Income Smoothing and Earnings Informativeness

A matter of institutional characteristics or accounting standards?

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Executive Summary

This study investigates the level of income smoothing and its impact on the informativeness of earnings. The main contribution of this research is that as well IFRS as investor protection are considered to examine the association between income smoothing and earnings informativeness. Income smoothing is measured as the variation in net income relative to the variation in operating cash flows. A returns-earnings regression based on Zarowin (2002) is used to measure earnings informativeness. A sample of listed companies from United Kingdom (strong investor protection), France and the Netherlands (weak investor protection) is chosen. The results suggest that companies in United Kingdom show less smooth earnings compared to companies in France and the Netherlands. In addition I find that firms smooth income to a higher degree in the period after IFRS. Moreover income smoothing improves earnings informativeness during the pre IFRS period for all sample companies, and to a higher degree in the United Kingdom, although not significant. Subsequently to IFRS adoption the results suggest that income smoothing decreases earnings informativeness in all countries.

For the full text of this master thesis refer to the following webpage: http://hdl.handle.net/2105/5605.

1. Introduction

Income smoothing is a form of earnings management and is generally defined as the dampening of fluctuations in reported earnings over time (Ronen and Yaari 2008, 317). In other words, management is inclined to take actions to increase earnings when earnings are relatively low and to decrease earnings when earnings are relatively high. The main reasons that managers smooth earnings are: maximizing their own wealth, reducing the

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perceived riskiness of the firm, enhancing firm value, meeting debt covenants, reducing tax and political costs and enhancing the reliability of financial forecasts.

Although there is evidence that income smoothing takes place, its effect on earnings informativeness is largely unknown. Hereby is earnings informativeness defined as *"the amount of information about future earnings or cash flows included in current period stock return"* (Zarowin 2002, 4). The literature hypothesizes two opposite effects of income smoothing (Zarowin 2002, Tucker and Zarowin 2006). One viewpoint is that income smoothing results in altered information and thus less informative stock prices. On the other hand income smoothing through efficient communication of private information about the firm's future expectations can lead to more informative stock prices.

This study investigates the relation between income smoothing and earnings informativeness in three different countries: UK, France and Netherlands. To compare between countries, the institutional infrastructure of the three countries has to be considered. The most relevant considered institutional factor here is investor protection, which is about how well the law protects shareholders against expropriation by managers (Cahan et al. 2008).

Income smoothing is assumed to take place through accounting choices. These choices in turn are dependent on the applied accounting standards. Therefore the set of accounting rules companies need to comply with, should be considered. As of January 1, 2005, companies listed in the European Union are required to present their consolidated financial statements applying International Financial Reporting Standards (IFRS). These new standards aim to improve comparability of companies across countries.

In this research I attempt to provide an answer to the following research questions:

What is the impact of IFRS on the level of income smoothing and its relation with earnings informativeness?

What is the impact of investor protection on the level of income smoothing and its relation with earnings informativeness?

Each country's sample consists of two periods, pre IFRS and post IFRS. I measure the degree of income smoothing as the ratio between the variation in net income and variation in operating cash flows (Zarowin 2002). The relation between income smoothing and earnings informativeness is given in a returns – earnings regression based on Zarowin (2002) and Tucker and Zarowin (2006).

I predict that the level of income smoothing will be higher in all three countries after IFRS adoption, since IFRS allows managers with more discretion. Companies in France and Netherlands, as weak investor protection countries, are expected to show higher levels of income smoothing during both periods.

The relation between income smoothing and earnings informativeness is predicted to be positive prior to IFRS for all three countries, with a stronger effect for UK, which is characterized by strong investor protection. After IFRS, the relation between income smoothing and earnings informativeness is expected to be weaker than in the first period for France and Netherlands and stronger for UK.

The association between income smoothing and earnings informativeness is important for policy makers as it relates to the ability of firms to manage earnings (Zarowin 2002, 4). This ability can be influenced by institutional factors (Leuz et al. 2003, Cahan et al. 2008) and accounting standards (Barth et al. 2008, Jeanjean and Stolowy 2008). I contribute to the body of international research by taking both the effects of IFRS and investor protection into account when investigating income smoothing and earnings informativeness.

The remainder of this paper is organized as follows: chapter 2 provides a comprehensive literature review. In chapter 3 the hypotheses are developed and research design is presented. Chapter 4 describes the empirical results and in the end chapter 5 provides a summary and conclusions of this study.

2. Literature review

2.1 Income smoothing and informativeness

2.1.1 Definition

Ronen and Sadan (1981, 2) define income smoothing as *"a deliberate attempt by management to signal information to financial users"*. In an earlier work the definition is *"the deliberate dampening of fluctuations about some level of earnings which is considered to be normal for the firm"* (Barnea et al. 1976, 110).

A more recent depiction is *"to characterize income smoothing as earnings management, we need to define the point at which managers' accrual decisions result in "too much" smoothing and so become earnings management"* (Dechow and Skinner 2000, 238). Basically income smoothing is the reduction of the variance in periodic profit over time to the extent allowed by accounting and management principles.

