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MULTI-DIMENSIONAL PERFORMANCE MEASUREMENT PRACTICES IN DEVELOPING COUNTRIES: A LITERATURE REVIEW AND FUTURE RESEARCH DIRECTION

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Abstract

This study reviews work on multi-dimensional performance measurement (MPM) and MPM tools such as the balanced scorecard (BSC) in developing countries. 103 papers published by accounting, performance measurement and management journals between 1987 and 2013 are analysed according to their topics, settings, theories and research methods. The principal findings are that firms in developing countries: use MPM but rates vary between countries; BSC was a popular MPM tool; MPM usage was related to varied internal and external factors; the manufacturing sector was the main focus of MPM research; and most studies fail to explicitly articulate their theoretical perspective, identify research gaps or reveal their research motivation. Following this review on MPM usage, MPM in developing countries is presented, and important future research directions identified and presented in the form of research questions.

Keywords: Performance Measurement, Multi-Dimensional Performance Measures, Developing Countries, Multiple Industries

1. INTRODUCTION

Over the past two decades, firms globally have shifted from traditional performance measurement systems (PMS) towards multi-dimensional performance measures (MPM) (Garengo &Bititci, 2007; Chenhall, 2005). The latter approach has gained popularity because allegedly it motivates employees and managers by reconciling achieving organisational objectives with individuals' sense of belonging and accomplishment (Yasin & Gomes, 2010; Greiling, 2006) and, in addition to financial information, MPM provides information on key dimensions of firms' value chains such as customers, employees, quality, the business process and suppliers (Neely et al., 2005; Duh et al., 2008). MPM has become an important tool for practitioners and a key research topic in management accounting, performance management and other academic disciplines. MPM research has dramatically increased over the last two decades (Kennerly & Neely, 2003; Neely et al., 2001, Neely, 2005; Yadav et al., 2013).

The aim of the current study is twofold: (a) to review the existing literature on multi-dimensional performance measurement in developing countries and to analyse the review results; and (b) to identify future research directions on MPM in developing countries. There are reviews of performance measurement in developed countries generally (e.g. Neely, 2005), in the USA (Srimai et al., 2011b] and in the services sector (Yasin and Gomes, 2010] but none of MPM in developing countries. Consequently, this review examines work on MPM there to identify whether factors that influence its adoption vary from those in developed countries. Other rationales and motivations that led to the current study are highlighted below.

Understanding the state of MPM in developing countries is important for few reasons. To illustrate, previous research mentioned that there have been relatively little research on management accounting theme in developing countries (Hopper et al., 2009; Ezzamel & Xiao, 2011; Waweru et al., 2005). Historically, this problem was even more noticeable because management accounting education and practice was less developed in the developing countries (Duh et al., 2008). However, globalisation, foreign direct investment, operations by foreign MNCs, assistance and prescriptions from many donor agencies for public sectors (such as World Bank, International monetary fund (IMF), Asian Development bank (ADB)) above all, joint venture initiatives of developed countries firms with organizations in many developing countries have offered opportunity to disseminate, adopt and practise many world best advanced management accounting tools including new performance measurement techniques such as TQM or BSC (Duh et al., 2008; Hopper et al., 2009). The travel of accounting ideas from developed countries to developing countries is therefore a fundamental research issue with a number of unsolved research questions. For example, how and why some accounting ideas travel globally (for example, Kaplan and Norton's balanced scorecard (BSC) (Ezzamel & Xiao, 2011). Scholars suggested that due to the influence of globalisation, leading accounting professional institute such as Chartered Institute of Management Accountants and Institute of Chartered Accountants in England and Wales, or other factors

(Ezzamel and Xiao (2011; p.629), through which accounting technologies travel from developed countries to the rest of the world (Hopper et al., 2009; Ezzamel & Xiao, 2011).

Similarly, it has also been argued that developing countries experience increasing pressure to ensure good governance, reduce corruptions, ensuring accountability, and above all other parameter such as demonstrating value for money services (Tillima et al., 2010; Mimba et al., 2007). Performance measurement which is key technique of providing performance information on these parameters to external stakeholders is believed to facilitate in this process.

Next, because of distinct culture, value system, socio-economic status of developing countries, imported western performance measurement system could be customised in developing countries (Hopper et al., 2009; Tillima et al., 2010); initiatives to implement MPM tool could be hindered; alternatively, new performance measurement techniques could be emerged to local demands; this line of understanding is not known from the context of developing countries. Understanding this line of knowledge would have potentials understanding to what extent westernised management accounting practices (e.g., MPM or MPM techniques BSC) has now become truly 'globalised'.

Furthermore, developing countries are the main provider of ready-made garments to the rest of the world (Haider, 2006; Hyvarinen, 2000). At the same time, developing countries are the key promoter of micro-credit finance, which is even model for developed countries (Microcredit Summit Campaign, 2005).Nevertheless, developing countries experience challenges of meeting development goals while at the same time economic (financial) and social problem (poverty reduction, work for better health and education service and better service) (Yip & Ramakrishna, 2002; Liverani & Lundgren, 2007; Kakande, 2006). To succeed in such attempt, effective and comprehensive performance measurement system are required to be put in place for firms in developing countries to measure and manage related activities and use information from measurement system irrespective of industries. Yet developments, progress of performance measurement techniques, the states of contemporary performance measurement system in developing countries are not yet known. Many commentators in western countries believe that in terms of economic progress and growth, BRIC (Brazil, India, China and South Africa) countries will dominate in this century (Ezzamel & Xiao, 2011).Consequently, unknown tales (development and progress) on management control system (MPM specifically) of firms in developing countries can be shared with interested international audience such as policy makers, businessman, and academics who are interested to know the progress and development of performance measurement system and who want to build relationship with firms in developing countries or to replicate success stories (if any) in developed countries.

In the context of developing countries, Hopper et al.(2009) is the first review of management accounting (MA) practices in less developed countries (LDCs): it outlines a framework of epochs of accounting developments but it has limited information on MPM. Tillema et als' (2010) framework identify factors influencing the demand for and supply of performance measurement information in LDCs but only within the public sector. This study extends the frameworks of both papers to MPM in developing and emerging countries across multiple industries. Little is known on what types of performance indicators they use; the extent, manner and motives for using such information; whether changes are taking place; and whether trends in developing countries firms parallel those in developed countries (Mimba et al., 2007, p.192). These may differ, especially given the prevalence of state-controlled economies in many developing countries compared to the free market economies in developed countries (Anderson & Lanen, 1999; Luther & Longden, 2001; Waweru et al., 2005). During the last three decades, however, many developing countries have liberalised their economies through deregulation, which has increased competition, customer and stakeholder demands and, above all, joint ventures with developed countries' firms (Waweru et al., 2005; Anderson & Lanen, 1999). Consequently, firms in developing countries now have a greater need for high quality and real-time MA information (Waweru et al., 2005) and possibly multi-dimensional performance measurement systems like the BSC (Ezzamel & Xiao, 2011, p. 628). Whether any such changes have taken place and whether these are due to the opening of their economies and greater competition need investigation.

This review of pertinent research publications addresses these issues by examining which factors influence the adoption of MPM in developing countries, identifying country differences, establishing a framework of factors influencing MPM usage, contrasting these findings with developed countries' experiences, and identifying fruitful avenues for future MPM research in developing countries[1].

The next section describes the methods utilized to these ends. The third section analyses the review findings followed by discussion of findings based on topics presented in section four. The final section summarises the findings and provides suggestions for future MPM research in developing countries.

2. REVIEW METHOD

The scope of the review covers the use of MPM and associated tools such as the BSC; their links with contextual factors, their relation to organisational performance; challenges of using MPM; and comparative studies on MPM between developing countries, and between developing versus developed countries. 'Multi-dimensional performance measures' refers to performance indicators, financial and non-financial and 'performance measurement' to their actual usage (Bourne et al., 2003, p. 3). Noted that in the current review, multi-dimensional performance measures cover indicators used for multiple perspectives such as customers, employees, quality, community interests, environmental factors,

[1] These issues include the reliance on: contemporary PM techniques in developing countries; how firms from developing countries accommodate Western-based PM tools within their own values and social systems; what are the challenges when implementing MPM techniques; and whether they require modification to suit the needs of developing countries

resource allocation or resource flexibility, and financial results, an approach in line with Ittner et al (2003).'Developing countries' include both emerging and newly industrialised countries (United Nations [UN], 2010). Wallace (1990) described 'emerging countries' as 'an amorphous and heterogeneous group of countries mostly found in Africa, Asia, Latin America, the Middle East, and Oceania' and which had a colonial past (p. 3). 'Newly industrialised countries' (NICs) have enjoyed rapid economic progress according to socio-economic classifications but are not yet fully developed (Bożyk, 2006).

The methodology is consistent with similar studies in the area (see Shields, 1997; Hopper et al., 2009; Chenhall & Smith, 2011). Several databases and search engines such as Emerald, Google Scholar, Inderscience, and Science Direct, were used to identify articles focused on the issues above. Keywords used in the search included 'multi-dimensional performance measures (MPM)', MPM tools such as 'BSC or others', 'performance measurement' and 'developing countries'. This revealed over 300 articles, each of which was read to identify whether it addressed the issues under scrutiny. All types of organisations were included.

103 papers published between January 1987 and December 2013 was selected. Consistent with Shields (1997), book reviews, conference papers, working papers, unpublished theses, brief editorials and commentaries were excluded. Only papers in English were considered. The 1987 start was chosen because it marked the beginning of an increased research interest in MPM (Johnson & Kaplan, 1987).The 2013 conclusion was the latest year the study could address at the time of writing. The review included articles on MPM in developing countries in top-tier and peer reviewed accounting and non-accounting journals (appendix 1 lists all reviewed journals). In appendix 1 details the number of papers in each journal listed, and compares the numbers in accounting and non-accounting journals. Reviewed papers were categorised by regions and countries (appendix 2) as in Hopper et al. (2009). Papers were classified according to their topics, settings, theories used and research methods.

Within the reviewed papers, topics were classified into four categories (see table 1 also in section 1.4), namely: (a) extent and use of MPM; (b) contextual factors and their role in MPM and organisational performance; (c) comparative studies on MPM; and (d) others (this category included the challenges of implementing and using MPM, MPM changes, any literature review-based MPM research in developing countries, and the development of their own MPM by firms in developing countries). Category (b) addressing 'contextual factors and their role with MPM and organisational performance' comprised those studies which have explicitly identified factors that drive firms in developing countries to use MPM. The grouping of category (c) was motivated by seeking to understand any MPM research attempted in developing countries beyond their own national boundaries. Similarly, comparative MPM studies between developing countries and with developed countries (if any) were likely to provide clear pictures of why implementation and use of any MPM or MPM tools were being facilitated or hindered in any developing country's setting, but might have been successfully implemented in developed countries. Category (d) entailing 'others' included other studies of MPM that did not fall under the earlier three categories.

Table 1. Topics in reviewed papers

Topics	***Frequency***	***Relevant studies***
Extent and use of MPM	**52**	Anand et al. (2005); Joshi (2001); Joseph (2008); Umashanker & Dutta (2007); Chaklader & Roy (2010); Khan et al. (2011); Khan et al. (2010a); Khan et al. (2010b); Khan & Halabi (2009); Huang et al. (2007); Jusoh et al. (2008b); Tayles et al. (2007); Burgess et al. (2007); Ong et al. (2010); Norhayati & Siti-Nabiha (2009); Yu et al. (2009); Rabbani et al. (2011); Rabbani et al. (2007); Rabbani et al. (2010); Anh et al. (2011); Yongvanich & Guthrie (2009); Posayanant & Chareonngam (2010); Sawalqa et al. (2011); Al-Materneh (2011); Valmohammadi & Servati (2011); Juhmani (2007); Ismail (2007); Jardali et al. (2011); Mohamed & Hussain (2005); Wadongo et al. (2010); Tsamenyi et al. (2010); Luther & Longden (2001); Lonial et al. (2008); Sˇevic (2005); Bogicevic & Domanovic (2009);Kloviene & Gimzauskiene (2009); Waweru et al. (2005); Curado & Manica (2010); Rhodes et al. (2008);Peters et al. (2007); Hansen et al. (2008); Edward et al. (2011); Srimai et al. (2011a); Pienaar & Penzhorn (2000); de Waal (2007); Scavone (2006); Solano et al. (2003); Bhagwat & Sharma (2007); Jasiukevicius & Christauskas (2011);Thakkar et al. (2009); Scapens & Yan (1993); Waweru & Spraakman (2012)
Contextual factors, their role in MPM and organisational performance	**29**	Anderson & Lanen (1999); Hoque & Alam (2004); Kapugi & Smith (2007); Fleming et al. (2009);O'Connor et al. (2006); Tsamenyi et al. (2011); Tsang (2007); Jusoh et al. (2008a); Jusoh et al. (2006); Jusoh & Parnell (2008); Amir et al. (2010); Amir (2011); Smith et al. (2008);Ong & Teh (2008); Kattan et al. (2007); Mmieh et al. (2011); Waweru et al. (2004); Eker & Pala (2008); Demirbag et al. (2006); Avci et al. (2011);Gimzauskiene & Kloviene (2011); Guerreiro et al. (2006); Kamhawi (2011); Al-Enizi et al. (2006); Tsamenyi et al. (2008); Lau &Sholihin (2005); Akbar et al. (2012); Kagaari (2011); Munir et al., (2013).
Comparative studies on MPM	**6**	Chen et al. (2006a); Jazayeri et al. (2011); Taylor et al. (2001); Julnes & Mixcoatl (2006); Sulaiman et al. (2004); Hoque (2001)
Others[2]	**16**	Duh et al. (2008); Mimba et al. (2007); Tillema et al. (2010); Hopper et al. (2009); Wickramasinghe et al. (2007); Othman et al. (2006);Bevanda et al. (2011); Sinkovic´ et al. (2011); Sharma & Lawrence (2005); Pusavat et al. (2009); Johnston & Pongatichat (2008); Li & Tang (2009); O'Donnell & Turner (2005); Satta (2006); Marwa & Zairi (2009); Siti Nabiha & Scapens (2005)
Total	**103**	

[2] This included challenges of implementing and using MPM, MPM change and any literature review-based PM research in developing countries.

3. REVIEW FINDINGS

Appendix 2 gives the regional distribution of the papers in which MPM was studied. Most (54.9% of 103 papers) were from Asia [Bangladesh (5), India (8), Sri Lanka (3), China (9), Malaysia (15), Indonesia (4), Pakistan (4), Afghanistan (3), Vietnam (1) and Thailand (5)];8.8 % came from the Middle East [Jordan (2), the four Gulf countries (1) and Iran (1), Palestine (1), Bahrain (2), Lebanon (1) and Oman (1)];13.7% came from Africa [Egypt (1), Kenya (3), Ghana (2), South Africa (4), Uganda 1, Tanzania (2) and Mauritius (1)]; 10.8% from Europe [Turkey (4), Croatia (2), Serbia (2) and Lithuania (3)]; 3.92% from South America (Argentina (1), Brazil (1), Mexico (1) and Venezuela (1). Others (7.9%) came from Fiji (1), Vanuatu (1) and 5 were attributed to no specific country.

Table 2 shows that MPM research in developing countries has focused principally on the manufacturing sector (28); followed by the services sector (20); the public sector (19); and then multiple industries (16). The majority of papers residing in manufacturing might be expected given that MPM has historically been associated with this setting (Shields, 1997). It is similar to findings for developed countries (e.g., Shields [1997)] in the USA and Chenhall and Smith [2011] in Australia).

Nevertheless, there is a limited focus on other industries such as banking (e.g., Rhodes et al., 2008). Given that banks in developing countries have experienced substantial pressure from stakeholders to improve their performance and to implement new performance measurement and management tools, e.g. to strengthen their capital base, to decrease non-performing loans and, above all, to foster banks' customer-retention efforts this is surprising (Munir et al., 2013; Erturk & Solari, 2007). There are few studies of micro-credit organisations (an exception is Waweru and Spraakman, 2012). These are now a vital component of development and are under increasing pressure to adopt MPM to help their stakeholders evaluate whether their social and financial objectives, their financial sustainability, community outreach and, above all, their desired developmental impacts have been attained (Zeller et al., 2003; Kipesha, 2013).

17% of the total reviewed papers were on public sector organisations. This was unexpectedly low given the prominence of the state sector in many developing countries and the allegedly widespread application of BSC in developed countries' public sectors (Smith & Kim, 2005; Dyball et al., 2011) though precise usage rates are as yet unknown. The absence of any studies on non-governmental organisations is puzzling and disappointing given their rapid growth in developing countries over the past three decades. These can concentrate on advocacy, often on behalf of the poor and marginalised, but many are now major providers of goods, finance and services, sometimes combining this with advocacy and poverty alleviation programmes in areas like health and education. Some like BRAC and Grameen in Bangladesh are amongst the country's largest enterprises. Given the multiplicity of constituencies that non-governmental organisation serve, and the complexity and variety of their goals, they represent fertile but neglected sites for MPM research.

Table 2. Settings used in reviewed papers

Settings	Frequency	Relevant studies
Manufacturing	**28**	Khan et al. (2010a); Khan & Halabi (2009a); Anderson & Lanen (1999); Joshi (2001); Bhagwat & Sharma (2007); Joseph (2008); Jazayeri et al. (2011); Kapugi & Smith (2007); Fleming et al. (2009); Burgess et al. (2007); Jusoh et al. (2008a); Jusoh et al. (2008b); Jusoh et al. (2006); Jusoh & Parnell (2008); Smith et al. (2008); Ong & Teh (2008); Sawalqa et al. (2011); Al-Materneh (2011); Valmohammadi & Servati (2011); Kattan et al. (2007); Eker & Pala (2008); Demirbag et al. (2006); Chaklader & Roy (2010); Hoque & Alam (2004); Thakker et al. (2009); Lau &Sholihin (2005); Taylor et al. (2001); Siti Nabiha & Scapens (2005)
Services	**20**	Chen et al. (2006a); Amir et al. (2010); Amir (2011); Othman et al. (2006); Rabbani et al. (2011); Rabbani et al. (2010); Jardali et al. (2011); Wadongo et al. (2010); Waweru et al. (2004); Avci et al. (2011); Jasiukevicius & Christauskas (2011); Mohamed & Hussain (2005);Wickramasinghe et al. (2007); Lonial et al. (2008); Tsang (2007); Huang et al. (2007); Peters et al. (2007); Hansen et al. (2008); Edward et al. (2011); Satta (2006)
Multiple industries	**16**	Khan et al. (2011); Khan et al. (2010b); Anand et al. (2005); Tsamenyi et al. (2011); Tayles et al. (2007); Ong et al. (2010); Anh et al. (2011); Yongvanich &Guthrie (2009); Pusavat et al. (2009); Juhmani (2007); Ismail (2007); Waweru et al. (2005); Luther & Longden (2001); Gimzauskiene & Kloviene (2011); Kloviene & Gimzauskiene (2009); Curado & Manica (2010)
No settings[3]	**9**	Duh et al. (2008); Rabbani et al. (2007); Kamhawi (2011); Hopper et al. (2009); Sulaiman et al. (2004); Scavone (2006); Solano et al. (2003); Bogicevic & Domanovic (2009); Scapens &Yan (1993)
Public sector	**19**	Li & Tang (2009); Tillema et al. (2010); Mimba et al. (2007); Srimai et al. (2011a); Johnston & Pongatichat (2008); O'Donnell & Turner (2005); Posayanant & Chareonngam (2010); Mmieh et al. (2011); Sinkovic´ et al. (2011); Bevanda et al. (2011); Julnes & Mixcoatl (2006); Sharma & Lawrence (2005);Norhayati & Siti-Nabiha (2009); O'Connor et al. (2006); Hoque (2001); Marwa & Zairi (2009); Sˇevic (2005); Tsamenyi et al. (2010); Akbar et al. (2012)
Universities/ colleges	**6**	Tsamenyi et al. (2008); de Waal (2007); Pienaar & Penzhorn (2000); Yu et al. (2009); Umashanker & Dutta (2007); Kagaari (2011)
Financial ins./Banks	**5**	Guerreiro et al. (2006); Al-Enizi et al. (2006); Rhodes et al. (2008); Waweru & Spraakman (2012); Munir et al., (2013).
Total	**103**	

[3]This included theoretical and conceptual papers, literature reviews and analytical pieces where no setting could be identified.

Table 3 classifies the papers according to their theoretical perspective. A particular type of theory employed was attributed if the theoretical approach employed was clearly mentioned the anywhere in the article. As Appendix 2, Table 4 indicates contingency theory has been the most applied theory (10), followed by institutional theory (6), grounded theory (3), and a stakeholder framework (2). However, the bulk of studies did not explicitly mention their theoretical perspective (71) (exceptions include Lau & Sholihin, 2005; Anderson & Lenen, 1999; Waweru et al., 2004; Guerreiro et al., 2006; Tsamenyi et al., 2008, 2011; Avci et al., 2011; Ong & Teh, 2008; Kloviene & Gimzauskiene, 2009; Gimzauskiene & Kloviene, 2011).

Of the six papers that addressed theoretical perspectives considering institutional theory lens, four studies were informed by the new institutional sociology (NIS) perspective (Mimba et al., 2007; Tilemma et al., 2010; Norhayati & Siti-Nabiha, 2009; Akbar et al. (2012), one study considers old institutional economics (OIE) (Guerreiro et al, 2005) and combination NIS and OIE is used in another study (see Siti Nabiha & Scapens 2005).These studies advanced our understanding on many issues such as change in MA practices including performance measure in a case bank (Guerreiro et al, 2005); developing the conceptual framework for MPM in public sector in less developed countries (Tillema et al., 2010); understanding demand and supply of MPM information in developing countries (Mimba et al., 2007);exploring the way the performance management system (PMS) in a public entity of Malaysia been institutionalization (Norhayati & Siti-Nabiha, 2009;) and understanding the relationship between "stability and change" in the process of accounting change that resulted in ceremonial use of key performance indicators (Siti Nabiha & Scapens, 2005).

Table 3. Theories used in reviewed papers

Name of theory	*Frequency*	*Relevant studies*
Contingency	**10**	Khan et al. (2011); Khan et al. (2010a); Anderson & Lanen (1999); Fleming et al. (2009); Tsamenyi et al. (2011); Ong & Teh (2008); Kattan et al. (2007); Waweru et al. (2004); Luther & Longden (2001); Avci et al. (2011)
Old institutional economics (OIE) & new institutional sociology (NIS)	**6**	Guerrerio et al. (2006); Tillema et al. (2010); Mimba et al. (2007); Norhayati & Siti-Nabiha (2009); Akbar et al. (2012); Siti Nabiha & Scapens (2005)
Grounded theory	**3**	Tsamenyi et al. (2008); Wickramasinghe et al. (2007); Pusavat et al. (2009)
Stakeholder model	**2**	Joseph (2008); Li & Tang (2009)
Contingency & complexity theory	**1**	Kloviene & Gimzauskiene (2009)
Institutional with technical rational theory	**1**	Sharma & Lawrence (2005)
Goal setting theory	**1**	Lau &Sholihin (2005)
Neo-institutional & actor network theory	**1**	Jazayeri et al. (2011)
Cultural political economy	**1**	Hopper et al. (2009)
Contingency, agency	**1**	Taylor et al. (2001)
Multiple, more than two[4]	**1**	Gimzauskiene & Kloviene (2011)
No explicit theories	**71**	Khan et al. (2010b); Khan & Halabi (2009a); Anand et al. (2005); Joshi (2001); Bhagwat & Sharma (2007); Kapugi & Smith (2007); Jusoh et al. (2008b); Jusoh et al. (2006); Jusoh & Parnell (2008); Smith et al. (2008); Sawalqa et al. (2011); Al-Materneh (2011); Valmohammadi & Servati (2011); Eker & Pala (2008); Demirbag et al. (2006); Chaklader & Roy (2010); Thakker et al. (2009); Chen et al. (2006a); Amir et al. (2010); Amir (2011); Othman et al. (2006); Burgess et al. (2007); Rabbani et al. (2011); Rabbani et al. (2010); Jardali et al. (2011); Wadongo et al. (2010); Jasiukevicius & Christauskas (2011); Mohamed & Hussain (2005); Tsamenyi et al. (2010); Lonial et al. (2008); Tsang (2007); Huang et al. (2007); Peters et al. (2007); Hansen et al. (2008); Edward et al. (2011); Satta (2006); Al-Enizi et al. (2006); Rhodes et al. (2008); Srimai et al. (2011a); Johnston & Pongatichat (2008); O'Donnell& Turner (2005); Posayanant & Chareonngam (2010); Mmieh et al. (2011); Sinkovic´ et al. (2011); Bevanda et al. (2011); Julnes & Mixcoatl (2006); Hoque (2001); Marwa&Zairi (2009); Sˇevic (2005);Duh et al. (2008); Rabbani et al. (2007); Kamhawi (2011); Sulaiman et al. (2004); Scavone (2006); Solano et al. (2003); Bogicevic & Domanovic (2009); Curado & Manica (2010); de Waal (2007); Pienaar & Penzhorn (2000); Yu et al. (2009); Umashanker & Dutta (2007); Tayles et al. (2007); Ong et al. (2010); Anh et al. (2011); Yongvanich &Guthrie (2009); Juhmani (2007); Ismail (2007); Waweru et al. (2005); Scapens & Yan (1993); Waweru & Spraakman (2012); Kagaari (2011)
Others[5]	**4**	Jusoh et al. (2008a); O'Connor et al. (2006); Hoque & Alam (2004); Munir et al., (2013).
Total	**103**	

[4] This included institutional theory, complexity theory and contingency theory.
[5] This included the selection approach (n =1), combining NIS and other framework (n=1) and development of a theoretical model (n =2).

Of the studies that followed contingency theories, studies have examined the influence on MPM design addressing many contextual variables such as economic reform, privatization, market competition, business strategy etc (e.g., Fleming et al, 2009; Khan et al., 2010; Fleming et al. 2009; Waweru et al., 2004; Luther & Longden, 2001).Furthermore, on top of examining the role economic reform, privatization in management accounting practices including MPM practices of firms in developing countries (Anderson & Lanen, 1999), the other contingency led studies' investigated the role of technological innovation in the application of MPM (e.g. Ong & Teh 2008); the influence of strategic orientation on firms performance considering both financial and non-financial dimensions (Avci et al., 2011); and the moderating role of business strategy in management control system and organisational performance (Tsamenyi et al., 2011), however is a recent phenomenon.A few studies adopted other approaches such as cultural political economy (Hopper et al., 2009), a stakeholder framework (Li & Tang, 2009), and grounded theory (Wickramasinghe et al., 2007) and a combination of NIS and technical rational perspectives (Sharma & Lawrence 2005).

The research methods (see Table 4) indicate that much research has been based on case studies using both interviews, and interview and document analysis (20 papers out of 103). Although surveys were the most popular method (45 papers), mixed-methods, which can enhance understanding of themes under investigation and provide rich sources of data (Modell, 2005) has grown (14).

Table 4. Research methods used in reviewed papers

Research methods	*Frequency*	*Relevant studies*
Survey	**45**	Khan et al. (2010a); Khan et al. (2010b); Khan & Halabi (2009a); Khan et al. (2011); Fleming et al. (2009); Anand et al. (2005); Joshi (2001); Kapugi & Smith (2007); O'Connor et al. (2006); Tsamenyi et al. (2011); Jusoh et al. (2008a); Jusoh et al. (2008b); Jusoh et al. (2006); Jusoh & Parnell (2008); Amir et al. (2010); Smith et al. (2008); Burgess et al. (2007); Ong et al. (2010); Ong & Teh (2008); Yongvanich &Guthrie (2009); Srimai et al. (2011a); Sawalqa et al. (2011); Al-Materneh (2011); Juhmani (2007); Ismail (2007); Wadongo et al. (2010); Mmieh et al. (2011);Waweru et al. (2004); Waweru et al. (2005);Luther & Longden (2001); de Waal (2007); Satta (2006); Eker & Pala (2008); Demirbag et al. (2006); Avci et al. (2011); Lonial et al. (2008); Gimzauskiene & Kloviene (2011); Kloviene & Gimzauskiene (2009); Curado & Manica (2010); Huang et al. (2007); Solano et al. (2003);Yu et al. (2009); Taylor et al. (2001); Lau &Sholihin (2005); Akbar et al. (2012)
Interviews	**11**	Bhagwat & Sharma (2007); Joseph (2008); Pusavat et al. (2009); Sˇevic (2005); Jasiukevicius & Christauskas (2011); Bevanda et al. (2011); Mohamed & Hussain (2005); Johnston & Pongatichat (2008); Tsang (2007); Rhodes et al. (2008); Julnes & Mixcoatl (2006)
Interviews and document analysis	**10**	Jazayeri et al. (2011); Othman et al. (2006); Tsamenyi et al. (2008); Kattan et al. (2007); Sharma & Lawrence (2005); Wickramasinghe et al. (2007); Tsamenyi et al. (2010);Waweru &Spraakman (2012); Siti Nabiha & Scapens (2005); Munir et al., (2013).
Action research	**1**	Li & Tang (2009)
Archival /desk research/ conceptual papers/ literature review	**18**	Hopper et al. (2009); Tillema et al. (2010); Mimba et al. (2007); Chen et al. (2006a); Duh et al. (2008); Rabbani et al. (2007); Marwa & Zairi (2009); Bogicevic & Domanovic (2009); Sinkovic´ et al. (2011);Sulaiman et al. (2004);O'Donnell& Turner (2005); Pienaar & Penzhorn (2000); Umashanker & Dutta (2007); Chaklader & Roy (2010); Hoque (2001); Scavone (2006); Thakker et al. (2009); Scapens &Yan (1993)
Analytical: mathematical	**4**	Rabbani et al. (2010); Kamhawi (2011); Jardali et al. (2011); Al-Enizi et al. (2006)
Mixed methods[6]	**14**	Anderson & Lanen (1999); Amir (2011); Tayles et al. (2007); Rabbani et al. (2011); Anh et al. (2011); Posayanant & Chareonngam (2010); Valmohammadi & Servati (2011); Guerreiro et al. (2006); Peters et al. (2007); Hansen et al. (2008); Kagaari (2011); Edward et al. (2011); Norhayati & Siti-Nabiha (2009); Hoque & Alam (2004)
Total	**103**	

[6] This included interviews, document reviews and a questionnaire all in one study.

Surprising, experiment have gained no popularity in developing countries since in our review no MPM research has applied that. This is the areas in where developing countries PM studies can contribute in future and to get the benefits of experimental research[7]. The number of analytical papers (mathematical) are also low (4 papers out of 103), than Shields's (1999) study in USA (49 papers out of 152) however greater than that of Australian-based management accounting studies (Chenhall & Smith, 2011, found only 1 paper as analytical out of 231). Mathematical analysis in the reviewed papers primarily involved the application of Data Envelop analysis (DEA) (Al-Enizi et al., 2006), Delphi technique (Jardali et al. 2011; Kamhawi, 2011; Rabbani et al. 2010) for understanding PM techniques. In line with findings, found in Australia[8], action research was not popular in developing countries (only one paper, specifically, Li & Tang, 2009).

4. DISCUSSIONS OF FINDINGS BASED ON TOPICS

As mentioned earlier, topics of reviewed papers were classified into four categories (see table 1): (a) extent and use of MPM (52 papers); (b) contextual factors driving firms to adopt MPM and organisational performance (29); (c) comparative studies (6); and (d) others (16) (including implementing and using MPM, MPM changes, literature review-based MPM research in developing countries, and development of MPM by indigenous firms).Within 52 papers on the topic of the extent and use of MPM in category (a), 7 papers explained the use of MPM in developing countries; 29 papers described the use of the BSC as a multi-dimensional performance measurement tools and 16 papers were relating to the use of MPM tools as performance management tool together with alternative applications of the MPM tool. These sections discuss these in details.

4.1 Extent and use of MPM

Of the (52) papers that studied how many firms used MPM, 7 investigated rates of adoption of MPM indicators (financial and other). For example, 81% (n=149) of listed manufacturing firms in Malaysia used MPM indicators (Burgess et al. (2007); 51.6% (n=124) ofKenyan hotel and tourism firms (Wadongo et al., 2010); and from 65.2% in 2003 to 71.8% in 2009 various Vietnamese firms (n=181), though public sector firms had lower MPM adoption than listed firms formed through joint ventures with foreign interests (Anh et al., 2011). A combination of financial and non-financial indicators were also found within responsibility centres in China (Scapens and Yan, 1993), micro-finance institutions (Waweru and Spraakman, 2012), banks in Gulf Cooperation Council countries (Al-Enizi et al., 2006), and a Tanzanian tertiary college (de Waal, 2007).

Adoption of the BSC as a performance measurement tool is evidenced in many studies (29 papers). Adoption rates for firms across multiple industries were 65% (n=83) in Bahrain (Juhmani, 2007); around 40% (n=123) in Thailand (Yongvanich & Guthrie, 2007); 10% (n=60) in Bangladesh (Khan et al., 2011); 60.1% (n=33) in Egypt (Ismail, 2007); 38.1% (n=181) in Vietnam (Anh et al., 2011);10% (n=30) in Madeira (Curado & Manica, 2010), and 21.2% (n=52) in South African manufacturing and service sectors (Waweru et al., 2005). Other studies report BSC adoption rates in manufacturing sectors, namely 40% (n=60) in India (Joshi, 2001) which in a similar later study rose to 45.28% (n=24) (Anand et al., 2005); 35.1% (n=168) in Jordan (Sawalqa et al., 2011); and 50% (n=30) in Lithuania (Jasiukevicius & Christauskas, 2011).

