Does national culture influence management's accounting behaviour and strategy? – an empirical analysis of European IFRS adopters

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Abstract

Purpose – This study examines, in a European context, whether a management-induced International Financial Reporting Standards (IFRS) accounting strategy is affected by national culture. It analyses the association between management's accounting strategy and Hofstede's cultural dimensions of individualism and uncertainty avoidance, as well as institutional and firm-specific factors.

Design/methodology/approach – Using hand-collected accounting decisions from 301 annual reports of firms from 14 European countries in 2017, a model is developed to identify two ordinally scaled accounting strategy variables, each representing the aggregated effect of the decisions on earnings and equity ratio. Afterwards, the effect of the cultural dimensions on these accounting-strategy variables is analysed by an ordered logistic regression.

Findings – The results do not support an association between management's accounting strategy and national culture, complementing the previous critical literature on values-based theories of culture. However, there is evidence that national legal enforcement, disclosure requirements and firm size explain differences in management's accounting strategy across countries.

Research limitations/implications – Using the cultural value dimensions of the Global Leadership and Organizational Behavior Effectiveness (GLOBE) project, the findings are robust and stable. However, the study is limited to a European data set and the sample year.

Practical implications – This study contributes to the discussion on the transparency and comparability of IFRS accounting. The results imply that these issues are not affected by cultural differences but rather by differences in institutional and firm-specific factors. In order to bring about improvements, regulators should establish a uniform institutional setting, while the standard setter should reduce the number of implicit and explicit accounting choices embodied in the IFRS.

Originality/value – The paper advances the understanding of cultural influences on management's IFRS accounting behaviour by providing an alternative to the existing accruals approach.

Keywords National culture, Hofstede, Accounting, Strategy, IFRS, Europe

Paper type Research paper

1. Introduction

This study investigates the impact of culture on management's accounting behaviour and strategy within the context of IFRS accounting. To examine this association, financial information disclosed in annual reports is analysed, since these reports are an important instrument for reducing information asymmetries between the management of a company and its investors and creditors (Watts, 1977). Both groups of addressees use the information presented in the reports for decision-making and monitoring (Cascino *et al.*,

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2014). Thus, the reports are an integral part of a company's capital market communication and of the decision-making process of capital providers. For this purpose, the European Union (EU) implemented the International Financial Reporting Standards (IFRS) mandatorily for publicly traded firms in 2005, so as to provide investors and creditors with comparable, transparent and uniform financial information (European Union, 2002). They are structured as a set of generally accepted and principle-based accounting standards developed by the International Accounting Standards Board (IASB). Since they are principle based, the IFRS reduce the number of explicit accounting choices and promote measurements reflecting a firm's economic performance and position (IASB, 2018). Nevertheless, an inherent flexibility remains, which requires the professional judgement of an accountant (Sunder, 2009). On the one hand, the existing explicit and implicit accounting choices can be used to achieve a fair presentation, but on the other hand, they offer management opportunities to influence the financial statements opportunistically (Doukakis, 2014). This behaviour is also known as "earnings management" or "creative accounting" and is mostly seen as problematic by practitioners and regulators (Dechow and Skinner, 2000).

A number of studies have examined the impact of IFRS adoption in the EU, regarding the quality of disclosure and earnings. While some of them found a positive link between IFRS adoption and less earnings management, and thus higher accounting quality (Barth *et al.*, 2008; Christensen *et al.*, 2014), others found no or even a negative link (Atwood *et al.*, 2011; Ahmed *et al.*, 2013). Furthermore, there is no unanimous evidence that IFRS adoption really improves transparency and comparability. In particular, Lang *et al.* (2010) do not find improvements in comparability through IFRS adoption, while Yip and Young (2012) provide evidence to the contrary (see also Brüggemann *et al.* (2013)). Notwithstanding this situation, concordant empirical evidence shows positive effects on the capital market in the form of decreasing bid-ask spreads (Muller *et al.*, 2011) or increasing stock market liquidity (Daske *et al.*, 2008) through IFRS introduction. In short, the evidence of capital market effects is, therefore, mostly clear and compelling but mixed in terms of whether IFRS leads to a decrease in earnings management and consequently to greater transparency and comparability. Regarding the incentives for earnings management, various, but mainly US, studies investigate the link between earnings management and management incentives. They focus on the effect of firm-level factors on management's accounting behaviour, starting with the positive accounting theory of Watts and Zimmerman (1978, 1986). While these studies focus on the political cost (Jones, 1991), debt covenant (Dichev and Skinner, 2002) or the bonus plan hypothesis (Healy, 1985), fewer international studies investigate the influence of country-specific factors on earnings management behaviour. These few find evidence of a decreasing effect of strong national legal enforcement and investor protection on earnings management (Leuz *et al.*, 2003; Burgstahler *et al.*, 2006). Taking into account that these factors are affected by national culture (Stulz and Williamson, 2003), a cultural influence on earnings management is evident (Pacheco Paredes and Wheatley, 2017; Han *et al.*, 2010; Doupnik, 2008). Based on these results, European cultural accounting studies find evidence that the cultural influence on earnings management persists after IFRS adoption (Ugrin *et al.*, 2017; Gray *et al.*, 2015).

This study contributes to the previous literature in several ways. First, it examines the question of how European companies make use of the available explicit and implicit IFRS accounting choices, and how these decisions influence accounting figures. For this purpose, this paper analyses the exercise of various accounting choices made by companies in the EU on the basis of annual reports and their effects on the equity ratio and earnings. Second, it develops a model that transfers these choices into a cross-firm and cross-country comparable accounting-strategy variable and therefore provides an alternative approach for investigating accounting behaviour, besides the methodology used in the accrual-based studies mentioned above. Third, this paper examines the impact of national culture on

management's accounting strategy, using an ordered logistic regression. Hence, this study differs from previous research by focussing on the IFRS *application* instead of IFRS *adoption*. It, thus, provides insights into management's accounting practice and the extent to which the application of the principle-based IFRS allows transparent and comparable accounting across countries. Furthermore, it increases our understanding of the impact of country-specific factors in general and national culture in particular on differences in the IFRS application across Europe. In this context, the study also contributes to the question to what extent national cultural values actually have explanatory power, or whether there are other more useful factors to explain accounting strategy.

This study uses a sample of 301 annual reports for the fiscal year 2017 of companies listed in the lead indices of 14 EU first-time adopter countries of IFRS. The European setting is suitable for testing cultural influence on IFRS accounting practice, since the EU has rather homogeneous securities markets and a single commercial market. Yet, despite the ongoing harmonisation and integration process, each country retains its unique culture, customs and traditions (Kraus, 2012). The year 2017 is chosen, because it marks the end of a relatively stable period in Europe, without significant economic events and changes as well as new standards since the introduction of IFRS 13 in 2013. In the subsequent years, the IASB introduced new standards and released a new framework. It is, thus, generally taken into account that the management has gained experience over the past few years in applying this constant set of IFRS standards. Therefore, the setting provides a similar institutional basis and the included annual reports represent the accounting behaviour without being affected by changes in the accounting or economic setting, helping to isolate and analyse the cultural influence.

The results show that a causal relationship between national culture and accounting strategy cannot be confirmed using the cultural values of Hofstede (2001, 1980). Therefore, national differences in culture, at least based on Hofstede, are not an explanatory factor of management's accounting behaviour. These findings show that the comparability and transparency of IFRS are not affected by culture but rather by institutional and firm-specific factors. The results are especially important for regulators, since they should presumably increase their efforts to implement a uniform institutional setting across Europe. Likewise, the standard setter should consider reducing the number of explicit and implicit accounting choices in the IFRS in order to decrease management's accounting opportunities. The remainder of this paper is organised as follows. The next section reviews the literature and develops hypotheses. Section 3 presents the accounting-strategy model. In Section 4, the ordered logistic regression is conducted, and the empirical findings are presented and analysed. The final Section 5 provides conclusions and suggestions for future research.

2. Literature review and hypotheses

2.1 Earnings management and IFRS adoption in Europe

The widespread evidence on earnings management indicates that managers are tempted to manipulate their earnings in order to achieve the desired earning targets. The incentives are often contractual and include debt covenants, management compensation, union negotiation and other regulatory factors (Fields *et al.*, 2001). Earnings can be managed in various ways. Earnings may be manipulated upwards in order to meet or beat analyst expectations as well as to avoid earnings decrease and losses (Brown and Caylor, 2005; Burgstahler and Dichev, 1997). Furthermore, managers may engage in earnings maximisation to increase their bonus payments or avoiding debt covenant violations (Healy, 1985; Dichev and Skinner, 2002). Earnings may not only be managed downwards in highly profitable periods to reduce political costs (Jones, 1991) but also in loss periods to enhance future income, referred to "big bath" accounting (Elliott and Shaw, 1988). In addition, earnings may be smoothed to reduce

the volatility of reported earnings exerting positive effects on the stock market valuation of the company (Myers *et al.*, 2007).