2.1.2 Earnings informativeness

Efficient income smoothing can improve the informativeness of a firm's current and past earnings about future earnings and cash flows. Earnings informativeness (or stock price informativeness) is defined by Zarowin (2002, 4) as *"the amount of information about future earnings or future cash flows impounded in the current period stock return."* Resource allocation can be improved if stock prices include more information through income smoothing (Zarowin 2002, 3).

When making discretionary accounting choices managers consider expected future earnings (Fudenberg and Tirole 1995, 77). Tucker and Zarowin (2006, 253) categorize the managers' use of reporting discretion as either (a) garbling or (b) efficient communication of private information. The authors argue that if income smoothing is garbling, then the resulting earnings are less informative about future earnings. When income smoothing is used to communicate private information about future performance expectations, it could provide more information about future earnings and cash flows. This last argument is the one I use further in this master thesis.

2.1.3 The relation between income smoothing and earnings informativeness

Although the effect of income smoothing on earnings informativeness is not thoroughly investigated, the accounting literature so far theorizes two opposite effects of income smoothing on earnings informativeness according to Zarowin (2002, 4) and Tucker and Zarowin (2006, 253). One viewpoint is that managers use income smoothing to make public their private information about the firm's future earnings (Ronen and Sadan 1981, Chaney and Lewis 1995, Tucker and Zarowin 2006). Here income smoothing results in more information about future earnings and cash flows, which in turn is reflected in the stock prices. Alternative findings suggest that income smoothing alters information and makes stock prices less informative. Less information about future earnings and cash flows will be reflected in the stock prices, making smoothing harmful (Tucker and Zarowin 2006, 253).

2.1.4 Income smoothing improving the value relevance[2] of earnings

The study of Hunt et al. (2000) investigates whether earnings smoothing through discretionary accruals improves or deteriorates the informativeness of earnings. The findings suggest that both discretionary and nondiscretionary accrual accounting practices increase the informativeness of earnings. Further the results support the informativeness hypothesis, namely that managers smooth income to convey their private information. Here, Hunt et al. (2000, 8) refer to the study of Chaney and Lewis (1995), which also stated that only managers have private information about future earnings and therefore smooth income.

The study of Zarowin (2002) introduces a new approach by focusing on the relation between current stock prices and future information in a cross-sectional setting. Zarowin (2002, 4) defines stock price informativeness as *"the amount of information about future earnings and cash flows that is reflected in current period stock returns"*. This notion is measured as the coefficient on future earnings (FERC) in the regression of current stock return on current and future earnings.
Regressions of stock returns against lagged, current and one year ahead earnings or cash flows and accruals, provide evidence that increased smoothing is associated with increased earnings informativeness. Thus firms with stock returns including more information about future earnings and cash flows have higher stock price informativeness.

The study of Tucker and Zarowin (2006) is more recent, and the approach used is closely related to Zarowin (2002). The authors believe that a firm has certain information about future earnings when current earnings are realized, because of the continuous business cycle. Then the reporting behaviour and the stock price reveal this information.
The research of Tucker and Zarowin (2006) provides evidence of more informative stock prices when firms smooth income, with stock prices of higher-smoothing firms more informative than lower-smoothing firms. Again, this is evidence that firms use discretion in reporting standards to make public information about future earnings and cash flows.

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[2] The term value relevance is used for earnings informativeness

2.1.5 Income smoothing as "garbling"

The second viewpoint in the income smoothing literature is that managers use their reporting discretion to "garble" earnings according to Tucker and Zarowin (2006, 253). Sloan (1996) investigates whether information about future earnings is fully reflected in the stock prices. This information is assumed to be contained in accruals and cash flows. In a regression of future abnormal returns on earnings, evidence is found that stock prices fail to anticipate the lower persistence of earnings impounded in accruals.

The research of Beneish and Nichols (2005) expands on Sloan (1996) by examining the role of earnings management in relation with the market pricing of accruals more thoroughly. The results suggest that when the probability of managed earnings is high, positive earnings are less persistent than negative earnings. This is in contradiction with investors' expectations that firms which manipulate earnings have higher future earnings. Subsequently the authors argue that earnings management is misleading.

2.2 Institutional characteristics

2.2.1 Investor protection

The notion of investor protection is defined by Cahan et al. (2008, 3) as *"how well investors are protected by law from expropriation by managers and controlling shareholders of firms"*. Insiders (managers) have the incentive to act in their own interest (opportunism), to obscure private control benefits and not reporting the true firm performance. An example is overstating earnings. When outside investors detect this behaviour, they will try to take actions against the insiders according to Leuz et al. (2003, 506). Investors are protected by law and regulation, which can differ across countries. Insiders are less intended to act opportunistically when investors are better protected. Here the distinction is made between strong investor protection and weak investor protection countries. This distinction is based on characteristics of a country's legal system, legal enforcement, shareholder rights, equity market importance, ownership concentration and disclosure requirements (Leuz et al. 2003, following La Porta et al. 1997, 1998).

2.2.2 The relation between investor protection, income smoothing and earnings informativeness

A study defining earnings management as managers' opportunistic behaviour and thus misleading is the research of Leuz et al. (2003, 506). Managers have the incentive to conceal true firm performance. The extent of their discretion depends on the accounting rules in a country and the legal system. Institutional characteristics are also taken into account. The results suggest that income smoothing is more persistent in weak investor protection countries.