4 studies empirically tested causal links within the BSC model (Huang et al., 2007) in the Chinese tourist industry, Jusoh et al. (2008a) in Malaysian manufacturing firms, Khan et al. (2010b) in Bangladesh, and Ong et al. (2010) in Malaysia each examined applications of the four perspectives in Kaplan and Norton's (1992) BSC model.

The empirical results of Huang et al (2007) study revealed that non-financial performance measures of BSC dimension (i.e., the learning and growth perspective, internal process perspective, and customer perspective) not only directly influence the financial performance measures, but also have indirect effect on performance through the cause-and-effect relationships among different perspectives. The findings by Jusoh et al. (2008a) study suggest that the use of BSC measures in the form of internal business process and innovation and learning measures showed to have a significant effect on firms' performance. Their results also suggest that when studied firms use a performance measurement system incorporating all four perspectives of BSC measures, their performance is much better than when they rely exclusively on an individual perspective. Ong et al. (2010) evidenced the theoretical foundations of BSC model and they found sequential dependency among the four perspectives of BSC. This line of understanding is further supported by Khan et al (2010) study. Their study further reported that the relationship between customer perspective factors and internal business process factors are stronger than that of the relationship between learning and growth factors and internal business process factors. Their study also evidenced that the companies that have improved their financial indicators have increased their efforts towards internal business activities more than the companies that have not. Specifically, companies that financial indicators (ROA and ROE) have increased over the three years period had been found an increased orientation to improving internal business process compared to the companies that had these ratios decreased in the period.

It is important to mention that all of the above-mentioned BSC-based studies involved the full adoption of all four perspectives of Kaplan and Norton's (1992) BSC model, with one exception (i.e., Tsamenyi et al., 2010). Using a modified version of the BSC model by adding the community perspective as a fifth perspective, Tsamenyi et al. (2010) analysed the performance of two large privatised companies in Ghana. Their study reported that subsequent to privatisation, the two case companies were able to improve their performance in all performance dimensions.

[7] Experimental work's focus internal validity that offers a powerful way of testing specific, focused theories on how individuals respond to information from management control system or any other MA systems (Chenhall & Smith, 2011)

[8] Chenhall and Smith [2011] found one paper employing action research out of 232 reviewed

BSCs not only incorporate financial and non-financial measures but also claim to translate mission and strategy into tangible objectives reinforced by comprehensive performance measures (Kaplan & Norton, 1996, 2001). 16 papers examined MPM as a performance management tool (10 using the BSC and 6 alternative applications of BSC). BSC was studied as a performance management tool for an academic information service in South Africa (Pienaar & Penzhorn, 2000). Subsequent studies claim promoted systemic integration and thence better quality assurance in a Venezuelan company (Sonalo et al., 2003), and when it was extended to incorporate environmental factors in Argentina (Scavone, 2006), and social and environmental dimensions in an Indian automobile company (Chaklader and Roy, 2010), it improved sustainability-related performance. The use of BSC as a performance management tool has also been studied in Pakistan (Rabbani et al., 2010) and in Afghanistan's health sector (Peters et al., 2007; Hansen et al., 2008; Edward et al., 2011).

Within these studies, Rabbani et al., (2010) reported that BSC stimulates individual clinicians and managers to cooperatively work towards improving hospital performance. Peters et al, (2007) reported that the adaptation of the BSC model [they modify BSC model under 6 dimensions such as patient perspectives, staff perspectives, capacity for service provision; service provision (technical quality), financial systems, and overall vision for the health sector] in Afghanistan has been served as an useful tool to assess the multidimensional nature of health-services performance, that facilitated managers to benchmark performance identifying strengths and flaws in the Afghan environment. Following Peters et al, (2007) modified version of BSC model, Hansen et al., (2008) reported that the use of a clear monitoring framework (e.g., BSC) enable service sectors to identify priority areas for improvement and measure performance over time in an objectives-based approach, and enable decision-makers to manage public health services effective way in a difficult environment like Afghanistan. Another study by Edward et al., (2011) reported that the BSC has been effectively implemented to assess and improve health service capacity and service delivery using performance benchmarking during the 5-year period. Their study also reported that the use of BSC helped to show the effects of investments in health care, assisted policy change, and form a more evidence-based decision-making culture in Afghanistan's primary health care system (p.9).

The application of BSC in developing countries is found for some other reasons (6 studies).These include developing higher education programs/institutions in India (Umashankar & Dutta, 2007) and in Malaysia (Yu et al., 2009); measuring supply chain management performance in Indian small and medium enterprises (Bhagwat & Sharma, 2007; Thakkar et al.2009); developing key performance indicators (KPIs)and value chain analysis in the Thai public sector (Posayanant & Chareonngam, 2010); and, in conjunction with a Delphi multi-criteria decision-making methodology, measuring national hospital performance in Lebanon (Jardali et al., 2011). Nevertheless, the amount of research on alternative MPM usages remains small. This may reflect researchers' choices of which firms to study or that although many firms in developing countries may use MPM they often do so only for limited purposes (an exception is Waweru and Spraakman (2012). For example, there is little evidence for or scrutiny of its use in performance evaluation of employees or managers, or in strategic or tactical decision-making (Ittner et al., 2003).

Firms in developing countries apparently have used BSC similarly to their counterparts in developed countries[9]. The architects of BSC have continually improved it as a management tool (Kaplan et al., 2010; Kaplan & Norton, 2004) but few studies reviewed here gave adequate information on the type[10] of the BSC model used (an exception is Yongvanich and Guthrie, 2009). Papers lack detailed specification of MPM systems design despite prior work giving guidance for doing this (Chenhall, 2005), e.g. which MPM technique (especially the BSC model) was used,[11] how was it defined operationally as a management tool, which generation of the BSC model was used, was it an improved or modified version?.The paucity of such information on actual practices contrasted to the systems and claims in texts from proponents of MPM makes it impossible to confidently evaluate the effectiveness MPM applications when used as a management tool.

Also little is known about MPM tools used other than BSC (exception include Curado & Manica, 2010). Curado & Manica (2010) found the largest firms on Madeira used the Tableaux de Bord more than BSC. Given the importance of French MPM techniques in Francophone developing countries, this is important. Nor do the papers reveal much on the processes and institutions involved in diffusing MPM techniques. This is surprising given the frequent claim that systems inappropriate to the problems and context confronting many developing countries are often imposed by transnational institutions such as the World Bank, frequently upon advice of Western consultants.

4.2 Contextual factors

29 papers traced the influence of contextual factors on the use of MPM. Researchers have shown increased interest in this, perhaps due to its prominence in developed country research (e.g., Chenhall, 2005; Anderson & Lanen, 1999). The use of MPM or MPM tools has been attributed to economic liberalisation (deregulation); reform policies and privatisation (Waweru et al., 2004; Hoque & Alam, 2004; Anderson & Lanen, 1999; O'Connor et al., 2006); market competition (Fleming et al., 2009; Khan et al., 2010a; Munir et al., 2013); firm size

[9] For example, BSC usage rates were 17.8% (n=200) in Canada (Gosselin, 2005); 31% (n=17) in Finland (Malmi, 2001);32% (n=53) in Denmark (Nielsen & Sorensen, 2004); 26% (n=201) in the three German-speaking countries, Germany, Austria and Switzerland (Speckbacher et al., 2003); 60% (n=1,000) in the USA (Silk, 1998);40% (n=1,000) in the USA (Thompson & Mathys, 2008); and 88% (n=140) in Australia (Chenhall & Langfield-Smith, 1998)

[10] See Malmi (2001), Speckbacher et al. (2003), Valmohammadi and Sarvati (2011) for discussion of this

[11] MPM techniques are a performance management tool when they: combine multiple performance indicators with leading and lagging indicators; indicators are derived from the firm's overall strategy; they link all business units' activities, and managerial staff and employees' performance to the achievement of the firm's goal and objectives; it is fully documented; and organisational rewards are linked with performance (financial and non-financial) (Chenhall, 2005).

(Khan et al., 2011; Burgess et al., 2007); structural change and uncertainty (Luther & Longden, 2001); the external environment (Gimzauskiene & Kloviene, 2011; Kloviene & Gimzauskiene, 2009); legislative requirements (Akbar et al., 2012); national culture (Tsang, 2007); social and cultural factors such as values, loyalty and obedience (Tsamenyi et al., 2008); and type of ownership (Burgess et al., 2007). Anderson and Lanen (1999), a notable study conducted in India, enhanced understanding of how contextual factors, namely, economic reforms, international orientation of firms and organisational strategy, influenced MA practices including MPM. Recent studies revealed that traditional performance measurement techniques fail to provide adequate management information, which resulted in adoption of MPM in developing countries (Al-Enizi et al., 2006; Munir et al., 2013).

4 studies investigated the mediating and moderating role of contingent variables upon MPM and organisational performance.MPM use in Malaysia significantly mediated relationships between differentiation strategies, environmental competitiveness and organisational performance in service firms (Amir, 2011; see also Lonial et al.'s (2008) study of Turkish hospitals). Two studies investigated the moderating role of contingent factors on performance measurement practices. A mixed method study found organisational culture had moderating effect on MPM practices and thence achievement of non-financial performance indicators (service quality and delivery, and cost reduction) in Ugandan public universities (Kagaari (2011; see also Tsamenyi et al (2011)on the moderating role of business strategy upon management control and performance in China).

Others have found MPM use is influenced by internal factors, namely: business strategy (Tsamenyi et al., 2011; Jusoh et al., 2006, 2008b; Jusoh & Parnell, 2008; Amir et al., 2010; Avci et al., 2011); technological innovation (Smith et al., 2008; Ong & Teh, 2008); information technology (Kamhawi, 2011); growth strategy (Fleming et al., 2009); corporate culture (Hoque & Alam, 2004); technical knowledge and management commitment (Akbar et al., 2012); and total quality management (TQM)[12]. Guerreiro et als' (2006)qualitative research study using old institutional economics (OIE) found three major institutional forces influenced a bank in Brazil to adopt MPM alongside other MA changes: competition, declining inflation, and the bank's previous substantial losses (p. 217). Lau and Sholihins' (2005) study conducted in Indonesia was arguably the first to examine behavioural aspects of MPM. They found two intervening two factors (subordinates' trust in supervisors and fairness in the PM evaluation process) influenced relationships between performance measures (financial and non-financial) and job satisfaction.

As found in the current review, the use of MPM in the context of developing countries is also stimulated as a result of technological innovation and the use of information technology (IT) (Bevanda et al., 2011; Smith et al., 2008). These studies showed that use of technological innovation such as computer aided manufacturing, computer-aided design, computer-aided inspection and testing influence the use of contemporary management accounting techniques including MPM tool such as BSC. Other studies in developing countries evidenced that use of IT plays influential role in MPM use (Kamhawi, 2011; Ong & Teh, 2008). Technological innovation and the use of IT thus are influential factors for the use of MPM in developing countries.

The above studies advance knowledge of contextual factors that influence the use of MPM in developing countries. Nevertheless, little is known about the effect of other contextual factors such as investment in intangible assets and decentralization. Unexplored relationship between decentralisation and MPM In developing countries is rather surprising, given that in the developing countries a key prerequisite in gaining financial support from donor agencies has been organisational reforms, including decentralization and delegation of responsibilities to lower levels of management (Mimba et al., 2007). On top of it, given that the size and scope of operations of firms in developing countries is growing, greater delegation of operational decision-making to middle and operational levels of management is seen for firms in developing countries (Narayana, 2005). Given that decentralized organisations are more inclined to make decisions at an operational level they depend more on operational measures that tend to be non-financial (Gosselin, 2011), decentralised organisational structure for firms in developing countries therefore could more inclined to use MPM. This issue deserve further investigation in developing countries.

4.3 Comparative analyses

6 six papers undertook a comparative analysis of MPM (or MPM tools) between developing countries, or developing versus developed countries. The use of BSC by hospital authorities in Japan and China stimulated development of performance measures and helped them compare and evaluate hospital performance across both countries (Chen et al., 2006a). Despite their slight use of contemporary MA tools like BSC adoption of non-financial indicators (e.g., customer satisfaction) was claimed to be growing in four Asian countries owing to increasing competition (Sulaiman et al., 2004).Government agencies in five South Asian countries (Bangladesh, India, Nepal, Pakistan and Sri Lanka) haveall widened the scope of performance measures to incorporate inter alia, growth, efficiency, value for money, competition and customer satisfaction (Hoque, 2001).

A comparative case study of manufacturing firms in Sri Lanka and the UK revealed that a BSC implementation was unsuccessful in the former since it was externally imposed (by the Chartered Institute of Management Accountants [CIMA] Sri Lanka) and resulted in internal disagreement but in the UK firm an 'internal change" culture aided the successful use of BSC (Jazayeri et al., 2011). A comparative study of manufacturing firms in Australia and Mauritius found Australian Chief Executive Officer (CEO)s emphasised financial measures but in Mauritius CEOs rely more on non-

[12] Demirbag et al. (2006) was the first to examine the link between TQM adoption and BSC use in developing countries (see also Eker & Pala, 2008; Kapuge & Smith, 2007). Their results are consistent with findings in developed countries (Vinuesa & Hoque, 2011)

financial measures: production technology and information asymmetry had an impact on these differences (Taylor et al., 2001). Lastly,MPM implementations in state governments in Mexico (Campeche) and the USA (Utah) differed. In Utah, BSC implementation was initiated by legislators and the governor took a key leadership role but it was implemented in a participative manner. However, in Campeche, pressure for a BSC implementation emanated primarily from external pressures to which the governor acceded but the project was implemented in a top-down manner (Julnes and Mixcoatl, 2006).

More attempts in the services sector would be prudential as recent literature has shown increasing interest in performance measurement in this sector (Munir et al., 2013; Huang et al., 2007).

4.4 Others

The 16 papers categorised in 'others' category covered: literature reviews (4); challenges/roadblocks of implementing and using MPM (10); andin-house development of MPM by firms (2). Some studies identified implementation problems associated with Western-based MPM tools such as BSC (Wickramasinghe et al., 2007; Othman et al., 2006; Bevanda et al., 2011; Pusavat et al., 2009; Sharma& Lawrence, 2005; O'Donnell & Turner, 2005). Wickramasinghe et al. (2007) argue that in Sri Lanka the diffusion of BSC is an expression of the country's Chartered Institute of Management Accountants (CIMA) desire to globalize by incorporating Western management accounting systems (MAS). The case firm implemented BSC but subsequently failed to use it continuously because intra-firm professional rivalries, resulting internal wrangles, and the owners' preference for focusing only on financial criteria rather than the entire BSC model.

Similarly, a BSC project was resisted in a Malaysian telecommunication company owing to a corporate culture and leadership style at odds with the human relations oriented approach needed for a successful implementation [Othman et al., (2006), see also Bevanda et al. (2011) and Sinkovic´ et al.'s (2011) study in Croatia].When a public entity implemented BSC in Fiji study as a condition for loans by donor agencies, especially the World Bank, the imposed public sector restructuring failed to meet local needs (Sharma and Lawrence, 2005). In Vanuatu the implementation of a performance system where all public officials would be evaluated according to their achievement of pre-defined agreed goals and targets was not widely accepted owing to distrust, absence of incentives and employees' perception that it was imposed by donor agencies (O'Donnell and Turner, 2005). High corruption, low institutional capacity, weak control systems and inclinations to informality were barriers to supplying MPM information within the public sectors in several LDCs (Mimba et al., 2007). Political restrictions and the absence of key data-bases impeded reforms of traditional MPM techniques of performance measurement in China (Li and Tang, 2009). Phusavat et al. (2009) found four key roadblocks to implementing MPM in Thai organisations, namely, empowerment of staff, budgeting, external knowledge and linkage with software usage. Furthermore, the current review found that bargaining between agents through the use of power within firms in developing countries determines what performance indicators can be used (Jazayeri et al., 2011; Wickramsinghe et al., 2007).Thus, the use of MPM techniques can be subject to the interests of dominant parties. Bargaining between internal and external constituents can lead to professional rivalries or loss of interest by an owner-manager and thence unsuccessful use of MPM tools (e.g., Wickramsinghe et al., 2007). The success or failure of any MPM adoption can depend on reconciling political power, negotiating with, and managing powerful constituents whilst collaborating with others rather than through enforcing change through dictate (Jazayeri et al., 2011). Arguably, the degree of coalition among powerful constituents is an important factor for MPM use.

Some developing countries have developed their own performance indicators. A Tanzanian small firm financing scheme developed comprehensive performance assessment criteria including portfolio quality, financial structure, profitability, efficiency and productivity (Satta, 2006). Marwa and Zairi (2009) developed a diverse performance-oriented measurement model for a Kenyan firm that extended to stakeholder requirements, governance, leadership, and learning and innovation.

These studies identify a series of issues about the demand for and diffusion of MPM tools, challenges of implementing it, and the potential of firms to develop their own MPM techniques. Firms using a Western MPM model can experience difficulties if the local, cultural and social setting in which organisations operate is ignored (Wickramasinghe et al., 2007; Sharma & Lawrence, 2005; O'Donnell & Turner, 2005), hence calls for the need to adapt the BSC model (and its strategy map) to the specific indigenous culture of developing countries (Bevanda et al., 2011; Sinkovic´ et al., 2011). Whatever, implementing target-oriented performance evaluation requires local agreement and commitment to performance improvement (O'Donnell & Turner, 2005). Many studies reviewed have paid insufficient attention to such areas (exceptions include Mimba et al., 2007; Wickramsinghe et al., 2007; Sharma & Lawrence, 2005; Li & Tang, 2009; Satta, 2006; Hopper et al., 2009; Tilemma et al., 2010; Siti Nabiha & Scapens, 2005).

5. CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

This study reviewed research on MPM in developing countries. It reviewed 103 MPM research papers published from 1987 to 2013. The principal findings are that: firms in developing countries use MPM though rates of MPM use may vary between countries; BSC was a popular MPM tool; (c) the pace of MPM use was determined by various internal and external factors; MPM research has focussed predominately on the manufacturing sector; and most studies lacked explicit articulation of the theoretical perspectives used, any research gap, and research motivation.

External factors namely deregulation, economic reforms, growing competition, adoption of quality control techniques like TQM, and changing business strategies influenced the use of MPM. Although manufacturing was the most commonly used settings, several studies in the public sector have been made (19). MPM initiatives in the public sector are not surprising given the relatively large role of state-owned enterprises and the growing emphasis on ‘good governance’ by aid agencies requiring better performance assessment, new public management initiatives, and greater competition and market reforms (Mimba et al., 2007; Tillema et al., 2010; Li & Tang, 2009).

In conclusion, although MPM practices have not invariably been accepted, performance measurement practices in developing countries have often changed, though more needs to be known in the context of developing countries discussed in next paragraphs. In the light of review findings, the study has formulated future research directions discussed as follows.

First, as found in the current review, Western management controls and MPM techniques may need to be customised to take account of indigenous contexts (Tsamenyi et al., 2010). Whether MPM and/or MPM techniques have been modified as a result of increasing sustainability awareness needs further scrutiny. There has been increased consensus among developing countries that performance measurement needs to incorporate sustainability indicators covering employees, customers, the community, and the environment. These are often a result of international influences (Belal & Owen, 2007), or pressure from international financial institutions such as the World Bank, or from local regulators such as central banks or owing to pressure from international financial institutions such as the World Bank (Rahaman et al., 2004; Khan & Dyball, 2012).

RQ-1: Do firms in developing countries implement and use MPM tools/ techniques as result of pressure from international financial institutions such as the World Bank, or from local regulators such as central banks?

Second, the review has shown that many developing countries’ MPM initiatives were unsuccessful in this context. Although the current review has focused on MPM in developing countries at large, it is likely that these countries are heterogeneous with respect to the extent of poverty, corporate culture, and their political, social and economic systems (Hopper et al., 2009; Tillema et al., 2010). These heterogeneous characteristics could either facilitate the use of MPM or act as barriers to using MPM at the country-specific level. As found earlier, the rate of MPM use and/or of MPM techniques (e.g., the BSC) was not the same among different developing countries. It is likely that heterogeneous characteristics could have a major influence on the rate of MPM use in developing countries. Questions have thus emerged about whether and how firms in developing countries have been advanced or were challenged with respect to the use of MPM taking social, political and historical differences into consideration. A large-scale cross-country research study using a quantitative and qualitative approach is welcomed to investigate these questions.

RQ-2: How do firms in developing countries advance or have been challenged with respect to the use of MPM due to social, political and historical differences?

Likewise, as found in the current review, there has been growing demand from external stakeholders for performance measurement information in developing countries (Tillema et al., 2010; Mimba et al., 2007; Akbar, 2012). In the specific context of public sectors in developing countries, reviewed studies progressed the understanding that such external demand originates from stakeholders, which include central government (Akbar, 2012), international funding bodies (Tillema et al., 2010; Mimba et al., 2007). Tillema et al., (2010) reported that reforms in public sectors in developing countries propelled through the prescriptions of funding agencies thus could have influence in the demand of performance measurement information.

Parallel to the demand from external stakeholders for public sectors, in the context of banking sectors in developing countries, demand for using multi-dimensional performance measurement techniques could be driven as a result of external stakeholders influence such as influence from central bank, international funding agencies. In the specific context of banking sector, Munir et al (2011) offered three form of institutional influence (coercive, normative and mimetic) in understanding PMS change using New institutional sociology (NIS) lens (DiMaggio & Powell, 1983). As found in the current review, thus far, little has been progressed toward understanding the role of institutional influence (factors) in the use of MPM in the context of banks in developing countries. Future research is therefore required to investigate influence of institutional factors in the use of MPM for banks in developing countries. Nevertheless, as found in the current review, merely influence from external stakeholders did not lead to change in performance measurement practices in developing countries; participation and involvement of top-level management was essential to adopt new performance measurement (see study by Norhayati & Siti-Nabiha, 2009; Julnes & Mixcoatl, 2006). As a result, support and involvement from internal management is essential for the implementation and use of an MPM tool in banks in developing countries. An in-depth examination of interplay between internal factors and external factors for the use of MPM would be prudential in financial industry.

RQ-3: Are there any interplay between internal factors and external factors for the use of MPM in financial industry of developing countries?

As reported in the current review, within studies in developing countries, little attention has been devoted to the issue of firms’ investment in intangible assets, the multi-dimensional performance measurement system of firms and to the organisational performance implications in this regard [The current review found that in the context of developing countries, only one study (e.g., Tayles et al., 2007 in Malaysian context) revealed that the level of investment in intangible assets (IC) is associated with management accounting practices including performance measurement, and firms performance]. Investment by firms in diverse intangible assets (e.g., IT, human resource development, and relationship management of customers and other external parties) could improve organisational performance when firms use comprehensive performance measurement techniques (e.g., MPM tools such as BSC) (Kaplan & Norton, 2004). MPM are necessary to measure investment in intangible asset and to evaluate its effects on ultimate outcome i.e. organisational performance (Hendricks et al., 2012). Some developing countries invest more in intangible assets now than a decade earlier (Raihan, 2007). A key finding in Dutz et al. (2012) was that there was significant intangible investment in the Brazilian business sector (4% of gross domestic product [GDP] from 2000 to 2008): a rate not much below that of developed countries such as Italy and Spain (circa 5–6%). Hulten and Hao (2011) reported a rate of about 8% of GDP in China. Raihan's (2007) identified massive changes and improvements in this area within the banking industry of Bangladesh that included investing in automating and upgrading manual business processes, efficient manpower creation and enhancing employee skills and competence. As developing countries' investment in intangible assets grows significantly, the role of the MPM in reflecting the performance of intangible assets may be indispensable (Tayles et al., 2007). If so then investment in intangible assets is likely to be a driver of MPM usage. Given that many firms in developing countries now use MPM or MPM tool such as BSC (as reported in the current review), and many firms in developing countries concentrate on investing in intangible assets, emerging questions is whether investment in intangible assets lead firms to use contemporary performance measurement system (e.g., the use of MPM) in developing countries. Future research is therefore necessary in order to investigate whether there are any intervening role of MPM for firms in developing countries with regard to investment in intangible assets and its relationship to organisational performance.

RQ-4: With regard to change in investment in intangible assets and its relationship to organisational performance, what are the internal and external factors that could have mediating and moderating role for the use of MPM for firms in developing countries?

In terms of behavioural dimension of MPM, the current review revealed that there is very limited study (e.g., Lau & Sholihin, 2005). Future research can investigate on whether the reliance of MPM in evaluating subordinates' performance affects their performance or whether the effect is contingent on the specificity and difficulty of the goals contained in the performance measures. Goals specificity is not only factor that affects employees' behaviours; level of goal difficulty could also affect employees' behaviour (Sholihin et al., 2011). If there is level of goal difficulty, it might have an impact on the relationship of financial and non-financial based evaluation system and employees behaviours (Sholihin et al., 2011; Lau & Sholihin, 2005). Likewise, procedural fairness is related to performance and employee's performance, in turn, may be related to job satisfaction (Lau & Moser, 2008). Employees who perform well may experience high job satisfaction (Lau et al., 2008). This thus follows that the effects of procedural fairness on job satisfaction may be indirect through job performance of employees. Understanding such phenomenon is a good avenue for future MPM research in developing countries.

RQ-5: Does job performance of employees mediate for the use of MPM for firms in developing countries in explaining the effects of procedural fairness on job satisfaction?

Furthermore, the current review has revealed that the rate of BSC use in public sectors in developing countries is still unknown. The public sector of developing countries is therefore a candidate for future large-scale, survey-based research. At the same time, recent studies claimed that developing countries have been progressed significantly economically and socially, and many countries such as China are said to have led the world recovery from the most recent economic crisis (Ezzamel & Xiao, 2011). Ezzamel and Xiao (2011) narrated that accounting research should earnestly take into consider the possibilities of the travel of accounting ideas the other way round, from developing and transitional economies to advanced capitalist countries (p.634). Arguably, more need to know whether any 'novel' PM ideas and technologies, or revisions to PM and management accounting technologies imported by developed countries from developing and emerging market economies.

RQ-6: Are there any 'novel' performance measurement ideas and technologies, or revisions to PM and management accounting technologies imported by developed countries originate from developing countries?

Family ownership is more common in developing countries (Hopper et al., 2009). For detailed case studies of this in Indonesia (see Efferin & Hopper, 2007), in Sri Lanka (Jazayeri et al., 2011), and in Bangladesh (Uddin & Hopper, 2005). Family ownership can adversely influence the use of MPM in developing countries. It can induce informal and arbitrary management controls, restrict information and benefits to family members, rules and regulations dictated by family or friendship links, and disregard of the rights of minority shareholders (Hopper et al., 2009; Black et al., 2000; Uddin, 2009). However, as Efferin and Hopper (2007) indicate, family ownership may not invariably inhibit innovative MA reforms though they may have to tally with familial control and traditional cultures (see also Dyball & Valcarcel, 1999). Arguably, more need to know whether MPM ideas and technologies, or revisions to PM and management accounting technologies are stimulated and supported by dominant shareholders in developing economies.

RQ-7: Do development and improvement of MPM ideas and technologies, or revisions to PM stimulate and get supported by dominant shareholders in developing countries?

Similarly, high quality performance information intensifies communication between employees, managers, supervisors and other stakeholders (Hoque, 2001). It must be comprehensive when used for performance evaluation but also simple, understandable and easy to communicate if it is to motivate employees to improve performance (Mimba et al., 2007). MPM performance indicators in developing country firms particularly need to be simple[13] given their low institutional capacity and

[13] By 'simplicity', this study means that it is easy to understand, with no ambiguity in interpreting the results to the users of MPM information

weak governance (Mimba et al., 2007). It is essential that the nature of the performance indicators used in firms in developing countries generates high quality performance information so that it intensifies the communication between many parties such as employees, managers, supervisors and other stakeholders (Hoque, 2001). Communicating performance indicators in developing countries by way of either simple ratios or proportion enable users to better understand and compare information on performance indicators (Chen et al., 2006a). It is not well established yet what and how MPM information play role in communicating and corroborate different stakeholders in developing countries given that firms in developing countries operate unique institutional, cultural settings. This deserves further research attention.

RQ-8: Do MPM information play role in communicating and corroborate different stakeholders in developing countries?

In the context of developing countries, insufficient resources can impede MPM use. As found in the current review, many MPM initiatives in developing countries are stymied not only by insufficient funding but also as insufficient knowledge, technology; databases and training (see Phusavat et al., 2009; Li &Tang, 2009). Arguably, more need to know whether MPM ideas and technologies, revisions to MPM technologies are hindered as a result of fund shortages in developing countries. Furthermore, the review has suggested that increased attention to methodological issues will have the potential to carry forward future MPM research in developing countries. Survey research should pay heed to the data collection techniques prescribed by Dillman (2000).

Finally, as reported earlier, one of the features of the MPM studies in developing countries was the fact that most of the findings were reported without using any theoretical framework (see Table 4). Explicit reference to theories, developing theoretical framework informed in theoretical lens, or development of theoretical models are required in a research project if the researcher believes that they have contributed to academic literature and the rigorousness of theoretical knowledge. Probably this is one of the reasons why the number of developing countries' MPM articles published in top-tier accounting, management journals is very limited (see Appendix 1).

This review is not free of limitations. The literature review might have missed relevant MPM work that has been published in: areas other than accounting, operations and information systems; non-English language journals; or in book reviews, conference proceedings, working papers, professional publications or unpublished theses. Nevertheless, we hope the findings will be of assistance to further research on MPM in developing countries. Much effort still needs to be expanded essentially in many untouched areas.

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Appendix 1. Reviewed papers classified by journals

Journal titles	*Frequency (f)*
Accounting journals	
Accounting Organisations and Society (AOS)	2
Accounting Forum (AF)	1
Accounting, Auditing and Accountability Journal (AAAJ)	5
Management Accounting Research (MAR)	3
Journal of Management Accounting Research (JMAR)	1
Critical Perspectives on Accounting (CPA)	1
Research in Accounting in Emerging Economies (RAEE)	2
Journal of Accounting in Emerging Economies (JAEE)	1
Journal of Accounting and Organisational Change (JAOC)	7
Asia-Pacific Management Accounting Journal (APMAJ)	2
Asian Review of Accounting (ARA)	2
Managerial Auditing Journal (MAJ)	3
South African Journal of Accounting Research (SAJAR)	1
Qualitative Research in Accounting & Management (QRAM)	2
Pacific Accounting Review (PAR)	3
International Journal of Accounting (IJA)	1
British Accounting Review (BAR)	1
Advances in Accounting, incorporating Advances in International Accounting	1
Advanced in Public Interest Accounting	1
Journal of Accounting Auditing and Performance Evaluation (JAAP)	2
Journal of International Accounting, Auditing and Taxation (JIAAT)	1
Asian Journal of Business and Accounting (AJBA)	1
Total reviewed articles in accounting journals	**44**
Non-accounting journals	
Benchmarking: an International Journal (BIJ)	2
International Journal of Productivity and Performance Management (IJPPM)	7
Measuring Business Excellence (MBE)	4
Public Administration and Development (PAD)	1
International Journal of Operations & Production Management (IJOPM)	1
International Journal of Health Planning & Management (IJHPM)	2
Industrial Management and Data Systems(IMDS)	2
Indian Journal of Economics and Management (IJEM)	2
International Journal of Public Sector Management (IJPSM)	2
International Journal of Public Administration (IJPA)	1
Reviewed articles in other non-accounting journals[14]	35
b. Total reviewed articles in non-accounting journals	**59**
Total articles (a + b)	**103**

[14]Public Performance & Management Review (PPMR); International Journal of Emerging Markets (IJEM); International Journal of Electronic Business Management (IJEBM);Journal of African Business (JAB); The Business Review (TBR);Vikalpa;Computers & Industrial Engineering (CIE);EuropeanJournal of Economics, Finance and Administrative Sciences (EJEFAS); Management Decision (MD); Economics & Management (EM); International Journal of Health Care Quality Assurance (IJHCQA);Tourism Management (TM); Journal of Manufacturing Technology Management (JMTM); Engineering Economics (EE); International Journal of Human Resource Management (IJHRM);International Journal of Business & Management (IJBM);Journal of Economic and Social Research (IESR);Journal of Asia Pacific Business (JAPB); Implementation Science (IS); Perspective of Innovations, Economic & Business(PIE&B) International Journal of Business Research (IJBR);Journal of Business Economics and Management (JBEM); Health Policy;International Journal of Management and Decision Making (IJMDM);Service Industries Journal (SIJ); Bulletin of the World Health Organization; PLOS Medicine;Information Systems Management (ISM); Journal of Cleaner Production (JCP); Libri; Journal for Healthcare Quality (JHQ); Higher Education (HE);International Journal of Educational Management (IJEM); and International Journal of Sustainable Strategic Management (IJSSM).

