Preliminary Evidence of the Effects of the Adoption of the "Impairment-Only" Approach to Goodwill Accounting in Sweden.

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ABSTRACT

We examine the effects of the implementation of the "impairment-only" approach to goodwill accounting on the financial reporting quality in Sweden after the adoption of IFRS. Using accounting data from public companies in Sweden, we test the value relevance and timeliness of the accounting information before and after the switch to IFRS. We compare the value relevance of accounting information between 2004 and 2005 to investigate the effects of the switch from goodwill amortization to the "impairment-only" approach. We find some weak evidence of an increase in the value relevance of accounting information among companies with substantial goodwill balances in proportion to total assets. However, we find no statistically significance in the incremental value relevance related to amortization charges, impairment charges, or intangible assets, on share prices between the two periods. Moreover, we find no evidence of increased timeliness or any association between timeliness in reported earnings in 2005 and impairment charges made in that year.

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Introduction

We examine the effects of the implementation of the "impairment-only" approach to goodwill accounting introduced by IFRS 3 in Sweden in 2005 on the accounting quality of financial reporting in Sweden.

IASB (International Accounting Standards Board) argues that the "impairment-only" approach implemented in Canada and the U.S. provides a higher accounting quality solution than the amortization of goodwill. [1] The IASB and the FASB (Financial Accounting Standards Board) both argue that goodwill amortization expenses do not provide investors with useful information (Statement of Financial Accounting Standards no. 142, Goodwill and Other Intangible Assets, SFAS 142).

From January 1, 2005, all publicly traded companies within the European Economic Area, including Sweden, switched to IFRS (International Financial Reporting Standards) for reporting of consolidated accounts.[2] Before the switch to IFRS, the Swedish regulation required companies to amortize goodwill over the economic life of the asset. Under IFRS 3, however, amortization of goodwill is no longer allowed and at least, a yearly impairment test is required.

Using accounting data from companies traded on the Stockholm Stock Exchange, we test the value relevance of accounting information and the timeliness of impairment of the consolidated financial reports resulting from the adoption of IFRS 3. We compare the value relevance of the accounting information between the years 2004 and 2005 to investigate the effects

[1] ISAB press release "IASB Issues Standards on Business Combinations, Goodwill and Intangible Assets," March 31st, 2004

[2] The International Financial Reporting Standards (IFRS) were formerly called the International Accounting Standards (IAS). IFRS are standards issued by the International Accounting Standards Board (IASB). IASs are standards issued by the IASB's predecessor: the International Accounting Standards Committee (IASC). Some of the IASs are amended by the IASB subsequent to IASB succeeded the IASC. IASB has adopted all standards issued by IASC, and therefore, IFRS encompasses all standards by the IASC and the IASB. We will henceforth refer to these standards as IFRS and the standards setting body as IASB.

of the switch to the "impairment-only" approach. In addition, we also examine the effects of the impairment charges subsequent to the adoption of IFRS 3 (measured as return). Since all publicly traded Swedish firms switched to IFRS at one point in time, this presents a unique opportunity to investigate the effects of the implementation of the "impairment-only" approach.

We find no evidence of a general increase in the value relevance of the accounting measures between 2004 and 2005 for a sample containing publicly quoted companies in Sweden. Although, we find a significant increase in the association between share prices and accounting information for companies with substantial goodwill balances in proportion to total assets. This may be interpreted as an indication that the switch to IFRS in Sweden has mainly affected companies with substantial intangible assets. Hence, the explanatory power of the accounting measures for companies with substantial intangible assets increased significantly between 2004 and 2005. However, when investigating the incremental effect of intangible assets explanatory power on share prices we find that the incremental effect of amortizations and impairment charges and intangible assets were not statistically significant. In addition, we also investigate the timeliness of information on amortization and impairment charges made in 2005. We find no evidence of an increase in the timeliness or any association between the timeliness in the reported earnings for 2005 and the impairment charges made in that year.

These results would therefore suggest that the impairment charges under IFRS are not providing the market with new or incrementally useful information. Researchers have expressed concerns over the variety of impairment test methods used across countries and companies.[3] They argue that this increase diversity, instead of improving comparability, as intended by the

[3] For example in a plenary speech , at the 29th Annual Congress of the European Accounting Association, Professor Martin Hoogendoorn, Professor at the Erasmus University Rotterdam, Chairman of the Dutch Accounting Standards Board., and technical partner at Ernst & Young, raised this issue claiming that this is something that the Big 4 firms has experienced.

International Accounting Standards Board (IASB), Moreover, the differences in the impairment test methods are not always visible to investors since this information is provided in the notes to the financial report.

The remainder of this paper is organized as follows. In the 2nd section we provide our interpretation of previous research and develop our hypotheses. The 3rd section discusses the research design to empirically test out the hypotheses. Section 4 describes the sample and sample selection. Our results are presented in section 5 followed by concluding remarks in section 6.

1. Previous Research and Hypothesis Development

This section is divided into two parts; the first part offers a review of previous research on value relevance of accounting measures reported under IFRS the second part discusses research on goodwill accounting.

2.1 Previous Research on Value Relevance of Accounting Measures under IFRS

Several studies compare the quality of financial reporting under IFRS to the quality of financial reporting under other accounting regimes (Barth et al. 2005; Bartov, 2004; Hung and Subramanyam, 2004; etc.). The results of these studies are inconclusive.

