

## INSTRUCTIONS FOR FINALIZING MASTER'S THESIS IN ACCOUNTING

After having presented the second phase (phase II) version of your master's thesis in the seminar, you are expected to prepare a completed and checked version of the thesis, based on the feedback received from the supervisor and seminar participants. Typically, this takes about 3-4 months depending on the degree of completion of the thesis when presented at the seminar. The "completed and checked version" of the thesis has the following technical characteristics:

1. The manuscript includes the following components in this particular order: cover page, abstract page, table of contents, list of tables and figures, body text, list of references, and appendices (if any). The cover page and the abstract page must be prepared using the templates available from the web pages of the Department.<sup>1</sup>
2. Each chapter (or main section) contains at least two subsections. For example, if chapter 2 includes subsection 2.1, it should also include subsection 2.2. Should a chapter exceptionally include only one subsection, the heading of that subsection can be unnumbered and thereby not visible in the table of contents.
3. Subsections with headings including four or more digits (for example, 3.1.1.1) should be avoided. Instead, these headings (possibly written in italics) can be unnumbered in which case they are not visible in the table of contents.
4. The body text of the manuscript has page numbering. The recommended place of page numbers is either in the upper right corner or centered in the bottom of the page. Page numbering starts on the first page of the body text. The pages preceding it (abstract, table of contents, list of table and figures) may have separate (usually Roman) numbering which, however, is not necessary.
5. All figures have titles that are consecutively numbered. The same applies to tables.
6. All mathematical formulas are attached with consecutive numbers which are written in parentheses in the right margin on the right hand side of each formula.
7. Overly long paragraphs in the body text (for example, longer than one page) have to be avoided. Each paragraph in the body text should contain at least two sentences.
8. Recommendable page margins are 2.5 cm (or 2.0 cm at the minimum) on the top, bottom, left and right of the page.
9. In the body text the recommendable line spacing is 1.5. In any case it must not be 1.0 except in figure and table titles, table of contents, list of references, etc. The visual layout of the text, such as the font type, is otherwise volitional as far as it is consistently applied throughout the manuscript and the end result looks professional and polished.
10. Direct quotes from written source materials must be accompanied by quotation marks and a reference with a page number.
11. Citations, such as excerpts from interviews, must be in quotation marks. They can be written in italics in an intended paragraph, appended by a reference to the source in question (such as the name of the interviewee).

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<sup>1</sup> Ks. <https://into.aalto.fi/display/fiaccounting/Pro+gradu+-tutkielma+ja+valmistuminen+maisteriksi>

12. In tables which include numbers (such as descriptive statistics or results from statistical tests) it is recommendable to use only horizontal lines to separate different sections from each other. Vertical lines or framing different cells and sections should be avoided except when it improves the readability of the table (for example, when the cells in the table include text or when there are other reasons to separate different cells from each other visually).
13. The number of decimals displayed in tables where statistical results or similar numerical material is shown must be reasonable. Spreadsheet or statistical software may compute and show a high number decimals, but all of them need not be reported in the tables!
14. Literature references should be inserted either in the body text (in parentheses) or in footnotes. End notes should be avoided. In addition to author name and publication year, literature references to books should include also the relevant page number(s), which is usually not needed for references to articles.
15. Additional information, details, comments, or short excursions outside the main issue can be placed in footnotes. It is advisable to use as little footnotes as possible in the first chapter (Introduction) of the thesis, and in any case the first text page (in the Introduction) should not contain any footnotes.
16. In the body text, internal references forwards to tables, figures or sections appearing later in the text should be avoided. Internal references backwards to materials already presented can be made. For example, you may refer in section 3.2 to a table or figure in section 2.4, but not to a table or figure in section 4.3.
17. List of references must be double-checked. This means that each reference in the body text (or in a footnote therein) can be found in the list of references and, conversely, there is at least one reference in the body text (or in a footnote therein) to each item appearing in the list of references.
18. The list of references follows a uniform style so that, for example, the bibliographic information for all journal articles on the list is given in a consistent manner. To choose an appropriate style, you can have a look at the list of references in any well-known academic journal.
19. In case the list of references includes more than one item published in any one year by the same author(s), they can be separated in the body text and in the list of references with small letters attached to the publication year, for example: Smith et al. (2013a) Smith et al. 2013b), etc.
20. The bottom of any page in the body text should not have orphan section titles for text starting on the following page.
21. The language has been checked and polished.