Appendix 2. Reviewed papers classified by countries

Countries	*Numbers*	*%*	*Relevant studies*
Asia			
Bangladesh	5		Khan et al. (2011); Khan et al. (2010a); Khan et al. (2010b); Khan & Halabi (2009); Hoque & Alam (2004)
India	8		Anderson & Lanen (1999);Anand et al. (2005);Joshi (2001); Bhagwat & Sharma (2007);Joseph (2008); Umashankar & Dutta (2007);Chaklader & Roy (2010); Thakkar et al. (2009)
Sri Lanka	3		Jazayeri et al. (2011); Kapuge & Smith (2007);Wickramasinghe et al. (2007)
China	9		Chen et al. (2006);Duh et al. (2008);Fleming et al. (2009);Li & Tang (2009); O'Connor et al. (2006);Tsamenyi et al. (2011); Huang et al. (2007);Tsang (2007); Scapens & Yan (1993).
Malaysia	15		Jusoh et al. (2008a);Jusoh et al. (2008b); Jusoh et al. (2006); Jusoh & Parnell (2008);Amir et al. (2010); Amir (2011); Othman et al. (2006); Smith et al. (2008);Tayles et al. (2007);Burgess et al. (2007);Ong et al. (2010);Ong & Teh (2008); Siti-Nabiha & Scapens (2005);Norhayati & Siti-Nabiha (2009); Yu et al. (2009)
Indonesia	4		Tsamenyi et al. (2008); Rhodes et al. (2008); Lau & Sholihin (2005); Akbar et al (2012)
Pakistan	4		Rabbani et al. (2011); Rabbani et al. (2010); Rabbani et al. (2007); Munir et al., (2013)
Afghanistan	3		Peters et al. (2007);Hansen et al. (2008); Edward et al. (2011)
Vietnam	1		Anh et al. (2011)
Thailand	5		Yongvanich &Guthrie (2009);Srimai et al. (2011);Phusavat et al. (2009); Posayanant & Chareonngam (2010);Johnston & Pongatichat (2008)
Total	**56**	**54.9**	
Middle East			
Jordan	2		Sawalqa et al. (2011); Al-Matarneh (2011)
Four Gulf countries	1		Al-Enizi et al. (2006)
Iran	1		Valmohammadi & Servati (2011)
Palestine	1		Kattan et al. (2007)
Bahrain	2		Juhmani (2007); Kamhawi (2011)
Lebanon	1		Jardali et al. (2011)
Oman	1		Mohamed & Hussain (2005)
Total	**9**	**8.8**	
Africa			
Egypt	1		Ismail (2007)
Kenya	3		Wadongo et al. (2010); Marwa & Zairi (2009); Waweru & Spraakman (2012)
Ghana	2		Mmieh et al. (2011); Tsamenyi et al. (2010)
South Africa	4		Waweru et al. (2004); Waweru et al. (2005); Luther & Longden (2001);Pienaar & Penzhorn (2000)
Uganda	1		Kagaari (2011)
Tanzania	2		de Waal (2007); Satta (2006)
Mauritius	1		Taylor et al. (2001)
Total	**14**	**13.7**	
Europe			
Turkey	4		Eker & Pala (2008);Avci et al. (2011); Demirbag et al. (2006); Lonial et al. (2008)
Croatia	2		Sinkovic´ et al. (2011); Bevanda et al. (2011)
Serbia	2		Sˇevic (2005); Bogicevic & Domanovic (2009)
Lithuania	3		Jasiukevicius & Christauskas (2011); Gimzauskiene & Kloviene (2011); Kloviene & Gimzauskiene (2009)
Total	**11**	**10.8**	
South America			
Argentina	1		Scavone (2006)
Brazil	1		Guerreiro et al. (2006),
Mexico	1		Julnes & Mixcóatl (2006)
Venezuela	1		Solano et al. (2003)
Total	**4**	**3.9**	
Others			
Fiji	1		Sharma & Lawrence (2005)
Madeira Island	1		Curado & Manica (2010)
Vanuatu Islands	1		O'Donnell & Turner (2005)
Not specific to any country	5		Hoque (2001); Mimba et al. (2007); Tillema et al. (2010); Sulaiman et al. (2004); Hopper et al. (2009)
Total	**8**	**7.9**	
Total	**103**	**100**	

ON THE CAUSAL LINK BETWEEN FINANCIAL DEVELOPMENT AND ECONOMIC GROWTH: CASE OF JORDAN

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Abstract

This paper empirically examines the causal relation between financial development and economic growth in the case of Jordan for the period 1965 to 2004. That is, the paper attempts to provide answers to the following questions: a) Does financial development promotes economic growth? Or b) Does economic growth promotes financial development? Using Toda and Yamamoto (1995) Granger-no-causality model, the results reveal that there is a uni-directional Granger causality from economic growth to financial development (as defined by log (DC/GDP)).

Keywords: Financial Development, Economic Growth, Granger non-Causality, MENA, Jordan

1. INTRODUCTION

The relationship between financial development and economic growth has been investigated extensively in the literature. This investigation of such a relationship has been initiated by Schumpeter (1911) and followed by more recent work of McKinnon (1973) and Shaw (1973). Literature shows that two hypotheses are used to explain the direction of causality between financial development and economic growth. First, the supply-leading hypothesis that supports the argument that financial development promotes economic growth (see, for example, Levine and Zervos (1998), McKinnon (1993), and Shaw (1973)). Second, the demand-following hypothesis which supports the argument that economic growth promotes financial development (see, for example, Robinson (1962) and Stiglitz (1994)).

This link between financial development and economic growth became under further empirical investigation where more of such investigations have focused mainly on the developed countries with little performed on developing countries. These studies include, among others, Jung (1986), Lynch (1996), Ahmed and Ansari (1998), Darrat (1999), Ghali (1999), Shan et al (2001), Al-Yousif (2002), Chang (2002), Shan and Morris (2002), Calderon and Liu (2003), Ghirmay (2004), Al-Awad and Harb (2005), Atindehou et al (2005), Hondroyiannis et al (2005), Chang and Caudill (2005), Shan (2005), Kilimani (2009), Estrada (2010), Sunde (2011), Liang (2012), and Oludele (2015).

2. DATA AND METHODOLOGY

To investigate the causal link between financial development and economic growth in the case of Jordan, the paper will use annual data for the period 1965-2004 on real gross domestic product (RGDP), and two proxies for financial development: the ratio of broad money (M2) to GDP (M2/GDP) and the ratio of domestic credits to the private sector (DC) to GDP (DC/GDP). Data on real GDP are extracted from Groningen Growth and Development Center (2006) and data on both (M2/GDP) and (DC/GDP) are extracted from the World Bank, World Development Indicators.

The methodology used in this study follows Toda and Yamamoto (1995) procedure in order to test the Granger causality between economic growth and financial development. As an advantage of this method, Toda and Yamamoto (1995) stated that "Our method is applicable whether the VAR's may be stationery (around a deterministic trend), integrated of arbitrary order, or cointegrated of an arbitrary order. Consequently, one can test linear or nonlinear restrictions on the coefficients by estimating a levels VAR and applying the Wald criterion, paying little attention to the integration and cointegration properties of the time series data in hand (Toda and Yamamoto (1995), p.227)". This procedure involves two steps. First, to determine the lag length (k) of the VAR model and augment that with the maximum order of integration (dmax) of the variables used in the model. We used Schwarz criterion (SC) to determine the optimal lag structure (k) of the VAR model. We also used the Augmented Dickey-Fuller (ADF) test to determine the order of integration (dmax) of the variables used in the model. Second, to test for Granger causality by using the Modified Wald (MWALD) test in order to test the coefficients of the first k coefficients of the VAR (k+dmax). That is, Zapta and Rambaldi (1997) stated that "Toda and Yamamoto (1995) prove that the Wald test for restrictions on the parameters of a VAR (k) has an asymptotic Chi-square distribution when a VAR (k+dmax) is estimated where dmax is the maximal order of integration suspected to occur in the process (Zapata and Rambaldi (1997), p. 291)". In addition, Zapata and Rambaldi (1997) argued that the MWALD test does not requires initial knowledge of cointegration and or the degree of integration of the system.

Here, let Y_t represents economic growth (measured by real GDP) and FDt represents financial development (measured by two proxies: X_t and M_t be log (DC/GDP) and log (M2/GDP), respectively).

$$Y_t = \alpha_1 + \sum_{i=1}^{k+dmax} \alpha_{2i} Y_{t-i} + \sum_{i=1}^{k+dmax} \alpha_{3i} FD_{t-i} + \varepsilon 1_t \quad (1)$$

$$FD_t = \beta_1 + \sum_{i=1}^{k+dmax} \beta_{2i} Y_{t-i} + \sum_{i=1}^{k+dmax} \beta_{3i} FD_{t-i} + \varepsilon 2_t \quad (2)$$

Rambaldi and Doran (1996) have explained that the MWALD test used for testing Granger non-causality can be more efficient when using a Seemingly Unrelated Regression (SUR) method. Thus based on Toda and Yamamoto (1995) procedure, the Granger non-causality between economic growth and financial development can be tested using the following VAR system given in equations (1-2).

For example, when using Toda and Yamamoto (1995) approach to test the Granger non-causality from FD to Y, we need to test the H0: $\alpha_{3i} = 0$ for all i ≤ k in equation 1 and causality from FD to Y can be established through rejecting the null hypothesis stated above. A similar procedure can be used to test the causality from Y to FD, i.e., to test H0: $\beta_{2i} = 0$ for all i ≤ k in equation 2 and causality from Y to FD can be established if $\beta_{2i} \neq 0$ for all i ≤ k.

3. EMPIRICAL RESULTS

Following Toda and Yamamoto (1995) method, before testing for the non-causality between economic growth and financial development, we need to establish the lag length (k) of the VAR model and the order of integration (dmax) of the variables used in the model. We used Schwarz Information Criterion (SC) to establish the lag length (k) of the VAR model. According to the SC, the optimal lag length (k) for the VAR was established at 1, i.e. k=1. For the order of integration (dmax) of the variables used, the ADF test was used. The ADF results given in Table 1 show that all the variables are integrated of order of one (i.e., I(1)).

Table 1. ADF Unit Root Test
(The null hypothesis: Y, X, and M have a unit root)

Country/Period	Variables	Level	First Difference
Jordan			
(1965-2004)	Y	-2.643 (2)	-2.897* (2)
	X	-1.643 (0)	-7.023*** (0)
	M	-2.507 (0)	-5.252*** (0)

Notes: Y, X, and M as defined above. Optimal lags according to Schwarz Information Criterion (SIC) are given in parenthesis.
****, **, and * indicate significance levels of the 1%, 5%, and 10%, respectively.*

Table 2 reports Chi-square statistics and the p-values for the purpose of testing the Granger-no causality. The results show that the null hypothesis of Granger-no-causality from financial development to economic growth cannot be rejected. The results also show that the null hypothesis of Granger-no-causality from economic growth to financial development (defined as log(M2/GDP))) cannot be rejected. However, the null hypothesis of Granger-no-causality from economic growth to financial development (defined as log (DC/GDP)) is rejected lending support to one-way Granger causality form economic growth to financial development.

Table 2. Granger Causality Test Results Based on Toda-Yamamoto Method

Ho	Lag Length/Var order	MWald Statistics(d.o.f.)	p-value
X does not cause Y	1/2	2.61 (1)	0.1064
Y does not cause X	1/2	3.42 (1)	0.0645*
M does not cause Y	1/2	0.53 (1)	0.4685
Y does not cause M	1/2	0.51 (1)	0.4735

Notes: Y, X, and M as defined above. Optimal lags are determined according to Schwarz Information Criterion (SIC). Degrees of freedom are given in parentheses.
****, **, and * indicate rejection of the null hypothesis at significance levels of the 1%, 5%, and 10%, respectively.*

CONCLUSION

This study empirically examines the causality relationship between financial development and economic growth in Jordan using the Granger-no-causality method developed by Toda and Yamamoto (1995). The empirical results give no support to the hypothesis that financial development causes (in the Granger sense) economic growth. It was economic growth that Granger causes financial development.

The results support the demand-following hypothesis for Jordan. This suggests that reforms in the financial sector may not lead to promoting economic growth. The results should, however, be interpreted with cautious due to omission of some variables. It should also be noted that the results may be sensitive to the choice of the measures that are used as proxies for financial development.

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ACTIVIST SHAREHOLDERS AND THE DURATION OF SUPERVISORY BOARD MEMBERSHIP: EVIDENCE FOR THE GERMAN AUFSICHTSRAT

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Abstract

We study the fixed term nature of the German supervisory board appointment hypothesizing that the timing of the upcoming election has an impact on the credibility of effort by activist investors. More credible approaches should consequently be associated with higher wealth effects. An average abnormal return that is up to 6.9 percent higher can be observed when potential activists consider the timing of the next supervisory board election. Capital markets apparently perceive an activist effort within one to two years prior to the election as being most credible. Quite contrary to intuition it seems that high cash positions on targets' balance sheets have a negative impact on the post-announcement wealth effects.

Keywords: Shareholders, Activism, Supervisory Board, Germany

1. INTRODUCTION

With respect to the specific institutional setting of the German corporate governance system a number of studies focuses on ownership concentration (Franks and Mayer, 2001), large blockholders (Becht and Boehmer, 2003) and founding-family ownership (Andres, 2008) and emphasizing the importance and influence of German banks ((Franks and Mayer, 1998), (Köke, 2004), (Heiss and Köke, 2004)). The influence of banks, however, has decreased in the past two decades ((Vitols, 2005), (Dittmann, Maug and Schneider, 2010)). Hackethal, Schmidt and Tyrell (2005) argue that the breakdown of the traditional bank-based system may lead to a control vacuum as a result of a growing lack of bank monitoring.

More recent work documents the increased activity of international investors such as hedge funds and private equity funds ((Achleitner, Betzer and Gider, 2010), (Bessler, Drobetz and Holler, 2010), (Drerup, 2010), (Achleitner, Andres, Betzer and Weir, 2011), (Mietzner, Schweizer and Tyrell, 2011), (Rauch and Umber, 2012), (Drees, Mietzner and Schiereck, 2011)). The environment for activist shareholders in Germany is much more attractive now than it was ten to fifteen years ago ((Schaefer, 2007), (Goergen et al., 2008) Fabritius et al., 2015), resulting in increased investor activity. The purpose of this study, however, is not to come up with the latest and most comprehensive analysis of activist minority shareholders and abnormal returns in Germany. It is rather to explore whether some important elements of the German corporate governance framework may have gone unnoticed in empirical research so far.

Prior event studies on shareholder activism in Germany do not investigate the credibility of shareholder activism and its dependence on the timing of the supervisory board elections. Most studies apply models used in U.S. studies even though U.S. corporations do not have a supervisory board. This study relates the activist efforts to the timing of the next supervisory board election. With the election moving closer, abnormal returns tied to the announcement of activist stakes should be higher. Correspondingly, the frequency of activist events increases.

Paragraph II provides a literature overview, paragraph III gives an explanation of the process of sample construction and the methodology applied. Paragraph IV presents the empirical evidence and gives an interpretation of these findings. Paragraph V concludes with a summary and outlook.

2. LITERATURE BACKGROUND AND RESEARCH HYPOTHESES

The modern corporation is characterised by the separation of ownership and control. While stewardship theory (Donaldson and Davis, 1991) depicts the manager as a "steward" of the company serving in the firm's best interest, agency theory (Jensen and Meckling, 1976) predicts that managers, who are not sole owners of the firm, will engage in activities that do not maximize the value of the firm. Jensen and Meckling define the concept of agency costs. Agency costs can arise from such things as perquisites (Yermack, 2006), entrenched boards (Bebchuk and Cohen, 2005) or entrenching investments (Shleifer and Vishny, 1989).

The empirical evidence on shareholder activism in its many varieties is vast. Karpoff (2001) and Gillan and Starks (2007) provide surveys of empirical findings, mainly for the United States. The most recent studies of shareholder activism by hedge funds and other entrepreneurial shareholder activists find significant, positive abnormal stock returns associated with the disclosure of an activist stake ((Brav, Jiang, Partnoy and Thomas, 2008), (Klein and Zur, 2009), (Greenwood and Schor, 2009)).

However, Filatotchev and Dotsenko (2015) show that the effectiveness of shareholder activism in the UK varies significantly among different groups of activists. In Germany, the most active investors both in terms of frequency and depths of activism are hedge funds, along with Hermes Focus, manager of, inter alia, the British Telecom's pension fund (see Becht, Franks, Mayer and Rossi (2010b) for a clinical study of Hermes' activities in the UK). Larger and more institutional asset management firms, individuals and private equity investors taking minority stakes do also occasionally engage in minority shareholder activism in Germany.

The attendance rate at annual shareholder meetings of German corporations has been relatively low for the past decade. According to the German stock corporation act there is no quorum requirement. Articles of incorporation (Satzung) can fix a minimum requirement, but most German corporations abstain from it. Additionally, bylaws (Geschaeftsordnung) set out by the supervisory board have a negligible meaning for shareholders of German corporations. Almost any change to the corporate governance architecture of a corporation only becomes effective through an amendment of the articles of incorporation, for which shareholders have to vote upon at the annual meeting (section 179 AktG). Management and supervisory board do not have the power to make amendments without consulting the annual meeting. This legal framework favours shareholder activism.

Any investor holding 5 percent of voting rights or EUR 500,000 of the share capital has the right to put items on an annual meeting's agenda (section 122 sub-section 2 AktG). Any shareholder resolution receiving a positive vote is binding in nature (Cziraki, Renneboog and Szilagyi, 2010). This is not the case in the U.S. If a supervisory board election is to take place, any shareholder has the right to submit nominations for the supervisory board election (section 127 AktG, full proxy access). Full proxy access is another supportive feature for minority shareholder activism in Germany.

The management board and the chief executive officer are appointed by the supervisory board (section 84 AktG). Section 105 AktG prohibits a member of the management board of a German stock corporation from being a member of the supervisory board of the very same corporation. Members of the supervisory board must be non-executive, independent, outside directors or at most "gray" directors, that is having business relationships with the company (Bebchuk, Coates IV and Subramanian, 2002).

A well-known and widely discussed characteristic of German corporate governance is mandatory co-determination on the supervisory board of most, but not all, larger German corporations ((Gorton and Schmid, 2004), (Fauver and Fuerst, 2006)). Labour representatives of either the workforce or labour unions fill board seats: in companies with more than 500 employees, one third of board seats, and in companies with more than 2,000 employees, half of the board seats. The latter situation is also called full parity, full co-determination or quasi-parity co-determination. In the event of a tie of votes between labour representatives and shareholder representatives the chairman of the board has the power to decide on the respective issue (section 29 law of co-determination). On fully co-determined supervisory boards the chairman will be nominated by the shareholders (section 27 law of co-determination) while the labour representatives nominate the deputy chairman.

The members of the supervisory board usually share the same term of office. The maximum term of office of the members of the supervisory board is five years (section 102 AktG). Reappointment is permissible as well as usual (Hopt, 1997). But since the term of office of the members of the board of directors of a U.S. corporation is one year for an unstaggered board, the next election is always "right ahead" – not so in Germany. The average term of office of members of the supervisory board in the cross-section of 253 events is 4.83 years, close to the maximum term of five years. Since the supervisory board is the pivotal authority in German corporate governance, gaining a seat on the supervisory board substantially increases the likelihood of success of any activist effort and therefore its credibility. Post-announcement abnormal returns should as a result be higher when the supervisory board election moves closer as the likelihood of success increases. Given the existence of agency costs and the active approach of monitoring by new activist shareholders Hypothesis 1 claims:

H1: *There is a significant, positive abnormal stock-price effect associated with the announcement of an activist minority stake.*

With respect to the fixed-term nature of the German supervisory board's appointment Hypothesis 2 claims:

H2: *Capital markets will perceive an activist effort by a minority shareholder within a time frame that is closer to the new supervisory board election as being more credible. Post-announcement abnormal returns are therefore higher for the respective observations.*

The timing of the potential activist efforts will also be discussed in a separate analysis at the beginning of the results section. We hypothesize that serious monitoring efforts should be linked to the supervisory board election. Accordingly, there should be a relationship between timing of investment and next election.

3. DATA AND METHODOLOGY

There is no central database that stores the names of activist shareholders or activist events in Germany. We therefore form a list of potentially activist shareholders by gathering information from various sources including journal articles (for example Becht, Franks and Grant (2010a)) and by searching Bloomberg News and the Lexis Nexis database for articles on shareholder activism. For minority stakes below 10 percent an investor needs not to disclose any of his intentions. For stakes between 5 and 10 percent there is no equivalent to the U.S. SEC 13D filing from which conclusions about the investor's approach could be drawn.

Using the names from our list we search five possible sources for mandatory filings of significant shareholdings by potential shareholder activists below the 30 percent threshold and that were not followed by a takeover of the very same investor. The five sources are BZ Pro, dgap.de, target websites, target annual reports and the financial markets authority Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). The BaFin database only lists current shareholdings. Hence, we recur to historic copies of the database. BZ Pro, hosted by the newspaper Boersen-Zeitung, and dgap.de are electronic archives of mandatory disclosures. The five sources are complementary. It is possible to check almost every single company's announcements. Some companies have a minor free float thereby reducing the number of possible targets. We also look for announcements of activism only mentioned in the news to collect information about stakes below the 5 and 3 percent threshold, respectively. The threshold was lowered in 2007 from 5 percent to 3 percent. As Becht et al. (2010a) report this kind of process of data collection is quite straightforward and without convincing alternative. It yields a preliminary sample of 368 observations.

From the preliminary sample we exclude inter alia 31 cases of potential merger arbitrage (disclosure of stake after the announcement of a takeover bid by a third party), 30 events that occur within 282 trading days of the target's IPO (which would result in statistical issues), 20 debt-to-equity swaps (financial distress of target), ten cases where no event date could be found (in all ten cases the stakes were non-hostile, between 3 and 5 percent in size and acquired before and sold after January 2007), and eight observations of investments in non-voting preference shares (these eight events were collected from newspapers). The final sample consists of 253 potentially activist minority stakes in 140 target firms between January 1999 and May 2011, consistent with the number of events in the studies of shareholder activism in Germany by Bessler et al. (2010) and Drerup (2010).

We group each observation into one of four activity levels. Level 1 observations based on regulatory filings, Level 2 stands for regulatory filing and in addition mentioning in the news but without criticism, prerequisite for Level 3 is open criticism concerning the target's corporate governance and Level 4 means that there was actually a change on the supervisory board that can be attributed to the activist. Table 1 describes the sample.

Table 1. Sample Description

Activity Level	Mean initial %-stake	Mean initial EURm commitment	Median initial %-stake	Median initial EURm commitment	Maximum initial %-stake	N
1	5.0	27.8	3.4	12.7	23.6	108
2	6.2	100.8	5.1	22.4	25.1	84
3	4.9	222.5	3.3	32.0	28.3	41
4	12.2	164.5	10.4	15.0	29.8	20
Full sample	5.9	94.4	4.9	17.2	29.8	253

Activity Level 1: regulatory filing, Activity Level 2 regulatory filing and newspaper mentioning but no criticism, Activity Level 3: criticism by activist shareholder directed towards target management which is mentioned in the news, Activity Level 4: change on supervisory board attributable to activist shareholder. For 7 observations below regulatory thresholds no %-stake size was available. The %-stake sizes for these observations were proxied by the average of possible sizes. EURm commitment is the value of the activist stake in EUR millions proxied by %-size of initial stake times the market capitalisation at the end of the quarter preceding the investment. N is the number of observations.

The grouping into four levels allows for a more differentiated analysis and it is still possible to consider hostile (Level 3 and 4) and non-hostile (Level 1 and 2) events separately. Even though we do not fully rely on media coverage, there may still be a bias towards larger companies in this sample (as can be seen from the mean and median EURm commitment figures on Activity Levels 2 and 3). Market capitalisation as an explanatory variable is for this reason not included in the analysis. Hostile in the sense of this study means increasingly active or confrontational. It is not meant in the sense of the event resulting in a hostile takeover of the target firm. Overall, the selected approach is the best possible match to Brav et al. (2008) and Becht et al. (2010a). With respect to the possibility of observing regulatory disclosures below the 5 percent threshold it may even be an improvement to Brav et al.'s approach.

Less than 25 percent of all events are hostile (61 observations). 20 actual changes on the supervisory board of 17 target firms were initiated by 15 different minority activist shareholders. The changes on the supervisory board may come a few weeks after the investment (Euromicron / Sapinda), a few months after the investment (Demag Cranes / Cevian Capital) or in some cases several years after the investment (Infineon Technologies / Hermes). The event date is always the date of the disclosure of the stake, even though the change on the supervisory board occurs at a later point in time.

The event study approach applied to measure abnormal returns is the same as in Achleitner et al. (2011) using the market model to calculate expected returns with the broad, value-weighted C-DAX performance index of approximately 600 German firms as a proxy for the market portfolio.

The event date is defined as the date of disclosure of the regulatory filing or, in case of a newspaper article, the date of publishing. Whenever we find two different dates the earlier date is picked. It took some time to assign the proper event dates as corrections of earlier regulatory filings happen to occur quite often.

4.RESULTS

4.1 Timing of Activist Efforts

Apparently, activist shareholders use a timing strategy with respect to the next supervisory board election. The average term of office of the supervisory board across the full sample is 4.8 years. This is close to the maximum possible term of office of five years. This is stipulated by section 102 sub-section 1 Aktiengesetz (AktG), the German stock corporation act. New elections to the supervisory board are held just once in five annual meetings for all board members in the case of a five-year term.

When comparing the date of the investment with the remaining term of office of all the supervisory board members, we observe some systematic patterns. The frequency of activist stake-building increases when the next supervisory board election is moving closer. Table 2 provides a corresponding overview. Theoretically, it is possible to influence the firm's management or the firm's strategy without the involvement of the supervisory board. Moreover, members of the supervisory board can step down before their term of office expires. This opens up the possibility for activist shareholders to promote the appointment of certain candidates. Nevertheless, the results shown in Table 2 underline the relevance of the supervisory board election timing in German corporate governance.

Table 2. Timing of Activist Investments

Time remaining until next supervisory board election:	Number of observations (full sample)	Number of observations (robust)
5 years	35	31
4 years	45	31
3 years	38	28
2 years	61	44
1 years	74	55

Number of observations is the number of investments during the respective time frame prior to the next ordinary supervisory board election. Number of observations (robust) excludes the following observations: (i) the term of office of the supervisory board is less than five years (23 observations), (ii) the supervisory board is staggered and more than just one election is necessary to replace all members (33 observations), (iii) the observation is based on a newspaper article and as a result the actual timing of the investment cannot be clearly determined (21 observations).

4.2 Announcement Effects

Table 3 reports the average announcement effect on the share price of shareholder activist targets for the four activity levels across different event windows. The cumulative abnormal return on Activity Level 1 is below 1% across all event windows. Once the capital market has knowledge of the potential activist investor's disclosure of a regulatory filing (Activity Level 1), a news article reporting on the very same disclosure (Activity Level 2) does not convey any new information to the capital market. When shareholder activists take a hostile approach (Activity Level 3 and 4) cumulative average abnormal returns are larger. The mean cumulative abnormal return when combining Activity Level 3 and 4 is 4.38% in the [0; +5]-event window and it reaches 7.30% in the [-20; +20]-event window.

When comparing Activity Level 3 and 4 abnormal returns are higher on Level 4 reaching 11.28% in the [0; +10]-event window. This result can be interpreted in a way that the anticipation of changes on the supervisory board (Activity Level 4) leads to higher abnormal returns. Obtaining a board seat increases the probability of success of the activist effort. The difference in abnormal returns between Activity Levels 3 and 4, however, could in part also be explained through size effects, as firms on Level 4 are on average smaller (see Table 4 for subsample firm size). The size of the activist's initial stake seems to have an impact on abnormal returns, as the average initial stake on Level 4 is more than twice as high as on Level 3. This is consistent with the theory.

The results are robust when excluding target companies whose shares have an estimation window trading average of below 50,000 shares per day on German stock exchanges. In cases of low stock market liquidity abnormal returns can partly originate from stock illiquidity. In 92 cases potential shareholder activists acquire a stake in a firm where another potential activist is already invested. This can lead to full or partial overlap of estimation windows with event windows of earlier observations thereby causing a potential bias in expected returns. When excluding the respective observations from the sample cumulative abnormal returns are slightly higher than reported in Table 3 across all activity levels.

In order to facilitate further interpretation of the abnormal returns on Activity Level 1 and 2 an event study is conducted on 119 minority investments of non-activist institutional asset management firms including BlackRock, Fidelity Investments, Fidelity Management and Research, Schroder Investment Management, The Capital Group and Threadneedle. Results are shown in Table 4.

When large, non-activist asset management firms disclose the acquisition of a stake an abnormal return in the [0; +1]-event window of approximately 0.7% can be observed. The magnitude of these abnormal returns is very similar to that of potentially activist events that are non-hostile (Activity Levels 1 and 2). This finding supports theories beyond agency theory. Superior stock picking ability may be the reason for the abnormal returns observed on Activity Level 1 and 2.

Table 3. Announcement Effects on Different Activity Levels

	Cumulative Abnormal Return		t-Test	Boehmer Test	Wilcoxon Signed Rank Test
Event window	Mean	Median	t-value	z-score	z-score
Panel A: Activity Level 1 (108 observations)					
[-20;+20]	-0.18%	-1.39%	-0.10	-0.05	-0.37
[0;+0]	0.62%	0.14%	1.89*	1.80*	-1.33
[0;+1]	0.66%	0.28%	1.69*	1.32	-1.42
[0;+5]	0.65%	0.57%	0.94	0.71	-1.20
[0;+10]	0.42%	-0.62%	0.44	0.22	-0.07
Panel B: Activity Level 2 (84 observations)					
[-20;+20]	0.81%	2.70%	0.34	0.20	-1.29
[0;+0]	0.56%	0.12%	1.54	1.86*	-1.50
[0;+1]	0.37%	0.17%	0.81	1.30	-1.09
[0;+5]	-0.55%	-0.11%	-0.61	-0.40	-0.21
[0;+10]	-0.86%	-0.70%	-0.84	-0.68	-0.68
Panel C: Activity Level 3 (41 observations)					
[-20;+20]	4.36%	3.39%	1.88*	1.83*	-1.73*
[0;+0]	1.85%	0.86%	2.47**	2.87***	-2.44**
[0;+1]	2.28%	0.91%	2.71***	2.94***	-2.43**
[0;+5]	2.15%	0.75%	1.89*	2.00**	-1.39
[0;+10]	2.65%	1.87%	2.03**	2.17**	-1.67*
Panel D: Activity Level 4 (20 observations)					
[-20;+20]	10.13%	8.24%	1.74*	1.96**	-2.50**
[0;+0]	1.51%	0.37%	1.83*	2.08**	-2.20**
[0;+1]	4.31%	2.92%	2.81**	2.88***	-3.14***
[0;+5]	8.94%	3.28%	1.63	1.68*	-2.84***
[0;+10]	11.28%	5.82%	1.98*	2.04**	-2.99***

*Activity Level is described in Table I. Cumulative Abnormal Return is the sum of daily abnormal returns across the respective Event Window. Expected returns were calculated with the market model over the estimation period [t-282; t-30] with the C-DAX as market portfolio and the event date t=0. Boehmer Test as proposed in Boehmer, Musumeci and Poulsen (1991) is a modification of the traditional T-Test, which is robust towards event-induced variance. Wilcoxon Signed Rank Test is a non-parametric test (Wilcoxon, 1945) for difference-in-medians with the z-score being the standardised Wilcoxon test statistic. Share price data is from Thomson Datastream. ***, **, and * indicate statistical significance at the 1%-, 5%-, and 10%-levels, respectively.*

Table 4. Announcement Effects of Non-Activist Investments

	Cumulative Abnormal Return		t-Test	Boehmer Test	Wilcoxon Signed Rank Test
Event window	Mean	Median	t-value	z-score	z-score
[-20;+20]	-2.37%	0.11%	-1.711*	-1.564	-1.649*
[0;+0]	0.34%	-0.08%	1.313	1.309	-0.345
[0;+1]	0.71%	0.12%	2.389**	2.351**	-1.655*
[0;+5]	0.64%	0.01%	1.148	1.173	-0.339
[0;+10]	0.46%	-0.23%	0.604	0.424	-0.231

*This table shows the announcement effects on the share price of German target corporations when non-activist institutional asset management firms disclose a stake. The number of observations is 119. For explanations of methodology and test statistics see Table 3. Distribution of event dates across the observation period, characteristics of target firms and %-size of acquired stakes resemble those of the potential activist sample. **, and * indicate statistical significance at the 5%-, and 10%-levels, respectively.*

Overall, the results support Hypothesis 1 with respect to the hostile stakes (Activity Level 3 and 4). The results are also in line with the findings by Drees et al. (2011) who document positive, significant abnormal returns of up to 12 percent for activist blocks in Germany.

In cases where potential shareholder activists remain passive (Activity Level 1 and 2) significant positive abnormal returns can be observed. However, the results do not suffice to support Hypothesis 1 in the sense that these abnormal returns generate from the potential reduction of agency costs at the target firm by the activist shareholder given the results presented in Table 4 (non-activist fund sample).