Hung and Subramanyam (2004) examine German firms reporting under both IFRS and German GAAP. They found that reconciliations between the two reporting systems are value relevant for book values of equity, but not for earnings. Bartov et al. (2004), however, found a difference in value relevance between German and IFRS earnings. Barth et al. (2005) compare IFRS firms in 24 countries to a sample of non-IFRS firms. They find that accounting quality is higher for IFRS firms.[4]

All the above studies use data from before the mandatory EU adoption of IFRS for the consolidated accounts of all publicly quoted companies. Hence, the data is based on information from companies who chose to report under IFRS, which may cause a self-selection bias in the samples. Furthermore, the data used in these studies are mainly from China, Germany, and Switzerland. Sweden, like Germany and Switzerland, are commonly classified as a part of the Continental European accounting tradition (e.g. Ali and Hwang 2000; Ball, et al., 2000; Hung, 2000; Flower 1994). This Continental European accounting tradition is also frequently referred to

[4] Barth et al. (2005) define accounting quality as a low level of earnings management, and a high level of value relevance.

as the stakeholder model.[5] The Continental European accounting tradition has been viewed as an accounting regime of a lower quality and companies listed in these countries display a relatively weaker association between accounting measures and value (Alford et al., 1993; Ali and Hwang, 2000; Hung, 2000). IFRS is a set of accounting standards developed to create high quality financial reporting to guide, first, actors on the world's capital markets and, second, other users to make economic decisions (IASB 2004). Hence, IFRS places a greater emphasis on fair values as compared to historical costs than traditional Swedish GAAP. We, therefore, predict that the switch to IFRS in Sweden will improve the quality of accounting information, measured as the association between share prices and accounting information:

Hypothesis I: The value relevance of Swedish companies' accounting information improves after the switch from Swedish GAAP to IFRS.

2.1 Previous Research on Goodwill Accounting

Goodwill is the amount paid in excess of the fair value of an acquired enterprise's net assets. There are a number of ways to interpret a goodwill balance. Goodwill can either be seen as the fair value of unrecognized acquired assets, the fair value of the going concern component of the acquirer's existing business, or the fair value of future synergies arising from the combination (Johnson and Petrone 1997). The above reasoning indicates a future benefit attached to the goodwill balance that justifies its recognition as an asset (Churyk 2005; Johnson and Petrone

[5] We follow Ball et al. (2000) definitions of stakeholder and shareholder governance models. A stakeholder system of corporate governance model is characterized by that a large group of a firm stakeholders (such as the creditors, the government, employees, etc.) frequently serve on the Board of Directors of the companies using private communication for resolving information asymmetry. The shareholder corporate governance model, on the other hand, is characterized by a large group of shareholder outside of the firm relying on financial reporting for decision-making (Ball et al., 2002).

1997). The major standard setting bodies, IASB and the FASB, maintain that goodwill meets the definition of an asset, and therefore, should be recognized as an asset (IASB; FASB). Historically, both IASB and FASB used to require the amortization of goodwill over its useful life. This accounting practice was abandoned in favor of the "impairment-only" approach by FASB in 2001 with the adoption of SFAS 142 and SFAS 141 and by the IASB with the implementation of IFRS 3, which became mandatory for publicly listed European companies in 2005. The adoption of the impairment-only approach was motivated by the concern that reported goodwill and intangible assets do not adequately represent the underlying economic reality (FASB). Previous research suggests that goodwill amortizations do not add value to the earnings measure; on the contrary, goodwill amortizations add noise and make it harder for investors to use the earnings measure to predict future profitability (Jennings et al. 2001). Consequently, considering the increasing recognized economic importance of goodwill and intangible assets over time, a change in the way it was reported was considered necessary.

Since IFRS 3 only came into effect for business agreements from March 31, 2004, most of the research on the effects of the impairment-only approach is based on the consequences of the implementation of SFAS 142 in the U.S. There are a number of studies on SFAS 142 suggesting that the "impairment-only" approach has improved the quality of reported information on goodwill and intangible assets (Hayn and Hughes 2005; Chen et al. 2004; Churyk 2004; Li et al. 2004).

Hayn and Hughes (2005) investigate whether investors are able to assess the value of goodwill based on available financial reporting before and after the adoption of SFAS 142. They use a sample of U.S. companies that made acquisitions between 1988 and 1998. They track their sample companies' goodwill disclosures through to 2004 and find that the implementation of SFAS 142 has improved investors' ability to predict goodwill write-offs considerably. However,

their results also suggest there is a time lag between when the impairment occurred and actual recognition of the impairment losses, and consequently, there is a lag between investors' ability to predict impairment and the timing of the economic deterioration of the goodwill asset.

Chen et al. (2004) examine the effects on timeliness by decomposing impairment charges among U.S. companies into adoption impairments and subsequent impairments and to test the timeliness of these charges. If the goodwill accounting under amortization plans provides the market with sufficient information, then the adoption impairment charges are already impounded into stock prices and are basically a catch-up adjustment, while subsequent impairment charges are predicted to provide the market with new and relevant information. They find that the adoption impairment charges are partially providing the market with new information and that there is an increase in the value relevance of accounting information associated with the adoption of SFAS 142 (Chen et al. 2004). Similarly, Churyk (2005) tests the value relevance of the goodwill impairment charges made subsequent to the adoption of SFAS 142 and finds a strong increase in value relevance of reported goodwill.

Li et al. (2004) assess how the market responds to reported impairment charges by measuring the association between analysts' forecast revisions around the announcements of impairments charges. They find that the SFAS 142 adoption improved the reported information on goodwill and intangible assets to investors. In particular, they found that announcements of goodwill impairments provide investors with useful information about the firm's future prospects.

In sum, previous research regarding the SFAS 142 implementation suggests that the amortization of goodwill does not adequately capture its economic value and that the switch over to the impairment-only approach improves the quality of the accounting information on goodwill. Based on the above, we predict that the adoption of IFRS 3 and the abandonment of goodwill

amortizations will increase the value relevance of companies financial reporting with proportionally high intangible assets.

Hypothesis 2: Swedish companies with substantial intangible assets will experience an increased value relevance of accounting measures after the adoption of IFRS 3.