While these findings relate mainly to US firms, research in Europe concentrates on the impacts of the IFRS adoption on earnings management. Jeanjean and Stolowy (2008) find that the pervasiveness of earnings management has not declined in the UK and has increased in France after IFRS adoption. Capkun *et al.* (2016) detect an increase in earnings management and in income smoothing for voluntary and mandatory IFRS adopters. Callao and Jarne (2010) also find an overall increase in earnings management in 11 EU countries after IFRS adoption. Furthermore, several studies investigate the impact of IFRS adoption at the country level. They find increase in earnings management for Germany (van Tendeloo and Vanstraelen, 2005; Paananen and Lin, 2009) and Sweden (Paananen, 2008). However, these results contradict studies detecting less earnings management and improvements in earnings quality after IFRS adoption (Zeghal *et al.*, 2012; Houqe *et al.*, 2016) or in comparison with other reporting standards (Barth *et al.*, 2008). Improvements are also observed at the country level. For instance, Zéghal *et al.* (2011) detect a decrease in earnings management in French companies after mandatory IFRS adoption. This mixed and even contradictory evidence suggests that other factors affect earnings management and earnings quality. Given that studies reveal an impact of national culture on differences in companies' economic and business activities (Scholtens and Dam, 2007; Zhang *et al.*, 2013), national culture may be one of these factors.

2.2 Cultural values and earnings management

There are many definitions of culture in the literature [1], but in the following analysis Hofstede's (2001) is used, defining culture as "the collective programming of the mind that distinguishes the members of one group or category of people from another", while "the essential core of culture consists of traditional [. . .] ideas and especially their attached values" (Kroeber and Kluckhohn, 1952, p. 181). In this context, values represent the "broad tendency to prefer certain states of affairs over others" (Hofstede, 2001, p. 5). In this way, cultural values affect a country's economy, institutions and politics (Greif, 1994). Equally, individuals are constantly exposed to these cultural values, influencing their behaviour through institutions, laws and norms (Markus and Kitayama, 1994; Schwartz, 1999). Various concepts for measuring culture and its values were developed by Hofstede (2001, 1980), Schwartz (1994) and most recently by the GLOBE study of House *et al.* (2004). While the recent approach of GLOBE has not yet confirmed its validity (Brewer and Venaik, 2010), Hofstede's model of cultural dimensions is well tested and widely used in management and accounting research (Beugelsdijk *et al.*, 2017; Khlif, 2016); therefore, it is still considered relevant (Kirkman *et al.*, 2006).

In his model, Hofstede (2001, 1980) developed the following four dimensions characterising culture: uncertainty avoidance, individualism, power distance and masculinity. Uncertainty avoidance describes the way a society copes with future uncertainty and anxiety. Individualism refers to the degree of collectivity or individuality within a society. Power distance describes the extent to which the individual is willing to accept societal power imbalances and hierarchical structures. Masculinity refers to the societal roles a society assigns to both sexes. These dimensions can explain institutional structures and the behaviour of society members. Furthermore, they can be used to distinguish between societies or nations. Gray (1988) then hypothesises that Hofstede's cultural dimensions impact on a nation's accounting system through their influence on institutions and shared accounting values. He defines four accounting values, namely professionalism, uniformity, conservatism and secrecy, which are linked to Hofstede's cultural dimensions and affect accounting outcomes. Salter and Niswander (1995) tested and validated the assumed association between Hofstede's dimensions and Gray's accounting values.

Yet, Hofstede's approach of a value-based national culture is criticised in the literature, beginning with his definition of culture, which prioritises national culture as the dominant cause of behaviour (McSweeney, 2016). Although it is questionable whether nations are the proper unit of analysis (Kirkman *et al.*, 2017; McSweeney, 2013), his definition also ignores the cultural heterogeneity within a country's population and assumes shared cultural values instead (McSweeney *et al.*, 2016; Jones, 2007). The assumption of cultural coherence is therefore problematic (McSweeney, 2016), which also applies to the proposition of a static national culture (Kirkman *et al.*, 2017). However, both assumptions are needed to determine the cultural dimensions. In addition, their unilinear and unidimensional construction and their measurement through statistical methods are subject to critique (Chapman, 1997; McSweeney, 2002). This critique further includes Hofstede's approach to identify national culture on the basis of a large-scale questionnaire survey carried out in various branches of the IBM company around the world in the 1970s (Moore, 2003; Jones, 2007; Javidan *et al.*, 2006). Finally, the country scores obtained may be outdated due to the environmental changes in the last 50 years (Minkov *et al.*, 2017; Kirkman *et al.*, 2006). In order to address the latter issues, attempts have been made to update Hofstede's cultural dimensions (Minkov *et al.*, 2017, 2019; Minkov, 2018), but the general concerns about value-based national culture approaches persist.

Besides the critique, few studies examine the impact of cultural differences on accounting behaviour mainly focussing on earnings management. In a cross-country study among 31 countries, Doupnik (2008) states that Hofstede's dimension of uncertainty avoidance is positively linked with earnings discretion. In addition, strong uncertainty avoidant and high collectivist societies seem to engage more in earnings smoothing. Doupnik regards these results as an expression of the desire of such societies to control the future and protect the individual. In another study concerning the same countries, Desender *et al.* (2011) find that highly individualistic countries engage less in earnings management. Another cross-country study with 32 countries by Han *et al.* (2010) identifies a positive (negative) link between the dimension of individualism (uncertainty avoidance) and earnings management through accruals. These findings are explained by the assumption that individualistic societies offer more flexibility in the preparation of financial statements, while uncertainty avoidant societies focus more on conservatism and uniformity. Gray *et al.* (2015) support these findings in their study of 14 European countries. They determine a persistent influence of Hofstede's cultural dimensions on earnings management behaviour after mandatory IFRS adoption. For the same 14 countries, Ugrin *et al.* (2017) find that higher levels of uncertainty avoidance, individualism and power distance lead to more income-increasing earnings management after the IFRS adoption. Pacheco Paredes and Wheatley (2017) in turn investigate the influence of national culture on real earnings management across 31 countries. First, they state a negative relation between real earnings management and the dimensions of uncertainty avoidance, individualism and masculinity. Second, they reveal a positive association with the dimension of power distance.

2.3 Hypothesis development

Given that the studies described in the previous subsections point out that national culture influences earnings management behaviour, it is assumed that national culture can also explain management's accounting behaviour expressed as a particular accounting strategy. Hence, the study reveals new aspects of the association between accounting decisions, accounting practice and national culture in Europe, besides the two known accrual-based studies of Gray *et al.* (2015) and Ugrin *et al.* (2017). Following Han *et al.* (2010), only the cultural dimensions of uncertainty avoidance and individualism are considered with regard to the fact that only these two are fully linked to the four accounting values of Gray (1988).

2.3.1 Uncertainty avoidance. As previously mentioned, society's dealings with the unpredictability and ambiguity of the future manifest itself in the dimension of uncertainty avoidance. Strong uncertainty-avoiding societies try to lessen uncertainty with structures and principles expressed in their laws, institutions and societal interaction. By contrast, weak uncertainty-avoiding societies are more open to deviance and varying views (Hofstede, 2001; Hofstede *et al.*, 2010). Following Gray (1988), high levels of uncertainty avoidance lead to uniform accounting rules for the preparation and presentation of financial statements combined with stronger statutory control. In addition, earnings are reported more conservatively and cautiously with respect to upcoming and unknown events. Statutory control, uniformity and conservatism restrict the potential for managing earnings (Gray *et al.*, 2015), which may then result in lower earnings. However, Doupnik (2008) and Ugrin *et al.* (2017) argue that in cases of strong uncertainty avoidance, earnings are managed upwards in order to avoid negative capital market reactions arising, for instance, from negative analyst forecasts. Therefore, the association between the dimension of uncertainty avoidance and the accounting strategy is not clear. Hence, the following hypothesis is stated:

H1. Depending on the level of uncertainty avoidance, it is likely that an accounting strategy will be chosen that affects earnings (equity ratio) in the current and subsequent financial statements.