The study of Cahan et al. (2008) investigates whether earnings informativeness due to income smoothing is related to the institutional infrastructure of a country. They use the approach of Tucker and Zarowin (2006) to measure earnings informativeness. This study focuses on the positive effects of income smoothing, managers communicating their private information about firm's future expectations.

The legal enforcement index based on La Porta et al. (1998) is used to measure investor protection. Legal enforcement is considered to be a good indication because laws are ineffective if they are not enforced. The findings suggest that income smoothing is more pervasive in countries with weak investor protection. Consequently income smoothing in countries with strong investor protection improves earnings informativeness to a higher extent than in countries with weak investor protection. Opportunism is associated with low investor protection while the communication of private information is related to strong investor protection. While there is less income smoothing in strong investor protection countries, its effect on informativeness is stronger than in countries with weak investor protection. Thus the efficient communication use of income smoothing predominates the use for opportunistic purposes.

2.2.3 The introduction of IFRS

As of January 1, 2005, all companies listed in the European Union are required to apply International Financial Reporting Standards (IFRS) when preparing their consolidated financial statements. IFRS are accounting standards issued by an independent body in Europe, the International Accounting Standards Board (IASB).

With the introduction of IFRS, standards are more principle based. More general principles rather than detailed rules are developed. Associated with the principle based approach of IFRS is fair value accounting, which is defined in IAS 39 as: *"the amount for which an assets could be exchanged, or a liability settled, between knowledgeable, willing parties in an arm's length transaction"* (IFRSs in your pocket 2009, 98). Fair value accounting differs from historical cost accounting in that it requires estimates based on market prices, which are not always observable (Ball 2006) and thus subject of management judgement. With the introduction of IFRS, many international differences in accounting standards are about to disappear. Harmonization will be the result, which improves the comparability of companies across countries. To achieve this, consistent appliance of IFRS across countries is necessary. The IASB is a standard setter and not a regulator. Implementation of the standards is primarily the responsibility of managers, auditors and local regulators in each country (Ball 2006).

2.2.4 IFRS, earnings management and earnings informativeness

The introduction of one single set of accounting standards in the European Union is supposed to increase uniformity and comparability. Increased uniformity goes together with reduced managers' discretion, as concluded by Palepu et al. (2007).

For instance, Van Tendeloo and Vanstraelen (2005) compare voluntary adoption of IFRS with German GAAP during 1999-2001. They find no significant difference in the level of earnings management.

Barth et al. (2008) investigate whether the degree of earnings management changes after voluntary adoption of international standards during 1994-2003, in a cross country study. They conclude that the level of income smoothing is lower for companies applying international standards. Also they find a higher association between net income and stock returns, which is evidence of earnings being more informative.

The study of Jeanjean and Stolowy (2008) examines the consequences of the introduction of IFRS on earnings management in UK, France and Australia. It is argued that IFRS *"provides firm with substantial discretion"* (Jeanjean and Stolowy 2008, 484). Earnings management is found to be higher after IFRS adoption in France and remaining stable in UK and Australia. The explanation given is that countries have different institutional characteristics.

Soderstrom and Sun (2007) attempt to find an explanation for the mixed results in prior research on the consequences of IFRS adoption for accounting quality. They argue that accounting quality not only depends on the accounting standards applied but also on a country's legal and political system and financial reporting incentives. Accounting standard setting is primarily influenced by government in code law countries and private organizations in common law countries. Differences in legal enforcement across countries also play a role.

3. Hypothesis development and research design

After 2005 listed companies in Europe are required to apply IFRS. These standards follow a principle based approach and fair value accounting which requires more subjective judgement.

Paananen and Lin (2008) report that income smoothing behaviour increased after IFRS adoption in Germany. Jeanjean and Stolowy (2008) provide evidence of more earnings management after IFRS introduction in France. This leads to my first hypothesis:

H1: After the introduction of IFRS, firms in UK, France and Netherlands smooth income to a higher degree than during pre IFRS period.

Certain studies investigated the level of income smoothing across countries, by taking investor protection into consideration (e.g. Cahan et al. 2008, Leuz et al. 2003). Their findings suggest that income smoothing is more pervasive in countries where shareholders are less protected by law and regulations. Following these results, I deduce the next hypothesis:

H2: Income smoothing is lower in countries with strong investor protection regimes.

Keeping in mind that UK is a strong investor protection country and France and Netherlands have weaker investor protection based on proxies of La Porta et al. (1998) and the fact that I investigate two time periods, the following sub hypotheses are developed:

a: During pre IFRS adoption period income smoothing is higher in France and Netherlands compared to UK.
b: During post IFRS adoption period income smoothing is higher in France and Netherlands compared to UK.

When managers use income smoothing to communicate private information about future earnings, this information will be revealed in the stock price (Tucker and Zarowin 2006). Other studies argue that the effect of income smoothing on earnings informativeness also depends on the country's legal origin. Cahan et al. (2008) conclude that in strong investor protection countries income smoothing leads to more informative earnings. This is due to the fact that managers in these countries have high incentives to smooth earnings in order to reveal information to the market.

Assuming that the first hypothesis is true, and considering previous evidence about income smoothing improving earnings informativeness in strong investor protection countries, I have the same expectation about firms in UK.

H3: After the adoption of IFRS, income smoothing improves earnings informativeness to a higher extent than during the pre IFRS adoption period for firms in UK.