Furthermore, we predict that intangible assets reporting will result in an increase in the value relevance after the adoption of IFRS 3. A growing body of research focuses on the role different pieces of accounting information plays in the valuation process (e.g. Collins, Maydew and Weiss, 1997; Ashbaugh and Olsson, 2002; Lin and Paananen, 2005). However, these studies focus on the impact of earnings and the book value of equity. In comparison to these studies, Chen et al. (2004) adopt a slightly different approach. They separate out the goodwill item and the impairment item to measure the value relevance effects of the adoption of SFAS 142 and found that the goodwill relevance increased after the adoption of SFAS 142. We adopt a similar approach and extract the intangible assets and the amortizations and impairment charges to measure the value relevance effect of items related to IFRS 3. Based on the above, we predict that the incremental value relevance of intangible assets and amortizations and impairment charges will increase with the adoption of IFRS 3:

Hypothesis 3: The increase in value relevance of accounting measures after the adoption of IFRS 3 experienced by Swedish companies is driven by the reported intangible assets item and amortizations and impairment charges.

In addition, we also examine the timeliness of amortization and impairment charges among Swedish companies. We hypothesize that the amortization and impairment charges after the adoption of IFRS 3 represent new information to the market and formulate the following hypothesis:

Hypothesis 4: Amortizations and impairment charges reported under IFRS causes an increased timeliness in financial reporting.

2. Research Design

3.1 Test of the Value Relevance of Accounting Measures

Following previous research, we use a levels valuation model used in a stream of research showing that both book value of equity and earnings are factors explaining market value of equity (Barth et al. 2005; Chen et al. (2004); Lang et al. 2003; Ohlson 1995; etc.). In our base model share price is regressed on book value of equity per share and net income per share.

$$P_{it} = \beta_0 + \beta_1 E_{it} + \beta_2 BVE_{it} + \varepsilon_{it} \qquad (1),$$

where P_{it} is the price of a share of firm *i* three months after the end of year *t*, E_{it} is the net earnings before extra ordinary items per share for firm *i* in year *t*, BVE_{it} is the book value of equity per share for firm *i* in year *t*., and ε_{it} is the other value-relevant information of firm *i* in year *t*. The model is applied to years 2004 and 2005 respectively, i.e., prior to the adoption of IFRS and after the adoption of IFRS.

Second, we test the second hypothesis that companies with relatively high intangible assets experience an increased value relevance of accounting measures after the adoption of IFRS 3. We

re-specify the base model and separate the amortizations and impairment charges from earnings and intangible assets from the book value of equity. The reason for using amortizations and impairment charges is that many companies collapse these items into one in their financial reporting. Also, we use intangible assets as a proxy for goodwill because some Swedish companies do not specify intangible assets item by item in their financial reporting.[6] Ideally the impairment write-downs made in 2005 and the goodwill amortizations in 2004 should have been specified separately as well as a break down of intangible assets. Based on previous research, we modify model (1) as illustrated in model (2) below:

$$P_{it} = \beta_0 + \beta_1\left(E - AI\right)_{it} + \beta_2 AI_{it} + \beta_3\left(BVE_{it} - IA_{it}\right) + \beta_4 IA_{it} + \varepsilon_{it}, \qquad (2),$$

where book value of equity and earnings are as previously defined, AI_{it} is the amortization and impairment charges made by firm *i* in year *t*, and IA_{it} is the book value of intangible assets per share for firm *i* in year *t*. The model is applied to the years 2004 and 2005 respectively using a partitioned set of the data including companies with intangible assets in the 75th percentile of goodwill to total assets at the end of 2004.

Third, we test the third hypothesis that the incremental explanatory power of intangible assets has increased between 2004 and 2005. We estimate two models each for the two periods prior and after the adoption of IFRS. Model (3) and (4) disentangle the incremental value relevance of amortizations and impairment charges

$$P_{it} = \beta_0 + \beta_1\left(E - AI\right)_{it} + \beta_2 AI_{it} + \beta_3\left(BVE_{it} - IA_{it}\right) + \beta_4 IA_{it} + \varepsilon_{it} \qquad (3)$$

$$P_{it} = \beta_0 + \beta_1\left(E - AI\right)_{it} + \beta_3\left(BVE_{it} - IA_{it}\right) + \beta_4 IA_{it} + \varepsilon_{it} \qquad (4)$$

and

[6] We examined 5% of the sample companies' financial reports at the year-end 2004 and established that goodwill by far is the dominating item of intangible assets. We also manually collect information on all impairments in 2005 in further tests of timeliness.

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + \beta_2 AI_{it} + \beta_3 (BVE_{it} - IA_{it}) + \beta_4 IA_{it} + \varepsilon_{it} \quad (5)$$

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + \beta_2 AI_{it} + \beta_3 (BVE_{it} - IA_{it}) + \varepsilon_{it} \quad (6)$$

The incremental explanatory power of intangible assets is defined as model (3) - model (4) and model (5) – model (6) as outlined in Table 1.

<Insert Table 1 about here>

We aim to test if the models ability to explain whether the market value has improved after the adoption of IFRS. We assess the significance of the difference between R^2 for the two different time periods using Cramer's (1987) method for comparing variances.[7]

3.2 The Timeliness Test

Following Warfield and Wild (1992) we test the timeliness of amortization and impairment charges by analyzing the earnings recognition lag. Warfield and Wild (1992) regress current earnings on prior years' return to examine whether the current earnings represents economic events already incorporated by the market as follows:

$$E_{it} = \lambda_0 + \lambda_1 R_t + \lambda_2 R_{t-1} + \lambda_3 R_{t-2} + \varepsilon_t \quad (7)$$

Where E_{it} is the net earnings before extra ordinary items deflated by sales for firm "i" at time "t." Similarly to Chen et al. (2004) we also estimate the above regression deducting amortizations and impairment charges from the earnings variable. If the return variables' coefficients increase when amortizations and impairment charges are included in the earnings variable, then we interpret this as if the market has received news from this information in that

