$

$$\text{ERR-DR}_i = \beta_0 + \beta_1 \text{LEV} + \beta_2 \text{PROFIT} + \gamma_2 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{5}$$

$$\text{ERR-DR}_i = \beta_0 + \beta_1 \text{PROFIT} + \beta_2 \text{NPL(A)} + \gamma_3 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{6}$$

Hypothesis three process the change in the discount rate between the years 2012 and 2013 as the dependent variable, and thus relating to the effects of the amendment of IAS 19 regarding earnings management. This is the first hypothesis relating to earnings management after the amendment of IAS 19.

$$\Delta \text{DR}_i = \beta_0 + \beta_1 \text{NPL(A)} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{1}$$

$$\Delta \text{DR}_i = \beta_0 + \beta_1 \text{LEV} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{2}$$

$$\Delta \text{DR}_i = \beta_0 + \beta_1 \text{PROFIT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{3}$$

$$\Delta \text{DR}_i = \beta_0 + \beta_1 \text{NPL(A)} + \beta_2 \text{LEV} + \gamma_1 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{4}$$

$$\Delta \text{DR}_i = \beta_0 + \beta_1 \text{LEV} + \beta_2 \text{PROFIT} + \gamma_2 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{5}$$

$$\Delta \text{DR}_i = \beta_0 + \beta_1 \text{PROFIT} + \beta_2 \text{NPL(A)} + \gamma_3 \text{EM-INT} + \sum_{i=1}^{n=4} \varphi_i \text{Controls}_i + \varepsilon_i \tag{6}$$

To test our last hypothesis we applied the difference between the expected return on plan assets between year 2012 and 2013 as the dependent variable. As this has to be equal to the discount rate in 2013, the discount rate is used to reflect its value in 2013.

$$\Delta ERR_i = \beta_0 + \beta_1 NPL(A) + \sum_{i=1}^{n=4} \varphi_i Controls_i + \varepsilon_i \tag{1}$$

$$\Delta ERR_i = \beta_0 + \beta_1 LEV + \sum_{i=1}^{n=4} \varphi_i Controls_i + \varepsilon_i \tag{2}$$

$$\Delta ERR_i = \beta_0 + \beta_1 PROFIT + \sum_{i=1}^{n=4} \varphi_i Controls_i + \varepsilon_i \tag{3}$$

$$\Delta ERR_i = \beta_0 + \beta_1 NPL(A) + \beta_2 LEV + \gamma_1 EM\text{-}INT + \sum_{i=1}^{n=4} \varphi_i Controls_i + \varepsilon_i \tag{4}$$

$$\Delta ERR_i = \beta_0 + \beta_1 LEV + \beta_2 PROFIT + \gamma_2 EM\text{-}INT + \sum_{i=1}^{n=4} \varphi_i Controls_i + \varepsilon_i \tag{5}$$

$$\Delta ERR_i = \beta_0 + \beta_1 PROFIT + \beta_2 NPL(A) + \gamma_3 EM\text{-}INT + \sum_{i=1}^{n=4} \varphi_i Controls_i + \varepsilon_i \tag{6}$$

As the descriptive statistics on the following page show, in part 1 (H1) the amount of present values vary from 89 to 244 - of which the net pension liability/(asset) is the variable containing the most missing values, consequently affecting the interactions EMint1 and EMint3 as well. Part 2 (H2, H3, H4) also have missing values, but the amount of present values still exceeds at least 600 (the majority of the variables include 1000+ values). Missing values are more frequent in variables that relates to the accounting for defined benefit plans.

EXHIBIT 1
Descriptive statistics (pt. 1)

Variable	Mean	Standard deviation	Min	Max	Present values	Missing values	Total
ActGL	-237,6412	1082,967	-11939	550,2	243	5	248
NPLA	0,2022472	0,4039514	0	1	89	159	248
LEV	0,3081369	0,2575966	0	0,9153702	243	5	248
PROFIT	0,8237705	0,3817985	0	1	244	4	248
EMint1	0,0812126	0,2129464	0	0,9148991	88	160	248
EMint2	0,2545324	0,2673296	0	0,9153702	242	6	248
EMint3	0,1348315	0,3434786	0	1	89	159	248

EXHIBIT 2
Descriptive statistics (pt. 2)