4.3 NewBET Analysis

The information on the term of office of the supervisory board members is not available from the articles of incorporation alone. The same is the case for various other sources such as the annual report. Studying the agendas and voting outcomes of target company annual meetings solves this problem. We define NewBET as the New Supervisory Board Election Timing. NewBET can take on the values of 5, 4, 3, 2, and 1. Each value represents a time frame. NewBET 5, for example, applies to event dates within a time frame of more than four years and up to (the statutory maximum of) five years until the next supervisory board election. Another way to read the NewBET measure is taking it as the number of annual meetings until the next supervisory board election. NewBET 4 in this case means it will take four annual meetings for the supervisory board to come up for election. Capital markets at the time of the announcement of the activist stake will know that it will take this certain number of annual meetings for the supervisory board to come up for election. The NewBET analysis is presented in Table 5.

The frequency of potentially activist events almost gradually increases from 35 events five annual meetings ahead of the supervisory board election (NewBET 5) to 74 events right ahead (NewBET 1) of the election as can be seen in Panel E. A comparison with the sub-samples in Panel F (excluding overlaps in estimation windows) and Panel G (hostile events only) confirms these findings. We apply a robustness check and exclude all events where the term of office of the supervisory board is less than five years (23 observations), all events where the target's supervisory board is staggered (33 observations) and all observations below regulatory thresholds (21 observations). There may be a more news on shareholder activism when the annual meeting is moving closer. The results remain the same. As a second robustness check we investigate the NewBET values for the sample of 119 investments by non-activist institutional asset management firms (see Table 4 above). The NewBET distribution of these 119 events appears to be random. The modal value, that is, the highest value, is NewBET 3. These findings suggest that some activist shareholders apparently apply a timing strategy when engaging in activism, while non-activist shareholders do not time their investments.

Noteworthy at this point to mention, that the supervisory boards do not seem to be staggered for purposes of takeover defence. It rather looks like new members who fill vacancies are sometimes appointed for a maximum possible term of five years and not just for the remainder of the fixed term.

Table 5. Announcement Effects and NewBET

	Cumulative Abnormal Return		t-Test	Boehmer Test	Wilcoxon Signed Rank Test
Event window	Mean	Median	t-value	z-score	z-score
Panel E: Full sample (253 observations)					
NewBET 5 (35 observations)					
[0;+0]	0.67%	0.13%	1.07	1.24	-0.59
[0;+5]	0.32%	0.74%	0.24	0.25	-0.97
NewBET 4 (45 observations)					
[0;+0]	0.93%	0.37%	2.65**	2.85***	-2.20**
[0;+5]	1.06%	0.76%	1.19	1.09	-1.01
NewBET 3 (38 observations)					
[0;+0]	0.48%	0.16%	1.14	1.08	-0.98
[0;+5]	-1.74%	0.23%	-1.11	-1.12	-0.17
NewBET 2 (61 observations)					
[0;+0]	1.47%	0.76%	2.74***	3.06***	-2.96***
[0;+5]	3.71%	0.75%	1.86*	1.95*	-2.04**
NewBET 1 (74 observations)					
[0;+0]	0.63%	-0.04%	1.27	1.35	-0.69
[0;+5]	0.97%	0.12%	1.12	1.15	-0.55
Panel F: Full sample excluding overlaps in estimation windows (177 observations)					
NewBET 5 (24 observations)					
[0;+0]	0.26%	-0.69%	0.32	0.40	-0.77
[0;+5]	-0.74%	0.53%	-0.40	-0.41	-0.17
NewBET 4 (33 observations)					
[0;+0]	0.98%	0.61%	2.28**	2.59***	-2.08**
[0;+5]	0.61%	0.32%	0.71	0.75	-0.49
NewBET 3 (29 observations)					
[0;+0]	0.79%	0.74%	1.51	1.42	-1.46
[0;+5]	-1.63%	0.70%	-0.86	-0.86	-0.29
NewBET 2 (45 observations)					
[0;+0]	1.73%	0.78%	2.43**	2.59***	-2.56**
[0;+5]	5.29%	1.58%	2.01*	2.08**	-2.50**
NewBET 1 (46 observations)					
[0;+0]	0.87%	0.04%	1.22	1.08	-0.30
[0;+5]	1.32%	-0.55%	1.10	0.81	-0.03
Panel G: Hostile events, [0;+5]-event window (61 observations)					
NewBET 5 (9 obs.)	0.83%	-0.65%			
NewBET 4 (7 obs.)	1.82%	1.06%			
NewBET 3 (7 obs.)	1.01%	2.63%			
NewBET 2 (18 obs.)	10.76%	3.92%	1.72*	1.80*	-2.51**
NewBET 1 (20 obs.)	2.31%	0.70%	1.55	1.46	-1.12

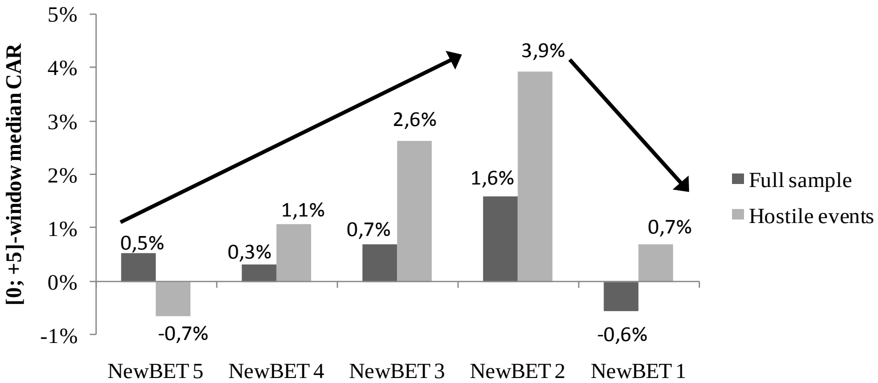
*Example: NewBET 3 means it will take three annual meetings for the new supervisory board to be elected. In the case of 33 observations there was a staggered board; in these cases NewBET 3 means that it will take three annual meetings for more than half of the supervisory board seats filled by shareholders to come up for election. Test statistics for Panel G are partly omitted given the low number of observations. For further explanations see Table III. ***, **, and * indicate statistical significance at the 1%-, 5%-, and 10%-levels, respectively.*

Since the frequency of events increases as the new supervisory board election moves closer there also happen to occur more overlaps in event and estimation windows towards the election. This creates an upward bias in expected returns. Overlapping events are therefore excluded from the analysis to achieve more robust results. The corresponding abnormal returns (CAR) are presented in Panel F.

The cumulative abnormal returns show different values for the five NewBET categories. Across all three panels cumulative abnormal returns are the highest at NewBET 2, that is, for events one to two years prior to the new supervisory board election. The abnormal returns reaches 5.29% in the [0; +5]-event window when observations with overlaps in the estimation windows are excluded.

Figure 1 depicts the relationship between NewBET and CAR using a bar chart. The focus here is on the [0; +5]-event window. The five-day period is long enough to capture the full effect of the announcement. On the other hand it is short enough to exclude post-event effects that are not related to shareholder activism. Such effects might deteriorate the results of the event study. Figure 1 shows the median CAR and not the mean in order to account for outliers.

Figure 1. Relationship Between Timing and CAR



The chart shows the full sample excluding overlaps in estimation windows (Panel F, 177 observations) and hostile events (Panel G, 61 observations).

Table 6 exhibits a difference-in-means test for the mean cumulative abnormal returns observed in the [0; +5]-event window between NewBET 2 category and the four other categories. There is a significant difference between NewBET 2 and NewBET 3 as can be seen in Panel H of as much as 6.92%. Given the presence of outliers we winsorize each of the five distributions at the 5%-level. Panel I displays the results of the difference-in-means test between the winsorised samples. As expected, there is a significant difference between NewBET category 2 and categories 3, 4, and 5 taken separately. This supports Hypothesis 2 to the extent that activist campaigns closer to the new supervisory board election tend to generate higher post-announcement abnormal returns. It does not support Hypothesis 2 in the sense that there is a strict inverse linear relationship between NewBET and abnormal returns. Looking at the median abnormal returns for the five NewBET categories for the hostile events (Figure 1), however, suggests that there is actually a partly linear relationship.

Table 6. Difference-in-Means-Test

NewBET	Mean CAR	Difference in means	t-stat	p-value	N	Mean inital, % stake	Mean EURm market cap
Panel H: Full sampie excluding overlaps in estimation windows (177 observations)							
5	-0.74%	6.04%	1.57	0.12	24	6.9%	1.441
4	0.61%	-4.69%	1.48	0.14	33	6.9%	1.084
3	-1.63%	6.92%	1.91*	0.06	29	7.2%	2.897
2	5.29%	-	-	-	45	5.5%	2.348
1	1.32%	3.97%	1.39	0.17	46	5.7%	3.540
Panel I: Full sampie excluding overlaps in estimation windows (177 observations) with distribution of mean CARs winsorized at the 5-% level							
5	-0.91%	4.42%	2.11**	0.04			
4	0.72%	2.79%	1.77**	0.08			
3	-1.00%	4.51%	2.46**	0.02	---------------- unchanged----------------		
2	3.51%	-	-	-			
1	1.16%	2.35%	1.46	0.15			

*Mean CARs (cumulative abnormal returns) are displayed for the [0; +5]-event window. Observations with overlaps in estimation and event windows are excluded. Difference in means is the difference between the respective Mean CARs. T-stat and p-value are reported for the respective two-tailed difference-in-means test. N is the number of observations. Panel I shows results for the difference-in-means test when Mean CARs are winsorised at the 5%-level within each NewBET category. Winsorising (Dixon, 1960) changes the highest Mean CARs in a sample to the next smallest and the smallest Mean CARs to the next highest, thereby reducing the influence of spurious outliers without fully excluding them. Mean EURm market cap is the average target market capitalisation at the end of the quarter preceding the investment. **, and * indicate statistical significance at the 5%-, and 10%-levels, respectively.*

The results are robust to applying a non-parametric test for unpaired samples, the Wilcoxon Rank Sum test (Wilcoxon, 1945). The median abnormal return in category NewBET 2 is 1.58% and the median abnormal return in the four other categories combined is 0.11%. The z-statistic for testing the null hypothesis that the two medians are equal is 1.97 with a one-tailed p-value of 0.024. The median abnormal return in the categories NewBET 3, 4 and 5 is 0.34% and the z-statistic testing the null hypothesis that the median equals the NewBET 2 median is 1.74 with a one-tailed p-value of 0.083.

Capital markets apparently perceive an activist effort within one to two years prior to the new supervisory board election as being most credible. By definition, minority shareholder activists who want to bring about change need to persuade fellow shareholders. In addition, ample communication may be necessary to convey the right information towards the target's supervisory board and management. Proxy proposals have to be prepared and submitted on time. All these efforts take time. Capital markets on average believe that less than one year is a very limited time frame as it seems. Contrary to intuition the highest post-announcement cumulative abnormal returns can be achieved with a comparably low minority stake. The mean initial percentage stake for NewBET 3, 4, and 5 is close to 7% while in NewBET category1 and 2 it is only 5.5%. Table V and Table VI illustrate that both the highest mean and median abnormal returns were actually achieved at NewBET 2 with the lowest average percentage stake. This further supports Hypothesis 2.

4.4 Determinants of Abnormal Returns

Table 7 presents results of a multivariate regression analysis to detect the drivers of the abnormal returns. The first model explains abnormal returns across the full sample. The second model additionally incorporates the annual meeting attendance rate of the last meeting prior to the event as an explanatory variable. The attendance rate of the annual meeting is expected to be a good proxy variable for lack of shareholder monitoring. Shareholders that do not attend the annual meeting will in most cases not engage in any other monitoring activities. In fact, the average attendance rate increases by 4.2 percent (p-value 0.03) to 54.5% in the first annual meeting after the activist has disclosed his stake suggesting that activist shareholders actively participate in corporate governance. The third model explains the abnormal returns of the 61 hostile events (Activity Level 3 and 4).

The level of hostility of the activist approach, the percentage size of the activist's initial stake, and the timing with respect to the new supervisory board election (NewBET 2) have a significant effect on the post-announcement abnormal return.

Both, attendance rates (Model 2), and the level of co-determination (Model 3) do not have a significant influence on the post-announcement abnormal return. A reason for the non-significance could be the high correlation (r=0.54) between firm size as measured by market capitalisation and the variable full co-determination. There is generally a negative relationship between firm size and abnormal return (r= -0.12 for the full sample and r= -0.27 for Activity Level 3 and 4). Model 1 and 2 were estimated without the variable level of co-determination. Including this variable does not improve goodness of fit.

Even though the multivariate regression applying Model 3 indicates no significance of Cofull and Cothird it is remarkable that despite the correlations described above both have a positive sign.

Quite contrary to intuition a high cash position on the target's balance sheet seems to undermine the credibility of the activist effort. This can be seen from the respective negative coefficient in Model 1, Model 2, and Model 3. This result is in line with the findings of Bessler et al. (2010). It is robust to excluding financial services firms from the regression. Energy and utilities companies are not present in the sample. We interpret this observation in a way that activist investors might be easily satisfied by an extra dividend payment without enforcing monitoring and reducing agency conflicts.

F-statistics for all three models are highly significant. When all insignificant explanatory variables (Wolfpack, Cothird and Cofull) are excluded then R-squared in Model 3 remains on the same level at 39.0%. This means the five remaining control variables have strong explanatory power in this Model. This includes the variable NewBET 2. NewBET 2 is significant at the 5%-level and it also seems to have an economic effect given the comparably high coefficient in absolute terms of 0.041.

The size of the activist's initial stake has a significant positive impact on the magnitude of abnormal returns, too. Larger activist stakes result in higher abnormal returns. This can once more be explained with arguments of credibility of the activist effort.

Including pre-announcement abnormal returns can bias results because for example larger stakes might cause larger pre-announcement stock-price run ups. The result is robust since the regression is based on post-announcement abnormal returns ([0; +1]-event window) and not on abnormal returns surrounding the event (for example [-20; +20]-event window). All results are in line with the findings presented above supporting Hypothesis 1 as well as Hypothesis 2.

Table 7. Results of Ordinary Least Squares Regression

	Model 1 All events (N=253)	Model 2 AGM attendance rate (N=209)	Model 3 Act. Level 3 & 4 (N=161)
Activest approach			
Activity Level 3 & 4	0.024***	0.016***	
	[3.244]	[2.963]	
Loginitialstake	0.020***	0.023***	0.046***
	[2.781]	2.718]	[3.143]
Wolfpack	-0.011*	-0.006	-0.013
	[-1.905]	[-1.198]	[-0.965]
NewBET2	0.013**	0.011**	0.041**
	[2.422]	[2.286]	[2.421]
Target fundamentals			
Prior 12mperf	-0.007	-0.008**	-0.014*
	[-1.500]	[-2.104]	[-1.939]
RoE	0.004	0.003	0.034**
	[0.725]	[0.571]	[2.094]
CashtoAssets	-0.035**	-0.026**	-0.111***
	[-2.374]	[-2.474]	[-3.765]
Corporate governnance fundamentals			
AGM attendance rate	-	-0.014	-
		[-1.455]	
Cothird	-	-	0.011
			[0.916]
Cofull	-	-	0.022
			[1.665]
R-squared	15.8%	13.5%	43.3%
Adjusted R-squared	13.7%	10.5%	35.8%
F-statistic	3.87***	4.37***	7.59***

*The dependent variable is the [0; +1]-event window cumulative abnormal return. Activity Level 3 & 4, Wolfpack, NewBET 2, Cothird and Cofull are binary variables taking the value of 1 if the attribute is present in the given observation. Loginitialstake is the logarithm of the initial %-stake. Wolfpack is 1 if another activist is already invested at the time of the event. Prior12mperf is the target's share price performance relative to the C-DAX index in the twelve months prior to the event. RoE is the target's return on equity and CashtoAssets is target cash and cash-equivalents divided by total assets in the fiscal year prior to the event. AGM attendance rate is the attendance rate at the annual meeting prior to the event. Attendance rates are available for 209 observations. Cothird and Cofull stand for the level of co-determination on the target's supervisory board with Cothird meaning one third of the board seats are occupied by labour representatives and Cofull meaning half of the seats. Data source is Thomson One Banker for company financial data, Thomson Datastream for share price data and WAI Wirtschaftsanalysen und -informations GmbH for attendance rates and annual meeting agendas. Intercepts are suppressed because of the full span of dummy variables (Brav et al., 2008). T-statistics are shown in brackets and were computed using heteroskedasticity-robust standard errors (White, 1980). ***, **, and * indicate statistical significance at the 1%-, 5%-, and 10%-levels, respectively.*

5. CONCLUSION

For a sample of 253 investments by potential shareholder activists in 140 German publicly listed firms between January 1999 and May 2011 we document abnormal returns which are positive and significant for hostile as well as non-hostile events. However, abnormal returns tend to be higher for hostile events and for events closer to the supervisory board election with the highest returns occurring within one to two years prior to the supervisory board election. All evidence suggests that post-announcement short-term abnormal returns are largely driven by the credibility of the activist effort to bring about change. Capital markets apparently perceive an activist effort within one to two years prior to the election as being most credible. Quite contrary to intuition high cash positions on targets' balance sheets have a negative impact on the post-announcement wealth effects.

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APPENDIX

Appendix 1. Matrix of Pearson Sample Correlation Coefficients

Activity Level (3 and 4)	Log initial stake	Wolfpack	NewBET2	Prior 12m perf.	RoE	Cash to Assets	AGM attendance rate	Cothird	Cofull	CAR01	
1.000	-0.019	0.102	0.071	0.079	0.031	-0.002	-0.091	-0.010	0.126	0.219	Activity Level (3 and 4)
	1.000	-0.019	-0.084	0.079	-0.040	0.042	-0.081	-0.018	-0.311	0.147	Loginitialstake
		1.000	-0.089	-0.146	0.016	0.002	0.052	-0.056	0.075	-0.080	Wolfpack
			1.000	0.126	-0.082	-0.007	-0.019	-0.010	-0.066	0.132	NewBET2
				1.000	0.094	0.050	-0.080	0.092	-0.068	-0.021	Prior 12m perf.
					1.000	0.044	0.039	0.102	-0.085	0.030	RoE
						1.000	-0.006	0.026	-0.148	-0.095	CashtoAssets
							1.000	-0.055	0.046	-0.177	AGM attendance rate
								1.000	-0.326	0.024	Cothird
									1.000	-0.020	Cofull
										1.000	CAR01

CAR01 is the [0; +1]-event window cumulative abnormal return. CAR01 is the dependent variable of the regression analyses. All control variables are explained in Table IV. (Results of Ordinary Least Squares Regression). Perf. stands for performance.

Appendix 2. Change in Annual Meeting Attendance Rates

	Attendance rate before investment	*Attendance rate after investment*	*Difference-in-means test / Wilcoxon Signed Rank Test*
	Full sample (159 observations)		
Mean	50,27	54,45	2,16** (0,032)
Median	52,24	54,55	3,35*** (0,000)
	Activity Level 1 and 2 combined (128 observations)		
Mean	51,37	54,77	1,53 (0,127)
Median	53,16	56,47	2,66*** (0,004)
	Activity Level 3 and 4 combined (31 observations)		
Mean	45,77	53,11	1,99* (0,051)
Median	45,17	50,73	2,03** (0,021)

*Each annual meeting is considered only once. Subsequent annual meetings are considered only if at least one new potential activist shareholder has disclosed a stake. Annual meetings after the takeover of a target firm are not included. Difference-in-means test (Wilcoxon Signed Rank Test) displays t-statistics (z-score), significance level and in brackets the corresponding p-value for the differences in mean or median. *, ** and *** mark statistical significance 10%-, 5%- and 1%-level. Source for attendance rates is the WAI Wirtschaftsanalysen und -informations GmbH (www.hv-info.de) database as well as annual reports and target firm websites.*

FACTORS INFLUENCING THE GOING PRIVATE DECISION - A HAZARD MODEL APPROACH

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Abstract

The aim of this paper is to characterize companies which voluntarily changed their ownership from public to private. The research question addressed in this paper is, if it is possible to characterize going private companies in earlier stages than just shortly before the announcement of their step into privacy. I therefore examine going private companies in a lifecycle context with Cox hazard model and conduct additional logistic regressions at the time of the IPO and shortly before delisting. Further, I not only focus on companies' fundamentals, but also on perceptibility and corporate governance variables. With data of 1'184 US IPOs from 1990 to 2013, my results show that both, perceptibility and corporate governance variables accelerate the going private decision.

Keywords: Going Private, Voluntary Delisting, Corporate Lifecycle

1. INTRODUCTION

While observing the life of a company, after a couple of successful years, it becomes obvious that often financial capital is needed in order to grow further. Having reached an adequate size, companies may put trust in a going public step[15] to achieve such a growth goal. After the generated capital is invested, companies most often stay public. Just few of them decide to leave the public capital market and become private again[16]. In other cases, companies are forced to delist, because they don't meet the minimum requirements of a stock exchange any more or go bankrupt[17]. Turbulent developments on financial markets and more rigid accounting standards by Sarbanes-Oxley Act of 2002 on the US public capital market make the step into privacy a lucrative choice for public companies[18]. As there is not a lot of empirical evidence about this issue and the topic enjoys even additional attention not only from companies' but also from investors' side, it is the motivation of the author to provide further research findings which may supplement the knowledge of researchers and practitioners and ease their decisions. This paper is focusing on factors influencing the voluntary going private decision in a lifecycle context.

Previous research provides different insights about the going private phenomenon. Researchers found evidence for abnormal returns, which can be earned by investors at the time of the announcement of the going private transaction.[19] Empirical evidence also exists about the bid premiums paid to shareholders with the aim of accomplishing the transaction.[20] In order to simplify the recognition of going private candidates among other public listed companies, researchers further conducted studies characterizing such companies[21]. These studies identify various company fundamental characteristics (e.g. small size, low growth expectations or high free cash flow) as significant factors influencing the going private decision shortly before the announcement of their step into privacy.

The research question, as seen by the author, is in the precise characterization of going private candidates as their recognition on the market is valuable for investors. The first question which arises is, if solely company fundamentals explain the going private decision. Recent studies show that good corporate governance has a positive influence on the post-IPO performance[22]. Firms lacking good corporate governance might therefore suffer in the public capital market and decide to leave it. The influence of corporate governance factors, mainly CEO characteristics, on a going private decision has been proven by Weir and Laing (2002) for the UK public capital market, but not in a lifecycle context.

The second question which arises is, if the time shortly before the announcement of a going private transaction is the only point in time which delivers useable data for the recognition of going private companies. This paper extends the view on the going private phenomenon by analyzing firm characteristics not only in one point in time, but

[15] The going public decision is discussed e.g. by Zingales (1995).

[16] According to Block (2004) about 20-30% of companies decide for a going private following his definition.

[17] Being forced to delist is examined in the literature under the keyword IPO failure.

[18] The influence of Sarbanes-Oxley Act (SOX) on the going private decision was examined by Chaplinsky and Ramchand (2012).

[19] E.g. DeAngelo et al. (1984), Lehn and Poulsen (1989), Denis (1992), Easterwood et al. (1994), Renneboog et al. (2007) or Billett et al. (2010) among others.

[20] E.g. DeAngelo et al. (1984), Amihud (1989), Carow and Roden (1997), Weir et al. (2005) or Geranio and Zanotti (2011) among others.

[21] E.g. Maupin (1987), Lehn and Poulsen (1989), Beck and Stinn (2002), Evans et al. (2005) or Gleason et al. (2007) among others.

[22] See Bell et al. (2012); Krishnan et al. (2011).

during the whole public lifecycle of a firm. Based on an analysis of companies' characteristics, next to the point shortly before the announcement of a step into privacy, this paper adds an additional view already at the time of the IPO. Further, this paper uses a hazard model approach in order to provide insights about the length of the public life. Going privates in a lifecycle context have been examined by Mehran and Peristiani (2010), Bharath and Dittmar (2010) and Pour and Lasfer (2013). Supplementary to them, this paper focuses not only mainly on company fundamentals, but also on its perceptibility and corporate governance factors.

2. LITERATURE REVIEW

2.1 Going Private Characteristics

The first study with the aim to characterize going private companies was conducted by Maupin et al. (1984) for the US market. The authors examined cash flow ratios, price-to-book ratio, the dividend yield as well as the concentration of ownership. All tested factors in their study had a significant influence on the going private decision. This study was repeated by Maupin (1987) and extended by two factors, price-to-earnings ratio and the book to initial cost of assets ratio. The results showed that the retested factors of the previous study as well as the two new factors had all a significant influence on the going private decision and therefore may be seen as characteristics of firms deciding to go private. The study of Lehn and Poulsen (1989) was based on the FCF hypothesis of Jensen (1986), which expects companies with large FCF to go private. Also tested were the factors equity, tax payments and sales growth. The FCF hypothesis of Jensen (1986), which is based on the agency theory, could be proven. Another study about going privates was conducted by Kieschnick (1989). His study focused on the US market and the factors examined were e.g. interest expense, growth, FCF or management ownership. His findings were contrary to those of Lehn and Poulsen (1989), as Kieschnick (1989) could not find any evidence for the FCF hypothesis of Jensen (1986). A study focusing on the ownership structure was conducted by Lowenstein (1986). He found evidence for his hypothesis and also showed that companies leaving the public capital market and significantly smaller than those which do not voluntary decide for a step into privacy.

Loh (1992) focused his study on financial characteristics as possible factors to distinguish from staying public companies. Among others, he tested the profitability of the company, its capital structure, the turnover and FCF. He could confirm the findings of Lehn and Poulsen (1989) and found evidence for the FCF hypothesis. Other factors were not significant for the going private decision. Another study which was examining the FCF hypothesis was conducted by Opler and Titman (1993). The authors could proof that the hypothesis holds by testing Tobin's Q and the FCF level. Companies with a low Tobin's Q and relatively high cash flow, characterized by authors as those with unfavorable investment opportunities, are more likely to leave the public capital market. Other significant factors found by Opler and Titman (1993) were the higher diversification and higher expectation of financial distress costs[23]. The FCF hypothesis formulated by Jensen (1986) remained the base for almost all studies also in the nineties. Carow and Roden (1997) found support for this hypothesis in their paper, testing for the high level of FCF and the low Tobin's Q. Kieschnick (1998) supports the findings of his first study and rejects the findings of Lehn and Poulsen (1989). He neither found evidence for the growth rate nor the level of FCF as significant factors influencing the going private decision. He also found no evidence for the size of the company and the tax payments. Halpern et al. (1999), also examined possible characteristics of going private companies. Consistent with previous findings of Kieschnick (1989 and 1998), no evidence was found for the level of FCF. Significant evidence however was shown for investment expenditures, stock performance and managerial stock ownership. The statistical evidence for managerial stock ownership is consistent with findings of Lowenstein (1986). Gleason el al. (2007) examined a large number of factors as possible characteristics of going private companies like e.g. the small size of the firm, the lower growth prospects, lower profitability, less debt and higher liquidity. All of their findings were similar to the previous research apart of two of their findings. Better growth prospects and greater levels of financial leverage were identified as typical characteristics of going private companies, which represents the opposite of what was expected. In a second step Gleason et al. (2007) focused on the influence of SOX. Their findings showed that companies before the passage of SOX were smaller in size with less earnings predictability. They also had higher growth prospects, liquidity, financial leverage, return to equity ratios as well as a higher potential for financial distress. The study by Boot et al. (2008) analyzed going privates with the focus on investor participation. They found empirical evidence for decreasing share price and increasing volatility as significant characteristics increasing the probability of a going private decision.

Weir et al. (2005) conducted a study for the UK public capital market. Their findings do not support the FCF hypothesis of Jensen (1986). Evidence is found for poor stock market performance, higher board and institutional ownership and poor market valuation. Findings of higher institutional ownership are contrary to the financial visibility hypothesis by Mehran and Peristiani (2010), who focus on the visibility aspect of companies which decide to go private despite being solid competitors to their peers. They adapt the entire public life view and examine with an extended, dynamic hazard model three visibility aspects, analyst coverage, institutional ownership and stock turnover as possible factors explaining the going private decision over the company's public life. Their results show, that firms with declining analyst coverage, falling institutional ownership as well as low stock turnover go more likely private and decide for such a step sooner. The study of Mehran and Peristiani (2010) is the first focusing on the entire public life of companies when explaining the going private step. A study focusing on costs and benefits of being public was conducted by Bharath and Dittmar

[23] Opler and Titman (1993) were testing the expenditures for research and development as an example for financial distress costs.

(2010). Similarly to Mehran and Peristiani (2010), they observe a company during its whole public life. Further, they examine their sample already at the time of the IPO. Pour and Lasfer (2013) analyze voluntary delistings from the London Stock Exchange in a lifecycle context. Their results suggest that firms with high leverage, low growth opportunities, low profitability and low trading volume are more likely to go private. These studies demonstrate that various firm fundamental characteristics describe the difference between going private companies and those which remain public. Few newer studies not only examine those characteristics shortly before the announcement of the transaction, but also during the whole public lifecycle.

2.2 Corporate Governance

Corporate governance with its rules for directing and controlling firms offers a framework for the management to achieve firm's objectives and at the same time not to disregard interests of various stakeholders. The role of corporate governance and its influence on post-IPO performance has already been examined in prior research. Krishnan et al. (2011) found evidence for positively influenced post-IPO firm performance by higher levels of corporate governance. In their research they focused on firm's reputation as a relevant part of corporate governance and showed that reputation offers various stakeholders valuable information for their decisions. Supporting evidence for this finding comes from Bell et al. (2012) who examine effects on IPO performance. Their results also suggest that higher level of corporate governance has a positive influence on IPO performance. Weir and Laing (2002) connected the research on corporate governance with the going private topic. They argue that corporate governance mechanisms may reduce the extent of the agency costs. Therefore, they imply that companies which went private have ineffective corporate governance mechanisms. Their research which focused mostly on CEO characteristics as proxies for corporate governance confirmed that low level of corporate governance is typical for going private companies shortly before their announcement for such a step.

The aim of this study is to combine literature on the voluntary going private decision in a lifecycle context with the literature on corporate governance. Prior literature shows that corporate governance has an influence on the going private decision when examining the time before the announcement of the transaction. So far, the influence of corporate governance from the time of the IPO as well as during the quotation time has an influence on the going private decision has not been examined. My study has the purpose to close this research gap.

3. HYPOTHESES

The passage of Sarbanes-Oxley Act in 2002 (SOX) increased the requirements concerning the internal control and other aspects of corporate governance on public listed companies in the US. Even before, public listed companies had to comply with various accounting and controlling standards. Chief financial officers of US listed firms have to review their reports and certify that those are fully in compliance with the requirements. Firms having issues with fulfilling corporate governance requirements while publicly listed might increase their wish for privacy. Chaplinsky and Ramchand (2012) examined the influence of stricter governance practices on the voluntary going private decision of firms and found out that they increase compliance costs and subsequently motivate firms to go private. Therefore, I expect companies with CFO certification to stay public, which leads to the first hypothesis.

H1: *Firms with no Chief Financial Officer SOX Certification decide earlier to go private.*

It is not only the firm's internal CFO certification, which plays a role when estimating the quality of corporate governance. When firm's financial statements are in accordance with the financial reporting standards and reflect a true and a fair view of the state of the firm, an auditor gives the company an unqualified opinion. If the contrary is the case and the auditor has concerns about the quality of the financial reporting, he will give a qualified opinion to the company. If the financial statements are only materially misstated, the auditor will give the company an adverse opinion report. Public companies which don't fulfill financial statement standards are negatively affected by investors' interest and therefore I expect of them to decide for a step into privacy.

H2: *Firms with no unqualified auditor opinion decide earlier to go private.*

The size of accruals is a measure for earnings management. The higher the accruals, the stronger are the indications of managed earnings of a firm, which is not in accordance with the true and fair view. If firms manipulate their earnings, the size of accruals may be used as a proxy of earnings quality. Earnings management has been examined by e.g. Peasnell et al. (2005), Xie et al. (2003) or Bekiris and Doukakis (2011). They found evidence for the relationship between earnings management and low level of corporate governance. The study of Chou et al. (2005) has proven that in the long-run, the performance and the returns of reverse LBOs are suffering when firms manage their earnings. Therefore, I expect firms with managed earnings, violating corporate governance rules to decide for a step into privacy.

H3: *Firms with higher accruals decide earlier to go private.*

Investors prefer to put trust in companies, which have high perceptibility already at the time of their IPO. Ernst and Haecker (2007) advance a view that small companies are not getting enough attention from the investors on the public market and therefore being public has no sense for them. They also add that bigger companies with a low free float are affected by a scant attention as well. According to Modigliani and Miller (1963), low cost of capital increases the wish to become public. As the reverse must be also truth, low liquidity, which occurred due to low visibility makes a staying public too expensive. Therefore, I expect small companies to decide for a step into privacy.