[7] The Z-statistic is calculated using the following formula: $Z = R^2_{2004} - R^2_{2005} \Big/ \sqrt{\left\{\sigma^2\left(R^2_{2004}\right) + \sigma^2\left(R^2_{2005}\right)\right\}}$, with the variance of the R^2 derived as shown in Cramer (1987).

year. In addition, we also modify the model to examine the impact on companies with and without impairments charges as shown below.

$$E_{it} = \lambda_0 + \lambda_1 R_t + \lambda_2 R_{t-1} + \lambda_3 R_{t-2} + \lambda_1 R_t * I + \lambda_2 R_{t-1} * I + \lambda_3 R_{t-2} * I + \varepsilon_t \qquad (8)$$

Where *I* represent a dummy variable taking on the value of 1 if the company has reported any impairment charges in year 2005 and 0 otherwise. All other variables are defined as previously described. A significant coefficient on return variables interacted with the impairment dummy variable indicates the incremental explanatory power of returns that is associated with impairments.

3. The Sample

The European switch to IFRS in 2005 provided opportunities to avoid the problem of self-selection biases, which has haunted previous studies of financial reporting under IFRS (Schipper, 2005). Using Perfect Analysis to extract data from Standard and Poor's Compustat Global, we collect data on all Swedish firms listed on Swedish stock exchanges. The initial sample consists of all firms listed at the end of 2004 and 2005. In total there are 846 observations (423 firms for each year). Of the 846 observations we exclude 124 observations where the firm is listed on a market other than on the Stockholm Stock Exchange. The reason for this is that the smaller equity markets in Sweden do not require firms to report under IFRS and a random sample of these firms' financial reports revealed that they use a mix of IFRS and Swedish GAAP. We then exclude 366 firm-year observations since they do not have any positive goodwill at the end of 2004. We also exclude 24 observations with non-calendar fiscal year ends and 38 observations from financially oriented industries (banks, insurance, and investment firms), and finally 6 due to missing information. All amounts collected are in Swedish Kronor (SEK) or number of shares. Table 2 briefly outlines the sample selection process.

<Insert Table 2 about here>

4. Results

We collected data on earnings per share, book value of equity per share, share price as per December 31, intangible assets scaled per share for the years 2004 and 2005. In addition, data was also collected in order to control for industry, exchange of registration, and non-calendar fiscal years. We ensure that outliers do not drive the results by winsorizing the data at the 1% level.

Table 3 shows descriptive statistics for all observations of the dependent and independent variables in 2004 and 2005. The descriptive statistics of the whole sample suggest that there is a statistical significant increase in share prices between 2004 and 2005, which is plausible considering the economical development in Sweden during this period of time. There is also a weak indication of an increase in intangible assets and a decrease in amortization and impairment charges between the two periods. However, the statistical significance is only prevalent when comparing the medians (p-values < 0.10). Similarly, there is also a weak indication of increased earnings before extraordinary items where amortizations and impairment charges are excluded.

<Insert Table 3 about here>

Furthermore, Table 4 provides descriptive statistics of the partition into companies with relatively high intangible assets to total assets. The main difference in the statistics between the two data sets is that the difference in share prices between the two years is only weakly significant with respect to the means (p-value < 0.10).

<Insert Table 4 about here>

Table 5 shows the descriptive statistics for the variables used to test the timeliness impairment charges.

<Insert Table 5 about here>

5.1 Results of the test of the Value Relevance of Accounting Measures

Table 6 shows the results of the OLS regressions of net profit (E) and book value of equity (BVE), and intangible assets on share price using the full sample. As predicted the adjusted R^2 2004 is smaller than R^2 for 2005 (0.264 to be compared to 0.197). The difference between the R^2s is evaluated using Cramer's (1987) method. As shown in Table 6, the difference is not significant (p-value 0.207). That is, hypothesis 1 is not supported. All variables in the model are statistically significant except for the book value of equity (excluding intangible assets) in both the 2004 and the 2005 estimation, the amortizations and impairment charges in 2005, and intangible assets variable in 2005. However, it appears that the magnitude of the impact of earnings has increased considerably. Before the adoption of IFRS, the earnings coefficient amounted to 0.567, compared to the earnings coefficient after the adoption of 2.190. On the other hand, the importance of amortizations and impairment charges, measured as the magnitude of the coefficients between the periods, seems to have decreased moving from 8.510 and highly significant in 2004 to 3.001 and insignificant in 2005.

<Insert Table 6 about here>

Table 7 shows the results of the OLS regressions of net profit (E) and book value of equity (BVE), and intangible assets on share price using the high goodwill subset. As predicted in hypothesis 2, the adjusted R^2 for 2004 is smaller than the R^2 for 2005 (0.221 to be compared to 0.473). The difference between the R^2s is evaluated using Cramer's (1987) method. As shown in the Table 7, the difference is significant on the 5% level (p-value 0.052), which could be interpreted as an increase in the relevance of accounting measures for companies with high intangible assets before and after the IFRS reform. All variables in the model are statistically significant. Moreover, the previously observed difference in the magnitude of the impact of earnings does not remain. Before the adoption of IFRS, the earnings excluding the amortization and impairment charges coefficient is 8.567, compared to the earnings coefficient after the adoption of 6.980. However, when using the sample with firms with a high proportion of goodwill the magnitude of the coefficient increased from 10.788 to 14.358. Thus, hypothesis 2 is supported.

<Insert Table 7 about here>

Finally, we test the third hypothesis that the incremental explanatory power of amortizations and impairment charges and intangible assets has increased between 2004 and 2005. We estimate the models shown in Table 1 for each of the two periods. With respect to the full sample, Table 8 shows, both amortizations and impairments, and the intangible assets appear to have an incremental explanatory power (although, not significant as shown in Table 6) except for intangible assets in 2005. The explanatory power increases if intangible assets are excluded from

the regression model. However, the difference is marginal and not statistically significant. The assessment of the comparisons of the R^2s for the different models reveals no statistical significant difference using the whole sample (p-values 0.330 and 0.281). Thus, it appears that the incremental explanatory power of amortizations and impairment charges and intangible assets has not significantly changed subsequent to the switch to IFRS.