2.3.2 Individualism. In high individualistic societies, individuals care primarily for themselves and their closest relatives. There are only loose ties between members of society. In contrast, individuals in collectivist societies are part of a group with strong ties that provide security in exchange for loyalty (Hofstede, 2001). Therefore, the degree of individualism in a society indicates how strong individuals integrate and subordinate themselves to this society. Gray's (1988) model states that individualistic societies promote individual professional judgement by the accountant and self-governance, as opposed to statutory control and regulation. Moreover, such societies allow more flexibility and optimism in measurement and accounting, depending on the company's situation. This is only limited by more transparency requirements in disclosure. Taking into account that in individualistic societies, companies engage in more earnings management (Han *et al.*, 2010; Gray *et al.*, 2015) and that greater income-increasing earnings management behaviour can be observed after IFRS adoption (Ugrin *et al.*, 2017), the following hypothesis is proposed:

H2. The higher the level of individualism, the more likely an accounting strategy will be chosen that increases earnings (equity ratio) in the current financial statement and decreases it in subsequent ones.

3. Classification model for a uniform accounting strategy

Inspired by the work of Healy (1985), Jones (1991) and others, most culture studies use discretionary accruals as a proxy for earnings management behaviour. For this purpose, they use different models, splitting total accruals into a discretionary and a non-discretionary part. These applied models offer many degrees of freedom, resulting from a lack of a standardised method for calculating discretionary accruals (Ohlson, 2014). Furthermore, it is questionable whether the accrual models can actually split into managed and ordinary accruals (Fields *et al.*, 2001).

Consequently, a different approach, established by Hagerman and Zmijewski (1979) as well as Zmijewski and Hagerman (1981), is chosen. They codify accounting decisions according to their impact on earnings and aggregate them into an accounting-strategy variable. In this way, the accounting strategy considers individual accounting decisions as a single comprehensive decision induced by the management. Both studies test and find evidence supporting the positive accounting theory. Later research adopts this approach

(Press and Weintrop, 1990; Astami and Tower, 2006), and this study also follows this methodology. In accordance with Hagerman and Zmijewski, earnings are seen as one objective of the accounting strategy. In addition , the equity ratio is also taken into account, as this allows examining the effects of the accounting strategy on the balance sheet as well as on the income statement. Earnings and the equity ratio also play an important role in debt financing and in management compensation (Healy and Wahlen, 1999). Apart from the two objectives of the accounting strategy, it is necessary to identify accounting instruments in the IFRS, which impact on earnings and the equity ratio. An accounting instrument is defined as an explicit or implicit accounting choice within the IFRS, requiring alternative accounting decisions. For the identification of an accounting instrument in the IFRS, the following three criteria are specified:

(1) The accounting decision related to the accounting instrument has to influence the objective directly.

(2) It has to be possible to determine the direction of effect of the accounting decision related to the accounting instrument on the objective. Multi-periodicity and reversal effects have to be considered.

(3) The information required to identify the accounting decision related to the accounting instrument has to be present in the financial statements.

The accounting instruments included in Table 1 are selected on the basis of these criteria. Additionally, the effects of the related accounting decisions on the objectives for the current and subsequent financial statements are also presented. The magnitude of the effect on the objectives is assumed to be equal, according to Inoue and Thomas (1996).

As mentioned above, the six accounting instruments involve different accounting decisions. These decisions include the measurement after recognition of property, plant and equipment in accordance with IAS 16 and of investment property in accordance with IAS 40 at fair value or at cost. Furthermore, IAS 17 requires the management to classify existing lease contracts as finance or operating leases. IAS 20 allows the management to recognise government grants related to assets as deferred income or as a deduction from the asset's carrying amount, while the capitalisation of intangible assets arising from internal development requires management, in accordance with IAS 38, to distinguish between a development and research phase. Finally, goodwill measurement in a business combination according to IFRS 3 embodies management decisions, which influence the amount of goodwill recognised in the consolidated financial statements. For a more detailed explanation of these accounting decisions and their effects on equity ratio and earnings in the current and subsequent financial statements, see Appendix 1.

Thus, the included accounting decisions described above may have either an increasing or decreasing effect on equity ratio and earnings. Therefore, an indicator variable is introduced in Table 2, classifying these decisions according to their impact on the two objectives in the current and subsequent consolidated financial statements.

For classification purposes, it is necessary to gain knowledge about the accounting decisions made. In combination with the ratios presented in Table 3, it is possible to determine the predominant application of the accounting decision made by the company. If the ratio lies above or below 0.5, a predominant exercise and, thus, the direction of the effect of the accounting instrument on the objectives is observable [2]. Moreover, it is not necessary to calculate the ratios for all accounting instruments. No ratios are required for the subsequent measurement of property, plant and equipment and, partly, for investment property, since the effects on the objectives are determined by the selected valuation model. The same applies to the recognition of government grants related to assets as deferred income or as a deduction of

	Effects on current consolidated financial statement				Effects on subsequent consolidated financial statements			
	Equity ratio		Earnings		Equity ratio		Earnings	
	(+)	(−)	(+)	(−)	(+)	(−)	(+)	(−)
IAS 16: Measurement after recognition of property, plant and equipment								
Cost model		X	X		X		X	
Revaluation model	X			X		X		X
IAS 17: Classification of leases								
Finance lease		X		X	X		X	
Operating lease	X		X		=		=	
IAS 20: Recognition of government grants related to assets								
As deferral		X	=		X		=	
As deduction of the carrying amount	X		=			X	=	
IAS 38: Possible capitalisation of internally generated intangible assets								
No capitalisation		X		X	X		X	
Capitalisation	X		X			X		X
IAS 40: Measurement after recognition of investment property								
Cost model		X		X	X		X	
At fair value	X		X			X		X
IFRS 3: Goodwill deriving from business combinations								
Low recognised goodwill		X		X	X		X	
High recognised goodwill	X		X			X		X

Note(s): This table lists the accounting instruments and related accounting decisions included in the analysis. In addition, the effects of the instruments on the equity ratio and earnings in the current and the subsequent consolidated financial statements are marked with "X". If the instruments influence the equity ratio and earnings equally, they are marked with "="

Table 1. Accounting instruments and related accounting decisions included in the analysis

Effect in current consolidated financial statement	Effect in subsequent consolidated financial statements	Indicator variable
Effect on equity ratio		
Decreasing	Increasing	1
Increasing	Decreasing	0
Effect on earnings		
Decreasing	Increasing	1
Increasing	Decreasing	0

Table 2. Classification of the accounting decisions according to their effects on equity ratio and earnings

an asset's carrying amount. A classification is not possible if the effect on the objectives is constant over time. This applies to government grants and also to the measurement after recognition of property, plant and equipment with regard to earnings (in Table 3: N/A).

By applying this methodology, it is possible to extract the accounting instruments used and their predominant effects on earnings and the equity ratio from a firm's consolidated financial statement. Using the formula in equation (1) from Appendix 2, the identified instruments can be aggregated into a composite accounting instrument score (CAI), according to their impact on the objectives (Astami and Tower, 2006; Bowen *et al.*, 1995). The values of CAI lie between a minimum of zero and a maximum of one. In the last step, the values of CAI are allocated to an ordinally scaled accounting-strategy variable. The value of

Ratio	Threshold	Indicator variable EQR	Earnings
IAS 17: Classification of leases			
$\frac{\text{operating lease expense}}{\text{operating lease expense+finance lease expense}}$	<0.5	1	1
	>0.5	0	0
IAS 20: Recognition of government grants related to assets			
Recognition as deduction of the carrying amount		0	N/A
Recognition as deferred income		1	
IAS 38: Possible capitalisation of internally generated intangible assets			
$\frac{\text{capitalised development costs}}{\text{capitalised development costs+R\&D expense}}$	<0.5	1	1
	>0.5	0	0
IAS 40: Measurement after recognition of investment property			
At fair value		0	0
According to cost model	<0.5	1	1
$\frac{\text{carrying amount}}{\text{carrying amount+fair value}}$	>0.5	0	0
IFRS 3: Goodwill deriving from business combinations			
$\frac{\text{increase in goodwill}}{\text{purchase price paid}}$	<0.5	1	1
	>0.5	0	0
IAS 16: Measuring after recognition of property, plant and equipment			
According to cost model		1	N/A
According to revaluation model		0	

Note(s):
Operating lease expense: Total future minimum lease payments under operating leases disclosed in the financial statements
Finance lease expense : Total future minimum lease payments under finance leases disclosed in the financial statements
Deduction of the carrying amount : Government grants related to assets are recognised in the financial statements as a deduction from the asset's carrying amount
Deferred income : Government grants related to assets are recognised in the financial statements as deferred income
Capitalised development costs : Total increase of capitalised development costs for internally generated assets disclosed in the financial statements
R&D expense : Total research and development costs disclosed in the financial statements
Carrying amount : Total carrying amounts of investment property disclosed in the financial statements
Fair value : Total fair values of investment property disclosed in the financial statements
Increase in goodwill: Total of newly purchased goodwill disclosed in the financial statements
Purchase price paid : Total purchase prices paid for new business combinations disclosed in the financial statements

Table 3. Identification and classification of the predominant application of the accounting decisions related to the accounting instruments included in the analysis

one represents a solely currently increasing, but in future decreasing, strategy with regard to earnings and the equity ratio. In contrast, the value of five represents a solely currently decreasing, but in future increasing, strategy. The value of three represents a balanced strategy, and the allocation process is presented in Table 4.