H4: *Firms with lower market capitalization decide earlier to go private.*

According to Bharath and Dittmar (2010), investors are less informed than the issuers about the true value of the firm going public, which is a problem of adverse selection. Firms with low perceptibility on the public capital market are affected by higher adverse selection costs and might wish to avoid them. As suggested by Ackert and Athanassakos (2001), the number of analysts who follow a firm can be used as a proxy for firm's perceptibility. The visibility hypothesis of Mehran and Peristiani (2010) also corresponds with the opinion of Bharath and Dittmar (2010) and states that low analyst coverage make a company invisible. Therefore, I expect companies with low analyst coverage to decide for a step into privacy as they wish to decrease their adverse selection costs.

H5: *Firms with low analyst coverage decide earlier to go private.*

Another possible indicator for a firm's low perceptibility is its auditor at the IPO. Firms with an auditor from the Big 4[24] are expected to receive higher attention from investors' side due to their higher visibility on the market. Auditors' reputation and its positive influence on the IPO pricing have already been proven by Beatty (1989). His findings were confirmed by Hogan (1997) who analyzed costs and benefits of auditing quality in the IPO market. The relevance of auditor quality for investors was proven by Mansi et al. (2004) who found evidence that quality and tenure of auditors both matter to investors. As the quality of the auditor influence the perceptibility of companies already at their IPO, I expect companies who were accompanied by minor players to decide for a step into privacy.

H6: *Firms with no Big 4 auditor at their IPO decide earlier to go private.*

In order to test these hypotheses, I use control variables covering company fundamentals already tested in previous studies and mentioned in the literature review. Table 1 presents the whole set of tested variables, consisting of corporate governance variables, perceptibility variables as well as company fundamentals variables.

4. DATA

This paper is analyzing a dataset of 1'184 IPOs of firms which went public on the three major stock exchanges NYSE, Amex and NASDAQ between 1990 and 2013 in the US. All IPOs were obtained from the Thomson SDC New Issues database and their data had also to be available in Compustat and CRSP database, which provided the company data and the delisting information. Penny stock IPOs, ADRs, REITs as well as all financial institution are excluded from the sample accordingly to previous literature. Only IPOs with voluntary delisting due to company request are part of the sample. Companies which had to delist due to negative reasons are excluded from the sample. These modifications lead to the final sample of 1'068 IPOs of which 188 went voluntary private during the examined period until Dec. 31 2013. The sample therefore includes only companies which went voluntary private between 1990 and 2013. Companies which were still trading during this period are part of the control group.

Table 1 explains all variables which are examined in this study. Perceptibility variables are obtained either from Compustat or CRSP database. I calculate the natural logarithm of market capitalization (*marketcap*) of each company in order to proxy the size. As no precise data about analyst coverage (*analyst*) is available, I construct a binary variable to set one if the absolute market capitalization of a firm is above median. Bigger companies are expected to be more covered than smaller ones.

Further variable contributing to the perceptibility hypothesis is the auditor at the IPO (*auditor*). I construct a binary variable set to one if one of the Big 4 was auditor at the IPO. CRSP database provides the auditor information. Big 4 auditors are indicated with signs from 01 to 09. All other auditors have a sign above 09. Therefore, I set all companies with a sign from 01 to 09 one and all others with zero.

In order to examine the influence of corporate governance on the voluntary going private decision, I acquire data about the quality of companies' reports. For calculating the CFO filings (*cfosox*) I hand collect data from SEC's EDGAR database. The Chief Financial Officer SOX Certification Variable identifies whether a company has filed Certification Documents as required by Sarbanes-Oxley Act of 2002 (SOX). These Certification Documents certify that the CFO of the company has reviewed the 10Q and 10K reports and that these reports report fairly and are fully in compliance with the requirements of the SEC. I construct a binary variable set to one if the CFO has signed the Certification Documents otherwise the variable is set to zero. Auditor's opinion (*opinion*) is a binary variable based on hand collected data also from SEC's EDGAR database. An opinion of an external auditor can be unqualified, qualified or adverse and is considered essential when reporting financial information to various stakeholders. An unqualified opinion indicates the auditor's endorsement of the accuracy and correctness of the disclosed information. A qualified opinion is not considered as negative, but it might indicate that the auditor was unable to verify certain information and misstatements might occur in the audited statements. An adverse opinion indicates serious reporting problems as the auditor states that the financial statements do not fairly present the financial situation of the company. Only an unqualified opinion is a sign of fairly presented financial statements and hence of a high level of corporate governance. I therefore set the binary variable to one only when the auditor's opinion is unqualified, otherwise I set it to zero. Management of earnings is a sign for low level of corporate governance (Xie et al., 2003). The measurement of aggregate accruals compared to previous periods is used to measure company's earnings quality. If overall earnings don't increase by actual cash

[24] PWC, KPMG, EY and Deloitte.

earnings, but by accrual accounting manipulation, then the company has less persistent earnings with lower quality. Thus, the higher the accruals (*accruals*) of a company, the more managed its earnings might be. I calculate the accruals ratio, as it is used to compare companies of different sizes, based on net operating assets and acquire the necessary data from Compustat:

$$Accruals\ Ratio = (NOA_t - NOA_{t-1})/((NOA_t + NOA_{t-1})/2) \quad (1)$$

where,

$$Net\ Operating\ Assets = (Total\ Assets - Cash) - (Total\ Liabilities - Total\ Debt) \quad (2)$$

All accounting variables are used from the year before the company's IPO and are obtained from Compustat.

Table 2 presents the survivor function of examined going private companies and well as the number of going private companies per quotation year. 22 companies were only one year public before they decided to return into privacy. 14 companies remained two years public. The longer the companies are public, the lower the probability of going private. So went only two companies private which have been on the public capital market for 19 years. During the observation period, almost 16% of companies decided for a voluntary step into privacy on the three major US stock exchanges.

Table 1. Variables description

Variables	***Description***
survival	Quotation time since the IPO until voluntary delisting or until the end of the observation period in years
censor	Binary variable set to one if the company is still trading at the end of the observation period and therefore the observation is right censored
Perceptibility variables	
marketcap	log of market capitalization: number of shares outstanding x share price
analyst	Binary variable set to one if the market capitalization (size as a proxy for coverage) of the company is above the median of the whole sample.
auditor	Binary variable set to one if the IPO is audited by a Big 4 auditor (Deloitte, EY, KPMG, PWC)
Company fundamentals	
roa	Return on Assets measured as Net Income over Total Assets
fcff	Free Cash Flow to the Firm measured as Free Cash Flow to the Firm over Total Assets
pe	Price-to-Earnings Ratio
pb	Price-to-Book Ratio
tlta	Total Leverage over Total Assets
capex	Capital Expenditures over Total Assets
Corporate Governance variables	
cfosox	Binary variable set to one if the filed certification document that company report fully complies with requirements of the SEC contains the CFO signature.
opinion	Binary variable set to one if the auditor opinion is non-qualified.
accruals	Accruals Ratio measured as aggregate accruals which are based on Net Operating Assets

Table 2. Going private companies over time

Time	**Total number of companies**	**Going private companies**	**Survivor function**
1	1'184	22	.9814
2	1'162	14	.9696
3	1'147	18	.9544
4	1'122	6	.9493
5	1'111	14	.9373
6	1'049	9	.9293
7	1'017	8	.9220
8	980	11	.9116
9	902	10	.9015
10	836	11	.8896
11	775	8	.8805
12	702	11	.8667
13	666	5	.8602
14	641	6	.8521
15	600	8	.8407
16	504	7	.8291
17	463	7	.8165
18	397	2	.8124
19	291	2	.8068
20	235	3	.7965
21	181	4	.7789
22	121	2	.7661
23	71	0	.7661
24	38	0	.7661
188 (16%)			

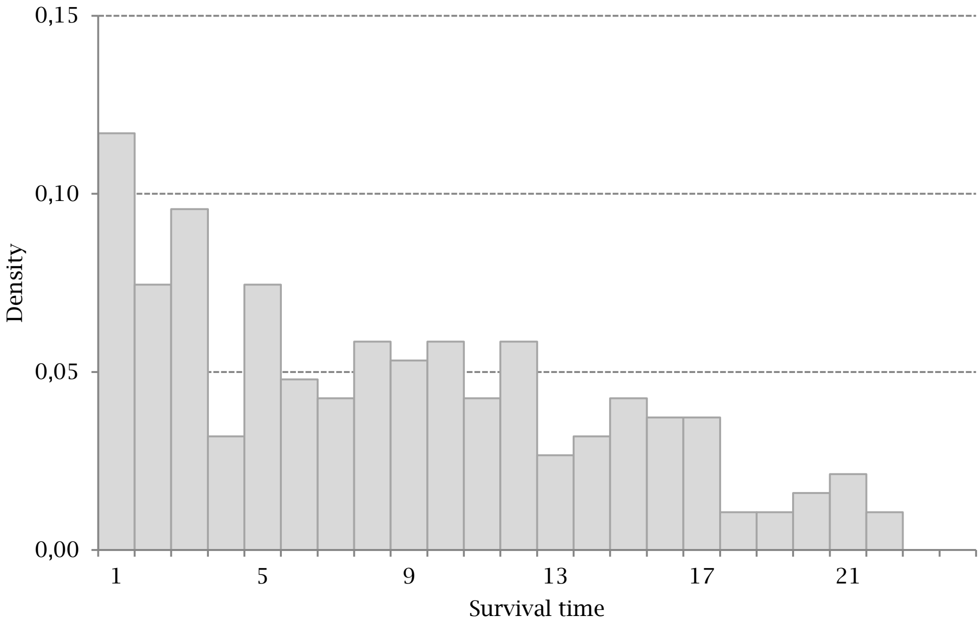
Table 3. Descriptive statistics

Variable	Total Sample			Surviving IPOs	Going Privates	t-Test
	Mean	Min	Max	Mean	Mean	
marketcap	5.424	-2.422	11.371	5.885	3.498	-58.636***
analyst	0.462	0	1	0.517	0.184	-36.155***
auditor	0.829	0	1	0.846	0.662	-17.170***
roa	-0.126	-32.932	1.220	-0.047	-0.201	-6.756***
fcff	-0.039	-4.626	0.750	-0.024	-0.122	-8.409***
pe	3.049	-1870	2890	1.145	20.113	2.035**
pb	4.946	-397.9	1422	2.999	3.776	0.750
tlta	0.542	0	19.513	0.518	0.556	1.793*
capex	-0.576	-162.2	142.2	-1.202	2.119	2.833***
cfosox	0.477	0	1	0.499	0.249	-24.633***
opinion	0.214	0	1	0.574	0.270	-29.419***
accruals	0.198	-33.1	154.3	0.035	0.119	0.552
survival	13.541	0	24			

*The majority of examined variables are highly significant on 1% level. This means that there are significant differences in these factors representing companies' characteristics between the going private companies and the control group which is still trading until the end of the observation period. */**/*** shows statistical significance at the 10%/5%/1% level.*

Table 3 provides the descriptive statistics and the results of the t-tests. The average survival time (*survival*) of examined companies on the public capital market is 13.5 years. Figure 1 makes obvious that the majority of going privates occur within the first years of privacy. More than a half of the examined going private companies went private within their first eight quotation years. Based on this fact, I conclude that company characteristics already at the time of its IPO influence the survival time on the public capital market until a voluntary going private decision.

Figure 1. Survival time of going private companies



Additionally, I calculate the time between the issue date and the delisting date for going private companies[25]. For the control sample a similar computation was done. As there is no delisting date for companies from the control sample, the duration of being public was calculated as the difference between the issue date and the last day in December 2013, when the data collection ends. Next to it, companies from the control sample were identified with 0 in order to be recognized as still trading in contrary to the going private group which was noted with 1.

5. METHODOLOGY

To examine factors influencing the going private decision of firms in the lifecycle context, I follow previous literature (e.g. Mehran and Peristiani, 2010 and Bharath and Dittmar, 2010) and use a survival analysis model. I analyze the expected survival time of going private companies and the factors which accelerate their voluntary decision to go private. If T is a random variable representing the time until the occurrence of a voluntary going private decision, then the cumulative distribution function of T is

$$F(t) = P(T<t),\ t>0 \tag{3}$$

[25] Data from Compustat.

It is expressing the probability that the event has occurred by duration t. The survival function gives the probability that the event has not occurred by duration t and is given by

$$S(t) = P(T>t) = 1 - F(t) \tag{4}$$

A conditional probability express that the event will occur in the interval t until t+h given that it has not occurred up to time t. Divided by the width of the interval, a rate of event occurrence per unit of time results. Limiting the interval to zero, a hazard function with an instantaneous rate of occurrence is then given by

$$\lambda(t) = \lim_{h\to 0} \frac{P(t<T<t+h|T>t)}{h} = \frac{f(t)}{S(t)} \tag{5}$$

For the first analysis of the survival data, I use a non-parametric model of Kaplan-Meier. For right censored data[26], the Kaplan-Meier survivor function is

$$\hat{S}(t) = \prod_{t_i=1}^{t} \left[\frac{(n_{t_i} - d_{t_i})}{n_{t_i}}\right] \tag{6}$$

where, d_i is the number of going privates until $t_{(i)}$ an n_i the number of public companies just before $t_{(i)}$.

To estimate the cumulative hazard, I apply the Nelson-Aalen estimator, which is defined as

$$\hat{\Lambda}(t_{(i)}) = \sum_{j=1}^{i} \frac{d_j}{n_j} \tag{7}$$

where, the cumulative hazard until t is the sum of the hazards up to t and can be interpreted as the number of voluntary going privates during the interval 0 to t.

To examine the impact of firm characteristics on the voluntary going private decision during the public lifecycle I use a Cox proportional hazard model (Cox, 1972) of the instantaneous probability of voluntary delisting. The model of Cox is a methodological approach which allows identifying explanatory variables on longevity or entity. Although the model has been mostly used in the previous research to explain e.g. bankruptcy[27], it will be transferred in this study and used for a "positive"[28] outcome calculation. Li et al. (2005) describe the advantage of the model as follows:

"The strength of the model lies in its ability to model and make inferences on the timing of delisting without making any specific assumptions about the distribution form of life expectancy (Li et al., 2005)."

The Cox proportional hazard model can be expressed as:

$$h(t) = h_0(t) * \exp(\beta_1 X_1 + \ldots + \beta_n X_n) \tag{8}$$

This model is providing estimates of β with a partial likelihood method, but provides no estimate of the baseline hazard $h_0(t)$. Some of the observations are right censored due to the fact that for some companies the going private event has not occurred at the time the data is analyzed. Cox hazard model is flexible enough to control for this fact.

In order to address heterogeneity concerns, I not only use the semi-parametric Cox hazard model, but also use more robust parametric models to verify the results. Even if the baseline hazard is not necessary for estimation of hazard ratio in the Cox model, the distribution of survival time is unknown. Thus, I assume a parametric form for the distribution of survival time and use four parametric models. When (1) T ~ Weibull (λ, p) with survivor function

$$S(t) = \exp\{-(\lambda t)^p\} \tag{9}$$

Where, p>0 and λ>o, then the hazard function is given by

$$\lambda(t) = \lambda^p p t^{p-1} \tag{10}$$

where, p is a shape parameter. When p>1 the hazard increases and vice versa. If p = 1, then the hazard is constant and leads to an exponential model (2) which is a special case of the Weibull distribution. In an exponential distribution the survivor function is

$$S(t) = \exp\{-\lambda t\} \tag{11}$$

and the density function of an exponential distribution is

$$f(t) = \lambda \exp\{-\lambda t\} \tag{12}$$

Another robust parametric hazard model is the Gompertz model (3), which is characterized by the fact that the log of the hazard is linear in t. Thus, Gompertz is a log-Weibull distribution with the hazard

$$\lambda(t) = \exp\{\alpha + \beta t\} \tag{13}$$

Further, I presume the baseline hazard function follows a log-logistic distribution. Then the log-logistic hazard function (4) is defined as

$$\lambda(t, x) = \frac{\exp(\beta x)\alpha t^{\alpha-1}}{[1+\exp(\beta x)^{t^{\alpha}}]} \tag{14}$$

Where, α>1 indicates an increasing hazard and vice versa.

Finally, I also conduct a logistic regression in order to find out how much of the voluntary going private decision can be explained already first at the time of the IPO as well as second at the time of the announcement of the going private decision. This probability can be expressed as (Pampel, 2000):

$$p(going\ private) = \frac{1}{1-e^{\alpha+\sum_{i=1}^{8}\beta_i * factor_i}} \tag{15}$$

6. EMPIRICAL RESULTS

This chapter contains the results of the empirical analysis on voluntary going privates. In the first

[26] Due to the fact that for some companies the going private event has not occurred at the time the data is analyzed, some of the observations are right censored.

[27] Shumway (2001) used e.g. this hazard model to forecast bankruptcy.

[28] In this thesis, the going private step is seen as positive, because the companies do not go bankrupt, but just leave the public capital market.

subchapter, the estimation of the survival function using the Kaplan-Meier method and the cumulative survival function using the Nelson-Aalen method are presented. The second subchapter presents the results of the duration analysis using the Cox proportional hazard model as well as the parametric hazard models of Weibull, Gompertz, the log-logistic model and the exponential one. The third subchapter presents the results from the logistic regressions.

Kaplan-Meier and Nelson-Aalen Survival Functions

In the first step, I estimate the non-parametric survival functions using the Kaplan-Meier and the Nelson-Aalen method. Figure 2 shows the Kaplan-Meier survivor function. The probability of surviving during the observation period shows that in t = 25 almost 25% of all companies from the whole sample undergo a voluntary going private and 75% stay public. Figure 3 shows the first derivative of the survival function, which is the hazard rate. Hazard rate describes the behavior of the probability during the observation period. Between the fifth and the 16th listing year the probability of a voluntary going private is given. After the fifth public year this probability increases abruptly, decreases on the contrary steadily after the 16th year of being public. The Nelson-Aalen method in figure 4 shows the cumulative hazard estimate. In t = 0 the whole sample is public and in t = 25 more than 25% companies went voluntary private. Around 6% of all companies decide for a voluntary delisting already during their first five years on the public capital market, which strengthens the fact that firm characteristics at the time of the IPO already have a significant influence if a company decides to go private or stay public.

Figure 2. Kaplan-Meier survival estimate

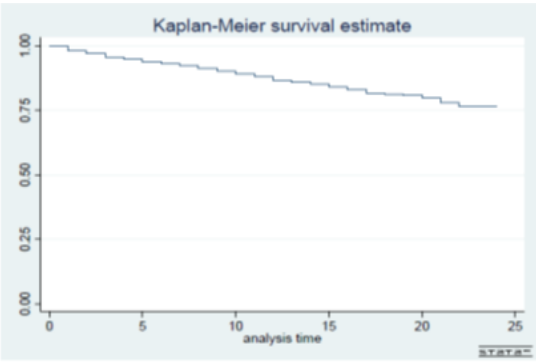


Figure 3. Smoothed hazard estimate

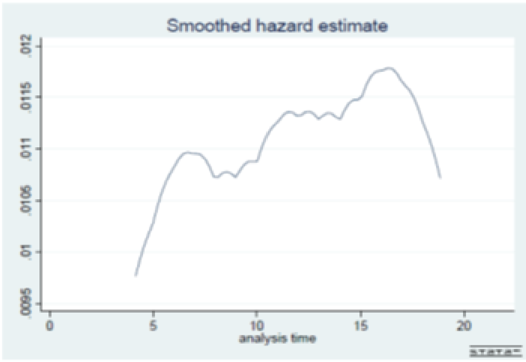
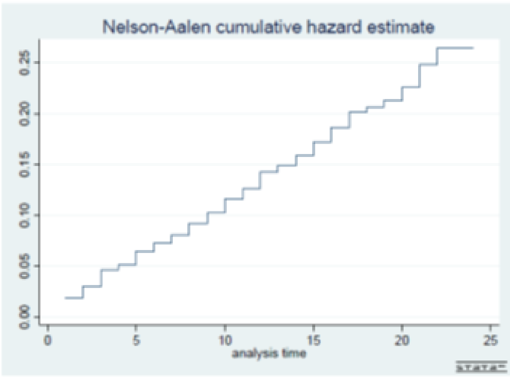


Figure 4. Nelson-Allen cumulative hazard estimate



Duration Analysis Results

Table 4 shows the results of the duration analysis using the semi-parametric Cox proportional hazard model. The coefficients represent the effect on the hazard rate when an independent variable increases by one unit.

The hypotheses 4-6 suggest that perceptibility measured as market capitalization, analyst coverage and the auditor at IPO accelerates the voluntary going private decision of public companies. The results shown in table 4 confirm this influence of perceptibility factors on the survival time.

The results of the Cox model suggest that market capitalization (marketcap) has a very strong significant influence on the hazard rate. Due to the negative sign of the coefficient, the higher the market capitalization, the longer a company stays public or vice versa, the smaller the company measured by market capitalization, the earlier it might decide to voluntary leave the public capital market. This result shows that market capitalization has an influence on the voluntary going private decision and therefore confirms H4. An explanation might be that smaller companies are less visible for investors and therefore receive less attention from them. Lacking investors' attention might lead to lower liquidity and undervaluation which encourages companies for a voluntary step into privacy. For analyst coverage (analyst) the results also suggest a very strong significant influence on the hazard rate. The lower the analyst coverage, the earlier a company decides for a voluntary going private. This confirms H5 and shows that companies with lower analyst coverage get less attention from investors and therefore decide earlier to leave the public capital market. A further factor significantly accelerating the voluntary going private decision is the Big 4 auditor at the IPO (auditor). According to the results, if the auditor at the IPO was one of the Big 4, than the survival time at the public capital market is longer. On contrary, if the auditor is less known, it accelerates the voluntary going private decision. This finding confirms H6.

Table 4. Regression results of Cox proportional hazard model

Variables	***Coeff***	***t-stat***
marketcap	-0.424***	-11.25
analyst	-1.147***	-4.84
auditor	-0.704***	-4.15
roa	-0.216*	-1.78
fcff	-0.311*	-1.62
pe	0.001	1.02
pb	0.003***	3.24
tlta	-0.001	-0.03
capex	0.020*	1.60
cfosox	0.182	1.01
opinion	0.319*	1.76
accruals	-0.062*	-1.60
Observations	1068	
Likelihood ratio (chi)	287.38***	

*The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is survival time, measured as the difference between the IPO date and the date of going private or end of observation period which is Dec 31 2013. If the IPO continues to be listed through the end of the observation period, the observation is right-censored. marketcap is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, analyst is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, auditor is a binary variable set to one when the IPO is audited by a Big 4 auditor, roa is the return on assets measured as net income over total assets, fcff is the free cash flow to the firm measured as free cash flow to the firm over total assets, pe is the price-to-earnings ratio, pb is the price-to-book ratio, tlta is the amount of leverage calculated as total leverage over total assets, capex are the capital expenditures calculated over total assets, cfocox is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, opinion is a binary variable set to one if the auditor opinion is non-qualified, accruals is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.*

Findings on hypotheses 1-3 about corporate governance measured as CFO SOX certification, auditor opinion and the amount of accruals are similar to those of perceptibility, even if the statistical significance is lower. *H1* suggest that firms with no CFO SOX certification (*cfosox*) which would certify that their accounting is fully in compliance with the requirements decide earlier to go private. The results suggest that CFO SOX certification has no statistical influence on the hazard rate and therefore companies with reports lacking certification do not earlier decide for a step into privacy. Further firms not only need to confirm their report quality internally, but also receive an auditor opinion. *H2* suggest that firms with no unqualified auditor opinion decide earlier to go private. The results confirm this hypothesis on a low significance level. The effect of accruals (*accruals*) on the hazard rate is also given on a low significance level. The lower the accruals, the earlier this company decides for a voluntary step into privacy. This stands in contrary to the expectations in *H3*. A possible explanation might be, that interpretation of accruals is highly dependent on investors' financial sophistication and therefore not an ideal measure for the level of corporate governance.

Further results on control variables mostly confirm findings from previous researches about going privates. Price-to-book ratio (*pb*) influences significantly the hazard rate but only with a low impact. The higher the price-to-book ratio, the earlier a company goes private. No evidence is found for price-to-earnings ratio (*pe*) and leverage (*tlta*). According to the results, they have no influence on the hazard rate. A low statistical significance is found for return on assets (*roa*). The lower ROA, the earlier a company might voluntary decide for privacy. Weak evidence is also found for free cash flow (*fcff*). Other than in previous findings where high free cash flow has a strong influence on a going private step and supports the agency theory, my results suggest that a lower free cash flow accelerates the voluntary going private decision. My findings are consistent with those of e.g. Kieschnick (1998) or Halpern et al. (1999).[29] Also capital expenditures (*capex*) provide weak evidence about the influence on hazard rate. The results suggest that companies with lower capital expenditures stay longer public and vice versa.

In order to test the robustness of these results, I perform further analyses using the Weibull, Gompertz, the log-logistic and the exponential model, which are in contrary to the semi-parametric Cox model fully parametric and therefore more robust. Tables 5 and 6 present the results from

[29] Both studies analyzed going privates shortly before the announcement of their step into privacy and not in a lifecycle context.

these four additional robustness models. They mainly confirm the findings of the Cox hazard model. The perceptibility hypothesis is also confirmed in the Weibull model, as all three perceptibility factors market capitalization *(marketcap)*, analyst coverage *(analyst)* and auditor at IPO *(auditor)* are highly significant. The log-logistic model shows identical results for the perceptibility hypothesis. The lower the market capitalization of a public company, the higher is the probability of an earlier voluntary step into privacy. The lower the size of analysts covering a public company, the higher is the probability of its earlier voluntary going private. If the auditor at the IPO was not one of the Big 4, the higher is the probability that such a company will decide earlier to leave the public capital market. These findings confirm the hypotheses 4-6. Similar to the Cox hazard model, the Weibull and the log-logistic model also couldn't find any evidence for the CFO SOX certification influencing the voluntary going private decision. The log-logistic model shows high significance for auditor's opinion *(opinion)* and confirms *H2*. Based on this finding, firms with no unqualified opinion from their auditor decide earlier for a voluntary step into privacy.

Table 5. Robustness test of the Weibull and the log-logistic survival model

Variables	*(I)*	*t-stat*	*(II)*	*t-stat*
marketcap	-0.427***	-11.37	0.398***	9.22
analyst	-1.155***	-4.87	0.822***	4.45
auditor	-0.707***	-4.17	0.641***	4.19
roa	-0.218*	-1.81	0.162	1.16
fcff	-0.322*	-1.70	0.218	1.13
pe	0.001	1.05	-0.001	-1.02
pb	0.003***	3.85	-0.002***	-3.15
tlta	0.005	0.09	-0.001	-0.01
capex	0.022*	1.76	-0.017*	-1.64
cfosox	0.186	1.03	-0.152	-1.00
opinion	0.333 *	1.84	-0.374**	-2.41
accruals	-0.062*	-1.63	0.052*	1.54
constant	-2.615***	-8.35	1.469***	6.90
Observations	1068		1068	
Likelihood ratio (chi)	294.90***		293.43***	

*The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is survival_time, measured as the difference between the IPO date and the date of going private or end of observation period which is Dec 31 2013. If the IPO continues to be listed through the end of the observation period, the observation is right-censored. marketcap is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, analyst is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, auditor is a binary variable set to one when the IPO is audited by a Big 4 auditor, roa is the return on assets measured as net income over total assets, fcff is the free cash flow to the firm measured as free cash flow to the firm over total assets, pe is the price-to-earnings ratio, pb is the price-to-book ratio, tlta is the amount of leverage calculated as total leverage over total assets, capex are the capital expenditures calculated over total assets, cfocox is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, opinion is a binary variable set to one if the auditor opinion is non-qualified, accruals is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.*

Table 6. Robustness test of the Gompertz and the exponential survival model

Variables	*(I)*	*t-stat*	*(II)*	*t-stat*
marketcap	0.651***	-11.39	0.656***	-11.14
analyst	0.312***	-4.91	0.326***	-4.73
auditor	0.494***	-4.15	0.493***	-4.18
roa	0.799*	-1.87	0.812*	-1.70
fcff	0.727*	-1.68	0.754*	-1.48
pe	1.000	1.05	1.000	0.96
pb	1.003***	3.57	1.003***	3.30
tlta	1.002	0.03	1.000	0.01
capex	1.021*	1.66	1.020*	1.59
cfosox	1.207	1.04	1.202	1.02
opinion	1.389*	1.81	1.387*	1.81
accruals	0.940*	-1.63	0.941*	-1.54
constant	0.108***	-9.20	0.152***	-8.89
Observations	1068		1068	
Likelihood ratio (chi)	294.28***		285.50***	

*The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is survival_time, measured as the difference between the IPO date and the date of going private or end of observation period which is Dec 31 2013. If the IPO continues to be listed through the end of the observation period, the observation is right-censored. marketcap is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, analyst is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, auditor is a binary variable set to one when the IPO is audited by a Big 4 auditor, roa is the return on assets measured as net income over total assets, fcff is the free cash flow to the firm measured as free cash flow to the firm over total assets, pe is the price-to-earnings ratio, pb is the price-to-book ratio, tlta is the amount of leverage calculated as total leverage over total assets, capex are the capital expenditures calculated over total assets, cfocox is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, opinion is a binary variable set to one if the auditor opinion is non-qualified, accruals is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.*

The Weibull model confirms this finding on a lower significance level. Higher accruals are a sign of earnings management and therefore an indication of a lower level of corporate governance. The Weibull model finds weak evidence for higher accruals accelerating the voluntary going private decision. The log-logistic model shows no empirical evidence. For the controlling variables the Weibull model shows strong significance of the price-to-book ratio *(pb)*, which confirms that undervaluation accelerates the decision for a step into privacy. On a low significance level the Weibull model finds evidence for return on assets *(roa)*, free cash flow *(fcff)* as well as for capital expenditures *(capex)*. This confirms the robustness of the results from the Cox hazard model. Companies with lower return on assets, lower free cash flow and with higher capital expenditures are those which might earlier decide to leave the public capital market. Low return as well as not efficiently spent capital might lead to lower interest from investors' side and accelerate the company's decision for a voluntary going private step. The log-logistic model confirms the capital expenditures hypothesis on a weak significance level only.

The Gompertz model also confirms the results of the Cox hazard model. Hazard ratios of the Gompertz model shows the influence on the time until a voluntary going private occurs. Low market capitalization *(marketcap)* significantly accelerates the going private decision. An increase in the market capitalization by one standard deviation decreases the likelihood of a going private by almost 35%, in line with *H4*. Statistical significance is also found for *H5* and *H6*. An increase in the analyst coverage *(analyst)* by one standard deviation reduces the public life by about 68% and an increase in Big 4 auditor at IPO *(auditor)* reduces it by almost 51%. The results on influence of corporate governance on the voluntary going private decision are less consistent than those on perceptibility. The effect on hazard rate of CFO SOX certification *(cfosox)* is positive but without statistical significance. Therefore *H1* cannot be confirmed. In contrary, auditor's opinion *(opinion)* shows significance. An increase in auditor's opinion by one standard deviation increases the probability of a going private which is in accordance with *H2*. Firms with no unqualified auditor opinion suffer under their low level of corporate governance and may therefore decide earlier to go private. Only weak evidence was found for the influence of accruals. An increase in the accruals by one standard deviation reduces the probability of a going private by almost 6%. This finding is contrary to the expectation in *H3*. This finding might be explained by the unclear interpretation of accruals as shown by Louis and Robinson (2005). Their findings show that accruals might not be always interpreted as managers' opportunism, but in some cases also as their optimism. The Gompertz model confirms the findings of the Cox hazard model for the control variables. Highest empirical evidence is again found for price-to-book ratio *(pb)*. An increase in the price-to-book ratio by one standard deviation increases the likelihood of an earlier going private. The results of the exponential model show similar results to those of the Gompertz model. The highest evidence is again found for the perceptibility hypothesis. For the corporate governance hypothesis weak evidence is found for auditor's opinion *(opinion)*, confirming *H2*. An increase in the auditor's opinion by one standard deviation increases the probability of an earlier step into privacy.

Logit Regression Results

As the results of the Kaplan-Maier and Nelson-Aalen survival function show, around 6% of all companies decide for a voluntary delisting already during their first five years on the public capital market, which strengthens the fact that firm characteristics at the time of the IPO already have a significant influence if a company decides to go private or stay public. Therefore, I conduct a logistic regression with the aim to show if future going private companies can be already recognized by investors at the beginning of their public life. Table 7 presents the results of the logistic regression. Strong empirical evidence is found for the perceptibility hypothesis. Companies, which later decide for a voluntary step into privacy are at the time of their IPO significantly of smaller size measured by market capitalization *(marketcap)*, have lower analyst coverage *(analyst)* and their auditor at IPO was not one of the Big 4 *(auditor)* compared to the control group. Strong evidence is also found for two of the three corporate governance factors.

Companies which later decide for a going private have no CFO SOX certification *(cfosox)* and no unqualified auditor opinion *(opinion)* compared to the control group. No evidence is found for the amount of accruals.