In contradiction to high investor protection, weak investor protection allows for more discretion. In this case the managerial intendancy to manipulate earnings aggravates according to Hung (2001). The author also suggests that the positive effect of income smoothing on value relevance of earnings is attenuated in low investor protection economies. This is because in those countries, managers are believed to smooth income for opportunistic reasons, according to Cahan et al. (2008). Income smoothing is then considered to cause earnings to be noisier and thus less informative Tucker and Zarowin (2006).

Considering the fact that France and Netherlands are characterized by weak investor protection, the next hypothesis can be formulated:

H4: After IFRS adoption, income smoothing improves earnings informativeness to a lower extent than during the pre IFRS period for firms in France and Netherlands.

Sample data

The aim of my study is to compare two groups of countries with different institutional characteristics prior to IFRS adoption and after the IFRS adoption. I choose listed companies from France and the Netherlands (French origin) on the one side and United Kingdom (English origin) on the other side. UK is a strong investor protection country while France and the Netherlands display a lower level of investor protection. Besides UK has a common law system, while France and the Netherlands are code law countries. The judgement on the strength of the investor protection system is based on the scores for the investor protection proxies (proxies from La Porta et al. 1997, 1998, used by Leuz et al. 2003).

I use annual, firm level data for my research from the databases Worldscope (Thomson One Banker) and Datastream. The regressions will be estimated for two sample periods: pre

IFRS adoption (2002 – 2004) and post IFRS adoption (2006 – 2008). The base years will be 2003 and 2007 respectively.

An overview of the sample construction is provided in table 1, after the missing observations are left out. For the final samples: financial firms are excluded, because of their different accounting practices.

Table 1 Sample

Country	Pre IFRS	Post IFRS
France	363	241
The Netherlands	82	78
UK	642	253
Total	*1.087*	*572*

Methodology

▪ **Income smoothing measure**

Income smoothing is measured by variation in net income relative to the variation in operating cash flows: σ_{NI}/σ_{CFO}. A lower relative variation in net income is evidence of income smoothing (Zarowin 2002). To estimate the income smoothing measure for 2003 (pre IFRS, base year), data about net income and operating cash flows for the years 2001, 2002, and 2003 is needed. Similar, the smoothing measure of 2007 (post IFRS, base year) requires data from 2005, 2006, 2007.

An income smoothing ranking is employed by Zarowin (2002) to control for industry and time effects. I choose a similar way of ranking, with a small modification. The smoothing variable *IS* is determined as the fractional ranking of income smoothing and takes values between 0 and 1. The fractional ranking is the raw rank minus 1 divided to the number of observations minus 1. An example: The firms are arranged according to the σ_{NI}/σ_{CFO} from low smoothing to high and suppose there are 100 firms totally. The highest smoothing firm has raw rank 100, which results in a fractional ranking of (100-1)/(100-1) = 1, for the second highest smoothing firm it will be (99-1)/(100-1) = 0,989. A higher value indicates more income smoothing and thus a higher rank.

▪ **Earnings informativeness measure**

The relation between stock returns and future earnings is measured by the future earnings response coefficient (FERC). This is the coefficient on future earnings in a regression of current stock return on current and future earnings. The model of Tucker and Zarowin (2006) requires a longer sample period, since three years ahead of earnings and returns are included in the regression. Zarowin (2002) restricts the sample period, by taking only one year ahead of earnings and returns in consideration. I choose this last approach, since my sample period after IFRS is limited. Besides like Zarowin (2002, 13) argues, if there is an association between income smoothing and earnings informativeness it is more likely to be discovered in the next year than in the second or third year.

Main model

To provide evidence on hypothesis 3 and 4, the effect of income smoothing on the relation between stock return and future earnings has to be examined. This will be achieved, by applying the next regression based on Zarowin (2002):

$$R_t = b_0 + b_1 EPS_{t-1} + b_2 EPS_t + b_3 EPS_{t+1} + b_4 R_{t+1} + b_5 IS_t + b_6 IS_t * EPS_{t-1} + b_7 IS_t * EPS_t + b_8 IS_t * EPS_{t+1} + b_9 IS_t * R_{t+1} + \varepsilon_t$$

Where:

R_t = the current annual stock return in year t

EPS_{t-1} = the earnings per share for year t-1, deflated by the stock price at the beginning of year t

EPS_t = the earnings per share for year t, deflated by the stock price at the beginning of year t

EPS_{t+1} = the earnings per share in the year t+1, deflated by the stock price at the beginning of year t

R_{t+1} = the stock return for year t+1

The earnings per share variables are adjusted for stock splits and stock dividends and excluding extraordinary items. The FERC is represented by b_3, and is predicted to be positive. The higher this coefficient the more information about future earnings is included in the current stock price. The coefficient on current earnings, b_2 is also predicted to be positive and higher than b_3. The coefficient on past earnings is predicted to be negative. The coefficient on $IS_t * EPS_{t+1}$, b_8, is expected to be positive if income smoothing results in more information about future earnings (since a higher ranking means more smoothing). In contrast when income smoothing is considered as garbling then b_8 is predicted to be negative. In that case current stock returns contain less information about future earnings. This regression will be estimated for each country twice, before IFRS and after IFRS adoption.