4. Empirical results

4.1 Sample selection

The initial sample consists of 459 firms listed in the lead indices of the 15 EU first-time IFRS adopter countries at the year end of 2017. First, cross-listed firms are assigned to their country

of domicile. If the domicile country lies outside the EU, the firm is eliminated from the sample. Second, financial firms are excluded. Third, all companies from Luxembourg and four from other countries are eliminated due to missing values. Next, I downloaded the annual reports for fiscal years that ended in 2017 from the investor relations section of the firm websites for the final sample of 301 firms. Finally, I hand collected the required data to apply the model presented in Section 3 and identified the accounting-strategy variable for each report individually. Table 5 shows the composition of the final sample by country.

4.2 Independent and control variables

The cultural dimensions model of Hofstede (2001, 1980) is used to test the hypotheses developed in Section 2.3. This model distinguishes between national cultures by providing point values for each dimension and country. The values of the independent variables, uncertainty avoidance (UCA) and individualism (IND), for each country *c* are presented in Table 6 – Panel A.

According to the findings of Leuz *et al.* (2003) and Burgstahler *et al.* (2006), institutional factors could also explain management's accounting behaviour. Both studies examine an influence of national legal enforcement (ENF) and investor protection (INV) on earnings

Table 4. Identification and classification of the strategy variable ACCOUNTING STRATEGY$_i$

CAI$_i$	Accounting strategy	ACCOUNTING STRATEGY$_i$
0	Solely currently increasing, but in future decreasing, strategy with regard to the objectives	1
$0 < CAI_i < 0.5$	Predominantly currently increasing, but in future decreasing, strategy with regard to the objectives	2
0.5	Balanced accounting strategy	3
$0.5 < CAI_i < 1$	Predominantly currently decreasing, but in future increasing, strategy with regard to the objectives	4
1	Solely currently decreasing, but in future increasing, strategy with regard to the objectives	5

Table 5. Sample selection

Country	Starting sample	Less cross-listed firms	Less financial firms	Less firm missing values	Final sample
Austria	20	0	9	0	11
Belgium	20	4	5	0	11
Denmark	20	1	2	0	17
Finland	25	2	1	0	22
France	40	7	4	0	29
Germany	30	0	6	0	24
Greece	25	2	6	1	16
Italy	40	6	13	0	21
Luxembourg	9	3	3	3	0
Netherlands	25	3	5	0	17
Portugal	18	1	1	1	15
Republic of Ireland	20	4	6	0	10
Spain	35	2	9	0	24
Sweden	31	3	5	2	21
United Kingdom	101	16	22	0	63
Total	459	54	97	7	301

Panel A: Variable definitions

Variable	Definition and measurement
UCA_c	The value of the uncertainty avoidance dimension of a country, provided by Hofstede *et al.* (2010)
IND_c	The value of the individualism dimension of a country, provided by Hofstede *et al.* (2010)
$DISC_c$	A country's disclosure requirement index, provided by La Porta *et al.* (2006)
INV_c	A country's legal minority shareholder protection, measured as the antidirector index used in La Porta *et al.* (1998)
ENF_c	National legal enforcement measured as the mean score across the legal variables used in La Porta *et al.* (1998): the efficiency of the judicial system, an assessment of rule of law and the corruption index
LEGGER	Indicator variable, which equals 1 if firm's country of domicile have a German legal origin and 0 otherwise
LEGFR	Indicator variable, which equals 1 if firm's country of domicile have a French legal origin and 0 otherwise
LEGSC	Indicator variable, which equals 1 if firm's country of domicile have a Scandinavian legal origin and 0 otherwise
LEGUK	Indicator variable, which equals 1 if firm's country of domicile have a British legal origin and 0 otherwise
$SIZE_i$	Natural logarithm of the market value of equity
LEV_i	Total liabilities divided by total equity
$ISSUE_i$	Indicator variable, which equals 1 if the firm issues new shares in the given year and 0 otherwise
ROA_i	Income before taxes divided by total assets
$LOSS_i$	Indicator variable, which equals 1 if the firm experiences a loss in the given year and 0 otherwise
$BIG4_i$	Indicator variable, which equals 1 if the group's auditor is one of the Big 4 audit firms and 0 otherwise

Panel B: Descriptive statistics of cultural and institutional variables

	N	UCA_c	IND_c	$DISC_c$	INV_c	ENF_c
German legal origin						
Austria	11	70	55	0.25	2	9.36
Germany	24	65	67	0.42	1	9.05
French legal origin						
Belgium	11	94	75	0.42	0	9.44
France	29	86	71	0.75	3	8.68
Greece	16	100	35	0.33	2	6.82
Italy	21	75	76	0.67	1	7.07
Netherlands	17	53	80	0.5	2	10.00
Portugal	15	99	27	0.42	3	7.19
Spain	24	86	51	0.5	4	7.14
Scandinavian legal origin						
Denmark	17	23	74	0.58	2	10.00
Finland	22	59	63	0.5	3	10.00
Sweden	21	29	71	0.58	3	10.00
British legal origin						
Republic of Ireland	10	35	70	0.67	4	8.36
United Kingdom	63	35	89	0.83	5	9.22

Panel C: Descriptive statistics of firm-specific variables

	N	Mean	Median	SD	Minimum	Maximum
$SIZE_i$	301	22.96	22.97	1.30	19.78	25.59
LEV_i	301	2.02	1.51	2.06	−4.18	11.13
ROA_i	301	0.08	0.06	0.06	−0.07	0.33

Note(s): Panel A reports on the independent variables included in the ordered logistic regression and their definitions and measurements. Panel B and Panel C provide summary descriptive statistics of the cultural, institutional and firm-specific variables included in the analysis

Table 6.
Variable definitions, measurement and descriptive statistics

management. ENF is measured as the mean score across the three legal variables used in La Porta *et al.* (1998): the efficiency of the judicial system, an assessment of rule of law and the corruption index. INV represents the anti-director index from La Porta *et al.* (1998), indicating the legal protection of minority shareholders. Moreover, Gray *et al.* (2015) argue that national

disclosure regulation (DISC) affects earnings discretion, whereby DISC is the disclosure requirement index from La Porta *et al.* (2006). Additionally to these institutional factors, LEGAL controls for a country's legal origin, classified by Reynolds and Flores (1989) and applied by La Porta *et al.* (1998).