Regarding the control variables, high empirical evidence is found for price-to-earnings ratio *(pe)*, price-to-book ratio *(pb)* as well as for leverage *(tlta)*. Firms with higher price-to-earnings ratio, with higher price-to-book ratio as well as with higher leverage at the time of their IPO decide later more likely for a step into privacy. Valuation multiples like the price-to-book and the price-to-earnings ratio are industry-dependent and therefore an industry-specific analysis would be needed in order to describe their impact on going privates more precisely. Previous studies found diverging evidence for valuation multiples. My results are consistent with those of Maupin (1987). No significant results are found for return on assets *(roa)*, free cash flow *(fcff)* and for capital expenditures *(capex)* at the time of the IPO. The tested factors in logistic regression at the time of the IPO explain 72.3% of the going private decision measured by R^2.

The majority of previous studies, as shown in in the literature review, focused their analyses on explaining the going private step by firms' characteristics shortly before the announcement of this step. I conduct a logistic regression with data shortly before the announcement. The results are presented in table 7. The R^2 of the regression is 35.6%. Characteristics tested in this study seem to explain less of the going private decision shortly before the delisting than at the time of the IPO. Still, strong evidence is again found for the perceptibility hypothesis. Firms characterized by lower market capitalization *(marketcap)*, low analyst coverage *(analyst)* and with no Big 4 auditor *(auditor)* are more likely to decide to go voluntary private. Empirical evidence is also found for auditor's opinion *(opinion)*. Firms with no unqualified auditor's opinion are more likely to go private. For control variables, empirical evidence is found for return on assets *(roa)* and free cash flow *(fcff)*. Firms with lower return on assets and with less free cash flow than the control group decide more likely for a going private. These results are consistent with the findings of e.g. Kieschnick (1998), Kosedag and Lane (2002) and Weir et al. (2005).

Table 7. Logit regression at the time of the IPO and before the announcement of a going private

Variables	*(I)*	*t-stat*	*(II)*	*t-stat*
marketcap	-0.690***	-7.31	-0.712***	-10.67
analyst	-3.125***	-3.62	-1.167***	-4.40
auditor	-1.258***	-3.44	-1.289***	-5.40
roa	-0.278	-0.92	-0.807***	-3.03
fcff	-0.373	-1.29	-0.819**	-2.29
pe	0.037***	3.31	0.001	0.69
pb	0.033**	2.69	0.001	0.71
tlta	1.049***	3.65	0.389*	1.63
capex	-0.004	-0.35	0.016	1.23
cfosox	-3.002***	-3.22	0.277	1.16
opinion	-5.138***	-10.64	0.497*	2.00
accruals	0.043	0.66	-0.087*	-1.64
constant	6.426***	8.53	2.454***	6.29
Observations	1077		1077	
Likelihood ratio (chi)	741.45***		342.48***	
R^2	72.29%		35.59%	

*The sample includes 1'184 IPOs going public between 1990 and 2013 on NASDAQ, NYSE or AMEX. The independent variable is set to one if the company went private and zero if it is part of the control group. Data for the first analysis were collected one fiscal year before the IPO and data for the second analysis were collected from the fiscal year before the announcement of the voluntary step into privacy. marketcap is the logarithm of market capitalization calculated as number of shares outstanding multiplied by the share price, analyst is a binary variable set to one if the market capitalization of the company is above the median of the whole sample, auditor is a binary variable set to one when the IPO is audited by a Big 4 auditor, roa is the return on assets measured as net income over total assets, fcff is the free cash flow to the firm measured as free cash flow to the firm over total assets, pe is the price-to-earnings ratio, pb is the price-to-book ratio, tlta is the amount of leverage calculated as total leverage over total assets, capex are the capital expenditures calculated over total assets, cfocox is a binary variable set to one if the certification document fully complies with SEC requirements and is signed by the CFO, opinion is a binary variable set to one if the auditor opinion is non-qualified, accruals is the accruals ratio measured as aggregate accruals based on net operating assets. For ties, the Breslow method is applied. ***/**/* indicates statistical significance at the 1%/5%/10% level.*

7. CONCLUDING REMARKS

The aim of this study is to explore the relationship of perceptibility and corporate governance factors on the voluntary going private decision. Previous studies mostly focused on various company characteristics which distinguish them from companies which stay public. This characterization was conducted shortly before the announcement of a going private step. Only few studies analyzed the whole public lifecycle and characterized the companies not only shortly before their going private, but also earlier. This study complement these findings by adding perceptibility and corporate governance factors, which were analyzed not only shortly before the announcement of a step into privacy, but also already at the time of the IPO with a logistic regression and during the whole public lifecycle with a Cox proportional hazard model. Using a sample of 1'184 IPOs in the US between 1990 and 2013, I find that the voluntary step into privacy is influenced by perceptibility as well as corporate governance variables. Small size of a company together with low analyst coverage and with no Big 4 auditor at the IPO decreases the perceptibility of a company at the public market and increases the likelihood of a voluntary step into privacy. The results further show that firms with no unqualified opinion from their auditor decide more likely for a voluntary step into privacy. I cannot find evidence for the missing CFO SOX certification as well as for the high amount of accruals accelerating the voluntary going private step. These results of the Cox hazard model are confirmed by the Weibull, exponential, log-logistic and Gompertz model. The results from the logistic regression at the time shortly before the announcement of a going private step confirm the perceptibility hypothesis as well as the influence of auditor's opinion. The results further show that future going private companies strongly differ from companies which stay public already at the time of their IPO in perceptibility as well as corporate governance variables.

Overall, the results show that investors shouldn't take only fundamental variables into account when identifying future going private companies at the public capital market. Important roles play also the perceptibility and corporate governance variables. According to the results companies differ in these variables already at the time of their IPO and during their whole public lifecycle from companies which stay public. Investors who are able to recognize future going private companies may earn higher returns when these companies are buying their shares back, making them a lucrative investment. Further research might focus on further variables explaining the going private phenomenon as well as on the question if these companies should have ever gone public.

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AUDIT OUTCOMES AND THE LEVEL OF SERVICE DELIVERY WITHIN LOCAL GOVERNMENT MUNICIPALITIES IN SOUTH AFRICA

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Abstract

The South African Government evaluates municipalities on how well Integrated Development Plan in terms of service delivery are met. This study aims to examine whether a positive correlation exists between the service deliveries of district municipalities across six indicators: water provision, sanitation, weekly refuse removal, electricity, housing, and economic development; and the audit outcomes of each municipality. The purpose is to establish whether good governance leads to effective service delivery as well as to establish an accountability mechanism for which municipalities can be measured against. The result was a moderate correlation between audit outcomes and service delivery. In terms of establishing an accountability framework, this paper concludes that an examination of audit outcomes and service provision together would be beneficial.

Keywords: Accountability, Audit Report, Public Sector Auditing, Regulation

1. INTRODUCTION

Service provision in South Africa is a crucial problem facing municipalities at present (Managa 2012; Institute for Security Studies 2009). Not only is there no active accountability for municipalities in terms of the level of provision, specifically if the municipality is underperforming, there is also evidence to suggest that corrective measures are either not pursued, or poorly implemented (The World Bank 2011; University of the Western Cape 2007).

As municipalities are required to be audited each year, this presents an independent measure of how well each municipality is performing in terms of reporting financial information and accurate record-keeping. The potential of drawing a comparison between this measure and another of service delivery is determined.

This paper begins by reviewing relevant literature on the make-up of South African municipalities and its audit outcomes. The relevant method is then set out detailing the sampling process and the development of a balanced score-card to measure service delivery. The results then draw conclusions on the relation to audit outcomes. Essentially, this paper aims to shed light on how accountability, in the form of audit outcomes of municipalities, could lead to better service provision and an improved South African Government as a whole.

2. LITERATURE REVIEW

This literature being by explaining the make-up and responsibilities of South African municipalities. Therefore, audit outcomes and the detail of such reports are set out to inform the null hypothesis.

2.1 South African Municipalities

South African municipalities are fundamental bodies of local governance which focus on local needs and priorities instead of focusing on the country as a whole. These municipalities consist of political and administrative functions for the municipality, and the community within the area that the municipality resides (South African Local Government Ascociation 2011). In line with this, municipalities serve as a distributive function of national resources and are expected to result in the better use of resources to meet local needs.

There are three categories of municipalities, namely Categories A, B and C (*Municipal Structures Act No. 117*, 1998). A Category A municipality is a metropolitan municipality which has exclusive authority to institute policies over its area of jurisdiction. A Category B municipality is a local municipality which shares power with the district municipality in whose area it resides. A district municipality is a Category C municipality which administers and forms rules over areas that include more than one local municipality thus sharing authority with Category B municipalities (South African Local Government Ascociation 2011). Since the municipal elections in 2011, municipal governance consists of 8 metropolitan municipalities that govern the main metropolitan regions and the rest of the South Africa is divided into 44 district municipalities, each comprising several local municipalities (Independent Electoral Commission 2011).

Neutrality of municipal management is key in public administration (Raga & Taylor 2005).

However, this is not always the case in South Africa. Increasingly, districts have failed to perform their statutory functions. This has led to provinces shifting service delivery responsibilities onto their local municipalities, resulting in the lack of a centralized plan (University of the Western Cape 2007). This has worsened service delivery, specifically of water and sanitation, as local municipalities lack the capacity and expertise to appropriately deliver these amenities (University of the Western Cape 2007).

In the early 2000's, the government launched "Batho Pele" which translates to "People First". This was in response to the lack of service delivery across the country (Raga & Taylor 2005). The aim of Batho Pele was to create a sense of belonging and loyalty for municipal officials in the hopes of leading to improved service delivery. However, no marked improvement in service delivery was seen (Managa 2012). Similarly, the Promotion of Administrative Justice Act (PAJA) was gazetted in 2000 with the aim of addressing impartiality in service delivery (Raga & Taylor 2005). But once again, a lack of compliance ensued.

At the root of poor service delivery is incompetent staff, corruption, the lack of a formal plan for how municipalities will deliver these services, and an absence of strict accountability (The World Bank 2011; Managa 2012; University of the Western Cape 2007; Raga & Taylor 2005). In the last decade, South Africa has experienced violent service delivery protests which are only expected to worsen unless municipal governance can be strengthened (Managa 2012).

Evidently, service provision in South Africa is deficient, and previous efforts to correct this have not been fruitful. The primary role of municipalities was to lead to better decision making around service provision which has not been successfully carried out.

2.2 Audit Outcomes

All municipalities in South Africa are audited and receive an annual audit outcome depending on their performance for that financial year. Audit outcomes are categorized broadly into financially unqualified audit opinions, qualified audit opinions, adverse opinions and disclaimers of opinion.

The responsibility of a local government is to consider the needs of their surrounding community, how the council intends to meet these needs, as well as the municipality's strategy to involve and consult the district in this approach (*Municipal Structures Act No. 117*, 1998, *Municipal Systems Act*, 2000). The Constitution of the Republic of South Africa (1996) stipulates a municipality's responsibility to be accountable, promote social and economic development as well as a safe and healthy environment. The Municipal Finance Management Act No. *53* (2006) was subsequently introduced to ensure sustainable financial management of municipalities as well as to further outline the roles and responsibilities of local municipalities and councilors.

The role of financial reporting is to provide decision useful information to a variety of users (International Accounting Standards Board 2011). In terms of a municipal report, the role of the report is to inform stakeholders of the due diligence and actions taken by the municipality as well as whether this is in the district's best interests. This form of accountability also puts pressure on municipalities to be transparent in their decisions and utilization of funds in a manner which should theoretically lead to better local government (Grant & Devas 2003). The National Audit Report, issued by The Auditor General annually, cited the root of unclean audits being a lack of internal controls, unqualified staff and unauthorized spending (Auditor-General South Africa 2013a).

2.3 Conclusion

Legislating the auditing of municipalities has aimed to improve accountability and create a measurement tool for the performance of that municipality. However, this has not been successful. Literature suggests the reason therefore being ineffective financial reporting by the municipalities themselves and the nonexistence of ramifications.

Considering that the annual auditing of municipalities is currently in place, it is possible that an augmented system of accountability could lead to better service provision. Considering the limitations of expenditure and human administration skills, this paper considers an improved system of accountability - based on audit outcomes - as a possible method of improving service provision.

3. METHOD

This paper explores whether evaluating a municipality's audit outcome produces a synonymous result to measuring service delivery (in the form of a score-card). A finding as such would suggest that the same factors at play in determining the effectiveness of service delivery of that municipality and its auditing function. These results could potentially alter how municipalities are evaluated and lead to better decision making by local government in the future.

The null hypothesis of this paper is that no relationship (or a negative relationship) exists between audit outcomes and service delivery (H0). The alternate hypothesis is that a positive relationship exists between audit outcomes and service delivery (H1).

3.1 Sampling

This paper aims to compare municipalities that, on average, are similar with similar focuses. Thus all the metropolitan municipalities and district municipalities will be examined as the literature shows them to have similar roles. There are 8 metropolitan municipalities and 44 district municipalities currently in South Africa. The 8 metropolitans and 44 districts will be evaluated in each provincial sphere, against each other and compared to the national average.

In terms of using reliable data for correlation testing purposes, the Census of 2011 performed by Statistics South Africa is deemed to be the most accurate. Statistics South Africa is accountable to the Minister of Planning, Monitoring and Evaluation and is regulated by the Statistics Act (1999) which permits Statistics South Africa to capture, disseminate and coordinate statistics for official use by organs of state for decision making (Statistics South Africa 2015). The 2011 Census is the most recent census in terms of the 2012-2013 audit reports being evaluated.

The intention of this paper is to investigate the annual reports of all 52 district and metropolitan municipalities in South Africa for the year beginning 1 July 2012 to 31 June 2013 to determine whether a relationship exists between audit outcomes and a municipality's performance in terms of the key performance indicators which this paper establishes. A direct correlation would suggest that a municipality's internal structure and financial reporting permeates into its outer spheres of performance and service delivery.

3.2 Audit Outcomes

This paper has narrowed the audit opinions to an unqualified opinion, a qualified opinion and a disclaimer of opinion. A clean audit (unqualified opinion) will receive a rating of 5 (as this is the highest score a municipality can receive for service delivery), a qualified opinion will receive a rating of 3 and a disclaimer of opinion will receives a rating of 1. In any district municipalities where the overall audit opinion has not yet been finalised, this paper uses the average audit opinion (that has been finalised) across the respective local municipalities that are under that district's umbrella.

The MFMA, states that independent institutions, such as the Auditor General, must provide annual reports on financial and service delivery outcomes of each municipality (Anon 2006). Even though the Auditor General audits the government, it has been autonomous since 1993 and is not subject to public service rules and regulations (Auditor General 2014). Due to the independence of the Auditor General, these annual reports in 2013 (which state the audit opinions issued by the Auditor General to each district) will be used.

3.3 Developing a Score-card

The advantage in measuring entities against a score-card is that it determines links between actions undertaken by the entity and the impact of those actions on creating value. Balanced score-cards, defined as "a strategic management system that links performance measurement to strategy using a multi-dimensional set of financial and non-financial performance metrics" are becoming more widely accepted in evaluating corporate performance due to sustainability being dependent on a rounded approach to business (Epstein & Wisner 2001, p.2). For municipalities, the latter lies in the quality of service delivery.

In terms of the assessment use of a score-card, Epstein and Wisner (2001) reports that it should contain a spread of internal and external criteria, strategic and tactical measurements as well as encompass process and product focuses. From a municipal perspective this is limited to service delivery.

Severn Trent Water Ltd (Severn Trent), an international provider of water, waste and utility systems based in the United Kingdom could arguably be comparable to that of a municipality due to paralleling services on a correspondingly large scale (Epstein & Wisner, 2001). Severn Trent uses a balanced score card.

Severn Trent's social progress objective has three main drivers: 'health', measured by the population receiving water and waste services from them, 'education and training' measured by employee training and housing quality, and 'housing quality', measured by the domestic properties receiving water, sewerage or refuse collection for the company. As municipalities are tasked with providing these same services, these drivers and measures will remain relatively the same for this paper. The significance of these services are particularly important as they mirror basic human needs, especially in light of the poverty apparent in South Africa (Managa, 2012). Education, however, is the responsibility of The Department of Education and thus not a relevant criteria for district municipalities (Government Gazette, 2011).

In developing a score-card, the key performance indicators used must be assessable. This paper aims to define the determination of each quantification for each measure. The measures used should also be controllable to an extent as the municipalities should not be evaluated on matters out of their sphere of influence (Epstein & Wisner 2001).

Section 151 of the Constitution states that a municipality's core functions are that of accountable governance for local communities, sustainable service provision while promoting social and economic development, and providing a safe and healthy environment (Anon 1996). Chapter Seven of The Constitution deals with local government. In terms of Section 152, municipalities must "prioritise the basic needs of the community; promote social and economic development and participate in national and provincial development programmes" (Anon 1996, p.1331(2)). Thus, this paper focuses on the basic needs of communities, within the municipal governance sphere, that should be met by these municipalities.

This paper narrowed down the responsibilities to six indicators which are shown in Table 1. The source criteria and key performance indicators are presented as well as an explanation of how the ratings are awarded. By examining these six key service provisions – based on legal responsibilities of district municipalities – a score-card is developed.

3.4 Scoring

A rating of five would equate to the municipality fully performing its duties in terms of this criteria. Four indicates there is marginal room for improvement. A rating of three would translate to acceptable services, two meaning marginally insufficient, one equaling inept service delivery, and zero meaning a lack of service delivery entirely.

(a) Water and sewerage services are measured as a percentage in terms of "in house" access. This directly translates to a rounded score out of five.

(b) Refuse removal is measured in terms of weekly service delivery with populous percentage access also translating to a score out of five. As the national access to weekly refuse removal is just above 50% (see Appendix 1), the ratings are as follows:

- five- 80% or more have access
- four- between 60% and 79% have access
- three- 50% to 59% have access
- two- 30-49% have access
- one- 1-29% have access
- zero- equating to none of the population having access.

(c) In terms of unemployment, the national average is 31% (see Appendix 1). Based on this:

- 5 represents a district with a 10% unemployment rate
- four represents a 20% unemployment rate
- three represents a 30% unemployment rate
- two represents a 40% unemployment rate
- one- any unemployment rate above 50%
- zero being a 0% employment rate.

(d) Housing is measured in terms of the percentage of population in formal and traditional dwellings. Traditional dwellings equate to African-style buildings made of clay and wood. The national averages are 78% and 12% respectively (see Appendix 1) - thus the remaining 10% reside in informal dwellings. Based on this:

- five would mean 100% of the population has formal or traditional housing
- four would mean 90% of the population has formal or traditional housing
- three would mean 80% of the population has either housing
- two would mean less than 80% but more than 50% have either form of housing
- one would mean there is a portion of the population with formal or traditional housing
- zero would mean none of the population have formal or traditional housing.

(e) Electricity is measured in terms of the percentage of population that have access to electricity for domestic lighting.

Municipalities that have chosen to outsource any services are measured on the performance of the outsourcer as this takes into consideration the role and responsibility of the municipality in choosing an outsourcer. The national averages for service provision with related scores are shown in Appendix 1, followed by a worked example of the scoring system in Appendix 2.

Table 1. Municipal Score-Card Indicators

Criteria	*Criteria Source*	*Key Performance Indicators*	*Rating Explanation**	*Data Source*
Water for Household use	(Anon 1996)	Access to in-house piped water	(a)	(Statistics South Africa 2012)
Sewage and Sanitation	(Anon 1996)The Constitution s152(d)	Access to flush facilities	(a)	(Statistics South Africa 2012)
Refuse Removal	(Anon 1996)	Weekly refuse removal	(b)	(Statistics South Africa 2012)
Economic Development	(Anon 1996)	Unemployment levels	(c)	(Auditor-General South Africa 2013a)
Housing	(Anon 1997)	Formal and traditional dwellings for housing	(d)	(Statistics South Africa 2012)
Electricity	(Anon 1997)	Access to electricity	(e)	(Statistics South Africa 2012)

3.5 Testing

By assembling the data in terms of individual districts for each service provision as well as that municipality's respective audit outcome, a correlation can be examined. Firstly, this paper will examine the nine individual provinces descriptively on a national level and at a provincial level, from the best service provision to the worst service provision. This will be compared to the audit outcomes in each province. Secondly, the correlation as a whole in terms of the average service provision of all the municipalities and the average respective audit outcome will be examined. This correlation will furthermore be observed for each of the six service provisions, in other words, an individual comparison of each service provision against the audit outcomes. Furthermore, a correlation of the average service provisions and the average audit outcomes achieved will be performed. This last correlation is intended to provide results that are less skewed by outliers as outliers are less apparent when combined into an overall average result.

4. RESULTS

The results that follow in Table 2 are broken down into provincial averages. Further detail making up these scores is given in Appendix 3. A descriptive analysis of each province in descending order of the level of service provision is given, along with an examination of each individual service indicatore to the audit outcomes.

4.1 National Results

Trends are found on an individual indicator level, as well as at an overall level. This can also be analyzed on a provincial level. Overall, electricity provision was the best delivered service in the country with a national average of 3.54 (Table 2).

In total only five provinces improved their audit outcomes (Western Province, Gauteng, Eastern Cape, Free State, and KwaZulu Natal while two provinces regressed (Limpopo and Mpumalanga). This refers to the quality of the Annual Financial Statements produced as well as compliance with legislation. Ninety percent of the municipalities that were audited had material non-compliances with legislation as well as an overall continued occurrence of irregular, fruitless and unauthorized spending. Twenty percent of the total municipalities received adverse or disclaimer of opinions with a further 25% receiving qualified audit outcomes. Thirty-five percent of the residual municipalities received unqualified audit opinions only by correcting previously qualified findings. In many of the audits it was discovered that documentation was missing - specifically in the tendering process - and it was noted that many vacancies existed in key management positions as well as a lack of skill at the required level for management (Auditor-General South Africa 2013a).

The key risk areas remained the same as previous years: confidentiality, access to data and the integrity of the data (Auditor-General South Africa 2013a).

Table 2. Average Provincial Service Provision

	Audit opinion	*Water*	*Sanitation*	*Housing*	*Electricity*	*Refuse Removal*	*Economic development*	*Total average score*	*Average score/ Average audit opinion*
Western Cape	**5.00**	4.00	4.00	3.17	4.00	4.67	3.50	**3.89**	**0.78**
Eastern Cape	**3.25**	2.25	1.88	3.50	3.25	2.25	1.75	**2.48**	**0.76**
North West	**3.00**	2.75	1.75	3.00	2.75	2.25	2.00	**2.42**	**0.81**
Kwazulu-Natal	**4.09**	2.09	1.64	3.91	3.00	1.91	1.73	**2.38**	**0.58**
Limpopo	**2.60**	2.20	1.20	3.80	3.60	1.40	2.40	**2.43**	**0.94**
Gauteng	**5.00**	4.00	4.00	2.80	4.00	4.80	2.80	**3.73**	**0.75**
Mpumalanga	**5.00**	3.33	2.00	3.33	4.00	2.33	2.00	**2.83**	**0.57**
Free State	**4.20**	4.00	3.20	3.00	4.00	4.00	2.40	**3.43**	**0.82**
Northern Cape	**3.80**	3.60	2.80	3.20	4.00	3.60	2.80	**3.33**	**0.88**
Overall average	**3.96**	2.98	2.42	3.38	3.54	2.92	2.31	**2.93**	**0.74**

4.2 Provincial Results and Substantiations

On average, the Western Cape and Gauteng municipalities outperformed the other provinces as well as the national average in terms of water provision and sanitation. In both provinces all the municipalities obtained ratings of 4 (Appendix 3). Both provinces also obtained high ratings in terms of refuse removal nationally and at a provincial level. The Western Cape Province also performed well in terms of employment rates with an overall ranking of first with average unemployment across the province being 19%, which is 11% below the national average (Appendix 3). The Western Cape's average electricity provision score of 4 also beat the national average (Appendix 3).

Similarly, the Gauteng municipalities also performed above the national average for employment marginally by 4% (Table 2). Gauteng's service delivery in terms of electricity was on par with the national average. All the Gauteng districts received clean audits, and there was an overall improvement on the findings of the previous year, however, 92% of auditees had material noncompliance with legislation (Auditor-General South Africa 2013d).

The third best performing province was The Free State province. In terms of water provision the province received scores of 4 for all the districts (1.02 points above the national average). In terms of refuse removal and sanitation the province outperformed the national averages. Electricity was above the national average by 0.56. In terms of unemployment, almost a third of The Free State's population is unemployed (32%). This is considered to be below satisfactory and slightly higher than the national unemployment level of 31%. Housing provision was below the national average. Two of the five districts (Mangaung Metropolitan municipality and the Xhariep municipality) received qualified audit reports, with the rest of the districts receiving clean audits (Auditor-General South Africa 2013c).

The Northern Cape received an average score of 3.33. In terms of water access, The Northern Cape scored 4 for all districts except John Taolo Gaetsewe District (Auditor-General South Africa 2013f) which received a 2. This district also underperformed in terms of sanitation and refuse removal (receiving scores of 1 for both). In terms of housing and electricity the province performed, on average, on par with the rest of the country. However, the province received a score of 2.80 for employment levels which is only slightly above the national average. Three of the five districts received qualified audit outcomes with the other two districts receiving clean audits.

All the other provinces on average underperformed the average score of 2.93. Mpumalanga province scored an average of 2.83. The North West province received only one clean audit out of four districts. Limpopo province received unfavorable audit outcomes for all five districts, which is a regression on the previous year's outcomes and 100% of the audits revealed material noncompliance with legislation (Auditor-General South Africa 2013e).

The Eastern Cape performed particularly poorly (Table 2). This could be due to the population of the Eastern Cape making up over 10% of the country (Statistics South Africa 2012). It is also possible that the Eastern Cape did not receive a proportionate share of resources. Three of the eight districts received clean audits and two districts received disclaimer of opinions, with the latter two receiving disclaimer of opinions for the sixth consecutive year (Auditor-General South Africa 2013b). Every service provision, other than housing, rated below the national average.

An important finding was that of housing provision being unintuitive. It appears that provinces who deliver other services relatively well have poor housing provision, whereas the provinces with the worst service provision and audit outcomes seemingly provide good housing. This could be due to housing scoring being too strict in that a district with an 80% level of housing is seen as the acceptable standard (with a score of 3) where as for other services such as refuse removal, a scoring of 80% would receive a score of 5, the highest rank. This paper examined formal and traditional housing as one and the same, which means that in provinces where formal housing is relatively low but traditional housing is very high, the score achieved might be better than other provinces that have higher levels of formal housing.

Overall, the Western Cape performed the best in terms of service provision and audit outcomes, shortly followed by the Gauteng province. The Free State and the Northern Cape also performed acceptably in terms of service provision and audit outcomes. KwaZulu Natal had the lowest service provision and only marginally underperformed the Eastern Cape, North West, and Limpopo provinces.

4.3 Correlation Results

By comparing the weighted score of each district municipality and the score received for its audit outcome in Table 3, a positive, yet weak correlation of 0.45 is found. This correlation is statistically significant. This suggests that a moderate positive relationship exists, thus confirming the H1 hypothesis, however the relationship is albeit not as strong as anticipated from the literature review.

Table 3. Correlation and P-Value per Service Provision

Service	*Water*	*Sanitation*	*Housing*	*Electricity*	*Refuse Removal*	*Economic development*	*Overall*
Correlation to audit outcome	0.49	0.41	-0.25	0.33	0.39	0.33	0.45
P-value	0.0002	0.0029	0.0747	0.0172	0.0042	0.0155	0.0009

The correlation is determined by comparing the weighted score of each district municipality and the score received for its audit outcome. The associated p-value is also expressed.

In terms of specific indicators, water provision has the most significant correlation of 0.49, with the results again being statistically significant. The only inverse correlation existed between housing provision and audit outcomes with a weak correlation of -0.25. These results were not statistically significant. Sanitation provision had a correlation of 0.41, refuse removal had a weak yet positive correlation of 0.39 and unemployment levels and electricity had the weakest positive correlations of 0.33. All of these four correlations obtained p-values below 5%. Thus the chances of receiving the same statistical results, if the null hypothesis (H0) was correct, are close to nil. This means that the null hypothesis (H0) must be rejected. It must also be noted that despite the housing indicator receiving a negative correlation, an overall positive correlation was still obtained, at a statistically significant level. Thus it is considered that if housing was left out of the score-card, an even higher overall correlation would have been obtained.

When each province's score was averaged and compared to the average audit outcome per province, a much higher correlation is found. This suggests that even though there are outliers that have no correlation, at a provincial level these outliers are not as frequent and thus not as significant. Or, alternatively, higher correlations exist for specific provinces and not for others.

By comparing each average audit outcome to each average service provision per province, ratios of 0.57 to 0.94 can be found (see last column of Table 2). This further substantiates that higher correlations exist for specific provinces. This is most likely due to the districts having different sources of resources as well as some districts having smaller areas to govern which theoretically makes for easier service provision. This means that the score-card developed by this paper is a good indication of the quality of administration for some areas but not for others. This suggests that if municipalities were to be evaluated on a score-card system, a more tailored approach for each individual province or district would be more useful. Even the lowest correlation of 0.56 (Table 2) is high enough to assume that the same factors are at play for a municipality's administration function and its service provision function, and that evaluating this relationship could lead to improvement in both spheres.

5. SCOPE FOR FURTHER RESEARCH

Only six indicators were examined in this paper with each indicator making up one factor. It is possible that the correlation would increase if more factors were considered such as public transport, public roads, and tourism. Furthermore, indicators could be made more relevant by combining more factors. For example, this paper examined economic development in terms of employment levels whereas other factors to consider, such as projects completed and gross domestic product per area, could provide more valuable results. It would be useful to examine housing provision further and whether this indicator is relevant, as without the results of housing provision the overall correlation of 0.45 would improve. This paper also only examines 52 districts (including the metropolitan municipalities). A further study could be done of all of the local municipalities.

CONCLUSION

It is evident from this paper that a correlation, if only moderate, exists between audit outcomes and municipal service provision. Even though this paper has not examined the causes of this correlation it can be inferred that, due to a lack of objective and proficient governance as well as poor execution of culpability, municipalities that do not have the capacity to produce clean financial statements also lack the ability to competently supply services to their district.

There is the expectation that service delivery protests are the result of anger towards the lack of accountability for municipalities (Managa 2012). Furthermore, a lack of accountability has resulted in collapsed governance and misrepresented communities (Grant & Devas 2003).

The quality of financial reporting is regarded as one of the top six key areas that need attention in upcoming years (Auditor-General South Africa 2013a). This would suggest that further measures should be taken by the South African Government to ensure a greater sense of accountability for municipalities in terms of audit outcomes together with service delivery. Possible solutions include fund-distribution based on municipal performance in annual audits as well as annual evaluations on service provision.

A more rounded approach to managing a municipality appears to be most successful, as municipalities with high service provision also have better audit outcomes. Thus, this paper concludes that examining both a municipality's audit outcomes and service provision, and basing an accountability function on these two fields, would be the most effective in improving the service provision in South Africa.

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APPENDIX

Appendix 1: National Averages of Service Provision and Related Scores

Water			*Sanitation*			*Housing*				*Electricity*		*Refuse Removal*		*Economic Development*		*Overall*
Statistics		Score	Statistics		Score	Statistics			Score	Statistics	Score	Statistics	Score	Statistics	Score	Average Score
In House	Communal		Flush/Chem	Pit/Bucket		Formal	Traditional	Informal		Access		Weekly Access		Unemployment		
68%	**21%**	**3,87**	**57%**	**35%**	**3,35**	**78%**	**12%**	**11%**	**3,54**	**80%**	**3,56**	**53%**	**2,92**	**31%**	**2,31**	**3,26**

Data collected from: Census 2011 (Statistics South Africa, 2012)

Appendix 2. A worked example of the scoring system

Cape Winelands District Municipality				***Water***			***Sanitation***			***Housing***					**Electricity**		**Refuse Removal**		**Economic Development**		**Average Score**
				Statistics		**Score**	**Statistics**		**Score**	**Statistics**				**Score**	**Stati-stics**	**Score**	**Stati-stics**	**Score**	**Statistics**	**Score**	
				In House	**Com-munal**		**Flush/ Chem**	**Pit/ Bucket**		**For-mal**	**Tradi-tional**	**Infor-mal**	**F&T**						**Unemploy ment**		
Audit opinion:	Unqualified with findings	A	5	89%	10%	4	92%	3%	4	83%	1%	16%	84%	3	93%	4	80%	5	14%	4	**4,00**

As can be seen in the above example, the Cape Winelands district received a clean audit. This resulted in the district receiving a score of 5 for its audit opinion. In terms of its water provision, the district provided 89% of its inhabitants with in-house water. This result in the district receiving a score of 4, based on the scoring system explained above. Similarly, as the Cape Winelands sanitation provision was at 92%, a score of 4 is given. The same method follows for housing, electricity, refuse removal and economic development by applying the scoring system explained above. The average score obtained by the Cape Winelands is the sum of the scores received across the six provisions, divided by six.