4. Empirical results and analysis

4.1 The degree of income smoothing

UK

From performed sample statistics it follows that the mean σ_{NI}/σ_{CFO} amounts 2,147 during pre IFRS and 1,350 after IFRS. A lower ratio indicates a higher degree of income smoothing. In fact the ratio should be less than 1 for income smoothing firms (Zarowin 2002). When I take a look at the absolute values of the σ_{NI}/σ_{CFO} ratio, then I conclude that 305 from the 622 UK firms (49%) have a ratio lower than 1, which is evidence of income smoothing. For the post IFRS period 155 from 239 companies (65%) show a lower variation in net income relative to the variation in operating cash flows. The difference in the mean values together with the decrease in the absolute values suggests that firms in UK smooth income to a higher degree after IFRS adoption.

To confirm this establishment, the Mann-Whitney test is performed. This is a non parametric test that allows comparing two independent samples, which do not satisfy the condition of normally distributed data. The actual Mann-Whitney statistic is the U[3]. The results of the Mann-Whitney test for UK are given in table 2.

Table 2 Mann-Whitney test results pre IFRS UK vs. post IFRS UK

Ranks					Test Statistics[a]	
	Period	N	Mean Rank	Sum of Ranks		σ_{NI}/σ_{CFO}
σ_{NI}/σ_{CFO}	Pre IFRS	621	452,41	280.946,00	Mann-Whitney U	60.604,000
	Post IFRS	239	373,57	89.284,00	Wilcoxon W	89.284,000
	Total	**860**			Z	-4,169
					Asymp. Sig. (2-tailed)	0,000
					a. Grouping Variable: Period	

The lower mean rank in the post IFRS period means that there are more lower values of the ratio σ_{NI}/σ_{CFO}, than in the pre IFRS period. The difference between these means is significant. From previous statements I conclude that firms in UK smooth income to a higher degree after adoption of IFRS, which confirms that hypothesis 1 is proven true for UK.

France
The mean income smoothing ratio (σ_{NI}/σ_{CFO}) is 1,097 in the pre IFRS period and 0,987 after IFRS adoption. Again, the mean ratio is lower after adoption of IFRS. In addition it takes a value lower than 1. For the absolute values of smoothing firms I find that about 66% in the pre IFRS period and 71% during the period after IFRS introduction have a ratio below 1. Also here the Mann-Whitney test is performed.

Table 3 Mann-Whitney test results pre IFRS France vs. post IFRS France

Ranks					Test Statistics[a]	
	Period	N	Mean Rank	Sum of Ranks		σ_{NI}/σ_{CFO}
σ_{NI}/σ_{CFO}	Pre IFRS	346	291,77	100.954,00	Mann-Whitney U	39.003,000
	Post IFRS	231	284,84	65.799,00	Wilcoxon W	65.799,000
	Total	**577**			Z	-0,489
					Asymp. Sig. (2-tailed)	0,625
					a. Grouping Variable: Period	

The Mann-Whitney test designates that the mean rank is lower after IFRS, but the difference is not significant (1-tailed significance 0,625/2 = 0,313). However, there is still an indication that companies in France smooth income more after adoption of IFRS. Thus hypothesis 1 is considered to be true for France.

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[3] $U = N_1 N_2 + (N_1 * (N_1+1))/2 - R_1$, where N_1 and N_2 are the sample sizes of the two groups and R_1 is the sum of ranks of the first group.

The Netherlands

As for UK and France, for Netherlands the mean σ_{NI}/σ_{CFO} ratio is also smaller subsequent to IFRS adoption. The mean value is 1,550 in the first period with respect to 1,237 in the second period. Prior to IFRS, approximately 59% companies show a ratio indicating income smoothing practices. After IFRS the percentage grows up to 76%. This is consistent with the results of Jeanjean and Stolowy (2008), which also find evidence of increased earnings management in France.

Table 4 Mann-Whitney test results pre IFRS Netherlands vs. post IFRS Netherlands

Ranks					Test Statistics[a]	
	Period	N	Mean Rank	Sum of Ranks		σ_{NI}/σ_{CFO}
σ_{NI}/σ_{CFO}	Pre IFRS	78	82,97	6.472,00	Mann-Whitney U	2.537,000
	Post IFRS	76	71,88	5.463,00	Wilcoxon W	5.463,000
	Total	**154**			Z	-1,543
					Asymp. Sig. (2-tailed)	0,123
					a. Grouping Variable: Period	

In the table 4 the results of the Mann-Whitney test are presented. The mean rank is lower in the second period, thus the income smoothing ratio is lower over the whole period, significant at 10% level (1-tailed significance 0,123/2 = 0,061). There is evidence that companies smooth income to a larger degree after appliance of IFRS standards. Thus the prediction made in hypothesis 1 is considered true for Netherlands.

Comparison between France, the Netherlands and UK

France and Netherlands have weaker investor protection than UK. The legal environment of a country is predicted to influence the degree of managers' discretion in a country.

Pre IFRS

The Kruskal-Wallis test is similar to the Mann-Whitney, it is based on ranks, and performs well with not normally distributed data. In addition, the Kruskal-Wallis can be used to test for differences among more than two groups, which is the case here, since I want to compare the mean of σ_{NI}/σ_{CFO} for UK, France and the Netherlands. The results of this test for the pre IFRS period are shown in the next table.