Furthermore, firm-specific incentives could also play a role in management's accounting behaviour. Therefore, several variables are included to control for firm-specific factors. The variable SIZE, calculated as the natural logarithm of the market value of equity, is included because larger firms experience more monitoring by and attention from the capital market, public or government (Han *et al.*, 2010; Scott, 2012). Thus, SIZE may impact on a manager's accounting behaviour. Leverage (LEV) is also included, as it controls the effects on the accounting strategy of increased monitoring by debt holders in highly leveraged firms (Gray *et al.*, 2015). LEV is calculated as total liabilities divided by total equity. Besides the debts, a raise in equity could also have an impact. Thus, the indicator variable ISSUE is added, which equals 1 if the company issues new shares in the given year and 0 otherwise (Han *et al.*, 2010). Furthermore, the return on assets (ROA) is included to control the impact of a firm's profitability and measured as income before taxes divided by total assets [3]. In addition, accounting strategy may be affected by negative earnings periods (Healy and Wahlen, 1999). Therefore, an indicator variable LOSS is added, which is 1 if the company experiences a loss in the given year and 0 otherwise. Finally, BIG4 indicates whether the firm is audited by one of the Big four companies. The required data on the firm level were extracted from Thomson Reuters Eikon for fiscal years that close in 2017. Moreover, INDUSTRY controls for industry fixed effects using the 12-industry classification scheme of Fama-French. Variable definitions, measurements and descriptive statistics are reported in Table 6. The firm-specific variables are winsorized at the 1 and 99% levels:

4.3 Empirical model

Since the dependent variable ACCOUNTING STRATEGY is ordinally scaled, an ordered logistic regression is carried out to test the hypotheses. In contrast to ordinary least square regressions, ordered logistic regressions yield conclusions on the probability of a particular outcome of ACCOUNTING STRATEGY, depending on the predictors. While the dependent variable has to be categorical, the independent variables can be continuous, dichotomous and discrete (Tabachnick and Fidell, 2014) [4]. Therefore, the general form of the ordered logistic regression model is as follow:

$$\begin{aligned}\text{ACCOUNTING STRATEGY}_i = {} & \beta_0 + \beta_1{*}\text{UCA}_c + \beta_2{*}\text{IND}_c + \beta_3{*}\text{ENF}_c + \beta_4{*}\text{INV}_c \\ & + \beta_5{*}\text{DISC}_c + \beta_6{*}\text{SIZE}_i + \beta_7{*}\text{LEV}_i + \beta_8{*}\text{ISSUE}_i \\ & + \beta_9{*}\text{ROA}_i + \beta_{10}{*}\text{LOSS}_i + \beta_{11}{*}\text{BIG4}_i + \sum \gamma_L \text{LEGAL}_l \\ & + \sum \delta_M \text{INDUSTRY}_m + \varepsilon_i \end{aligned} \quad (2)$$

The independent and control variables are as defined in Section 4.2, while c denotes the country, i the firm, l the legal origin cluster and m the industry cluster.

Table 7 represents the Pearson correlations for the independent variables. Strong correlations can be observed between the cultural and institutional variables. This is not surprising, since culture clearly influences the institutions of a country. In addition, institutional factors may have a close linkage by law, like INV and DISCL, thus explaining strong correlations. Comparable correlation values can also be found in La Porta *et al.* (2006)

	UCA		IND		ENF		INV		DISC		SIZE		LEV		ISSUE		ROA		LOSS	BIG4
UCA	1.00																			
IND	−0.71	***	1.00																	
ENF	−0.69	***	0.58	***	1.00															
INV	−0.43	***	0.29	***	0.07		1.00													
DISC	−0.51	***	0.75	***	0.17	***	0.66	***	1.00											
SIZE	−0.22	***	0.47	***	0.30	***	0.03		0.34	***	1.00									
LEV	0.13	**	−0.12	**	−0.21	***	0.07		−0.02		−0.05		1.00							
ISSUE	0.12	**	0.01		−0.10	*	−0.03		0.04		0.06		0.15	**	1.00					
ROA	−0.25	***	0.15	**	0.15	***	0.08		0.13	**	0.13	**	−0.23	***	−0.11	*	1.00			
LOSS	−0.05		0.00		0.05		−0.01		−0.04		−0.08		0.00		0.04		−0.41	***	1.00	
BIG4	−0.10	*	0.13	**	0.05		0.00		0.04		0.08		−0.02		0.01		0.03		0.04	1.00

Note(s): The Pearson correlations are reported in this table whereby *, ** and *** indicate statistical significance at the 0.1, 0.05 and 0.01 levels, respectively, (two-tailed)

Table 7.
Correlation matrix between the independent variables

and Gray *et al.* (2015). Furthermore, only SIZE and IND as well as LOSS and ROA have slightly greater values than 0 and 0.4. This will be considered in the robustness checks.

4.4 Main results

Initially, Table 8 provides an overview of the distribution of ACCOUNTING STRATEGY by country and industry.

Across countries, the analysed firms tend to use an accounting strategy which predominantly or solely currently decreases the equity ratio (EQR: 51%). In contrast, the majority of firms follow an accounting strategy which predominantly or solely currently increases annual's earnings (EA: 51%). In both cases, about one-third uses a balanced strategy (EQR: 29%, EA: 32%) and the minority follows a predominantly or solely currently increasing (EQR: 20%) or decreasing (EA: 17%) strategy.

Considering legal origin, only firms in countries with a German legal background use, on average, strategies that currently decrease the equity ratio (EQR: 3.6) and earnings (EA: 3.1) but have positive impacts in future periods. In contrast, firms in countries with a British legal origin apply on average a less decreasing strategy concerning equity ratio (EQR: 3.2) but an on average currently increasing strategy concerning earnings (EA: 2.3). It is therefore not surprising that the most representative countries of these two strategies have a German legal (Austria: EQR: 3.9, EA: 3.5) or British legal background (United Kingdom: EQR: 3.1, EA: 2.0). However, other countries also show high or low values for one or both accounting strategies, such as Spain (EQR: 3.8), Greece (EA: 1.9) or the Netherlands (EQR: 3.1, EA: 2.1).

With regard to the industry, the strategies differ depending on the firm's sector. Notable values for an on average currently decreasing strategy for the equity ratio are found for the oil, gas and coal sector (EQR: 4.3, EA: 3.2) and the utilities sector (EQR: 3.9, EA: 2.9). In contrast, the telephone and television sector (EQR: 2.9, EA: 1.9), as well as the wholesale and retail sector (EQR: 3.0, EA: 1.9), apply a more balanced or increasing strategy on average for both objectives.

Summarising, the results mentioned above first allow the identification of the majority exercise of the accounting strategy among the firms in the sample regarding the accounting objectives. Second, these majorities generally do not occur at country or industry level. Third, management pursues opposing strategies concerning the equity ratio and earnings at the country as well as the industry level. These findings support the question of whether cultural differences affect management's accounting behaviour. Furthermore, considering the results, it seems reasonable to control for industry and legal influences.

Next, two ordered logistic regressions are performed to test the hypotheses. The results are presented in Table 9. Both models are statistically significant at the 1% level (χ^2 of 75.21 resp. 70.49). The McFadden's pseudo-R^2 is 9.95% in the equity ratio model and 7.97% in the earnings model. This seems to be low, but pseudo-R^2 values between 0.2 and 0.4 already indicate an excellent fit (McFadden, 1979), and the outcomes are comparable to other accounting-strategy studies, such as Zmijewski and Hagerman (1981) or Skinner (1993). The models properly classify 49.83% resp. 44.19% of the firm's accounting strategy concerning the equity ratio and earnings. Comparing these values with the results of the naive model (44.52% resp. 31.56%), the formulated models reveal better prediction rates. The naive model follows the maximum choice criterion (Morrison, 1969).

4.4.1 Uncertainty avoidance (H1). The results in Table 9 do not indicate that the uncertainty avoidance dimension (UCA) significantly influences management's accounting strategy in terms of equity ratio and earnings. Therefore, Hypothesis 1 is rejected in favour of the null that the chosen accounting strategy does not depend on the level of a country's uncertainty avoidance dimension. These findings are consistent with the results of earnings