Appendix 3. Score-card data

District Municipality: **By Area (2013):**		***Audit Opinion***	**Opinion**		***Water***			***Sanitation***			***Housing***					***Electricity***		***Refuse Removal***		**Economic Development**		**Average Score**
					Statistics		**Score**	**Statistics**		**Score**	**Statistics**				**Score**	**Stati-stics**	**Score**	**Stati-stics**	**Score**	**Stati-stics**	**Score**	
					In House	**Com-munal**		**Flush/ Chem**	**Pit/ Bucket**		**For-mal**	**Tradi-tional**	**Infor-mal**	**F&T**						**Unemploy-ment**		
Western Cape		**Average:**		**5**	**91%**	**8%**	**4,00**	**90%**	**5%**	**4,00**	**86%**	**1%**	**13%**	**87%**	**3,17**	**92%**	**4,00**	**83%**	**4,67**	**19%**	**3,50**	**3,89**
Cape Winelands		Unqualified with findings	A	5	89%	10%	4	92%	3%	4	83%	1%	16%	84%	3	93%	4	80%	5	14%	4	**4,00**
Central Karoo		Unqualified with findings	A	5	97%	2%	4	90%	6%	4	98%	0%	2%	98%	4	89%	4	79%	4	23%	3	**3,83**
City of CT (M)		Unqualified with no findings	A	5	87%	12%	4	91%	5%	4	79%	0%	21%	79%	2	94%	4	94%	5	24%	3	**3,67**
Eden		Unqualified with findings	A	5	89%	9%	4	86%	8%	4	84%	1%	15%	85%	3	91%	4	86%	5	23%	3	**3,83**
Overberg		Unqualified with findings	A	5	88%	11%	4	90%	3%	4	83%	1%	16%	84%	3	91%	4	83%	5	17%	4	**4,00**
West Coast		Unqualified with no findings	A	5	96%	3%	4	88%	3%	4	89%	1%	10%	90%	4	94%	4	77%	4	15%	4	**4,00**

District Municipality: By Area (2013):		*Audit Opinion*	Opinion		*Water*			*Sanitation*			*Housing*					*Electricity*		*Refuse Removal*		Economic Development		Average Score
					Statistics		Score	Statistics		Score	Statistics				Score	Stati-stics	Score	Stati-stics	Score	Stati-stics	Score	
					In House	Com-munal		Flush/ Chem	Pit/ Bucket		For-mal	Tradi-tional	Infor-mal	F&T						Unemploy-ment		
Correlation:																						
Eastern Cape		**Average:**		**3,25**	**49%**	**29%**	**2,25**	**44%**	**36%**	**1,88**	**64%**	**29%**	**7%**	**93%**	**3,50**	**74%**	**3,25**	**40%**	**2,25**	**38%**	**1,75**	**2,48**
Alfred Nzo		Disclaimed with findings	C	1	16%	34%	1	13%	72%	1	42%	57%	1%	99%	4	46%	2	6%	1	44%	1	**1,67**
Amathole		Unqualified with findings	A	5	25%	45%	1	24%	56%	1	53%	42%	5%	95%	4	70%	3	16%	1	43%	1	**1,83**
Buffalo City (M)		Qualified with findings	B	3	71%	27%	3	75%	18%	3	73%	5%	22%	78%	2	81%	4	70%	4	35%	2	**3,00**
Cacadu/Sarah Baartman		Unqualified with findings	A	5	86%	10%	4	77%	18%	3	87%	2%	11%	89%	3	87%	4	79%	4	25%	3	**3,50**
Chris Hani		Qualified with findings	B	3	43%	44%	2	38%	38%	1	62%	36%	2%	98%	4	76%	3	28%	1	39%	2	**2,17**
Joe Gqabi		Unqualified with findings	A	5	42%	32%	2	12%	20%	1	61%	35%	4%	96%	4	69%	3	28%	1	35%	2	**2,17**
Nelson Mandela Bay (M)		Qualified with findings	B	3	90%	9%	4	90%	8%	4	88%	0%	12%	88%	3	90%	4	83%	5	37%	2	**3,67**
OR Tambo		Disclaimed with findings	C	1	19%	30%	1	19%	61%	1	44%	55%	1%	99%	4	70%	3	11%	1	44%	1	**1,83**
North West		**Average:**		**3**	**66%**	**27%**	**2,75**	**49%**	**44%**	**2**	**80%**	**2%**	**18%**	**83%**	**3,00**	**61%**	**3**	**47%**	**2**	**33%**	**2**	**2,42**
Bojanala Plat		Unqualified with findings	A	5	73%	17%	3	39%	57%	1	69%	1%	30%	70%	2	63%	3	49%	2	31%	2	**2,17**
Dr Kenneth Kuanda		Qualified with findings	B	3	91%	7%	4	88%	8%	4	82%	1%	17%	83%	3	63%	3	75%	4	30%	2	**3,33**
Dr Ruth Segomotsi		Qualified with findings	B	3	48%	48%	2	37%	52%	1	87%	3%	10%	90%	4	58%	2	27%	1	36%	2	**2,00**
Ngaka Modiri Molema		Disclaimed with findings	C	1	51%	35%	2	33%	60%	1	83%	4%	13%	87%	3	61%	3	35%	2	34%	2	**2,17**
Kwazulu-Natal		**Average:**		**4,09**	**53%**	**26%**	**2,09**	**43%**	**48%**	**1,64**	**68%**	**27%**	**5%**	**95%**	**3,91**	**71%**	**3,00**	**35%**	**1,91**	**36%**	**1,73**	**2,38**
Amajuba		Unqalified with findings	A	5	76%	16%	3	56%	40%	2	88%	7%	5%	95%	4	84%	4	57%	3	39%	2	**3,00**
Ethekwini (M)		Unqalified with findings	A	5	81%	16%	4	78%	20%	3	80%	4%	16%	84%	3	90%	4	86%	5	30%	2	**3,50**
Ilembe		Unqalified with findings	A	5	44%	37%	2	44%	50%	2	65%	26%	9%	91%	4	73%	3	34%	2	31%	2	**2,50**
Sisonke/Harry Gwala		Unqalified with findings	A	5	33%	32%	1	28%	69%	1	41%	55%	4%	96%	4	63%	3	21%	1	36%	2	**2,00**
Ugu		Disclaimer of opinion	C	1	34%	49%	1	36%	59%	1	66%	30%	4%	96%	4	72%	3	25%	1	35%	2	**2,00**
Umgungundlovu		Unqalified with findings	A	5	78%	13%	3	56%	41%	2	71%	22%	7%	93%	4	86%	4	44%	2	30%	2	**2,83**
Umkhanyakude		Qualified with findings	B	3	37%	25%	1	31%	49%	1	72%	26%	2%	98%	4	38%	1	9%	1	43%	1	**1,50**
Umzinyathi		Unqalified with findings	A	5	34%	32%	1	29%	58%	1	55%	43%	2%	98%	4	49%	2	20%	1	37%	2	**1,83**
Uthukela		Disclaimer with findings	C	1	50%	30%	2	40%	51%	2	67%	32%	1%	99%	4	75%	3	33%	2	40%	1	**2,33**
Uthungulu		Unqualified with no findings	A	5	65%	19%	3	44%	44%	2	71%	27%	2%	98%	4	76%	3	30%	2	35%	2	**2,67**
Zululand		Unqualified with findings	A	5	53%	16%	2	33%	46%	1	74%	25%	1%	99%	4	70%	3	22%	1	41%	1	**2,00**
Limpopo		**Average:**		**2,6**	**50%**	**36%**	**2,20**	**25%**	**68%**	**1**	**91%**	**4%**	**6%**	**94%**	**4**	**82%**	**3,60**	**23%**	**1**	**33%**	**2**	**2,43**
Capricorn		Qualified	B	3	62%	27%	3	29%	66%	1	92%	1%	7%	93%	4	87%	4	30%	2	37%	2	2,67

District Municipality: **By Area (2013):**		***Audit Opinion***	**Opinion**		***Water***			***Sanitation***			***Housing***					***Electricity***		***Refuse Removal***		**Economic Development**		**Average Score**
					Statistics		**Score**	**Statistics**		**Score**	**Statistics**				**Score**	**Stati-stics**	**Score**	**Stati-stics**	**Score**	**Stati-stics**	**Score**	
					In House	**Com-munal**		**Flush/ Chem**	**Pit/ Bucket**		**For-mal**	**Tradi-tional**	**Infor-mal**	**F&T**						**Unemploy-ment**		
Mopani	(average 3/5)	Qualified	B	3	40%	43%	2	23%	66%	1	95%	3%	2%	98%	4	52%	2	17%	1	39%	2	**2,00**
Sekhukhune	(average 5/5)	Qualified	B	3	43%	35%	2	9%	86%	1	91%	3%	6%	94%	4	88%	4	8%	1	21%	3	**2,50**
Vhembe		Disclaimer with findings	C	1	33%	52%	1	16%	74%	1	88%	10%	2%	98%	4	97%	4	14%	1	39%	2	**2,17**
Waterberg		Qualified	B	3	71%	24%	3	50%	46%	2	88%	1%	11%	89%	3	87%	4	44%	2	28%	3	**2,83**
Gauteng		**Average:**		**5**	**91%**	**10%**	**4,00**	**86%**	**12%**	**4**	**81%**	**0%**	**19%**	**81%**	**2,80**	**88%**	**4**	**86%**	**5**	**27%**	**3**	**3,73**
City of JHB (M)		Unqualified with findings	A	5	92%	7%	4	91%	8%	4	82%	0%	18%	82%	3	91%	4	95%	5	25%	3	**3,83**
City of Tshwane (M)		Unqualified with findings	A	5	89%	8%	4	80%	19%	4	81%	0%	19%	81%	3	89%	4	81%	5	24%	3	**3,83**
Ekurhuleni (M)		Unqualified with findings	A	5	97%	12%	4	88%	10%	4	84%	0%	16%	84%	3	89%	4	88%	5	29%	3	**3,83**
Sedibeng		Unqualified with no findings	A	5	93%	6%	4	90%	9%	4	85%	0%	15%	85%	3	91%	4	88%	5	32%	2	**3,67**
West Rand		Unqualified with findings	A	5	83%	15%	4	83%	15%	4	74%	0%	26%	74%	2	82%	4	77%	4	26%	3	**3,50**
Mpumalanga		**Average:**		**5**	**74%**	**15%**	**3,33**	**49%**	**45%**	**2**	**83%**	**5%**	**12%**	**88%**	**3,33**	**86%**	**4**	**46%**	**2**	**31%**	**2**	**2,83**
Ehlanzeni		Unqualified with no findings	A	5	58%	23%	2	27%	63%	1	92%	3%	5%	95%	4	89%	4	25%	1	34%	2	**2,33**
Gert Sibande		Unqualified with findings	A	5	81%	10%	4	69%	26%	3	73%	10%	17%	83%	3	83%	4	64%	4	30%	2	**3,33**
Nkangala		Unqualified with findings	A	5	82%	11%	4	52%	45%	2	84%	2%	14%	86%	3	86%	4	48%	2	30%	2	**2,83**
Free State		**Average:**		**4,2**	**90%**	**8%**	**4,00**	**72%**	**25%**	**3,20**	**83%**	**2%**	**15%**	**85%**	**3,00**	**90%**	**4**	**71%**	**4,00**	**32%**	**2,40**	**3,43**
Fezile Dabi		Unqualified with findings	A	5	92%	7%	4	81%	17%	4	84%	0%	16%	84%	3	90%	4	82%	5	34%	2	**3,67**
Lejweleputswa		Unqualified with findings	A	5	91%	7%	4	79%	18%	3	80%	0%	20%	80%	3	91%	4	80%	5	37%	2	**3,50**
Mangaung (M)		Qualified with findings	B	3	87%	11%	4	64%	33%	3	85%	1%	14%	86%	3	91%	4	79%	4	28%	3	**3,50**
Thabo Mofutsanyana		Unqualified with findings	A	5	87%	10%	4	54%	43%	2	78%	7%	15%	85%	3	87%	4	49%	2	35%	2	**2,83**
Xhariep		Qualified	B	3	94%	4%	4	82%	12%	4	88%	0%	12%	88%	3	92%	4	66%	4	27%	3	**3,67**
Northern Cape				**3,8**	**79%**	**18%**	**3,60**	**66%**	**25%**	**2,80**	**85%**	**3%**	**12%**	**88%**	**3,20**	**86%**	**4**	**65%**	**3,60**	**26%**	**2,80**	**3,33**
Frances Baard		Unqualified with findings	A	5	85%	13%	4	80%	11%	4	83%	1%	16%	84%	3	83%	4	74%	4	34%	2	**3,50**
John Taolo Gaetsewe		Qualified	B	3	41%	56%	2	31%	58%	1	77%	12%	11%	89%	3	87%	4	26%	1	30%	2	**2,17**
Namakwa		Qualified	B	3	95%	2%	4	73%	22%	3	95%	2%	3%	97%	4	86%	4	80%	5	20%	3	**3,83**
Pixley ka Seme		Qualified	B	3	89%	10%	4	74%	17%	3	87%	1%	12%	88%	3	85%	4	73%	4	28%	3	**3,50**
Siyanda/ ZF Mgcawu		Unqualified with findings	A	5	86%	9%	4	73%	16%	3	81%	1%	18%	82%	3	87%	4	70%	4	19%	4	**3,67**
Overall average:				**3,96**	**68%**	**21%**	**2,98**	**57%**	**35%**	**2,42**	**78%**	**12%**	**11%**	**89%**	**3,38**	**80%**	**3,54**	**53%**	**2,92**	**31%**	**2,31**	**2,93**

SHORT-TERM AND LONG-TERM EFFECTS OF IFRS ADOPTION ON DISCLOSURE QUALITY AND EARNINGS MANAGEMENT

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Abstract

This study investigates the effect of IFRS adoption on the transparency of financial reporting in Germany. For a sample period from 1995 to 2012, we analyze the development of the degree of earnings management and of disclosure quality using discretionary accruals and disclosure quality scores from an annual report 'beauty contest' published by a German business journal as proxies. We find that IFRS adoption is associated with an increase in disclosure quality and with an initial increase in the extent of earnings management. We argue that the latter is driven by factors such as low compliance, lack of experience and weaker enforcement in the early years of IFRS accounting and show that the degree of earnings management decreases from the 'early' to the 'mature' phase of IFRS accounting. Finally, we provide evidence for a negative association between disclosure quality and earnings management indicating that disclosures potentially constrain earnings management.

Keywords: IFRS Adoption, Earnings Management, Earnings Quality, Disclosure Quality

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1. INTRODUCTION

Since 2005, European listed companies are required to prepare their consolidated financial statements according to International Financial Reporting Standards (IFRS)[30]. This is the result of the so-called "IAS-Regulation" (Regulation (EC) No. 1606/2002) which formulates two objectives directly related to financial reporting: (higher) comparability and transparency of financial statements. Although IFRS have been adopted in the European Union (EU) for some time, academics have failed to deliver compelling, unambiguous evidence for the effects of IFRS adoption on financial reporting quality, to date.[31]

In this paper, we focus on the effects of IFRS adoption on the transparency of financial reporting which, in our perception, have mostly been evaluated by measures of the properties of earnings ("earnings transparency").[32] A large part of this research examines the effects on the extent of earnings management accompanying the regulatory change. However, evidence for a decrease of the degree of earnings management, and thus an increase in financial reporting transparency,[33] is not yet conclusive. In particular, studies using discretionary accruals as a proxy for earnings management often do not support the general assumption that the adoption of IFRS leads to higher transparency (Ahmed et al., 2013). Instead, they often find an increase or no significant change rather than a decrease in the extent of discretionary accruals studying the very first years after IFRS adoption (e.g. van Tendeloo and Vanstraelen, 2005; Callao and Jarne, 2010).

Undoubtedly, users of financial reporting are interested beyond such aggregate measures of earnings quality (Brüggemann et al., 2013). Moreover, studies analyzing the effects on specific properties of accounting measures do not account for potential changes regarding the information content of annual reports published by firms applying IFRS (Daske and Gebhardt, 2006).

[30] In the following, we use the abbreviation IFRS when referring to the accounting standards issued by the International Accounting Standards Board (IASB) or its predecessor, the International Accounting Standards Committee (IASC). Standards issued by the IASC are called International Accounting Standards (IAS).

[31] See the findings of Soderstrom and Sun (2007) and Brüggemann et al. (2013) who review the literature related to voluntary and mandatory adoption of IFRS, respectively.

[32] Similarly, Brüggemann et al. (2013) observe that IFRS adoption studies mostly use 'earnings quality' metrics.

[33] Being aware that earnings management can also be used to signal private information, we interpret earnings management opportunistically which is in line with the majority of earnings management studies regarding IFRS adoption. For example, Barth et al. (2008) predict companies with earnings of higher quality to exhibit less earnings management and point out that this prediction is consistent with prior literature.

Therefore, researchers have examined the effects of IFRS adoption on the quantity and the quality of disclosures that typically accompany the primary financial statements (hereafter: disclosure quality), a different dimension of transparency. Contrary to the results regarding earnings management, research examining disclosure quality provides unanimous support for an increase in transparency in the course of the switch to international accounting standards (Leuz and Verrecchia, 2000; Daske and Gebhardt, 2006; Glaum et al., 2013). Since prior research indicates that disclosure quality and earnings management are negatively related (e.g. Lobo and Zhou, 2001; Shalev, 2009) and that disclosures facilitate the detection of earnings management (Hunton et al., 2006; Jo and Kim, 2007), enhanced disclosures under IFRS have been brought forward as one argument to expect a decrease in earnings management after the switch to IFRS (see Doukakis, 2014). This argument and the different effects of IFRS adoption on earnings management and disclosure quality documented in the literature make the association between these dimensions of transparency around the regulatory change a matter of great interest that has not been addressed by prior literature.

In our paper, we examine the effects of IFRS adoption on earnings management as well as disclosure quality. We focus on Germany which allows using a specific proxy for disclosure quality, namely the disclosure scores of the "Best Annual Report" 'beauty contest' of the German business journal *manager magazin*, which are publicly available from 1995 to 2012.[34] Since prior research had to study some few years around the adoption of IFRS and the need to study longer time horizons has been explicitly emphasized (e.g. Callao and Jarne, 2010), we are particularly interested in the development of transparency from the first few years, the 'early' phase of IFRS accounting, to the 'mature' phase. Moreover, we examine the nature of the relationship between disclosure quality and the degree of earnings management.

Consistent with prior research, we find an increase in disclosure quality accompanying the transition from German GAAP to IFRS. Contrary, we find a significantly higher level of earnings management under IFRS compared to German GAAP. However, this seems to be driven by observations from the first few years of IFRS reporting, since our results indicate a significant decrease in the extent of earnings management from the 'early' phase of IFRS accounting to the 'mature' phase. Comparing the degree of earnings management under German GAAP to 'mature' IFRS observations, we do not find a significant difference indicating that the extent of earnings management does not increase under IFRS compared to German GAAP in the longer run. We interpret this as an improvement in transparency over time attributable to learning effects of preparers, users, and auditors, developing enforcement, diminishing effects resulting from the application of IFRS 1 (First-time Adoption of IFRS), and emerging common guidelines and interpretations fostering more consistent application of the new standards. Finally, we show that disclosures have the potential to constrain earnings management, especially when accounting standards require comparatively few disclosures and/or when common guidelines and interpretations are not yet developed and financial statements are influenced by low compliance, little experience or weak enforcement as in the 'early' phase of IFRS accounting.

Our findings contribute to the widespread debate on the effects of IFRS adoption highlighting the importance to study time horizons beyond the few years around the regulatory change. Considering the dimension of the introduction of IFRS in the EU, regulators, standard setters and other financial reporting stakeholders should clearly be interested in the long-term effects rather than focused on short-term outcomes. Thus, our results may mitigate concerns raised by prior 'short horizon' studies documenting increasing earnings management behavior under IFRS (e.g. Callao and Jarne, 2010). Our results regarding the negative association between disclosures and earnings management are of potential interest to both standard setters and analysts. The former should feel encouraged to demand high quality disclosures, especially with regard to management's estimates and assumptions, while the latter should be aware of the use of discretionary accounting in the absence of disclosures.

The remainder of this paper is organized as follows. Section 2 describes the institutional background by presenting the German accounting environment and its development towards IFRS. Section 3 reviews related literature and develops our hypotheses. Section 4 describes our research design, our data, and the measurement of disclosure quality and earnings management. Section 5 presents our results next to robustness checks. Section 6 concludes.

2. INSTITUTIONAL BACKGROUND: DEVELOPMENT OF THE GERMAN ACCOUNTING ENVIRONMENT

For our study, we focus on Germany, a continental European country that has been characterized as a code-law country having had relatively weak investor protection rights (La Porta et al., 2000). Overviews of the German accounting system have been provided by several authors (e.g. Harris et al., 1994; van Tendeloo and Vanstraelen, 2005; Ferrari et al., 2012) which is why we limit our remarks to the fundamental characteristics and developments towards mandatory IFRS adoption. Traditionally, German accounting according to the German Commercial Code ("Handelsgesetzbuch", HGB) mostly aims at protecting the interests of firms' creditors and is heavily influenced by tax regulations (van Tendeloo and Vanstraelen, 2005; Glaum et al., 2013). While the dominant valuation principle is prudence (Harris et al., 1994; Ferrari et al., 2012), German GAAP has been characterized as providing a

[34] There are three more reasons for our focus on Germany. First, the large differences between German GAAP and IFRS as well as relatively high compliance levels likely result in more powerful tests on the effects of IFRS adoption (Bartov et al., 2005; Soderstrom and Sun, 2007). Second, since German firms account for a substantial part of the firms worldwide that reported under IFRS in the 1990s (see Daske and Gebhardt (2006) for an analysis of the number of firms adopting IFRS between 1996 and 2004), the effects of the regulatory change can be studied particularly well in the German setting (see also Glaum et al., 2013). Third, our focus on a single country removes the need to put emphasis on country-specific factors that are not related to the financial reporting system but could potentially be confounding (Barth et al., 2008).

multitude of options with regard to inclusion and valuation of balance sheet items and opportunities to manage earnings (van Tendeloo and Vanstraelen, 2005).

In the 1990s, the accounting rules of the German system were criticized by Anglo-American investors and the financial press.[35] Leuz and Verrecchia (2000) outline the main arguments as follows: German GAAP allows too much discretion, especially with regard to the management of income through the use of large hidden reserves; German GAAP financial statements are subject to tax optimization incentives to a large extent; and German GAAP has deficits regarding disclosure requirements that are not sufficient to meet the demands of investors and analysts. Over the years, the financing as well as the ownership structure of German firms have changed since companies have been relying more and more on public equity markets. In the course of this development, the importance of (potential) investors as users of financial statements has risen (van Tendeloo and Vanstraelen, 2005).

In response to the complaints about German GAAP and the increasing importance of capital markets, many German firms adjusted their financial reporting and disclosure strategies and published additional information according to US GAAP or IFRS (Leuz and Verrecchia, 2000).[36] Nevertheless, German groups had to provide consolidated financial statements according to local GAAP until April 1998. At that time, the German Parliament and Federal Council decided to allow listed firms to issue consolidated financial statements that comply with either German GAAP or international accounting standards (either IFRS or US GAAP) by enacting the "Law to Facilitate the Raising of Capital" ("Kapitalaufnahmeerleichterungsgesetz", KapAEG).[37] The next important milestone in the development of the German financial reporting environment was the enactment of the so-called "IAS Regulation" in 2002 (Regulation (EC) No. 1606/2002). For fiscal years starting on or after 1 January 2005, the regulation requires European firms to prepare their consolidated financial statements in accordance with IFRS, if their securities are admitted to trading on a regulated market within the EU.[38]

In the meantime, the German stock exchange Deutsche Börse AG had introduced the requirement of international financial reporting for selected segments, such as the New Market (*Neuer Markt*) which required listed firms to publish financial statements in accordance with internationally recognized standards already in 1997. Similarly, companies seeking to comply with the listing requirements of the prime standard segment which was introduced in 2003 had to adopt international accounting standards prior to 2005, if they had not been listed before 1 January 2003.[39] Alongside the adoption of IFRS in the EU, the member states also introduced the requirement to establish, on a national basis, mechanisms to ensure the appropriate and consistent application of the international accounting rules. In Germany, the DPR ("Deutsche Prüfstelle für Rechnungslegung" – German Financial Reporting Enforcement Panel, FREP) was established in 2004 and started assessing financial statements with respect to compliance with the relevant accounting rules in 2005. Once a material error is detected, this finding has to be disclosed by the firm to the public, which may lead to negative capital market effects for the firm.[40]

In contrast to traditional German GAAP, IFRS aim at providing information that is useful to investors and creditors in deciding about the provision of financial resources to the reporting firm.[41] Consequently, IFRS differ substantially from German GAAP. Importantly, international accounting standards are said to require a greater amount of disclosures (Leuz and Verrecchia, 2000; Ashbaugh, 2001) and provide fewer accounting choices than German GAAP (d'Arcy, 2000). These features potentially constrain earnings management and therefore might lead to the intended increase in transparency of financial reporting. In this paper, we analyze the effects of IFRS adoption on disclosure quality and earnings management separately and asses the relationship between these dimensions of transparency to further understand the consequences of the regulatory change.

3. PRIOR RESEARCH AND HYPOTHESES

3.1 IFRS Adoption and Transparency

The requirement for European listed firms to prepare their consolidated financial statements in accordance with IFRS is the result of the so-called "IAS Regulation" in 2002. The stated objectives of the Regulation are *'…the adoption and use of international accounting standards in the Community […] in order to ensure a high degree of transparency and comparability of financial statements and hence an efficient functioning of the Community capital market and of the Internal Market'* (Regulation (EC) No. 1606/2002, Article 1). Thus, with regard to financial reporting, two objectives can be identified, transparency and comparability, which should enhance the functioning of capital markets and, finally, foster macroeconomic developments (Brüggemann et al., 2013). Assuming this causal chain, research provides broad evidence for positive capital market and macroeconomic effects of IFRS adoption.[42]

[35] See Leuz and Verrecchia (2000) who also provide some examples.

[36] Leuz and Verrecchia (2000) identify three different strategies to report (almost) in compliance with IFRS or US GAAP: 1. Preparation of financial statements as close as possible to international standards while still complying with German GAAP; 2. Reconciliation of income and shareholder's equity with international accounting standards while providing additional disclosures required by international standards in the notes; 3. Provision of an additional separate set of financial statements in accordance with international standards.

[37] See Bundesgesetzblatt, 1998, pt. 1, no. 22, Bonn, April 23, 1998.

[38] See Regulation (EC) No. 1606/2002, Article 4. Firms that were preparing their statements in accordance with US GAAP were allowed to apply IFRS at latest for fiscal year 2007 (see Regulation (EC) No. 1606/2002, Article 9(b)).

[39] See Daske and Gebhardt (2006) for a description of the transition process towards IFRS including the role of listing requirements for Germany, Austria and Switzerland.

[40] For a good overview of the enforcement of IFRS in the EU in general and, in particular, the specific German two-tier enforcement system consisting of a private body (the DPR) and the securities regulator (the federal agency BaFin) see Hitz et al. (2012).

[41] See Conceptual Framework, OB2.

[42] Several studies investigate the effects of the adoption of international accounting standards on capital markets, such as changes in bid-ask spreads

Besides those indirect measures of financial reporting quality, research has also examined the impact of international accounting standards on financial reporting quality directly. Consistent with the notion that there is no consensus on the characteristics of high quality financial reporting (see e.g. Daske and Gebhardt 2006; Glaum et al., 2013) studies have focused on different dimensions of comparability and transparency. First, the compliance of firms' financial statements with IFRS has been questioned. Street and Gray (2002) provide evidence for substantial compliance problems in IFRS financial reports for the year 1998. Verriest et al. (2013) and Glaum et al. (2013b) also find a considerable degree of non-compliance with regard to IFRS disclosures in the first year of IFRS application. Second, studies have investigated the effects of IFRS adoption on the comparability of financial statements documenting substantial differences across countries with regard to accounting policy choices (e.g. Kvaal and Nobes, 2010 and 2012; Haller and Wehrfritz, 2013).

Third, the quality of financial statements, especially regarding transparency, has been evaluated by measures of the properties of earnings but, to date, results have been inconclusive. For example, some researchers have addressed the value relevance of IFRS financial statements in capital markets (e.g. Bartov et al., 2005; Hung and Subramanyam, 2007; Jermakowicz et al., 2007; Aharony et al., 2010; Ahmed et al., 2013).[43] A common approach to evaluate the quality of earnings is to measure the degree of earnings management whereby earnings management refers to corporate decision makers affecting the outcomes of financial reporting by either structuring real transactions or using discretion over recognition or disclosure when preparing financial statements (see e.g. Healy and Wahlen, 1999; Roychowdhury, 2006; Ronen and Yaari, 2008). They may do so in order to achieve certain contractual outcomes that are dependent on accounting figures or to mislead users of financial reporting about the real performance of the company (Healy and Wahlen, 1999). Besides such opportunistic reasons, discretionary accounting choices can also be used as a means of signaling private information to outside investors or other external parties (Watts and Zimmermann, 1986; Healy and Wahlen, 1999). However, in most cases, higher quality earnings are assumed to exhibit less earnings management.[44]

Prior research reveals inconsistent results. For example, the results of Barth et al. (2008) generally indicate less earnings management in terms of earnings smoothing and earnings management towards positive earnings ("loss avoidance") for firms that adopted international accounting standards compared to (matched) non-adopters applying domestic GAAP in 21 countries. Contrarily, Jeanjean and Stolowy (2008) who examine the impact of the mandatory adoption of IFRS in Australia, France, and the UK conclude that the pervasiveness of earnings management behavior has not been reduced by the introduction of the new standards. The most widespread approach to measuring the degree of earnings management is to determine discretionary accruals. Ahmed et al. (2013) provide a comprehensive overview of research on the association between IFRS adoption and discretionary accruals highlighting the inconsistency of prior findings. On the basis of a meta-analysis, they further conclude that the regulatory change towards IFRS did not lead to a decrease in discretionary accruals.

For the German accounting environment, van Tendeloo and Vanstraelen (2005) provide evidence for a significant increase in earnings management measured by discretionary accruals following the voluntary adoption of international accounting standards for a sample period from 1999 to 2001. However, the authors find no significant differences between voluntary adopters of international standards and firms reporting under German GAAP after including hidden reserves into their analyses. Nevertheless, van Tendeloo and Vanstraelen (2005) conclude that the application of international accounting standards cannot be associated with a decrease in earnings management. These results are complemented by Callao and Jarne (2010) who examine the effects of mandatory IFRS adoption in 11 European countries. Covering a period of two years before and two years after the regulatory change in 2005, the authors find an increase in earnings management as discretionary accruals increased immediately after the IFRS adoption in Europe. Meanwhile, the results for Germany reveal significant changes only with regard to long-term discretionary accruals, while there are no significant differences regarding total and current accruals.

As one potential explanation for such inconsistent results regarding the financial reporting effects of the adoption of IFRS, Brüggemann et al. (2013) suggest that the (earnings quality) metrics applied are not capturing what is relevant to users of financial reporting. In a similar vein, Daske and Gebhardt (2006) point out that studies examining the effects of IFRS adoption on specific properties of accounting measures, such as earnings, *'by their design do not analyze the potential differences and changes in the information provided in the actual annual reports of firms adopting IFRS'* (p. 462). Obviously, the primary contents of financial statements, income statement and balance sheet, are not the only means by which firms communicate to external stakeholders. Accordingly, some researchers have examined the effects of the introduction of international accounting standards on disclosure quality, a different dimension of transparency.

(Leuz and Verrecchia, 2000; Muller et al., 2011), stock market liquidity (Daske et al., 2008), cost of capital (Daske, 2006) or the accuracy of analysts' forecasts (Glaum et al., 2013). Others have focused on macroeconomic effects, particularly on changes in foreign investment behavior (e.g. Beneish et al., 2015). Brüggemann et al. (2013) who review the literature on the economic consequences of mandatory IFRS adoption observe that *'there is plenty and almost unanimous evidence of positive capital market and macroeconomic effects'* (p. 29).

[43] With regard to Germany, results are mixed. Bartov et al. (2005) provide evidence for earnings computed according to US GAAP or IFRS being of higher value relevance than German GAAP earnings. For a DAX-30 sample of firms, Jermakowicz et al. (2007) also find support for higher value relevance as a result of the voluntary adoption of IFRS. However, Hung and Subramanyam (2007) find no evidence for an increase in value relevance from local GAAP numbers to those that are presented by German first-time adopters of international accounting standards. For a comprehensive overview of value relevance studies examining the effects of IFRS adoption see Ahmed et al. (2013) highlighting the mixed evidence delivered.

[44] See footnote 4 again.

Leuz and Verrecchia (2000) examine the quality of disclosures for German *DAX 100* firms by comparing ratings of an annual report 'beauty contest' published in the business journal *Capital*. For the fiscal years ending between July 1997 and June 1998, they find significantly higher mean and median ratings for firms that have adopted international reporting strategies[45] compared to firms that report solely according to German GAAP. Daske and Gebhardt (2006) analyze the effects of the adoption of internationally recognized financial reporting standards, IFRS and US GAAP, on the quality of annual reports for firms from Austria, Switzerland, and Germany. Using disclosure quality scores based on ratings of yearly "Best Annual Report" 'beauty contests' published in business magazines between 1996 and 2004,[46] they find a significant increase of disclosure quality in the course of the adoption of international standards, particularly IFRS. Importantly, their results also hold in multivariate analyses controlling for individual reporting incentives.[47]

For a sample of German listed firms from 1997 to 2005, Glaum et al. (2013) examine changes in the accuracy of analysts' earnings forecasts due to the introduction of international accounting standards and whether such changes can be attributed to increased disclosure. Measuring disclosure quality with scores obtained from a yearly "Best Annual Report" 'beauty contest' organized by the German business journal *manager magazin*,[48] they find that the quality of disclosures in the notes to the financial statements as well as in management reports is significantly higher for firms reporting under IFRS or US GAAP compared to firms reporting under German GAAP. Overall, Glaum et al. (2013) conclude that the introduction of international standards improved disclosure quality and the accuracy of analysts' forecasts, whereby the latter effect can, to some extent, be attributed to the former.