Table 5 Pre IFRS Kruskal-Wallis test results France, Netherlands and UK

Ranks				Test Statistics[a]	
	Country	N	Mean Rank		σ_{NI}/σ_{CFO}
σ_{NI}/σ_{CFO}	UK	621	574,25	Chi-Square	45,586
	France	346	439,55	df	2
	Netherlands	78	485,15	Asymp. Sig.	0,000
	Total	**1.045**		a. Kruskal Wallis Test	
				b. Grouping Variable: Country	

The mean rank is the highest for UK and lowest for France. A lower mean rank indicates lower values of σ_{NI}/σ_{CFO}. The difference is significant, which means that the country in

which a company operates influences the degree of income smoothing. In France and Netherlands firms smooth income to a larger extent compared to firms in UK in the pre IFRS period. Also the mean σ_{NI}/σ_{CFO} is higher for UK, as mentioned in section 4.1. These findings confirm hypothesis 2a.

Post IFRS
The same expectations apply for the post IFRS period. Table 6 presents the results of the Kruskal-Wallis test.

Table 6 Post IFRS Kruskal-Wallis test results France, Netherlands and UK

Ranks				Test Statistics[a]	
	Country	N	Mean Rank		σ_{NI}/σ_{CFO}
σ_{NI}/σ_{CFO}	UK	239	294,02	Chi-Square	7,451
	France	231	260,17	df	2
	Netherlands	76	249,49	Asymp. Sig.	0,024
	Total	**546**		a. Kruskal Wallis Test	
				b. Grouping Variable: Country	

Again the mean rank of UK is the highest, followed by France and Netherlands. The degree of income smoothing is significantly different across the investigated countries, with companies in UK smoothing income less than companies in France and Netherlands. This conclusion can also be depicted if the mean ranks of σ_{NI}/σ_{CFO} for the three countries are considered. Hypothesis 2b is thus supported by the results.
Even in the period after IFRS firms in weak investor protection countries smooth income more than firms in strong protection countries. They might do so for different reasons. With weak investor protection (e.g. weak public enforcement) opportunistic behaviour is less likely to be detected and probably more prevalent.

4.2 Income smoothing and earnings informativeness

In this section the results of the main model are presented per country. The main model for each period is specified below.

Pre IFRS: $R_t = b_0 + b_1 EPS_{2002} + b_2 EPS_{2003} + b_3 EPS_{2004} + b_4 R_{2004} + b_5 IS_{2003} + b_6 IS_{2003} * EPS_{2002} + b_7 IS_{2003} * EPS_{2003} + b_8 IS_{2003} * EPS_{2004} + b_9 IS_{2003} * R_{2004} + \varepsilon_t$

Post IFRS: $R_t = b_0 + b_1 EPS_{2006} + b_2 EPS_{2007} + b_3 EPS_{2008} + b_4 R_{2008} + b_5 IS_{2007} + b_6 IS_{2007} * EPS_{2006} + b_7 IS_{2007} * EPS_{2007} + b_8 IS_{2007} * EPS_{2008} + b_9 IS_{2007} * R_{2008} + \varepsilon_t$

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Table 7 Results UK

	Model variables	Intercept	EPS_{t-1}	EPS_t	EPS_{t+1}	R_{t+1}	IS_t	$IS_t *$ EPS_{t-1}	$IS_t *$ EPS_t	$IS_t *$ EPS_{t+1}	$IS_t *$ R_{t+1}
UK pre IFRS*	Coefficients	-0,268	0,018	0,142	-0,032	-0,089	0,014	0,056	0,258	0,507	0,058
	t-statistic	(-9,966)	(1,516)	(2,585)	(-0,408)	(-4,129)	(0,287)	(0,879)	(1,395)	(2,503)	(1,447)
	P-value	0,000	0,130	0,010	0,683	0,000	0,774	0,380	0,164	0,013	0,148
UK post IFRS**	Coefficients	0,003	1,121	0,686	2,072	-0,408	0,277	-1,643	1,764	-2,786	0,527
	t-statistic	(0,043)	(2,364)	(0,697)	(2,168)	(-2,714)	(1,975)	(-1,268)	(0,827)	(-1,617)	(1,865)
	P-value	0,966	0,019	0,487	0,031	0,007	0,049	0,206	0,409	0,107	0,063

*Adj. R^2=0,215

**Adj. R^2=0,165

The coefficient on the interaction between income smoothing and future earnings is the one I am interested in ($IS_t * EPS_{t+1}$). For the pre IFRS period this coefficient is significantly positive, as predicted. Thus it can be concluded that income smoothing enhances earnings informativeness in the pre IFRS period for UK. The value of b_7 is also positive but not significant.

For the post IFRS period income smoothing is predicted to improve the information content of current stock returns about future earnings to a higher extent than in the pre IFRS period for UK. In contrast, b_8 is found to be highly negative. However the results are not significant and the explanatory power of the model is also lower in the post IFRS period. If income smoothing alters information in the post IFRS period, a suitable explanation should be provided. It might be possible that IFRS allows for more discretion than UK GAAP, which encourages managers to manipulate earnings for opportunistic reasons.