Variable	Mean	Standard deviation	Min	Max	Present values	Missing values	Total
ERRDR	1,190672	4,508296	-25,55	52,5	1072	2737	3809
deltaDR	0,662151	3,749621	-16,14	62,5	795	3014	3809
deltaERR	-0,4823754	5,57445	-31,9	63,3	602	3207	3809
NPLA	0,102834	0,303865	0	1	1235	2574	3809
LEV	19631,41	393449,3	0	1,91E+07	3619	190	3809
PROFIT	0,9315214	0,252599	0	1	3753	56	3809
EMint1	8543,364	199326,6	0	5919001	1211	2598	3809
EMint2	16897,82	365748,6	0	1,91E+07	3566	243	3809
EMint3	0,0842105	0,2778158	0	1	1235	2574	3809

5. RESULTS

5.1 THE CORRIDOR APPROACH

In exhibit three we find the regression output for the models relating to the use of the corridor approach, with the variable 'ActGL' as the dependent. The variable PROFIT is significant at a 1 % and 5 % level (coefficient = 217.3, t-value = 3.75 (model 3) and coefficient = 203.1, t-value = 2.57 (model 5)), indicating that less profitable entities reported a higher value of restatements as a result of the amendment of IAS 19, and thus deferred a higher value of actuarial gains and losses through the corridor approach. We also see that NPL(A) is significant at 5 % (coefficient = -297.9, t-value = -2.21 (model 4) and coefficient = -279.6, t-value = -2.09 (model 6)), where the negative correlation state that entities with a deficit in the pension plan have had to make restatements of a lesser value, and consequently deferred actuarial gains and losses of a lesser value during previous periods. The distinction that those solely are actuarial losses cannot be made though, as this is not specified in the regression. When adding the interaction EMint1 (LEV × NPLA) (i.e. a deficit *and* a high debt-to-equity ratio), we can deduce that this variable is also significant at a 5 % level (coefficient = 697.9, t-value = 2.42), suggesting that highly leveraged entities with a deficit in their pension plan used the corridor approach to defer actuarial gains and losses of a higher value. The interaction EMint3 (PROF × NPLA) is also significant at a level of 5 % (coefficient = 363.6, t-value = 2.26), which indicates that less profitable entities with a deficit in their pension plan report a higher value of restatements, and thus deferred a higher value of actuarial gains and losses via the corridor method. In addition to these are significant control variables such as PBO and several countries.

EXHIBIT 3
Regression output

Dependent var. ActGL	(1)	(2)	(3)	(4)	(5)	(6)
Independent var.						
NPLA	-25.61			-297.9**		-279.6**
	(-0.35)			(-2.21)		(-2.09)
LEV		72.63		-14.43	8.838	
		(0.92)		(-0.10)	(0.05)	
PROFIT			217.3***		203.1**	34.99
			(3.75)		(2.57)	(0.33)
EMint1				697.9**		
				(2.42)		
EMint2					41.02	
					(0.21)	
EMint3						363.6**
						(2.26)
Constant	-138.7	-156	-334.3***	-118.8	-329.3**	-157.9
	(-1.00)	(-1.29)	(-2.64)	(-0.85)	(-2.40)	(-0.98)
N	89	201	202	88	201	89
R-sq	0.441	0.346	0.389	0.485	0.39	0.483

t statistics in parentheses
* p<0.10. ** p<0.05. *** p<0.01
Control variables: TA, PBO, Industry, Country

5.2 THE DISCOUNT RATE

When performing our analysis, an average of 17 control variables reflecting the entities' origin were omitted because of collinearity. As there were a total of 43 control variables of this kind (and several others reflecting entity size, PBO and industry), we don't find that this impaired our result.

The regression output for hypothesis two is shown in exhibit four, where we can see that the variable LEV is significant at a level of 10 % (coefficient = 0.799, t-value = 1.66). This indicates that highly leveraged entities in our sample reported a greater difference between ERR and DR year 2012. This can indicate an expected rate of return set higher than the discount rate, all other equal, being consistent with previously stated earnings management theories. No other earnings management variables were significant in the regression, which leads us to the interpretation that the entities were not affected by these factors when making actuarial assumptions regarding the expected return and the discount rate during the year. Our control variable PBO was also significant in all models, with a negative correlation with ERRDR stating that entities with a greater projected benefit obligation reported a smaller difference between the two.