Accounting strategy	*N*	Distr	1		2		3		4		5		Mean	
Panel A: Country			EQ	EA	EQ	EA	EQ	EA	EQ	EA	EQ	EA	EQ	EA
Austria	11	3.7%	0	0	1	1	0	5	9	4	1	1	3.9	3.5
Germany	24	8.0%	1	3	3	6	6	9	14	6	0	0	3.4	2.8
German legal origin													3.6	3.1
Belgium	11	3.7%	0	3	3	3	2	3	6	2	0	0	3.3	2.4
France	29	9.6%	2	9	7	7	7	10	13	3	0	0	3.1	2.2
Greece	16	5.3%	0	8	2	2	6	6	7	0	1	0	3.4	1.9
Italy	21	7.0%	0	6	4	2	6	9	9	2	2	2	3.4	2.6
Netherlands	17	5.6%	0	5	5	8	7	3	4	0	1	1	3.1	2.1
Portugal	15	5.0%	0	5	2	3	4	3	6	1	3	3	3.7	2.6
Spain	24	8.0%	0	6	3	5	6	6	9	1	6	6	3.8	2.8
French legal origin													3.4	2.4
Denmark	17	5.6%	0	5	4	2	3	8	9	1	1	1	3.4	2.5
Finland	22	7.3%	0	2	1	5	6	10	13	3	2	2	3.7	2.9
Sweden	21	7.0%	0	3	3	9	8	6	10	3	0	0	3.3	2.4
Scandinavian legal origin													3.5	2.6
Republic of Ireland	10	3.3%	0	3	3	3	2	1	4	2	1	1	3.3	2.5
United Kingdom	63	20.9%	0	29	16	12	25	16	21	5	1	1	3.1	2.0
British legal origin													3.2	2.3
Total	301	100.0%	3	87	57	68	88	95	134	33	19	18	3.4	2.5
Panel B: Industry														
Business equipment	19	6.3%	0	4	4	10	10	2	3	1	2	2	3.2	2.3
Chemicals and allied products	17	5.6%	0	1	1	10	9	5	7	1	0	0	3.4	2.4
Consumer durables	11	3.7%	0	3	3	2	2	4	6	2	0	0	3.3	2.5
Consumer non-durables	25	8.3%	1	10	8	5	5	7	11	3	0	0	3.0	2.1
Healthcare, medical equipment and drugs	23	7.6%	0	4	3	7	7	6	12	5	1	1	3.5	2.7
Manufacturing	55	18.3%	0	4	3	11	13	23	37	15	2	2	3.7	3.0
Oil, gas and coal extraction and products	10	3.3%	0	2	0	0	1	5	5	0	4	3	4.3	3.2
Other	60	19.9%	1	29	17	8	16	17	21	1	5	5	3.2	2.1
Telephone and television transmission	24	8.0%	1	11	8	5	8	7	7	1	0	0	2.9	1.9
Utilities	28	9.3%	0	5	0	3	6	13	18	3	4	4	3.9	2.9
Wholesale, retail and some services	29	9.6%	0	14	10	7	11	6	7	1	1	1	3.0	1.9
Total	301	100.0%	3	87	57	68	88	95	134	33	19	18	3.4	2.4

Note(s): This table presents the distribution of the accounting strategy variable concerning the equity ratio and earnings by country in panel A and by industry in panel B. Last two columns report on the mean of the accounting strategy variable concerning the equity ratio and earnings for each country, industry, legal origin and the final sample

Table 8.
Distribution of the accounting strategy variable by country and industry

management studies by Ugrin *et al.* (2017) and Gray *et al.* (2015), which also do not confirm this overall association in a European setting. Thus, accounting values linked with the uncertainty avoidance dimension by Gray (1988), such as uniformity, statutory control and conservatism, do not influence accounting strategy. Hence, there are neither indications of more conservative behaviour nor of attempts to currently increase financial statement figures in highly uncertainty-avoiding countries, as assumed by Doupnik (2008). Consequently, it can be assumed that managers make IFRS accounting decisions regardless of the national level of uncertainty avoidance.

Table 9.
Results of the ordered logistic regressions

Accounting strategy	(1) Equity ratio Coefficient	*p*-value	(2) Earnings Coefficient	*p*-value
UCA_c	0.011	0.387	0.006	0.599
IND_c	0.022	0.405	0.007	0.788
ENF_c	−0.462	0.061*	−0.265	0.263
INV_c	0.272	0.162	0.099	0.596
$DISC_c$	−4.788	0.029**	−2.295	0.265
$SIZE_i$	0.282	0.019**	0.295	0.010***
LEV_i	−0.021	0.723	−0.004	0.949
$ISSUE_i$	−0.068	0.814	0.108	0.703
ROA_i	−0.164	0.937	−2.875	0.162
$LOSS_i$	0.839	0.109	0.695	0.150
$BIG4_i$	−0.111	0.777	−0.178	0.962
Legal origin		Yes		Yes
Industry fixed effects		Yes		Yes
Pseudo-R^2	9.95 %		7.97 %	
χ^2	75.21***		70.49***	
Correctly classified	49.83 %		44.19 %	
Naive classification	44.52 %		31.56 %	

Note(s): *, ** and *** indicate statistical significance at the 0.1, 0.05 and 0.01 levels, respectively

Model:

$ACCOUNTING\ STRATEGY_i = \beta_0 + \beta_1{*}UCA_c + \beta_2{*}IND_c + \beta_3{*}ENF_c + \beta_4{*}INV_c + \beta_5{*}DISC_c + \beta_6{*}SIZE_i + \beta_7{*}LEV_i + \beta_8{*}ISSUE_i + \beta_9{*}ROA_i + \beta_{10}{*}LOSS_i + \beta_{11}{*}BIG4_i + \sum \gamma_l LEGAL_l + \sum \delta_M INDUSTRY_m + \varepsilon_i$ with $ACCOUNTING\ STRATEGY_i \in (1, 2, 3, 4, 5)$ whereby 1 (5) stands for a solely currently increasing (decreasing), but in future decreasing (increasing), strategy with regard to equity ratio and earnings. $LEGAL_l$ controls for the influence of a country's legal origin, constructed as dummy variables. $INDUSTRY_m$ controls for industry fixed effects using the 12-industry classification scheme of Fama-French. All other independent variables are defined as before, while *c* denotes the country, *i* the firm, *l* the legal origin cluster and *m* the industry cluster

4.4.2 Individualism (H2). In both models, the dimension of individualism (IND) does not significantly affect management's accounting strategy. Furthermore, the positive coefficients do not meet the expectations suggested by the hypothesis. Hence, Hypothesis 2 is rejected in favour of the null that, depending on the level of individualism, no increasing accounting strategy is chosen with regard to the equity ratio and earnings. While most cultural accounting studies identify an effect of individualism on earnings management (Han *et al.*, 2010; Desender *et al.*, 2011; Ugrin *et al.*, 2017), the results do not confirm that individualism impacts on management's accounting decisions and strategy. Consequently, tendencies of individual societies towards more flexibility, optimism and transparency, as assumed by Gray (1988), do not affect the accounting strategy. The same applies to the professional judgement encouraged in individualistic societies. This leads to the conclusion that managers choose their accounting strategy disregarding the national level of the individualism dimension.

4.4.3 Institutional factors. Considering the results of the institutional factors in Table 9, the coefficients of national legal enforcement (ENF: −0.462) and national disclosure regulation (DISC: −4.788) are significantly negative at the 10% resp. 5% significance level in the equity ratio model. This suggests that the higher each measure, the more likely managers tend to select an accounting strategy that currently increases the equity ratio and decreases it in subsequent periods. As ENF captures the efficiency of judicial system, the assessment of rule of law and the corruption index, this behaviour may be induced by enhanced investor confidence in financial statements due to a strict enforcement of the legal consequences of mistakes or misjudgements in the statements and more transparency due to strong disclosure requirements. Since management knows the legal limits and consequences as well as the increased visibility of its actions, it tends to report more optimistic numbers within these boundaries. In contrast, weaker legal enforcement and disclosure requirements may then cause a lack of confidence and lessen the likelihood of management selecting such a strategy. In this situation, management is likely to tend towards a less currently increasing and more balanced or conservative strategy. Management may then use the existing scope in the IFRS and the circumstance of weaker controls by government, as well as lower disclosure obligations, to create positive reserves for possible future negative events or performances similar to a cookie jar reserve. Although the signs of ENF in the earnings model correspond to those from the equity ratio model, the significance cannot be held. Therefore, the association described above can only be confirmed for accounting strategies concerning the equity ratio. In addition, the coefficients of the protection of minority shareholders (INV) are not significant in the models tested. Hence, a link between investor protection and accounting strategy cannot be verified.

4.4.4 Firm-specific factors. Regarding the results of the control variables at the firm level, the coefficients of SIZE are significantly positive at a 5% resp. 1% level in the equity ratio and earnings model (0.282 resp. 0.295). This indicates that the larger a company, the more likely managers tend to select an accounting strategy that currently decreases the equity ratio, as well as earnings, and increases them in subsequent periods. These findings are in line with the accounting-choice studies of Inoue and Thomas (1996), Skinner (1993) and Zmijewski and Hagerman (1981) and support the political cost hypothesis developed by Watts and Zimmerman (1978, 1986). Thus, managers are likely to select transferring accounting strategies to avoid negative consequences arising from increased attention from capital markets, regulators and the public, as a result of good financial statement figures. Such attention can result in new taxes and regulations or even public anger (Scott, 2012). While this relation holds in both models, other firm-specific factors are not significant at all. Therefore, neither the level of leverage (LEV) nor the profitability, measured as the return on assets (ROA) and as a dummy for a loss, is considered in management's accounting strategy. The

same applies to the issuance of new shares (ISSUE) and whether the firm is audited by a Big four company (BIG4).