Not until you have made the revisions required by these checks you may forward a hard copy of the manuscript to your supervisor for a preliminary (unofficial) inspection. While such inspection is not mandatory, the need for it varies from case to case. In general, it aims to ascertain that the thesis will meet the minimum requirements from a technical perspective before you submit it for the final (official) inspection and grading.

Attached you can find examples extracted from a master's thesis which meets the technical requirements quite well. Please pay attention to the following details:

- The cover page and the abstract have been written on the official templates which include the logo of the School.
- Table of contents: the chapters (main sections) are easily identifiable visually; the titles of the subsections have no more than three digits; the page numbers are aligned with the right margin. The abstract and the table of contents have Roman page numbering.
- Pages 1-2: line spacing and margins are appropriate; the text is aligned with the right margin; important words relating to research objectives emphasized visually using italics.
- Page 33; mathematical formulas consecutively numbered in parentheses and aligned with the right margin; the font type and size used in the mathematical formulas is consistent with body text except that the variables in the formulas are in italics (not necessary); the definitions of the variables are clear and presented after each formula.
- Page 40: the table has a title with consecutive numbering; horizontal lines (no vertical lines) have been used to frame the table; the table includes separate sections (Panel A and Panel B) which have titles of their own and a short description of their contents aligned consistently with the right margin; the number of decimals displayed is appropriate; the numbers in the columns are aligned to the right; the font in the table is consistent with the body text.
- Page 41: the figures have been separated from the text with horizontal lines; the tables includes here both horizontal and vertical lines which in this case increases readability.
- Page 46: horizontal lines used to separate relevant sections in the table; statistically significant test statistics bolded.
- Page 62: in the list of references line spacing is 1.0; references listed in alphabetical order according to the first author; journal articles and books are *not* listed in separate sections but are included on the same list; the titles of the books and the titles of the articles are *not* in quotation marks; the names of the journals are in italics.

# **EARNINGS MANAGEMENT AS A SCOPE OF ART**

Empirical analysis of accrual-based and real earnings management in Finnish listed companies during 2001-2010

Master's Thesis  
Miia Tirkkonen  
Fall 2013  
Accounting

Approved in the Department of Accounting \_\_\_ / \_\_\_20\_\_\_ and awarded the grade

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**Abstract**

This study examines whether mandatory IFRS adoption in 2005 has affected earnings management practices in Finnish publicly quoted companies. Earnings management is analyzed by covering both accrual-based and real earnings management. The study also explores whether there are annual changes in the level of earnings management which do not relate to IFRS adoption.

The study is quantitative in nature and applies OLS regression to explore changes in the level of earnings management. Real earnings management is studied by examining sales manipulation and overproduction. The sample consists of companies publicly quoted in Helsinki Stock Exchange in 2001–2010.

The results suggest that accrual-based earnings management and overproduction have increased after IFRS adoption. Additionally, study results offer some support for increased level of sales manipulation after IFRS. In relation to the yearly analysis, the results indicate that there are annual changes in the levels of all three earnings management types during the sample period which are not explained by IFRS adoption.

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**Keywords** earnings management, real earnings management, sales manipulation, overproduction, accruals, the Jones model, International Financial Reporting Standards (IFRSs)

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# 1. INTRODUCTION

## 1.1. BACKGROUND OF THE STUDY

Net income is not something one can determine in an unambiguous way. As accounting legislation does not completely constrain managers' choices of accounting policies and procedures, management has flexibility in determining financial reporting figures. Actual earnings management behavior, on the other hand, has been documented to arise from contractual, stock market or management's personal incentives (Scott 2009; Graham et al. 2005).