In the regression output for hypothesis three (exhibit five) we find a negative correlation of the variable NPLA in model six at a 10 % significance level (coefficient = -0.789, t-value = -1.77). Thus, entities with deficits in their pension plan report a smaller change in the discount rate between the years. In addition to this are significant control variables such as PBO, TA and the country Hungary. The latter can indicate that entities originating from Hungary change their discount rate more than those in other countries, but the explanation to this can be found in circumstances other than solely earnings management.

The regression output for our last hypothesis (hypothesis four) is shown in exhibit six, where the variable PROFIT is significant at a level of 10 % in models three (coefficient = 0.640, t-value = 1.83) and five (coefficient = 0.761, t-value = 1.77). This suggests that less profitable entities reported a greater change in the expected rate of return between year 2012 and 2013, which can indicate that these entities chose a higher expected rate of return in 2013 (i.e. chose a discount rate year 2013 higher than the expected rate of return year 2012). This in order to reduce the pension liability. No other earnings management variables were significant in the regression. Of the control variables the significant ones were TA, the insurance industry, and a number of countries.

EXHIBIT 4
Regression output

Dependent var. ERRDR

Independent var.	(1)	(2)	(3)	(4)	(5)	(6)
NPLA	-0.295			-0.292		-0.526
	(-1.51)			(-0.96)		(-1.17)
LEV		0.198		-0.0488	0.799*	
		(0.92)		(-0.19)	(1.66)	
PROFIT			-0.231		-0.00491	-0.168
			(-1.01)		(-0.02)	(-0.63)
EMint1				0.0983		
				(-0.04)		
EMint2					-0.72	
					(-1.38)	
EMint3						0.289
						(0.58)
Constant	1.516	1.283	1.664	1.511	1.359	1.682
	(0.83)	(0.69)	(0.89)	(0.83)	(0.73)	(0.91)
N	787	1043	1052	779	1043	787
R-sq	0.059	0.105	0.104	0.06	0.108	0.06

t statistics in parentheses
* p<0.1. ** p<0.05. *** p<0.01
Control variables: TA, PBO, Industry, Country

EXHIBIT 5
Regression output

Dependent var. deltaDR

Independent var.	(1)	(2)	(3)	(4)	(5)	(6)
NPLA	-0.281			-0.241		-0.789*
	(-1.34)			(-0.72)		(-1.77)
LEV		0.0948		0.144	0.645	
		(0.43)		(0.57)	(1.4)	
PROFIT			0.111		0.324	-0.111
			(0.51)		(1.19)	(-0.44)
EMint1				-1.332		
				(-0.46)		
EMint2					-0.694	
					(-1.37)	
EMint3						0.653
						(1.3)
Constant	1.075	0.971	-0.564	-0.676	-1.235	1.192
	(0.65)	(0.6)	(-0.35)	(-0.42)	(-0.74)	(0.71)
N	621	743	754	612	743	621
R-sq	0.108	0.103	0.098	0.118	0.105	0.111

t statistics in parentheses
* p<0.10. ** p<0.05. *** p<0.01
Control variables: TA, PBO, Industry, Country

EXHIBIT 6
Regression output

Dependent var. deltaERR	(1)	(2)	(3)	(4)	(5)	(6)
Independent var.						
NPLA	0.0576			0.276		-0.285
	(0.18)			(0.55)		(-0.44)
LEV		-0.0744		0.158	0.271	
		(-0.20)		(0.38)	(0.38)	
PROFIT			0.640*		0.761*	0.299
			(1.83)		(1.77)	(0.75)
EMint1				-3.732		
				(-0.85)		
EMint2					-0.471	
					(-0.58)	
EMint3						0.425
						(0.57)
Constant	4.848**	-1.795	-2.108	4.796**	-3.527	4.577*
	(2)	(-0.75)	(-0.88)	(1.98)	(-1.44)	(1.87)
N	493	587	594	487	587	493
R-sq	0.086	0.102	0.1	0.098	0.107	0.088

t statistics in parentheses
* $p<0.10$. ** $p<0.05$. *** $p<0.01$
Control variables: TA, PBO, Industry, Country

6. CONCLUDING DISCUSSION

This thesis is built on the presumption that entities used the previous version of IAS 19 in order to manipulate earnings, and that this still occurs. The output from our regression models support these premises to a certain extent; under the previous standard indications of the use of earnings management have been found, but after the amendment the use seem to have decreased. This can indicate that the amendment reduced the opportunities for the use of earnings management within the accounting for defined benefit plans under IFRS.