<Insert Table 8 about here>

We also conducted the same test on the sub-sample with a high- proportion of goodwill to total assets. As shown in Table 9, both amortizations and impairments and intangible assets appear to have an incremental explanatory power, the explanatory power increases in both 2004 and 2005 if these variables are included in the models. However, the difference in the incremental explanatory power is not statistically significant for either amortizations and impairments or the intangible assets, thus, hypothesis 3 is not supported.

<Insert Table 9 about here>

5.2 Results of the Timeliness Test

We aim to test if the models ability to explain market value has improved after the adoption of IFRS. We assess the significance of the difference between R^2 for the two different time periods using Cramer's (1987) method for comparing variances.[8]

[8] The Z-statistic is calculated using the following formula: $Z = R^2_{2004} - R^2_{2005} \Big/ \sqrt{\left\{\sigma^2\left(R^2_{2004}\right) + \sigma^2\left(R^2_{2005}\right)\right\}}$, with the variance of the R^2 derived as shown in Cramer (1987).

We also test the timeliness of amortization and impairment charges by analyzing the earnings recognition lag. As shown in Table 10 Panel A, reveals that there is no increase in the return coefficients if the earnings variable includes amortization and impairment charges. In addition, Table 10 Panel B shows that that any potential increase in explanatory power is not associated with the amortizations and impairments charges made after the switch to IFRS in 2005. Hence, the only conclusion that could be drawn from the results in Table 10 is that the earnings variables, including or excluding amortizations and impairment charges are providing the market with new information. However, this information is not associated with the amortizations and impairment charges. Hypothesis 4 is not supported. Moreover, we also conducted the above estimations on the sub-sample with substantial goodwill balances at the end of 2004. These results, not reported here, were qualitatively the similar to those above.

5. Conclusion

We find no evidence of an over all increase in the value relevance of the accounting measures between 2004 and 2005 for Swedish listed companies included in the sample. However, we do find a significant increase in the association between share prices and accounting information for companies with substantial intangible assets. Although the results must be interpreted with caution due to the limited sample size, this may be interpreted as an indication that the switch to IFRS in Sweden has mainly affected companies with substantial intangible assets. That is, the explanatory power of accounting measures of companies with substantial intangible assets increased significantly between 2004 and 2005. However, when investigating the incremental effect of intangible assets explanatory power on share prices we found that the incremental effect of amortizations and impairment charges and intangible assets were not statistically significant. In addition, we also investigate the timeliness of information on

amortization and impairment charges made in 2005. We find no evidence of increased timeliness or that the timeliness in the reported earnings in 2005 is in any way associated with impairment charges made in that year.

These results might be a first indication of that impairment charges under IFRS are not providing the market with new and useful information. There are researchers who have raised concern over the variety of in impairment test methods used across countries and companies might increase diversity instead of aiding, as intended by the International Accounting Standards Board (IASB), comparability.[9] Moreover, these differences in impairment test methods are not always visible to investors since this information is provided in the notes to the annual reports. Therefore, these results might call for future research examining the variety and investor usefulness of in impairment test methods used under IFRS.

[9] For example in a plenary speech , at the 29th Annual Congress of the European Accounting Association, Professor Martin Hoogendoorn, Professor at the Erasmus University Rotterdam, Chairman of the Dutch Accounting Standards Board., and technical partner at Ernst & Young, raised this issue claiming that this is something that the Big 4 firms has experienced.

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Table 1:Comparison of models to test the incremental value relevance for amortizations and impairment charges and intangible assets.

Panel A: Design of test of incremental value relevance amortizations and impairment charges	**2005 (after IFRS)**	**2004 (prior to IFRS)**
Earnings[1] – amortizations and impairment charges[2] + book value of equity [3]	$R^2_{(E-AI)+(BVE)}$ *	$R^2_{(E-AI)+(BVE)}$
Earnings + book value of equity	R^2_{E+BVE}	R^2_{E+BVE}
Panel B: Design of test of incremental value relevance intangible assets	**2005 (after IFRS)**	**2004 (prior to IFRS)**
Earnings + book value of equity[3] – intangible assets[4]	$R^2_{E+(BVE-IA)}$ *	$R^2_{E+(BVE-IA)}$
Earnings + book value of equity	R^2_{E+BVE}	R^2_{E+BVE}

[1] Net profit before extra ordinary items per share for firm "i" at time "t."
[2] Total amortizations and impairment charges related to intangible assets firm "i" at time "t."
[3] The book value of the total shareholders' equity per share for firm "i" at time "t."
[4] Intangible assets per share for firm "i" at time "t."

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + \beta_2 AI_{it} + \beta_3 (BVE_{it} - IA_{it}) + \beta_4 IA_{it} + \varepsilon_{it}$$

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + \beta_3 (BVE_{it} - IA_{it}) + \beta_4 IA_{it} + \varepsilon_{it}$$

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + \beta_2 AI_{it} + \beta_3 (BVE_{it} - IA_{it}) + \beta_4 IA_{it} + \varepsilon_{it}$$

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + \beta_2 AI_{it} + \beta_3 (BVE_{it} - IA_{it}) + \varepsilon_{it}$$

Table 2: The Sample Selection Process.

	2004	2005	Total no of observations
Total number of observations	423	423	846
Firms not listed on the Stockholm Stock Exchange	-62	-62	-124
Firms with no positive goodwill on December 31, 2004	-183	-183	-366
Non-calendar fiscal year observations	-12	-12	-24
Finance and insurance observations	-19	-19	-38
Excluded observations due to missing data	-3	-6	-6
Total sample	144	143	287

Table 3: Descriptive Statistics of Observations Related to the Value Relevance Tests.