4.5 Additional tests and robustness checks

As mentioned in the literature review, Hofstede's cultural values are treated rather critically in the literature (Jones, 2007; Javidan *et al.*, 2006; House *et al.*, 2004; McSweeney, 2002). Taking this into account, alternative cultural values for uncertainty avoidance (UCA_{Globe}) and collectivism ($COLLECT_{Globe}$), interpreted as the opposite of individualism, are used in an additional test. The required values are taken from the GLOBE study of House *et al.* (2004). As Table 10 shows, robust results are obtained for both models. As in the initial models, the GLOBE values do not influence the accounting strategy. Furthermore, ENF, DISCL and SIZE remain robust in their signs and significance in the equity ratio model, while in the earnings model, SIZE is still significantly positive. In addition, INV and LOSS become positively significant in the equity ratio model. This contributes to the primary results in that institutional and firm-specific factors impact on management's accounting strategy in contrast to cultural factors.

Moreover, several robustness checks are performed on the initial models to test whether the research design affects the findings. First, an ordered probit regression is carried out instead of the ordered logistic one [5]. The untabulated results are consistent with those of the initial equity ratio and earnings model. Since the sample firms are nested in nations, two-level mixed-effects ordered logistic and probit regressions are performed to consider this hierarchical structure. As the untabulated results do not change in their significance, the main results are robust to the choice of empirical model. Second, alternative proxies for SIZE, LEV and ISSUE are used separately in the main models. SIZE is now calculated as the logarithm of total assets (Ugrin *et al.*, 2017). LEV and ISSUE are now defined as total liabilities divided by total assets and as an indicator variable, which equals 1 if total issuance of new shares exceeds 5% of year-end total assets and 0 otherwise, both based on Gray *et al.* (2015). In all models, the untabulated results do not differ qualitatively from those reported in the previous section. Third, either the variable ROA or LOSS is excluded from the initial model to check for collinearity. Previously significant variables remain significant and their signs do not change in all tested models. Additionally, LOSS becomes significantly positive when ROA is excluded from the equity ratio and earnings model. Furthermore, ROA becomes significantly negative in the earnings model when LOSS is excluded. Fourth, the regressions are executed with only one of the two cultural variables, UCA or IND. In both cases, the main results are robust to these modifications.

Fifth, prior research suggests a correlation between the dimension of individualism and national wealth (Minkov *et al.*, 2017; Tang and Koveos, 2008; Inglehart and Baker, 2000). Assuming a curvilinear relationship between national wealth and IND, the logarithm of GDP per capita as well as the square term of the logarithm of GDP per capita are included as control variables in the initial models to incorporate this association (Tang and Koveos, 2008). In both models, GDP per capita is significantly positive and the square term of GDP per capita is significantly negative while IND remains insignificantly positive (untabulated). Therefore, IND still does not influence accounting strategy in contrast to the economical wealth of a nation. In addition, robust results are also obtained for the other explanatory variables except for ENF, which becomes significantly negative in the earnings model, and LOSS, which is significantly positive in the equity ratio model.

Sixth, management's accounting decisions may be influenced by firm's corporate governance structure (Carcello *et al.*, 2011; Brown *et al.*, 2011). "Corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer and Vishny, 1997, p. 737). Thus, it establishes a set of

Accounting strategy	(1) Equity ratio Coefficient	*p*-value	(2) Earnings Coefficient	*p*-value
UCA_{Globe}	−0.219	0.774	−0.412	0.572
$COLLECT_{Globe}$	−1.164	0.321	−0.571	0.604
ENF	−0.771	0.092*	−0.592	0.166
INV	0.325	0.088*	0.219	0.229
DISC	−2.983	0.048**	−1.561	0.267
SIZE	0.259	0.036**	0.299	0.011**
LEV	−0.011	0.860	0.004	0.942
ISSUE	−0.186	0.540	−0.039	0.896
ROA	0.617	0.767	−2.379	0.248
LOSS	0.972	0.064*	0.785	0.105
BIG4	−0.251	0.551	−0.170	0.672
Legal origin	Yes		Yes	
Industry fixed effects	Yes		Yes	
Pseudo-R^2	10.16 %		8.07 %	
χ^2	74.26***		68.77***	
Correctly classified	48.62 %		44.83 %	
Naive classification	44.14 %		31.72 %	

Note(s): *, ** and *** indicate statistical significance at the 0.1, 0.05 and 0.01 levels, respectively

Model:

$$\text{ACCOUNTING STRATEGY}_i = \beta_0 + \beta_1 * UCA_{Globe,c} + \beta_2 * \ COLLECT_{Globe,c} + \beta_3 * ENF_c + \beta_4 * INV_c + \beta_5 * DISC_c + \beta_6 * SIZE_i + \beta_7 * LEV_i \ + \beta_8 * ISSUE_i + \ \beta_9 * ROA_i + \beta_{10} * LOSS_i + \beta_{11} * BIG4_i + \sum \gamma_l LEGAL_l + \sum \delta_M INDUSTRY_m + \varepsilon_i \text{ with ACCOUNTING STRATEGY} \in (1, 2, 3, 4, 5)$$

whereby 1 (5) stands for a solely currently increasing (decreasing), but in future decreasing (increasing), strategy with regard to equity ratio and earnings. $LEGAL_l$ controls for the influence of a country's legal origin, constructed as dummy variables. $INDUSTRY_m$ controls for industry fixed effects using the 12-industry classification scheme of Fama-French. $UCA_{Globe,c}$ and $COLLECT_{Globe,c}$ represent the country value scores of uncertainty avoidance and institutional collectivism from the GLOBE study. All other independent variables are defined as before, while *c* denotes the country, *i* the firm, *l* the legal origin cluster and *m* the industry cluster

Table 10.
Results of the ordered logistic regression using the cultural values of GLOBE

provisions and mechanisms to ensure the efficient management of a firm's assets and to mitigate agency problems. Research reveals that strong corporate governance is assumed with more accounting conservatism and constraints on management's opportunities to exercise accounting discretion (García Lara *et al.*, 2009, 2007; Bowen *et al.*, 2008). Therefore, several variables are added that are commonly used in accounting and finance research to approximate a firm's corporate governance. Board size and the number of board meetings approximate the board effectiveness (García Lara *et al.*, 2009). A dummy variable, which equals 1 if the chairman of the board is also CEO and 0 otherwise, as well as the proportions of non-executive and independent board members on the board consider the independence of the board from operating business (García Lara *et al.*, 2009). Furthermore, the proportion of shares held by institutional investors considers their advantages over individual investors in monitoring and evaluating firm's accounting numbers and decisions (Bowen *et al.*, 2008; Gillan and Starks, 2003). The untabulated results correspond qualitatively to those from the initial earnings and equity ratio models. Further, the added corporate governance variables do not significantly influence the accounting strategy in both models.

5. Conclusions

This study examines the association between national culture and the application of IFRS and the extent to which national culture influences management's accounting behaviour and strategy. The main motivation for this study arises from the question of whether the IFRS really increases the comparability and transparency of financial statements across countries. Since this is a broadly discussed issue in accounting research, this paper provides insights into management's accounting practice across Europe, and how it is influenced by national culture. In a first step, a model is developed by aggregating various IFRS accounting decisions into an accounting strategy, depending on their effect on the consolidated equity ratio and earnings. The results show that the accounting strategy differs across the sample countries, indicating differences in management's accounting behaviour. To determine whether national culture may cause these differences, an ordered logistic regression is used to analyse the influence of Hofstede's cultural values on the accounting strategy. The findings do not confirm an association between the cultural dimensions of uncertainty avoidance as well as individualism and management's accounting practice after controlling for institutional and firm-specific factors known to influence managers' decisions. While the findings of the uncertainty avoidance dimension are consistent with results of previous cultural earnings management studies, such as Ugrin *et al.* (2017) or Gray *et al.* (2015), this does not apply to the individualism dimension. Since those studies are limited to accrual-based earnings management and on the transition from national GAAP to IFRS, this study expands our understanding of the cultural impact on management's IFRS accounting behaviour by focussing on the application rather than adoption.

In contrast to the cultural dimensions, the study reveals an institutional and firm-specific influence on management's accounting strategy. The strength of national legal enforcement and disclosure requirements seem to affect the chosen accounting strategy with regard to the equity ratio. These findings are complementary to Burgstahler *et al.* (2006) and indicate that institutional factors are an important determinant in the accounting decision-making process. In addition, company size is an explanatory factor of management's accounting strategy in both models. This is in accordance with other accounting-choice studies (see Skinner (1993) or Inoue and Thomas (1996)) and with the positive accounting theory. These results indicate that the accounting strategy chosen by management is not affected by national culture but rather by national institutional and firm-specific factors.