In the end, the evidence provided does not support hypothesis 3, since the results are inconsistent with the predictions and not significant.

Table 8 Results France

	Model variables	Intercept	EPS_{t-1}	EPS_t	EPS_{t+1}	R_{t+1}	IS_t	$IS_t *$ EPS_{t-1}	$IS_t *$ EPS_t	$IS_t *$ EPS_{t+1}	$IS_t *$ R_{t+1}
France pre IFRS*	Coefficients	-0,348	0,086	0,090	0,013	0,009	0,229	-0,151	0,263	0,483	-0,209
	t-statistic	(-10909)	(2,063)	(1,464)	(0,144)	(0,234)	(4,110)	(-1,021)	(1,346)	(2,227)	(-2,800)
	P-value	0,000	0,040	0,144	0,885	0,815	0,000	0,308	0,179	0,027	0,005
France post IFRS**	Coefficients	0,110	1,667	1,116	-0,078	0,207	0,069	-0,791	-0,813	-0,088	-0,116
	t-statistic	(1,660)	(3,108)	(1,988)	(-0,142)	(1,106)	(0,523)	(-0,483)	(-0,572)	(-0,083)	(-0,349)
	P-value	0,098	0,002	0,048	0,887	0,270	0,601	0,629	0,568	0,934	0,728

*Adj. R^2=0,224

**Adj. R^2=0,153

The key interest coefficient is significantly positive for France during pre IFRS. Income smoothing also causes stock return to include more information about current earnings, although b_7 is not significant.

In the second period, b_8 shows a negative value, but highly insignificant. The same conclusion as for UK can be drawn here. In addition b_7 is negative, which means that income smoothing does not lead to more information about current earnings being included in the price, which is unreasonable.

Although for the post IFRS period the results are not significant, I carefully consider hypothesis 4 to be true for France, based on the results for both periods. Income

smoothing causes earnings to be less informative after IFRS adoption, I can not conclude that income smoothing is garbling in the post IFRS period, since the results are not significant.

Table 9 Results Netherlands

	Model variables	Intercept	EPS$_{t-1}$	EPS$_t$	EPS$_{t+1}$	R$_{t+1}$	IS$_t$	IS$_t$ * EPS$_{t-1}$	IS$_t$ * EPS$_t$	IS$_t$ * EPS$_{t+1}$	IS$_t$ * R$_{t+1}$
NL pre IFRS*	Coefficients	-0,232	-0,186	0,295	0,365	-0,291	0,053	0,622	-0,486	0,269	0,065
	t-statistic	(-3,639)	(-2,216)	(2,687)	(1,438)	(-2,501)	(0,508)	(2,007)	(-1,233)	(0,405)	(0,303)
	P-value	0,001	0,030	0,009	0,155	0,015	0,613	0,049	0,222	0,687	0,763
NL post IFRS**	Coefficients	0,106	1,066	1,370	0,797	-0,095	0,071	-0,278	1,420	-2,961	0,246
	t-statistic	(1,022)	(1,777)	(2,186)	(1,290)	(-0,261)	(0,327)	(-0,108)	(0,664)	(-1,942)	(0,384)
	P-value	0,310	0,080	0,032	0,201	0,795	0,745	0,915	0,509	0,056	0,702

*Adj. R^2=0,316

**Adj. R^2=0,226

For Netherlands b_8 is also positive but not significant prior to IFRS. The coefficient on current earnings is negative and insignificant. The evidence is not convincing, so I can not conclude that income smoothing improves earnings informativeness before IFRS adoption. After IFRS, the coefficient on future earnings is highly negative and significant at 10% level, which induces that income smoothing is altering information. In contrast, b_7 is positive but not significant. Given the insignificant results for the pre IFRS period, I consider that hypothesis 4 is supported for Netherlands.

5. Summary and conclusions

5.1 Conclusions

First of all I found evidence of higher income smoothing behaviour after the introduction of IFRS in UK, France and Netherlands. These results confirm the expectation that IFRS standards allow for more managerial discretion. Fair value accounting requires subjective judgement. Managers probably use this incentive to smooth income streams.

Further, in the weak investor protection countries France and Netherlands, firms present more stable earnings than in UK, for both periods of time. An explanation is that managers in low investor protection countries are more able to hide true firm's performance for stakeholders and act in their own benefit (Cahan et al. 2008).

The second part of my research, relates to the effect of income smoothing on earnings informativeness. In the period prior to IFRS income smoothing causes stock returns to contain more information about future earnings for all three countries, with insignificant results for Netherlands. Subsequently to IFRS adoption the findings indicate that income smoothing decreases earnings informativeness for all the three countries, although the results are insignificant for UK and France. This is in accordance to my expectations for France and Netherlands but not for UK. Since firms in UK show more stable earning after IFRS, it is not only about the degree of smoothness. Like Cahan et al. (2008) suggest, in strong investor protection countries firms mainly smooth income to efficiently

communicate information about true firm performance, while in weak investor protection countries opportunism is the major reason. In the first case, income smoothing should improve the value relevance of earnings.