Earnings management has been a topic of research already for several decades (e.g. Healy 1985; Jones 1991). Academic research has traditionally concentrated on analyzing *accruals manipulation*, i.e. earnings management implemented by altering the level of discretionary accruals. However, there are recent research findings indicating that *real earnings management*, i.e. earnings management implemented by manipulating real operations, is becoming more dominating in today's business environment (e.g. Li et al. 2011; Graham et al. 2005; Roychowdhury 2006). As evaluating reasons behind recent earnings management behavior, it has been suggested that preferring real earnings management might be a consequence of the stigma attached to accounting fraud in the post-Enron world, where also legislation is made stricter (Graham et al. 2005). At the same time, it has been suggested that real earnings management can be more costly for a company in the long run than accruals manipulation (Roychowdhury 2006).

The level of real earnings management is argued to be higher in countries with stronger legal system (Li et al. 2011). Closely relating to this, prior research evidence indicates that companies have switched from accrual-based to real earnings management after the passage of Sarbanes Oxley-Act (SOX) in the US (Cohen et al. 2009). Also the effect of International Financial Reporting Standards (IFRSs) on earnings management has been studied, but research findings are controversial. While some studies suggest IFRS to have a positive influence on accounting quality and earnings management (e.g. Barth et al. 2009; Chen et al.

2010), some other publications indicate increase in earnings management after IFRS (Jeanjean and Stolowy 2008). Earlier research studying the effects of IFRS adoption has focused on accounting quality and thus concentrates on accrual-based earnings management.

All listed companies in European Union (EU) member countries have been required to apply IFRS since 2005. Respectively, all Finnish publicly quoted companies were required to adopt IFRS in 2005. This creates an opportunity and motivations to study the effect of IFRS adoption on earnings management in Finland. Controversial research findings of the effect of IFRS adoption on accrual-based earnings management make it interesting to study the phenomenon from accruals manipulation viewpoint. Further, research evidence suggesting a shift from accrual-based to real earnings management in context of legislation change in the US encourages widening research scope to cover both two earnings management types.

## **1.2. OBJECTIVES AND CONTRIBUTION**

In this study I will concentrate on analyzing earnings management, including accruals manipulation and real earnings management, in Finnish publicly quoted companies. Real earnings management is examined by concentrating on sales manipulation and overproduction. *The main objective* of this study is to examine whether mandatory IFRS adoption has affected earnings management practices in Finnish publicly quoted companies.

There is research evidence suggesting that companies' earnings management incentives vary in different financial situations (Agarwal et al. 2007). Financial situation in Finland changes during the research period, as economic downturn takes place at the end of the sample period. This creates motivations to analyze yearly earnings management development in the sample companies. Respectively, *the secondary objective* of this study is to examine whether there are annual changes in the level of earnings management which do not relate to IFRS adoption.

The empirical part of the study will be implemented as a quantitative analysis applying OLS regression model to explore changes in the levels of earnings management. Accruals manipulation will be analyzed by using the Jones (1991) model. Real earnings management



### **Overproduction**

As sales manipulation, also overproduction will be evaluated by following Roychowdhury (2006) and by applying the model developed by Dechow et al. (1998). As discussed earlier, production costs will be determined as follows:

$$PROD_t = COGS_t + \Delta INV_t, \quad (4)$$

where

$PROD_t$  = production costs in year t

$COGS_t$  = cost of goods sold in year t

$\Delta INV_t$  = change in inventory in year t ( $INV_t - INV_{t-1}$ ).

Further, the model for normal COGS will be determined as:

$$COGS_t / A_{t-1} = \alpha_1(1 / A_{t-1}) + \alpha_2(S_t / A_{t-1}), \quad (5)$$

where

$COGS_t$  = cost of goods sold in year t

$A_{t-1}$  = total assets at t-1

$S_t$  = sales in year t.

And the model for normal inventory growth will be determined as:

$$\Delta INV_t / A_{t-1} = \alpha_1(1 / A_{t-1}) + \alpha_2(\Delta S_t / A_{t-1}) + \alpha_3(\Delta S_{t-1} / A_{t-1}), \quad (6)$$

where,

$\Delta INV_t$  = change in inventory in year t ( $INV_t - INV_{t-1}$ )

$A_{t-1}$  = total assets at t-1

$\Delta S_t$  = sales change in year t ( $S_t - S_{t-1}$ )

$\Delta S_{t-1}$  = sales change in year t-1 ( $S_{t-1} - S_{t-2}$ ).