Our findings in part one show that Nordic entities with deficits in their pension plan combined with a high debt-to-equity ratio as well as less profitable ones report a higher value of restatements as a result of the amendment, and thus deferred a higher value of actuarial gains and losses through the corridor approach during previous periods. These results support our hypothesis that entities with incentives to manage earnings used the corridor approach. This result also supports previous research conducted by for example Bergstresser et al. (2006), concluding that entities that report a loss or a decrease in the results tend to manage earnings. We also found that entities in our sample with a deficit in their pension plan reported a lesser value of restatements and consequently deferred a lesser value of actuarial gains and losses through the corridor approach, indicating that those deferred actuarial results possibly worsening their result - although we cannot state that those are specifically actuarial losses. This in accordance to Asthana (1999), finding that entities with a deficit in the pension plan are more inclined to use earnings management. When an interaction representing less profitable entities with deficits in their pension plan included in the regression also indicate the use of earnings management, as it shows that the value of deferred actuarial gains and losses tend to be higher for such entities.

In part two, based on our larger worldwide sample, we found that highly leveraged entities reported a greater difference between the expected return on plan assets and the discount rate in 2012. This can indicate that they, all else equal, chose a higher expected rate of return than the discount rate in order to increase the reported earnings in the comprehensive income, or chose a smaller discount rate – supporting our hypothesis that entities with incentives to manage earnings report a greater difference between the expected rate of return on plan assets and the discount rate year 2012. The former assumption is in line with the findings of Dechow, Sloan & Sweeney (1996), stating that highly leveraged entities are more likely to make aggressive assumptions in order to pass debt covenants, and Glaum, Lichtblau & Lindemann (2004), finding that highly leveraged entities are more likely to use earnings management.

And as a decreased discount rate increase the pension liability we see no incentive for highly leveraged entities to manipulate their discount rate downwards without being forced to do so.

In the final hypotheses of part two we found that entities with a deficit in their pension plan report a lesser difference between the discount rate between 2012 and 2013, thus not supporting our hypothesis that entities with incentives to manage earnings set a higher discount rate after the amendment of IAS 19 – at least not concentrating on the discount rate during the years. We can therefore, in this hypothesis, not prove that entities of this kind resort to solely the discount rate if manipulating results upward or downward in year 2013. Our output also show that less profitable entities report a greater change in the expected rate of return between year 2012 and 2013, which can indicate that they set, all else equal, a higher expected rate of return (i.e. a higher discount rate year 2013 than the expected rate of return year 2012). The result supports our hypothesis that entities with incentives to manage earnings report a change in the expected rate of return between 2012 and 2013. This in line with Bergstresser, Desai & Rauh's (2006) findings concluding that entities having to report a negative or/and decreased result are more likely to make aggressive assumptions.

Our overall impression of the regression outputs are that IAS 19 have succeeded to decrease the use of earnings management when accounting for defined benefit plans, as the significance of variables reflecting earnings management incentives in the hypotheses processing circumstances after the amendment (hypothesis three and four) are low compared to those processing circumstances solely before the amendment (hypothesis one and two).

Our suggestions on further research on the subject is an analysis of the standard with regard to earnings management, carried out with additional or entirely different earnings management incentives such as ownership structure, management's bonus scheme and degree of corporate governance. Preferably with focus on different aspects of the discount rate as this still can be used in order to manage earnings, and as we didn't find major indications of this when studying it immediately after the amendment. We find it likely that more enhanced indications can be found in a few years.

LITERATURE OVERVIEW

Amir, E. & Gordon, E. (1996), Firms' Choice of Estimation Parameters: Empirical Evidence from SFAS No.106, *Journal Of Accounting, Auditing & Finance*, 11(3) pp. 427-448

Asthana, S. (1999), Determinants of Funding Strategies and Actuarial Choices for Defined-Benefit Pension Plans, *Contemporary Accounting Research,* 16(1), pp. 39-74

Asthana, S. (2007), Earnings management, expected returns on pension assets, and resource allocation decisions, *Camebridge University Press,* 7(2), pp. 199-220

Baker, T., Collins, D. & Reitenga, A. (2003), Stock Option Compensation and Earnings Management Incentives, *Journal of Accounting, Auditing & Finance,* 18(4), pp. 557-582

Bergstresser, D., Desai, M. & Rauh, J. (2006), Earnings Manipulation, Pension Assumptions, and Managerial Investment Decisions, *The Quarterly Journal of Economics,* 121(1), pp. 157-195