Panel A							
Dependent Variable	**Obs.**	**N**	**Mean**	**25th Percentile**	**50th Percentile**	**75th Percentile**	**Std. Dev.**
Price[1]	All	287	81.496	22.500	58.000	118.500	78.593
	2004	144	67.007	18.925	49.100	102.625	63.452
	2005	143	96.086***	25.500	68.500***	140.980	89.234
Panel B							
Independent Variables	**Obs.**	**N**	**Mean**	**25th Percentile**	**50th Percentile**	**75th Percentile**	**Std. Dev.**
(BVE-IA)[2]	All	287	47.979	2.000	13.000	44.000	186.014
	2004	144	46.542	2.000	13.000	43.000	178.978
	2005	143	49.427	2.000	13.000	44.000	193.461
(E-AI)[3]	All	287	10.692	0.484	4.079	10.618	24.682
	2004	144	10.138	0.116	3.056	9.876	26.926
	2005	143	11.249*	0.116	4.654	11.444	22.277
IA[4]	All	287	28.038	1.000	6.000	18.000	103.175
	2004	144	27.736	1.000	5.000	15.750	127.636
	2005	143	28.343	2.000	8.000*	23.000	70.953
AI[5]							
	All	287	1.683	0.000	1.000	2.000	3.426
	2004	144	1.715	0.000	1.000	2.000	3.467
	2005	143	1.650	0.000	0.000**	2.000	3.395

[1] Share price as per March 31th 2006 for firm "i" at time "t."
[2] The book value of the total shareholders' equity less intangible assets per share for firm "i" at time "t."
[3] Net profit before extra ordinary items per share minus amortizations and impairment charges in intangible assets for firm "i" at time "t."
[4] Intangible assets per share for firm "i" at time "t."
[5] Total amortizations and impairment charges related to intangible assets firm "i" at time "t."
Asterisks indicate that the means (medians) of the years are significantly different using a two-tailed t-test (Mann-Whitney-Wilcoxon test): * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Table 4: Descriptive Statistics of Observations with a High Proportion of Intangible Assets to Total Assets at the end of 2004.

Panel A							
Dependent Variable	**Obs.**	**N**	**Mean**	**25th Percentile**	**50th Percentile**	**75th Percentile**	**Std. Dev.**
Price[1]	All	72	43.876	10.785	29.900	56.625	46.948
	2004	37	39.347	10.595	28.980	65.193	37.182
	2005	37	48.396*	11.900	30.400	56.625	55.196
Panel B							
Independent Variables	**Obs.**	**N**	**Mean**	**25th Percentile**	**50th Percentile**	**75th Percentile**	**Std. Dev.**
(BVE-IA)[2]	All	72	0.401	-0.485	0.030	2.088	7.406
	2004	37	-0.924	-2.425	-0.050	0.325	8.662
	2005	37	1.326	-0.043	0.160	2.618	6.264
(E-AI)[3]	All	72	0.842	-0.200	0.000	1.275	2.489
	2004	37	0.277	-2.425	0.325	0.388	2.004
	2005	37	1.236	-0.100	0.100	1.925	2.719
IA[4]	All	72	12.143	0.313	2.781	13.169	20.087
	2004	37	12.036	0.388	2.744	13.677	20.364
	2005	37	12.217	0.298	2.785	13.395	19.987
AI[5]							
	All	72	1.528	0.000	0.000	1.000	3.576
	2004	37	2.250	0.000	1.000	2.750	4.619
	2005	37	0.806*	0.000	0.000**	1.000	1.880

[1] Share price as per March 31th 2006 for firm "i" at time "t."
[2] The book value of the total shareholders' equity less intangible assets per share for firm "i" at time "t."
[3] Net profit before extra ordinary items per share minus amortizations and impairment charges in intangible assets for firm "i" at time "t."
[4] Intangible assets per share for firm "i" at time "t."
[5] Total amortizations and impairment charges related to intangible assets firm "i" at time "t."

Asterisks indicate that the means (medians) of the years are significantly different using a two-tailed t-test (Mann-Whitney-Wilcoxon test): * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Table 5: Descriptive Statistics of Observations Related to the Timeliness Tests.

Panel A:						
Dependent Variables	**N**	**Mean**	**25th Percentile**	**50th Percentile**	**75th Percentile**	**Std. Dev.**
E[1]						
(E-AI)[2]	139	0.056	0.033	0.079	0.131	0.302
Panel B						
Independent Variables	**N**	**Mean**	**25th Percentile**	**50th Percentile**	**75th Percentile**	**Std. Dev.**
R_{2005}[3]	139	0.653	0.224	0.588	0.932	0.634
R_{2004}	139	0.405	0.046	0.270	0.681	0.597
R_{2003}	139	0.772	0.124	0.427	1.078	1.089
R_{2005}* Imp[4]	139	0.653	0.224	0.588	0.932	0.634
R_{2004}* Imp	139	0.405	0.046	0.270	0.681	0.597
R_{2003}* Imp	139	0.772	0.124	0.427	1.078	1.089

[1] Earnings for the financial year 2005 scaled by sales in year 2004 for firm "i" at time "t."
[2] Earnings excluding amortizations and impairment charges for the financial year 2005 scaled by sales in year 2004 for firm "i" at time "t."
2005 scaled by sales in year 2004 for firm "i" at time "t."
[3] Cumulative annual return adjusted for dividends for firm "i" at time "t."
[4] A dummy variable taking on a value of 1 if the firm made any impairments charges in 2005 and 0 otherwise.
Asterisks indicates that the means (medians) of the years are significantly different using a two-tailed t-test (Mann-Whitney-Wilcoxon test): * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$.

Table 6: OLS Regressions of Accounting Measures on Share Price Using the Full Sample.