**TABLE 4: FAS AND IFRS SUBSAMPLE DESCRIPTIVE STATISTICS****Panel A: FAS Subsample Descriptive Statistics**

This table presents descriptive statistics (m. €) for FAS subsample. Variable values are scaled by previous period total assets. Regression is run for scaled variable values, which makes it important to present descriptive statistics for scaled values.

	<i>N</i>	<i>25th Percentile</i>	<i>Mean</i>	<i>Median</i>	<i>75th Percentile</i>	<i>Standard deviation</i>
<i>FAS subsample statistics</i>						
CFO	372	38.9 e <sup>-3</sup>	75.9 e <sup>-3</sup>	94.8 e <sup>-3</sup>	147.3 e <sup>-3</sup>	174.3 e <sup>-3</sup>
COGS	355	579.3 e <sup>-3</sup>	962.2 e <sup>-3</sup>	853.8 e <sup>-3</sup>	1,267.5 e <sup>-3</sup>	583.9 e <sup>-3</sup>
Net Income	365	3.4 e <sup>-3</sup>	19.4 e <sup>-3</sup>	44.2 e <sup>-3</sup>	87.1 e <sup>-3</sup>	202.8 e <sup>-3</sup>
Inventory	360	28.9 e <sup>-3</sup>	150.0 e <sup>-3</sup>	116.1 e <sup>-3</sup>	225.8 e <sup>-3</sup>	142.2 e <sup>-3</sup>
Production Cost	345	581.2 e <sup>-3</sup>	978.9 e <sup>-3</sup>	871.5 e <sup>-3</sup>	1,299.5 e <sup>-3</sup>	602.9 e <sup>-3</sup>
Property, Plant and Equipment	355	280.2 e <sup>-3</sup>	626.8 e <sup>-3</sup>	483.2 e <sup>-3</sup>	967.5 e <sup>-3</sup>	473.0 e <sup>-3</sup>
Receivables	372	126.1 e <sup>-3</sup>	229.4 e <sup>-3</sup>	119.1 e <sup>-3</sup>	227.6 e <sup>-3</sup>	167.6 e <sup>-3</sup>
Sales	372	887.7 e <sup>-3</sup>	1,294.6 e <sup>-3</sup>	1,244.1 e <sup>-3</sup>	1,692.6 e <sup>-3</sup>	604.3 e <sup>-3</sup>
Total Accruals	365	-108.1 e <sup>-3</sup>	-57.5 e <sup>-3</sup>	-60.0 e <sup>-3</sup>	-22.9 e <sup>-3</sup>	-151.3 e <sup>-3</sup>
Total Assets	372	908.4 e <sup>-3</sup>	1,042.0 e <sup>-3</sup>	984.5 e <sup>-3</sup>	1,086.4 e <sup>-3</sup>	431.8 e <sup>-3</sup>

**Panel B: IFRS Subsample Descriptive Statistics**

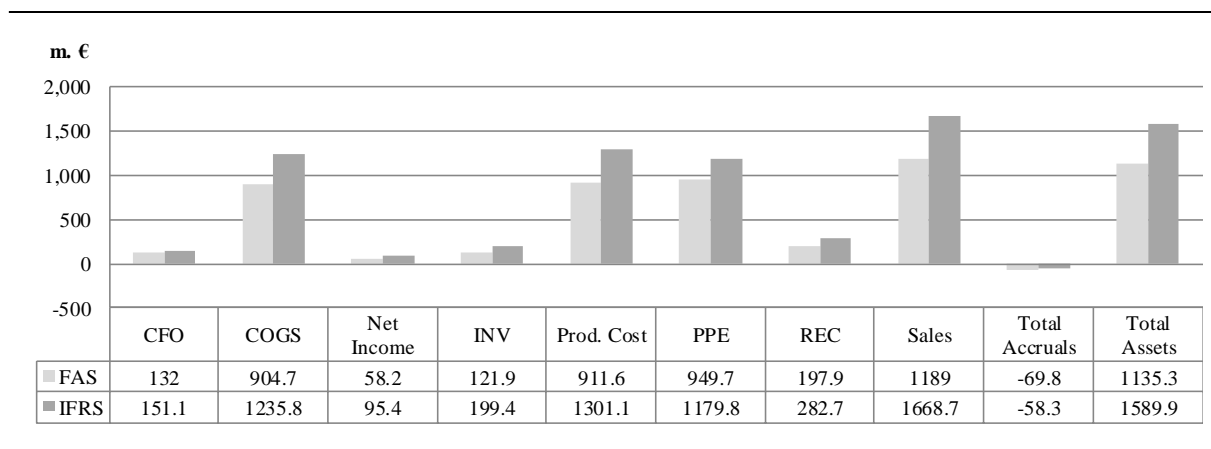
This table presents descriptive statistics (m. €) for IFRS subsample. Variable values are scaled by previous period total assets. Regression is run for scaled variable values, which makes it important to present descriptive statistics for scaled values.