A possible explanation for the garbling effect of income smoothing in the post IFRS period for UK, is that managers act in their own interest. The new standards provide more incentives for managers to smooth earnings than the UK GAAP standards probably. Managers use this discretion in an opportunistic way, despite of the high level investor protection. Another explanation could be that the public enforcement of accounting rules in the sample countries also changed after the introduction of IFRS. Or maybe national regulators expect more guidance from the European regulatory body (CESR) about how to enforce the new IFRS rules. Less strict enforcement would create more incentives for managers to deceive. However the results for the post IFRS period are not significant, and should carefully be interpreted.
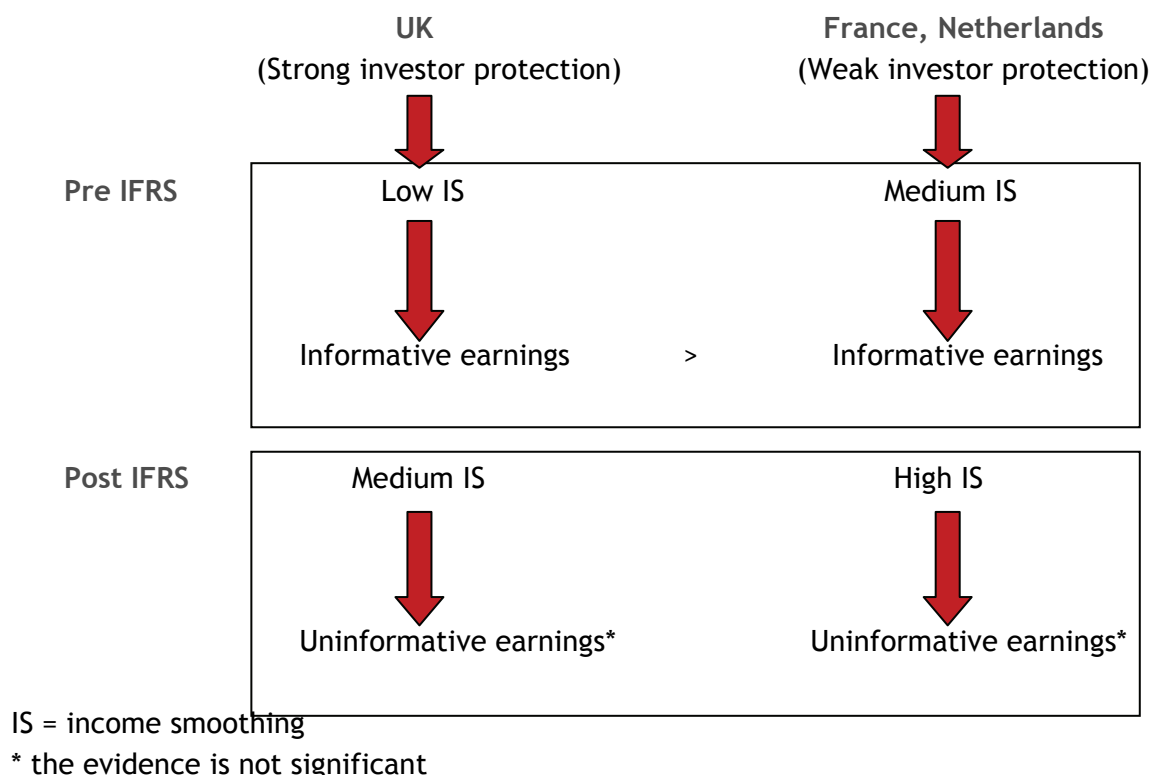
The degree of investor protection seems to be less important after IFRS adoption. Nevertheless this is a suggestive interpretation, since some results are insignificant.

Based on the evidence found no explicit conclusion can be drawn. The differences in the degree of income smoothing and earnings informativeness among countries can not be fully assigned to just the applied accounting standards, neither to just the institutional factors. It is rather a combination of factors, which affects the incentives for income smoothing.

In the end I would like to conclude this discussion by quoting Jeanjean and Stolowy (2008, 493):

"…management incentives and national institutional factors play an important role in framing financial reporting characteristics, probably more important than accounting standards alone. The IASB and the European Commission should now devote their efforts to harmonizing incentives and institutional factors rather than harmonizing accounting standards."

To summarize, the relation I found between IFRS, investor protection, income smoothing and earnings informativeness in this research is as follows.

	UK (Strong investor protection)	France, Netherlands (Weak investor protection)
Pre IFRS	Low IS ↓ Informative earnings	>	Medium IS ↓ Informative earnings
Post IFRS	Medium IS ↓ Uninformative earnings*		High IS ↓ Uninformative earnings*

IS = income smoothing

* the evidence is not significant

5.2 Limitations and suggestions for further research

I acknowledge that my study has some limitations. First of all the interpretation of the model is uncertain in an inefficient market, since it assumes market efficiency. Secondly, the income smoothing measure might not capture smoothing behaviour accurately. Next, the chosen samples include are small compared to prior research. The mandatory adoption of IFRS is still recent and the time horizon of data is limited. Fourthly, other factors that can influence income smoothing and/or the relation between income smoothing and earnings informativeness are not taken into account (e.g. firm size, industry, the growth rate of the company, inflation). In the end additional robustness test are not performed. In the end future research should be able to better investigate the effect of IFRS adoption on income smoothing and earnings informativeness using a bigger sample and omitting the implementation period. The influence of institutional factors should be more thoroughly investigated and changes in managerial incentives should be identified.

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