This complements and extents the critical literature on cultural dimension models (e.g. Chapman, 1997; Moore, 2003; Venaik and Brewer, 2013; McSweeney, 2016), as the findings

suggest only a limited explanatory power of the national cultural values and dimensions examined. Therefore, the study does not support the assumption of Hofstede and other researchers that differences in national culture values affect individual behaviour. Instead, it reveals that institutional and firm characteristics have a greater influence on the accounting strategy than national culture itself. This leads to the conclusion that national institutions are more useful to explain effects on accounting and accounting strategy than value-based cultural dimensions. Additionally, this supports the institutionalist position that the strategic behaviour of a company or management is mainly driven by differences in national institutions (Hall and Soskice, 2001; Jackson and Deeg, 2008; Hall, 2008).

This implies that the IFRS application in Europe varies across countries but not because of cultural differences. This has important implications for regulators as they should presumably focus more on implementing a uniform institutional setting. These efforts should include uniform legal enforcement and disclosure requirements across Europe. The difficulties of such initiatives are revealed by the EU's amendment of the transparency directive in 2013, resulting, for instance, in the abolishment of the obligation to publish interim management statements or quarterly financial reports (European Union, 2013). As regards, for instance, legal enforcement of accounting, the European Securities and Markets Authority (ESMA) is a European institution, which promotes the consistent application of IFRS by converging and unifying the enforcement across countries. To this end, it published non-legal binding guidelines for enforcement in the individual countries in 2014. Nevertheless, the countries remain responsible for the enforcement and differences in quality and effectiveness are detected, which contradict the aim of comparable and transparent accounting (ESMA, 2017). Therefore, the EU should continually intensify their harmonisation and integration efforts and try to expand the competencies of the ESMA in order to achieve improvements and avoid regulatory arbitrage. Furthermore, the standard setter has to consider that accounting judgements differ under their uniform standards. The standards do not automatically lead to uniform reporting practice but are applicable regardless of national cultural influences. Nevertheless, the IASB should reduce the number of explicit and implicit accounting choices as far as possible in order to mitigate management's opportunities to influence financial statements. The introduction of the new leasing standard IFRS 16 demonstrates that the IASB is aware of this problem. However, a lack of comparability persists and increases the analytical efforts for the addressees and their risks of misjudgements caused by differences in institutional and firm-specific factors.

Finally, this study is subject to some limitations. It relies on a relatively small data set consisting of the constituents of the lead indices from 14 EU first-time adopter countries of IFRS. These countries are characterised by advanced capital markets and do not cover the full variability of companies, countries and markets in Europe. Furthermore, the different accounting decisions are recognised unweighted in the accounting strategy due to identification and measurement difficulties. As prior accounting-decision studies have noted, this assumption does not influence the significance of the results (Inoue and Thomas, 1996; Zmijewski and Hagerman, 1981). Future studies could expand the data basis by including other indices or additional European and also non-European IFRS countries. Moreover, it might be useful to examine the influence of the cultural background of a company's management on the accounting strategy.

In summary, management uses IFRS accounting decisions differently across Europe. The results suggest that the national cultural values of uncertainty avoidance and individualism do not explain these differences, but institutional and firm specific factors do.

Notes

1. See, for example, Kroeber and Kluckhohn (1952), who review 160 definitions of culture in the anthropological literature.

2. Besides the used value of 0.5, other thresholds, such as the median or mean of the sample, are possible. One problem with these alternatives is that they are directly influenced by the sample, which constrains objectivity and replicability. Furthermore, no conclusion can be drawn on the predominant exercise from a value above or below a sample's median or mean and the related consequences presented in Table 1.
3. In contrast to Pacheco Paredes and Wheatley (2017), income before taxes is used instead of net income, so as to avoid distortions caused by different consolidated tax rates.
4. For application examples of the ordered logistic regression in accounting-decision studies, see Skinner (1993), Missonier-Piera (2004) or Collin *et al.* (2009).
5. Probit and logit models differ only in the assumptions made about the distribution of the error term. A standard logistic distribution is assumed in the logit model and a standard normal distribution in the probit model (Tabachnick and Fidell, 2014).

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Appendix 1
Further explanations of the accounting decisions related to the included accounting instruments

IAS 16: Measurement after recognition of property, plant and equipment

IAS 16.29 allows management to decide between the cost or the revaluation model for measurement after recognition of items of property, plant and equipment. Following the cost model, items are carried at historical costs less depreciation and impairment losses (IAS 16.30). Using the revaluation model, the increase in value is recognised in other comprehensive income as a revaluation surplus (IAS 16.39). The decrease in value is recognised in the profit or loss with regard to a previously recorded revaluation surplus, which has to be balanced first (IAS 16.40). Usually, the revaluation model leads to increases in the value of property, plant and equipment and therefore in equity (Soderstrom and Sun, 2007). However, it results in higher depreciations or impairment losses in subsequent periods and thus in a stronger reduction of earnings and equity, compared to the cost model.

IAS 17: Classification of leases

The classification of leases as either a finance or operating lease "is based on the extent to which risks and rewards incidental to ownership of a leased asset lie with the lessor or the lessee" (IAS 17.7). This offers management the opportunity to influence recognition in the financial statements by drafting the appropriate contracts. Under a finance lease, the lessee must initially report an asset and a liability at equal amounts (IAS 17.20). The asset must be depreciated in subsequent periods (IAS 17.25). Under an operating lease, the lessee has to recognise the lease payments as an expense in the profit or loss throughout the lease term (IAS 17.33). This allows the lessee to improve their equity ratio and earnings at first. In later periods, both parameters remain at the previously reached level. With a finance lease, the equity ratio and earnings initially decrease, although this changes in subsequent periods, due to declining interest expenses. Nevertheless, the equity ratio in finance leases always remains lower compared to operating leases.

IAS 20: Recognition of government grants related to assets

The company has the choice between recognising government grants related to assets as deferred income or as a deduction from the asset's carrying amount (IAS 20.24). Both options affect reported earnings the same way. However, recognition as deferred income initially leads to a lower equity ratio, compared to a reduction in the carrying amount. The subsequent reversal of the deferred income position in later periods results in stronger increase of the equity ratio, compared to a deduction of carrying amounts.

IAS 38: Possible capitalisation of internally generated intangible assets

The IFRS requires the capitalisation of intangible assets arising from internal development. For this purpose, criteria are provided to distinguish between a development and research phase (IAS 38.57). Since these criteria are discretionary, they may be used opportunistically by the management (Markarian *et al.*, 2008). The capitalisation initially results in increased equity ratios and earnings, by neutralising development expenses instead of recognising them in the income statement. In this case, earnings and equity ratios will decrease in subsequent periods due to the amortisation of the previously capitalised costs.

IAS 40: Measurement after recognition of investment property

For the measurement after recognition of investment property, management can decide between the fair value or the cost model. In accordance with the fair value model, changes in the value of investment property have to be recognised in the income statement (IAS 40.32A–35A). The effects on the equity ratio are comparable to those of IAS 16. However, in contrast to IAS 16, earnings now improve initially

due to the recognition of value increases in the income statement. However, this effect is reversed on the disposal of the asset.

IFRS 3: Goodwill deriving from business combinations

In a business combination, the difference between the net of acquired assets and liabilities, measured at fair value, and the purchase price is recognised as goodwill (IFRS 3.32). This proceeding allows management to influence the amount of goodwill recognised through the identification of assets and liabilities and their measurement at fair value (Detzen and Zülch, 2012). Therefore, a relatively low reported goodwill reduces the equity ratio and earnings at the time of the first subsequent consolidation due to higher scheduled depreciations of the purchased assets. In contrast, a relatively high reported goodwill increases the equity ratio and earnings at first but also possible impairment amounts. An impairment in later periods then leads to high impairment losses, which decrease both the equity ratio and earnings.

Appendix 2
Composite accounting instrument score CAI

$$CAI_i = \frac{\sum_{j=1}^{6} IV_{ij}}{AI_i} \tag{1}$$

where i denotes the index of the firm's consolidated financial statement, j the index of the considered accounting instrument, IV the indicator variable that classifies the effect of an accounting instrument on the objectives, AI the number of accounting instruments used in the consolidated financial statement and CAI the composite accounting instrument score. IV and AI take into account that not all firms rely on all accounting instruments.

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