	<i>N</i>	<i>25th Percentile</i>	<i>Mean</i>	<i>Median</i>	<i>75th Percentile</i>	<i>Standard deviation</i>
<i>IFRS subsample statistics</i>						
CFO	633	33.6 e <sup>-3</sup>	79.2 e <sup>-3</sup>	89.0 e <sup>-3</sup>	148.0 e <sup>-3</sup>	174.8 e <sup>-3</sup>
COGS	627	597.2 e <sup>-3</sup>	956.5 e <sup>-3</sup>	887.7 e <sup>-3</sup>	1,274.5 e <sup>-3</sup>	543.1 e <sup>-3</sup>
Net Income	620	15.5 e <sup>-3</sup>	66.6 e <sup>-3</sup>	80.6 e <sup>-3</sup>	144.3 e <sup>-3</sup>	179.1 e <sup>-3</sup>
Inventory	609	29.0 e <sup>-3</sup>	157.9 e <sup>-3</sup>	134.5 e <sup>-3</sup>	233.6 e <sup>-3</sup>	154.2 e <sup>-3</sup>
Production Cost	600	581.9 e <sup>-3</sup>	980.2 e <sup>-3</sup>	890.2 e <sup>-3</sup>	1,305.6 e <sup>-3</sup>	570.5 e <sup>-3</sup>
Property, Plant and Equipment	617	243.5 e <sup>-3</sup>	621.0 e <sup>-3</sup>	462.0 e <sup>-3</sup>	952.7 e <sup>-3</sup>	493.7 e <sup>-3</sup>
Receivables	632	132.4 e <sup>-3</sup>	238.6 e <sup>-3</sup>	208.9 e <sup>-3</sup>	310.4 e <sup>-3</sup>	153.3 e <sup>-3</sup>
Sales	633	923.2 e <sup>-3</sup>	1,317.3 e <sup>-3</sup>	1,237.7 e <sup>-3</sup>	1,727.0 e <sup>-3</sup>	600.9 e <sup>-3</sup>
Total Accruals	620	-82.9 e <sup>-3</sup>	-46.8 e <sup>-3</sup>	-41.7 e <sup>-3</sup>	-0.1 e <sup>-3</sup>	-106.4 e <sup>-3</sup>
Total Assets	633	1,119.2 e <sup>-3</sup>	1,041.5 e <sup>-3</sup>	471.0 e <sup>-3</sup>	959.1 e <sup>-3</sup>	1,158.3 e <sup>-3</sup>