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + AI_{it} + (BVE - IA)_{it} + IA_{it} + \varepsilon_{it}$$

Panel A: Observations from 2004:	N = 144			
Variable	Coefficient	Std. Dev.	p-value	Adj. R^2
Intercept	51.790	5.438	0.000	
(E-AI)[1]	0.567	0.318	0.077	
AI[2]	8.510	2.658	0.002	
(BVE-IA)[3]	0.007	0.040	0.858	
IA[4]	-0.197	0.057	0.001	0.197

Panel B: Observations from 2005:	N= 143			
Variable	Coefficient	Std. Dev.	p-value	Adj. R^2
Intercept	70.591	7.450	0.000	
(E-AI)[1]	2.190	0.515	0.000	
AI[2]	3.001	2.401	0.213	
(BVE-IA)[3]	-0.044	0.513	0.396	
IA[4]	-0.068	0.120	0.571	0.264

Panel C: Comparison of R^2:

R^2 for year 2004	0.197
R^2 for year 2005	0.264
Difference	-0.067
Z- value[5]	-0.817
p-value[6]	0.207

[1] Net profit before extra ordinary items minus amortizations and impairment charges scaled by shares for firm "i" at time "t."
[2] Amortizations and impairment charges scaled by shares for firm "i" at time "t."
[3] The book value of the total shareholders' equity less intangible assets per share for firm "i" at time "t."
[4] Net profit before extra ordinary items per share minus amortizations and impairment charges in intangible assets for firm "i" at time "t."
[4] Intangible assets per share for firm "i" at time "t."
[5] The Z-statistic is calculated using the following formula: $Z = R^2_{2004} - R^2_{2005} \Big/ \sqrt{\{\sigma^2(R^2_{2004}) + \sigma^2(R^2_{2005})\}}$, with the variance of the R^2 derived as shown in Cramer [1987].
[6] One-tailed tests

Table 7: OLS Regressions of Accounting Measures on Share Price Using a Subset of the Sample Consisting of Firms with Goodwill to total assets in the 75th percentile.

$$P_{it} = \beta_0 + \beta_1 (E - AI)_{it} + AI_{it} + (BVE - IA)_{it} + IA_{it} + \varepsilon_{it}$$

Panel A: Observations from 2004: N = 36

Variable	Coefficient	Std. Dev.	p-value	Adj. R^2
Intercept	30.554	6.576	0.000	
(E-AI)[1]	8.567	3.753	0.036	
AI[2]	10.788	5.092	0.042	
(BVE-IA)[3]	1.486	0.627	0.024	
IA[4]	-1.548	0.597	0.014	0.221

Panel B: Observations from 2005: N= 36

Variable	Coefficient	Std. Dev.	p-value	Adj. R^2
Intercept	27.349	7.820	0.001	
(E-AI)[1]	6.980	2.073	0.002	
AI[2]	14.358	4.876	0.006	
(BVE-IA)[3]	-0.459	0.189	0.021	
IA[4]	-0.398	0.236	0.101	0.473

Panel C: Comparison of R^2:

R^2 for year 2004	0.221
R^2 for year 2005	0.473
Difference	-0.252
Z- value[5]	-1.629
p-value[6]	0.052

[1] Net profit before extra ordinary items minus amortizations and impairment charges scaled by shares for firm "i" at time "t."
[2] Amortizations and impairment charges scaled by shares for firm "i" at time "t."
[3] The book value of the total shareholders' equity less intangible assets per share for firm "i" at time "t."
[4] Net profit before extra ordinary items per share minus amortizations and impairment charges in intangible assets for firm "i" at time "t."
[4] Intangible assets per share for firm "i" at time "t."
[5] The Z-statistic is calculated using the following formula: $Z = R^2_{2004} - R^2_{2005} \Big/ \sqrt{\{\sigma^2(R^2_{2004}) + \sigma^2(R^2_{2005})\}}$, with the variance of the R^2 derived as shown in Cramer [1987].
[6] One-tailed tests

Table 8: OLS Regression Testing the Incremental Value Relevance of Intangible Assets and Amortizations and Impairment Charges.

Panel A: Incremental value relevance of amortizations and impairment charges		
	2005 (after IFRS)	2004 (prior to IFRS)
	N = 143	N = 144
$R^{2}_{(E-AI)+AI+(BVE-IA)+IA}$ [1,2,3,4]	0.263	0.197
$R^{2}_{(E-AI)+(BVE-IA)+IA}$	0.261	0.144
Difference	0.002	0.053
Net difference between the periods	-0.225	
Z value[4]	-0.441	
P-value[5]	0.330	
Panel B: Incremental value relevance of intangible assets		
$R^{2}_{(E-AI)+AI+(BVE-IA)+IA}$ [1,2,3]	0.263	0.197
$R^{2}_{(E-AI)+AI+(BVE-IA)}$	0.267	0.135
Difference	-0.004	0.062
Net difference between the periods	-0.066	
Z value[4]	-0.581	
P-value[5]	0.281	

[1] Net profit before extra ordinary items minus amortizations and impairment charges scaled by shares for firm "i" at time "t."
[2] Amortizations and impairment charges scaled by shares for firm "i" at time "t."
[3] The book value of the total shareholders' equity less intangible assets per share for firm "i" at time "t."
[4] Net profit before extra ordinary items per share minus amortizations and impairment charges in intangible assets for firm "i" at time "t."
[4] The Z-statistics are calculated using the following formulas:

$$Z = \frac{R^{2}_{(E-AI)+AI+(BVE-IA)+IA_{2005}} - R^{2}_{(E-AI)+(BVE-IA)+IA_{2005}} - R^{2}_{(E-AI)+AI+(BVE-IA)+IA_{2004}} + R^{2}_{(E-AI)+(BVE-IA)+IA_{2004}}}{\sqrt{\sigma^{2}\left(R^{2}_{(E-AI)+AI+(BVE-IA)+IA_{2005}}\right)\sigma^{2}\left(R^{2}_{(E-AI)+(BVE-IA)+IA_{2005}}\right)+\sigma^{2}\left(R^{2}_{(E-AI)+AI+(BVE-IA)+IA_{2004}}\right)+\sigma^{2}\left(R^{2}_{(E-AI)+(BVE-IA)+IA_{2004}}\right)}}$$