Blankley, A. I., Comprix, J. & Hong, K. P. (2013) Earnings management and the allocation of net periodic pension costs to interim periods. *Advances in Accounting,* 29(1), pp. 27-35

Bodie, Z., Light, J. O. & Morck, R. (1987). Funding and asset allocation in corporate pension plans: An empirical investigation. *Issues in Pension Economics,* pp. 15-47

Davis-Friday, P. Y., Buky Folami, L., Liu, C.-S., & Mittelstaedt, F. (1999), The Value Relevance of Financial Statement Recognition vs. Disclosure: Evidence from SFAS No. 106. *The Accounting Review,* 74(4), pp. 403-423

Dechow, P. M., Sloan, R. G. & Sweeney, A. P. (1995) Detecting Earnings Management. *The Accounting Review,* 70(2), pp. 193-225

Dechow, P. M., Sloan, R. G. & Sweeney, A. P. (1996) Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research,* 13(1), pp. 1-36

Degeorge, F., Patel, J. & Zeckhauser, R. (1999) Earnings management to exceed thresholds, *Journal of business,* 72(1), pp. 1-33

Franzoni, F. & Marin, J. M. (2006) Pension Plan Funding and Stock Market Efficiency. *The Journal of Finance*, 61(2), pp. 921-956

Glaum, M. (2009), Pension accounting and research: a review. *Accounting & Business Research,* 39(3), pp. 273-311

Glaum, M., Lichtblau, K. & Lindemann, J. (2004), The extent of Earnings Management in the U.S. and Germany, *Journal of International Accounting Research,* 3(2), pp. 45-77

Godwin, J., Goldberg, S. & Duchac, J. (1996), An Empirical Analysis of Factors Associated with Changes in Pension-Plan Interest-Rate Assumptions, *Journal of Accounting, Auditing & Finance,* 11(2), pp. 305-322

Godwin, N. H. (1999), An Examination of Pension Actuarial Assumptions over the Decade Following the Issuance of FAS 87, *Journal of Pension Planning & Compliance,* 25(1), p. 62

Healy, P. M. & Wahlen, J. M. (1999), A Review of the Earnings Management Literature and Its Implications for Standard Setting. *Accounting Horizons,* 13(4), pp. 365-383

Hsu, A., Wu, C. & Lin, J. (2013), Factors in Managing Actuarial Assumptions for Pension Fair Value: Implications for IAS 19, *Review of Pacific Basin, Financial Markets & Policies,* 16(1), p. -1

Jelinek, K. (2007), The Effect of Leverage Increases on Earnings Management, *Journal of Business & Economic Studies,* 13(2), pp. 26-46

Marton, Jan (2013), *IFRS – i teori och praktik,* 3. [uppdaterade] uppl. Stockholm: Sanoma utbildning

Obinata, T. (2000), Choice of pension discount rate in financial accounting and stock prices, *Discussion paper, University of Tokyo*

Park, Y. & Shin, H. (2004), Board composition and earnings management in Canada, *Journal of Corporate Finance,* 10(3), p. 431

Swinkels, L. (2011), The case for local fair value discount rates under IFRS, *Pensions: An International Journal,* 16(2), pp. 107-114

INTERNET PUBLICATIONS

IFRS (2011). *Amendments to IAS 19 Employee Benefits.*
http://www.ifrs.org/Current-Projects/IASB-Projects/Post-employment-Benefits-(including-Pensions)/Defined-Benefit-Plans/Documents/EmpBenFSIAS190611.pdf [2014-04-26]

IFRS (2012), *Technical summary: IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors*
http://www.ifrs.org/Documents/IAS8.pdf [2014-05-11]

IFRS (2013), *IFRS Interpretatoins Committee meeting, Agenda ref: 7*
http://www.ifrs.org/Meetings/MeetingDocs/Interpretations%20Committee/2013/May/AP07%20-%20IAS%2019%20Discount%20rate.pdf [2014-05-02]

KPMG (2011), *First impressions: Employee Benefits*
http://www.kpmg.com/Global/en/IssuesAndInsights/ArticlesPublications/first-impressions/Documents/first-impressions-employee-benefits.pdf [2014-04-26]

PwC (2013). *Practical guide to IFRS - IAS 19 (revised), 'employee benefits'.*
https://www.pwc.no/no/ifrs/publikasjoner/ias-practical-guide.pdf [2014-04-26]