## FIGURE 1: AVERAGE VARIABLE VALUES FOR FAS AND IFRS SUBSAMPLES

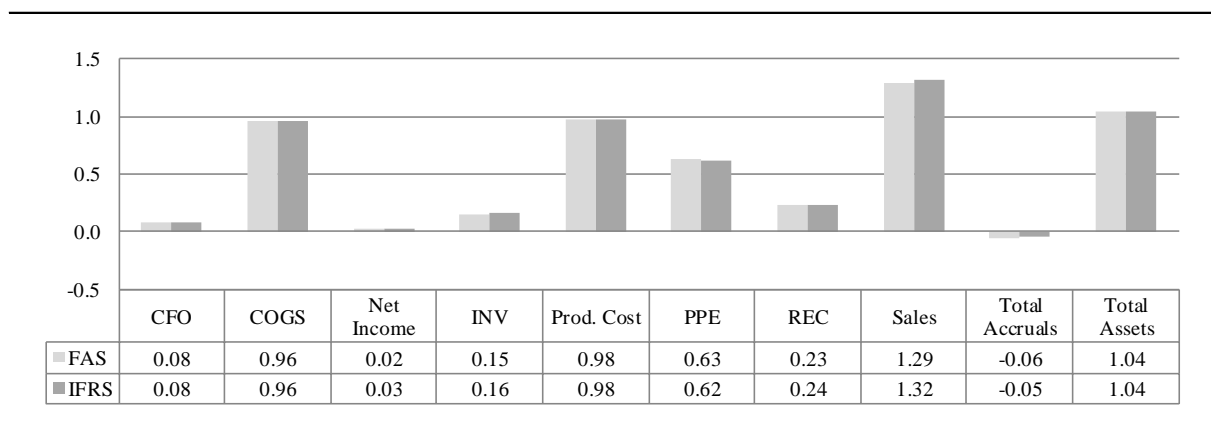
### Panel A: Non-Scaled Average Value Comparison between FAS and IFRS Subsamples

This figure presents average values (m. €) for all variables separately for FAS and IFRS subsamples. Averages are calculated based on non-scaled variable values. Because of this, the comparison reflects differences in the absolute variable magnitudes between the two subsamples.



### Panel B: Scaled Average Value Comparison between FAS and IFRS Subsamples

This figure presents average values for all variables separately for FAS and IFRS subsamples. Averages are calculated based on variable values that are scaled by previous year total assets. Thus, the comparison reflects differences in relative variable sizes between the two subsamples. Regression is run for scaled variable values, which makes it important to present descriptive statistics for scaled values.



As can be seen from Panel A of Figure 1, absolute average values are larger for IFRS than for FAS subsample in case of all other variables except total accruals. However, as can be observed based on comparison in Panel B of Figure 1, averages of scaled variable values are roughly the same for both two subsamples. It seems that change in accounting regulation has not had a major effect on the relation between research variables and previous year total

**TABLE 6: REGRESSION STATISTICS FOR FAS AND IFRS SUBSAMPLES**

This table presents regression statistics for FAS and IFRS subsamples. Outliers have been eliminated from the sample before running the regression. Outliers are eliminated manually based on analyzing Cook's Distance values. P-values statistically significant at five percent or better are presented **boldface**.

	<i>Accruals Manipulation</i>	<i>Sales Manipulation</i>	<i>Overproduction</i>
<i>Adjusted R-square</i>			
FAS	0.045	0.200	0.905
IFRS	0.036	0.116	0.847
<i>F-value (prob.)</i>			
FAS	3.738 <b>(0.001)</b>	16.412 <b>(0.000)</b>	460.541 <b>(0.000)</b>
IFRS	3.798 <b>(0.000)</b>	11.313 <b>(0.000)</b>	365.695 <b>(0.000)</b>
<i>Cook's Distance, max</i>			
FAS	0.777	0.677	0.769
IFRS	0.367	0.956	0.373
<i>Nr. of observations</i>			
FAS	348	372	338
IFRS	604	632	592
<i>Residual Mean Square</i>			
FAS	0.021	0.024	0.030
IFRS	0.011	0.027	0.050
<i>Independent samples t-test</i>			
<i>Difference F-value (prob.)</i>	1.874 <b>(0.000)</b>	1.114 <b>(0.121)</b>	1.680 <b>(0.000)</b>

In case of *accrual-based earnings management*, adjusted  $R^2$  value is lower for IFRS (0.036) than for FAS (0.045) subsample. In percentages, coefficient of determination value is about 20 percent lower for IFRS than for FAS observations. The difference in adjusted  $R^2$  values can be suggested to imply a higher level of accrual-based earnings management among FAS than IFRS observations.

The difference between FAS and IFRS samples can also be evaluated with independent samples t-test, which analyzes whether the difference between observed mean residual values (Residual Mean Square) of the two samples is statistically significant. The results from independent samples t-test are presented in Table 6. In case of *accrual-based earnings management*, the difference is statistically significant at five percent probability level (p-value

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