,

And

$$Z = \frac{R^2_{(E-AI)+AI+(BVE-IA)+IA_{2005}} - R^2_{(E-AI)+AI+(BVE-IA)_{2005}} - R^2_{(E-AI)+AI+(BVE-IA)+IA_{2004}} + R^2_{(E-AI)+AI+(BVE-IA)_{2004}}}{\sqrt{\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)+IA_{2005}}\right)\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)_{2005}}\right)+\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)+IA_{2004}}\right)+\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)_{2004}}\right)}}$$

with the variance of the R^2 derived as shown in Cramer [1987].

[5] One-tailed tests

Table 9: OLS Regression Testing the Incremental Value Relevance Intangible Assets and Amortizations and Impairment Charges for Firms with a high Intangible Assets to Total Asset Ratio.

Panel A: Incremental value relevance of amortizations and impairment charges		
	2005 (after IFRS)	2004 (prior to IFRS)
$R^2_{(E-AI)+AI+(BVE-IA)+IA}$ [1,2,3,4]	0.473	0.221
$R^2_{(E-AI)+(BVE-IA)+IA)}$	0.346	0.136
Difference	0.127	0.085
Net difference between the periods	0.042	
Z value[4]	0.189	
P-value[5]	0.425	
Panel B: Incremental value relevance of intangible assets		
$R^2_{(E-AI)+AI+(BVE-IA)+IA}$ [1,2,3]	0.473	0.221
$R^2_{(E-AI)+AI+(BVE-IA)}$	0.442	0.082
Difference	0.031	0.139
Net difference between the periods	-0.108	
Z value[4]	-0.514	
P-value[5]	0.304	

[1] Net profit before extra ordinary items minus amortizations and impairment charges scaled by shares for firm "i" at time "t."
[2] Amortizations and impairment charges scaled by shares for firm "i" at time "t."
[3] The book value of the total shareholders' equity less intangible assets per share for firm "i" at time "t."
[4] Net profit before extra ordinary items per share minus amortizations and impairment charges in intangible assets for firm "i" at time "t."
[4] The Z-statistics are calculated using the following formulas:

$$Z = \frac{R^2_{(E-AI)+AI+(BVE-IA)+IA_{2005}} - R^2_{(E-AI)+(BVE-IA)+IA_{2005}} - R^2_{(E-AI)+AI+(BVE-IA)+IA_{2004}} + R^2_{(E-AI)+(BVE-IA)+IA_{2004}}}{\sqrt{\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)+IA_{2005}}\right)\sigma^2\left(R^2_{(E-AI)+(BVE-IA)+IA_{2005}}\right)+\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)+IA_{2004}}\right)+\sigma^2\left(R^2_{(E-AI)+(BVE-IA)+IA_{2004}}\right)}}$$

,

And

$$Z = \frac{R^2_{(E-AI)+AI+(BVE-IA)+IA_{2005}} - R^2_{(E-AI)+AI+(BVE-IA)_{2005}} - R^2_{(E-AI)+AI+(BVE-IA)+IA_{2004}} + R^2_{(E-AI)+AI+(BVE-IA)_{2004}}}{\sqrt{\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)+IA_{2005}}\right)\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)_{2005}}\right)+\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)+IA_{2004}}\right)+\sigma^2\left(R^2_{(E-AI)+AI+(BVE-IA)_{2004}}\right)}}$$

with the variance of the R^2 derived as shown in Cramer [1987].

[5] One-tailed tests

Table 10:Results of Test of Timeliness

Panel A: Observations from 2004:

$$E_{it} = \lambda_0 + \lambda_1 R_t + \lambda_2 R_{t-1} + \lambda_3 R_{t-2} + \varepsilon_t$$

N = 139

Variable	Earnings before amortizations and impairment charges	Std. Dev.	p-value	Earnings after the first year's amortizations and impairment charges	Std. Dev.	p-value
Intercept	-0.076	0.035	0.030	-0.112	0.039	0.005
R_t	0.142	0.035	0.000	0.143	0.039	0.000
R_{t-1}	0.049	0.038	0.195	0.062	0.042	0.144
R_{t-2}	0.024	0.020	0.238	0.020	0.023	0.383
Adj. R^2	0.136			0.113		

Panel B: Observations from 2005:

$$E_{it} = \lambda_0 + \lambda_1 R_t + \lambda_2 R_{t-1} + \lambda_3 R_{t-2} + \lambda_1 R_t * I + \lambda_2 R_{t-1} * I + \lambda_3 R_{t-2} * I + \varepsilon_t$$

N = 139

Variable	Earnings before amortizations and impairment charges	Std. Dev.	p-value	Earnings after the first year's amortizations and impairment charges.	Std. Dev.	p-value
Intercept	-0.076	0.035	0.032	-0.113	0.039	0.005
R_t[1]	0.151	0.038	0.000	0.151	0.039	0.001
R_{t-1}	0.045	0.039	0.255	0.058	0.043	0.189
R_{t-2}	0.024	0.022	0.265	0.019	0.044	0.445
R_t*I[2]	-0.046	0.084	0.583	-0.055	0.024	0.564
R_{t-1}*I	0.049	0.150	0.745	0.069	0.094	0.681
R_{t-2}*I	0.000	0.060	0.999	0.017	0.168	0.801
Adj. R^2	0.119					

[1] Annual return adjusted for dividend for firm "i" at time "t."
[2] Annual return adjusted for dividend for firm "i" at time "t" times a dummy variable taking on a value of 1 if the firm has reported impairment charges and 0 otherwise.