The overview of prior research shows that results concerning the effect of the adoption of IFRS on the quality of financial reporting are not unambiguous. Regarding transparency, on the one hand, studies provide clear evidence for an increase in disclosure quality under IFRS. This is in line with the notion that international accounting standards require more disclosures than German GAAP (Leuz and Verrecchia, 2000; Ashbaugh, 2001). On the other hand, research on the effects of IFRS adoption on earnings management is not unambiguous which reflects ambiguous theoretical reasoning.[49] While some advocate that international standards limit accounting choices compared to German GAAP (d'Arcy, 2000) and, thus, might reduce the scope for earnings management (Barth et al., 2008), it has been acknowledged that there is a range of explicit and implicit options and vague criteria under IFRS, too (Nobes, 2006 and 2013), that offer opportunities to manage earnings (Callao and Jarne, 2010). Furthermore, the application of any set of accounting standards requires substantial judgment, estimates, and the use of private information (Jeanjean and Stolowy, 2008).

Following the assumption that IFRS are of higher quality than local GAAP within the EU on which the introduction of IFRS is based, the inconclusive research findings affirm the notion that high quality standards are not necessarily sufficient for providing high quality financial information (Ball et al., 2003). For example, Christensen et al. (2013) show that positive capital market effects of IFRS adoption only materialized in countries that experienced concurrent changes in their accounting enforcement mechanisms. In fact, the accounting numbers observed are the result of the financial reporting system as a whole, including standards, their interpretation as well as enforcement and litigation (Barth et al., 2008). Thus, besides the use of a variety of metrics, different time periods, data sources, and diverse research designs (Barth et al., 2008), institutional factors such as varying degrees of investor protection or enforcement of accounting standards and the essential role of incentives for accounting decisions (see e.g. Ball et al., 2003) may have contributed to the inconclusiveness of prior research.

Against this background, it is important to note that prior research inevitably had to study rather short-time horizons after the adoption of IFRS. This may have contributed to understating positive effects on the transparency of financial reporting for several reasons. First, the initial years of IFRS application are likely to be influenced more heavily by the first-time adoption rules of the relevant standard IFRS 1 which includes several exceptions from retrospective application of IFRS. This can be seen as a *'structural break in the time series of firms' accounting numbers that will take several years to wash out'* (Brüggemann et al., 2013, p. 30). Second, the younger a standard-setting regime is, the more principle-based it likely is, since common guidelines and interpretations are developed over time (Nelson, 2003; Callao and Jarne, 2010). Assuming shared guidelines and interpretations to enhance consistent application and to reduce the scope for discretionary accounting decisions,[50] comparing GAAP that have been applied for decades to a recently adopted reporting regime leaves the latter with a 'disadvantage'.

Third, substantial non-compliance with the effective IFRS (Street and Gray, 2002; Verriest et al., 2013; Glaum et al., 2013b), especially in the early phase of IFRS accounting, could also adversely affect the quality of summary measures of the accounting process, such as earnings. We expect IFRS compliance to improve over time assuming that the more experienced accountants, auditors and users are, the better the quality of IFRS financial

[45] See footnote 7 for a description of these strategies.

[46] The "Best Annual Report" 'beauty contests' are published by the business magazines *Capital* and *Focus Money* in Germany (1996–2003), *Bilanz* in Switzerland (2001–2004), and *Trend* in Austria (1997–2004).

[47] For a discussion of Daske and Gebhardt (2006) see Gallery (2006).

[48] These scores also form the basis for our analyses. For a description of the "Best Annual Report" 'beauty contest' published by *manager magazin* see section 4.2. Please note that Glaum et al. (2013) have access to more detailed scores which is beyond what has been published in the business journal. This enables them to differentiate between the disclosure quality of notes and that of management reports.

[49] See Doukakis (2014) who describes various arguments regarding the effect of mandatory IFRS adoption on earnings management and does neither hypothesize nor find effects of the regulatory change on accrual-based and real earnings management for observations from 22 European countries between 2000 and 2010.

[50] The effect of common guidelines and interpretations on earnings management is not unambiguous. While the scope for accounting choices is probably reduced as standards become more rules-based, incentives for real activities management might increase concurrently.

statements is. Fourth, Germany's enforcement institution, the German FREP, started to examine financial statements in 2005. In addition to this important change, we also expect enforcement to undergo a learning curve as well as increasing awareness among preparers and auditors about the consequences of non-compliance.[51] Since accounting enforcement is key to financial reporting quality (e.g. Hope, 2003; Christensen et al., 2013), we expect a decrease in earnings management as a result of these effects.

Being interested in the effects of IFRS adoption on transparency in Germany, we assess the effects on both, the quality of corporate disclosures as well as on the degree of earnings management. While the literature does not provide unanimous support for the superiority of IFRS, we consider that the IASB intends IFRS to be *'high quality, understandable, enforceable and globally accepted financial reporting standards …* [which] *should require high quality, transparent and comparable information in financial statements and other financial reporting'* (Preface to IFRSs, par. 6(a)). Thus, the objectives of the IASB correspond to the objectives regarding transparency and comparability formulated by the "IAS Regulation". Accordingly, we expect an increase of transparency in the course of the adoption of IFRS, i.e. an increase of disclosure quality and a decrease of the degree of earnings management. Additionally, we follow our argumentation above and expect transparency under IFRS to increase over time as preparers, users, auditors and enforcers become more experienced and proficient in the application of IFRS, compliance improves, the effects of the first-time adoption rules diminish, and common guidelines and interpretations of the standards emerge. Hence, we formulate our first hypotheses as follows:

H1: *Transparency of financial reporting is higher under IFRS than under German GAAP.*

H2: *Transparency of financial reporting under IFRS increases over time.*

3.2 Association between Disclosures and Earnings Management

Next to the effects of IFRS adoption on earnings management and disclosure quality, we are interested in the relation between these two dimensions of transparency. One motivation of the IASB to require financial statements to comprise disclosures is to ensure that financial reporting faithfully represents what it purports to represent, e.g. by enhancing the reliability of management's estimates and assumptions (see e.g. IAS 1.BC81; IAS 36.BC199-.BC209). In support of this motivation, anecdotal evidence suggests that insufficient disclosures create opportunities to manage earnings through the use of biased estimates and assumptions.[52]

Theoretically, both corporate disclosures as well as earnings management are associated with information asymmetry. Intuitively, the disclosure of private information reduces information asymmetries between insiders, i.e. managers of the firm, and outsiders of the firm, particularly investors (Diamond and Verrecchia, 1991; Kim and Verrecchia, 1994). Empirical research provides support for a relation between disclosure and information asymmetry between investors and managers as well as for the economic benefits resulting from the reduction of information asymmetry (e.g. Lang and Lundholm, 1993 and 1996; Botosan, 1997).

Theoretical arguments also suggest a relation between information asymmetry and earnings management. In particular, analytical models assume information asymmetry between managers and investors to be a precondition for earnings management (Trueman and Titman, 1988; Dye, 1988). Richardson (2000) provides empirical support for this notion and finds a positive association between the level of information asymmetry and earnings management. The author concludes that the higher the level of information asymmetry, the higher the degree of earnings management, suggesting that *'information known about the firm and its earnings may limit the extent of earnings management performed by firm managers'* (p. 344).

Drawing upon these relations, research also examined the link between disclosure quality and earnings management or, more generally, earnings quality. Lobo and Zhou (2001) infer from the above that *'firms that disclose more information have less flexibility to manage earnings'* (p. 4) and, accordingly, disclosure quality is negatively related to the degree of earnings management. However, Francis et al. (2008) as well as Mouselli et al. (2012) point out that prior literature provides conflicting theoretical arguments regarding the nature of the relationship between disclosure quality and earnings quality. On the one hand, one could argue that firms with low earnings quality (high information asymmetry) have incentives to provide higher quality disclosures in order to reduce information asymmetry. On the other hand, one could view earnings quality and disclosure quality as complements and expect management's incentives to disclose additional information to decrease with lower earnings quality, because external parties have stronger concerns regarding the credibility of such disclosures, and vice versa.[53]

[51] While negative capital market effects resulting from SEC error announcements are well documented (e.g. Dechow et al., 1996), Hitz et al. (2012) find first evidence for negative effects in terms of abnormal returns, abnormal trading volumes and abnormal bid-ask spreads of FREP error announcements in Germany as well.

[52] See, for example, the following extracts from responses in relation to the impairment-only approach for goodwill accounting to the IASB's request for information during the Post-implementation Review on IFRS 3 "Business Combinations" in 2014. The European Securities and Markets Authority states (ESMA, 2014, p. 6): *'ESMA identified shortcomings related to the description of the management approach to determining the value(s) assigned to each assumption, whether those values(s) reflect past experience or, if appropriate, are consistent with external sources of information as required by paragraph 134(d)(ii) of IAS 36. The high level of subjectivity in determining many assumptions and estimates combined with disclosures requirements that prove difficult to be enforced creates an incentive for earnings management.'* Similarly, the SIX Exchange Regulation recommends to require additional disclosures (e.g. *'Disclosure of the terminal value in percent of the total recoverable amount'*) in its comment letter to the same IASB request and states (SIX Exchange Regulation, 2014, p. 4): *'We believe that the disclosure of this information would not only be useful for investors, but might also mitigate the use of unrealistically optimistic assumptions.'*

[53] See Francis et al. (2008) and Mouselli et al. (2012) for this discussion. Since Mouselli et al. (2012) use classical earnings management proxies and refer explicitly to earnings management when interpreting their results, presumably the opposing theoretical views can be transferred to the

Similar to this controversy about the nature of the relationship, theory predicting a negative (positive) relation between disclosures and earnings management (earnings quality) is not conclusive about the direction of causality.[54] As argued by Francis et al. (2008) and Blanco et al. (2014), causality might flow from earnings quality to disclosure quality, because firms that provide higher quality information via their earnings signal also have stronger incentives to provide additional information that would further reduce information asymmetry and yield related benefits (e.g. lower cost of capital). Additionally, improvements in the information environment (i.e. higher earnings quality) strengthen the incentives to provide high quality disclosures, because non-disclosure would more likely be interpreted as bad news.

Contrarily, experimental research indicates that users are more likely to see through earnings management practices when financial information is presented in a more transparent manner (e.g. Hirst and Hopkins, 1998) and that incentives to conduct earnings management are reduced as the likelihood of a detection increases (Hunton et al., 2006). This is in line with the standard setter's rationale that enhanced disclosure requirements limit management's discretion over assumptions and estimates thereby reducing the scope for earnings management. Shalev (2009) provides evidence for a negative association between the quality of business combinations disclosures and the degree of earnings management and adds a related perspective on causation arguing that *'lower disclosure level increases managers' flexibility to manage earnings in the future'* (p. 245).

Empirical evidence regarding the interaction between disclosures and earnings management is scarce, in particular for Continental European countries and the IFRS reporting regime. Francis et al. (2008) examine the relation between earnings quality and voluntary disclosure for a sample of 677 US firms in 2001. They find a significant relation that is complementary in nature, i.e. the higher the quality of earnings the more voluntary disclosures are provided by the firm. For a US sample between 2001 and 2006, Blanco et al. (2014) examine the relation between the quantity of segment disclosures and earnings quality. Documenting a significant positive association between current levels of the two constructs, they further examine the association between current (past) segment disclosure and past (current) levels of earnings quality. Since only current segment disclosure is related to past earnings quality levels, Blanco et al. (2014) argue that earnings quality is more likely to be a determinant of segment disclosure than vice versa. However, Jo and Kim (2007) provide evidence for a negative association between the frequency of disclosure and earnings management for SEO firms in the US and argue for the opposite direction of causality, i.e. increased disclosure lowers information asymmetry and facilitates the detection of earnings management which, accordingly, reduces incentives for earnings management.

Mouselli et al. (2012) examine the relationship between disclosure quality, defined as the number of future-oriented earnings statements in the narrative sections of annual reports, and the absolute value of discretionary accruals. For a UK sample and a period from 1997 to 2004, the authors find a negative association and conclude *'that firms with higher disclosure quality engage less in discretionary accruals'* (p. 37). A second study with a focus on UK firms has been conducted by Iatridis (2011) for the years from 2005 to 2009. Using a checklist to measure the quality of annual reports, the author provides initial evidence for a negative association between disclosure quality and the degree of earnings management under IFRS. These results are consistent with earlier findings of Lobo and Zhou (2001) who show that disclosure quality and earnings management are negatively related for a sample of firms with disclosure ratings of the Association for Investment Management and Research (AIMR) during the period from 1990 to 1995. Taken together, these findings suggest that firms that provide high (low) quality disclosures exhibit less (more) earnings management, i.e. the greater the amount and the higher the quality of disclosures, the smaller the room for (opportunistic) earnings management. In contrast, Shaw (2003) finds that *'higher disclosure quality is not always synonymous with less earnings management'* (p. 1050) when examining the association between financial analysts' ratings of disclosure quality and discretionary accruals for an earlier period from 1985 to 1989. In particular, the author concludes that firms that provide higher quality disclosures engage more aggressively in earnings smoothing than firms that provide lower quality disclosures.

Building on extant literature, we expect disclosure quality and earnings management to be related. In particular, since disclosures potentially facilitate the detection of earnings management by reducing information asymmetry, which has been described as a precondition to conduct earnings management, we expect a negative relation between these dimensions of transparency. Anecdotal evidence as well as the standard setter's rationale for requiring disclosures further support the assumption that the greater the amount and the better the quality of firms' disclosures are, the tighter the constraint which they put on (opportunistic) earnings management behavior. This line of argumentation regarding the relationship is intuitive, especially from an intertemporal perspective as argued by Shalev (2009). Being aware of alternative views as presented above, we therefore formulate our hypothesis on the association of disclosure quality and earnings management (*H3*) as follows:

H3: *Higher quality disclosures have a constraining effect on earnings management.*

4. RESEARCH DESIGN

4.1 Measurement of Earnings Management

Following prior literature, we principally rely on the Jones (1991) model to obtain a proxy for the degree of earnings management. However, we use the performance adjusted modified Jones model as in Kothari et al. (2005) and estimate the accrual process as a function of sales growth (adjusted for

relationship between disclosure quality and earnings management, in particular.

[54] See Blanco et al. (2014) for the following discussion.

growth in credit sales), property, plant and equipment (*PPE*) and return on assets (*ROA*). Beginning of period total assets (*A*) serve as denominator in this equation:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 + \beta_1 \frac{1}{A_{it-1}} + \beta_2 \frac{\Delta Sales_{it} - \Delta Receivables_{it}}{A_{it-1}} + \beta_3 \frac{PPE_{it}}{A_{it-1}} + \beta_4 ROA_{it-1} + \varepsilon_{it}$$

In this model, TA_{it} is total accruals and is calculated as follows (*Rephrased in Worldscope items total accruals is calculated as [*$\Delta WC02201 - \Delta WC02003$*]–[*$\Delta WC03051 - \Delta WC18232 - WC04828$*]–* $WC01151$):

$$\begin{aligned} TA_{it} &= (\Delta Current\ assets_{it} - \Delta Cash_{it}) \\ &- (\Delta Current\ liabilities_{it} - \Delta Current\ portion\ of\ long\ term\ debt_{it} - \Delta Income\ tax\ payable_{it}) \\ &- Depreciation\ and\ amortization\ expense_{it} \end{aligned}$$

We separately estimate this model for each industry in our sample.[55] The residuals of this model serve as firm-year specific estimators for the degree of earnings management. As earnings management might be income-increasing or income-decreasing, we analyze the absolute value of discretionary accruals. As robustness checks, we use the standard Jones (1991) model and the modified Jones model of Dechow et al. (1995) as well as the PM/ATO diagnostic of Jansen et al. (2012), an alternative earnings management measure that does not depend on estimates of accruals.

4.2 Measurement of Disclosure Quality

A variety of proxies have been used in prior research to assess the quality of disclosures including self-constructed disclosure indices, external disclosure ratings or disclosure scores from annual report 'beauty contests'.[56] Examples of researcher-constructed indices include Botosan (1997) and Francis et al. (2008). This approach requires the researcher's subjective assessment regarding the items to be included as well as their weighting. In addition to that, the coding is labour-intensive. For these reasons, self-constructed indices are typically hard to replicate and often result in small sample sizes. On the other hand, these indices can be applied to any firm which disposes of one limitation of proxies derived from external ratings which only include firms covered by the rating agency. Examples of studies using such external ratings include Healy et al. (1999) and Botosan and Plumlee (2002). One concern with these external ratings is that they reflect analysts' perceptions of disclosure quality rather than the firms' actual disclosure quality (Lang and Lundholm, 1996). However, analysts are among the primary users of financial reporting and should be familiar with the individual firm and its industry. Moreover, the most widely used external rating, the disclosure ratings published in the CFA institute (former: Association for Investment Management and Research (AIMR)) reports, is not available for all time periods. Further, the committee evaluating disclosure quality differs by industry and time.[57]

In this study, we follow a third approach by using scores extracted from an annual report 'beauty contest', namely the "Best Annual Report" (*"Bester Geschäftsbericht"*) ranking of the German business journal *manager magazin*. Similar rankings have also been used in prior research (e.g. Daske and Gebhardt, 2006; Hail, 2002; Glaum et al., 2013). Our measure provides a compromise solution to the trade-off between the advantages and disadvantages of researcher-constructed and externally provided scores. By using this measure we avoid some concerns with regard to the self-constructed scores because we can neither influence the assessment itself nor the weighting. As a matter of course, the score is still subject to judgment by the scholars who performed the ranking. As the "Best Annual Report" ranking has been computed for a long time period and for a large number of firms, we have more than 1,500 firm-year observations in our sample which mitigates another concern with self-constructed disclosure indices. Furthermore, the time period from 1995 to 2012 is suitable for our research as it covers both German GAAP requirement periods as well as a number of international GAAP requirement periods.

The "Best Annual Report" ranking has recently been used in a study of Glaum et al. (2013).[58] As they provide an extensive description of the ranking, we focus on the main characteristics. The 'beauty contest' is conducted annually and includes mainly firms from the exchange indices DAX, MDAX, SDAX, TecDAX and Nemax-50[59] of the German stock exchange as well as European firms included in the STOXX index. In each year, annual reports including financial statements are evaluated with regard to different categories, such as 'language' and 'design' of the report and, most importantly, regarding the 'content' of disclosures. To capture the development of accounting and regulation, rankings need to change over time (Daske and Gebhardt, 2006). In some years, the aforementioned categories were complemented by the categories 'financial communication' and 'reporting efficiency' and an additional expert jury evaluation. Furthermore, the weighting of the individual categories changed over time. Therefore, we focus solely on the 'content' score as our measure for disclosure quality.

The 'content' category has been part of the ranking throughout the whole sample period from 1995 to 2012. For this score, each annual report is assessed by analysts of the University of Münster using a checklist of more than 300 items. The

[55] The industry classification is based on SIC codes (Ernstberger et al., 2013, and Frankel et al., 2002).
[56] See Artiach and Clarkson (2011) for a comprehensive discussion of the first two approaches.
[57] See Artiach and Clarkson (2011), pp. 24-32, for a more detailed discussion.
[58] See Glaum et al. (2013), pp. 91-92.
[59] The Nemax-50 index included firms from sunrise industries such as IT, biotechnology and telecommunications. This index has been closed in 2003 as a result of the dot-com bubble.

checklist covers the notes to financial statements, the management report as well as other disclosures that are provided additionally within the annual reports.[60] The items reviewed are weighted based on surveys of financial experts (Armeloh, 1998), resulting in a total disclosure score between 0 and 100.

With regard to the notes to financial statements which contain information about accounting policies, individual balance sheet items as well as income and expense positions and additional supplementing information regarding the firm's financial situation and performance, the evaluation considers whether and how detailed the information has been disclosed. Similarly, the management report which provides more future-oriented information, such as information about the firm's risks and opportunities, is evaluated by assessing whether and in which form (e.g. general verbal or quantitative information) the information is reported (Glaum et al., 2013). Thus, the checklist covers both the quantity and the quality of disclosures which is why the 'content' score of the "Best Annual Report" contest is a good approximation for disclosure quality as a measure of transparency.

4.3 Research Approach

Univariate analyses

To test our hypotheses, we start by conducting several t-tests and Mann-Whitney-Wilcoxon-tests for the differences in means and medians. First, we test the differences in means and medians of discretionary accruals and disclosure quality scores across the two reporting regimes. In line with our first hypothesis, we expect an increase of transparency in the course of the adoption of IFRS, i.e. an increase of disclosure quality and a decrease of the degree of earnings management.

In a second step, we analyze the differences across the early and mature phase of the individual firms' IFRS accounting. For these analyses, we define 'early' as the first four years of the individual firms' IFRS accounting, irrespective of whether the adoption was voluntary or not. We choose this cut-off point to obtain a balanced sample size and period length across the two groups.[61] The results are robust to other reasonable specifications of the phases, e.g. definition of the first three or the first five years of the individual firms' IFRS application as 'early'.

Multivariate analyses – earnings management

The univariate approach does not account for the effects of different firm characteristics and incentives or for changes over time on our metrics of transparency. Therefore, we also conduct different sets of regression analyses. The first set is intended to test the effect of IFRS adoption on discretionary accruals, whilst the second set is intended to test the effect of IFRS adoption on disclosure quality. By combining both models, we aim to test the constraining effect of disclosures on earnings management. We construct the following model (I) for earnings management analyses. All variables are defined in Appendix 1.

$$\begin{aligned}|DA| = {}& \alpha_0 + \beta_1 IFRS_{it} + \beta_2 Total\ Assets_{it} + \\ & \beta_3 Leverage_{it} + \beta_4 Sales\ growth_{it} + \beta_5 Cfo_{it} + \\ & \beta_6 Change\ PPE_{it} + \beta_7 CfoD_{it} + \beta_8 LossD_{it} + \\ & \beta_9 Big4_{it} + \beta_{10} New\ Market_{it} + \textstyle\sum \gamma_i Industry_i + \\ & \textstyle\sum \delta_i Year_i + \varepsilon_{it}\end{aligned} \tag{I}$$

The choice of control variables is based on prior literature and follows Houqe et al. (2012) and van Tendeloo and Vanstraelen (2005). *IFRS* is a dummy variable equal to 1 for firm-year observations with IFRS reporting.[62] We include *Total Assets* to control for size-related incentives for earnings management because prior research suggests that larger firms make more income-decreasing accounting choices in response to greater political and regulatory scrutiny (Watts and Zimmerman, 1986). However, more recent studies predict that size is positively associated with earnings quality because of relatively higher costs of internal control procedures for small firms.[63] Given the fact that we analyze the absolute value of discretionary accruals (|*DA*|) and interpret earnings management opportunistically, the latter would result in a negative association between |*DA*| and *Total Assets*. Next, we include *Leverage* to control for the leverage-related incentives for earnings management. The direction of the effect of leverage on earnings management, however, is not unambiguous. On the one hand, it is argued that higher leveraged firms are closer to debt covenant violations and are therefore more willing to engage in (income-increasing) earnings management (Watts and Zimmerman, 1986; DeFond and Jiambalvo, 1994; Houqe et al., 2012). On the other hand, it is argued that higher leveraged firms have incentives to engage in income-decreasing earnings management activities for the sake of contractual renegotiations (Becker et al., 1998; van Tendeloo and Vanstraelen, 2005). As we analyze the absolute value of discretionary accruals, this would result in a positive association between |*DA*| and *Leverage*. Prior literature suggests a positive relation between the degree of earnings management and growth because growth companies have higher incentives to manage earnings opportunistically in order to attract investors (Houqe et al., 2012). To capture this effect we include *Sales Growth* and the change in property, plant and equipment (*Change PPE*) in our model. Furthermore, we include *Cfo* to control for the association between operating cash flow and accruals. Following van Tendeloo and Vanstraelen (2005), we expect a positive relation between *Cfo* and the absolute value of discretionary accruals.

Additionally, we include the dummy variables *CfoD* and *LossD* which are intended to control for

[60] The overall 'content' score of the annual report contest which forms our proxy for disclosure quality is derived from the weighted scores for the notes to financial statements (44.88%), management report (43.12%) and other disclosures (12.00%). For detailed information about the "Best Annual Report" contest and the 'content' score see Baetge et al. (2012), pp. 63–68 and Oberdörster (2009), pp. 88–100.

[61] For firms adopting IFRS mandatorily in 2005, the cut-off point chosen results in four "early IFRS years" and four "mature IFRS years".

[62] The distinction between IFRS and local GAAP preparers is based on the Datastream item 'Accounting Standards Followed' (WC07536) using the coding of Daske et al. (2013).

[63] See Dechow et al. (2010) for a discussion of the determinants of earnings management.

the higher incentives for firms making losses and experiencing negative operating cash flows to engage in earnings management. Next, we include the dummy variable *Big4* to control for the constraining effect of larger auditors on the degree of earnings management (Francis et al., 1999; Becker et al., 1998). In Germany, there are firms which had to mandatorily adopt either IFRS or US GAAP prior to 2005 because Deutsche Börse AG required the financial statements of firms listed on the New Market – a market segment for innovative and fast-growing firms – to be prepared in accordance with international standards. Therefore, we include the dummy *New Market* in our analyses. Finally, we include dummy variables for years and industries.[64] We run the regressions with heteroskedasticity-adjusted robust standard errors clustered by firm and year (Petersen, 2009) and demeaned variables. We hypothesize that the introduction of IFRS leads to a decrease in the degree of earnings management. Accordingly, we expect the coefficient β_1 in the regression above to be negative and significant.

To separately analyze the effect of the early and the mature phase of the individual firms' IFRS accounting on discretionary accruals, we construct model (II) below. Here, the dummy *IFRS* is replaced by the two dummy variables *Early IFRS* and *Mature IFRS*, which indicate whether the firm-year observation belongs to the early or mature phase of IFRS reporting. In accordance with our hypotheses H1 and H2, we expect that the coefficient for *Mature IFRS* is not only negatively significant, but also indicates a stronger decrease of the level of earnings management than the coefficient for *Early IFRS*.

$$|DA| = \alpha_0 + \beta_1 Early\ IFRS_{it} + \beta_2 Mature\ IFRS_{it} + \beta_3 Total\ Assets_{it} + \beta_4 Leverage_{it} + \beta_5 Sales\ growth_{it} + \beta_6 Cfo_{it} + \beta_7 Change\ PPE_{it} + \beta_8 CfoD_{it} + \beta_9 LossD_{it} + \beta_{10} Big4_{it} + \beta_{11} New\ Market_{it} + \sum\gamma_i Industry_i + \sum\delta_i Year_i + \varepsilon_{it} \quad \text{(II)}$$

Multivariate analyses – disclosure quality

We construct the following model (III) to examine the effect of IFRS adoption on disclosure quality. In this equation, *DQ* is the score of the category 'content' of the "Best Annual Report" 'beauty contest' of *manager magazin*. For details about the calculation of all other variables please refer to Appendix 1. The selection of control variables is again based on prior literature and follows Glaum et al. (2013).[65] In general, disclosure quality is associated with firm size, financing needs, and performance (Lang and Lundholm, 1993; Leuz and Verrecchia, 2000). Therefore, we include *Total Assets* to proxy for size, *Leverage* to capture the incentives of more highly leveraged firms, and *ROA* to control for firm performance.

Furthermore, the ratio of a firm's foreign sales to its total sales (*Foreign Sales*) is included to proxy for the higher incentives for disclosure for more internationally active firms, whereas the percentage of closely held shares (*Close*) is included to proxy for ownership concentration. *Beta* is included to proxy for company risk. In addition, we include the dummy variables *Big4* and *US-Listing* to control for the effects of two firm-specific choices, i.e. the choice of a large auditor and the choice to cross-list overseas, on disclosure quality. We expect that both decisions have a positive influence on disclosure quality. Finally, we also include the dummy *New Market* in these analyses. As in models (I) and (II), we include fixed effects for years and industries, employ heteroskedasticity-adjusted robust standard errors clustered by firm and year (Petersen, 2009) and use demeaned variables. In accordance with hypothesis H1, we expect the coefficient β_1 for *IFRS* in the following model (III) to be significantly positive.

$$DQ = \alpha_0 + \beta_1 IFRS_{it} + \beta_2 Total\ Assets_{it} + \beta_3 Leverage_{it} + \beta_4 ROA_{it} + \beta_5 Foreign\ sales_{it} + \beta_6 Close_{it} + \beta_7 Beta_{it} + \beta_8 Big4_{it} + \beta_9 USListing_{it} + \beta_{10} New\ Market_{it} + \sum\gamma_i Industry_i + \sum\delta_i Year_i + \varepsilon_{it} \quad \text{(III)}$$

As in our earnings management analyses, we analyze the effect of the early and mature phase of the individual firms' IFRS accounting on disclosure quality by estimating model (IV).

$$DQ = \alpha_0 + \beta_1 Early\ IFRS_{it} + \beta_2 Mature\ IFRS_{it} + \beta_3 Total\ Assets_{it} + \beta_4 Leverage_{it} + \beta_5 ROA_{it} + \beta_6 Foreign\ sales_{it} + \beta_7 Close_{it} + \beta_8 Beta_{it} + \beta_9 Big4_{it} + \beta_{10} USListing_{it} + \beta_{11} New\ Market_{it} + \sum\gamma_i Industry_i + \sum\delta_i Year_i + \varepsilon_{it} \quad \text{(IV)}$$

Multivariate analyses – effect of disclosures on earnings management

To examine the relation between disclosure quality and earnings management, we include the variable *DQ* into our first model and estimate the following model (V). In accordance with our hypothesis H3, we expect the coefficient β_2 to be significantly negative.

$$|DA| = \alpha_0 + \beta_1 IFRS_{it} + \beta_2 DQ_{it} + \beta_3 Total\ Assets_{it} + \beta_4 Leverage_{it} + \beta_5 Sales\ growth_{it} + \beta_6 Cfo_{it} + \beta_7 Change\ PPE_{it} + \beta_8 CfoD_{it} + \beta_9 LossD_{it} + \beta_{10} Big4_{it} + \beta_{11} New\ Market_{it} + \sum\gamma_i Industry_i + \sum\delta_i Year_i + \varepsilon_{it} \quad \text{(V)}$$

Following the reasoning of Shalev (2009) that disclosures limit managers' flexibility in subsequent periods, we also conduct this analysis using prior year disclosure scores (DQ_{t-1}) to obtain deeper insights into the interplay between our dimensions of transparency. Furthermore, we estimate equation (V.) replacing *IFRS* by the two dummy variables *Early IFRS* and *Mature IFRS* as well as the interaction terms *Early IFRS*DQ* and *Mature IFRS*DQ* to examine whether the relationship differs across reporting regimes and time.

4.4 Data Description

Our focus on Germany[66] allows us to use a specific proxy for disclosure quality, the disclosure scores of the annual report 'beauty contest' of the German business journal *manager magazin*. Hence, our

[64] The industry classification is based on SIC codes (Ernstberger et al., 2013, and Frankel et al., 2002).

[65] In addition to the control variables used in our analysis, there are other candidate variables, e.g. number of analysts following or capital intensity (Daske and Gebhardt, 2006). We limit the control variables to those presented in this section to minimize the risk of multicollinearity.

[66] See footnote 5 for further reasons for limiting our sample to Germany.

sample composition is based on the firms included in this annual report competition and covers a time period from 1995 to 2012. The disclosure scores are merged with financial data taken from Thompson Reuters Datastream.[67] In order to strengthen our database for the analyses of the degree of earnings management, we include information for the whole sample period for all companies that have been covered at least once by the contest, if available. Due to the fact that not all firms are continuously included in the ranking published by *manager magazin*, the sample for the analyses of disclosure quality is smaller. We exclude firms from countries other than Germany, firms reporting in accordance with US GAAP[68], banking institutions and insurance firms as well as observations with missing data for the prior year. In total, we end up with 2,590 firm-year observations for the earnings management analyses and 1,502 firm-year observations for the analyses of disclosure quality.

5. RESULTS

5.1 Univariate Analyses

Panel A of table 1 shows the development of mean, median and standard deviation of the disclosure score from 1995 to 2012 differentiated by the reporting regime. Simple eyeball statistics show no clear trend for mean and median with local peaks and local valleys. With regard to the two reporting regimes, IFRS statements exhibit higher values in most years.[69] Panel B of table 1 shows overall mean (median) values and the results of t-tests (Mann-Whitney-Wilcoxon-tests) for German GAAP compared to IFRS and for the early vs. mature phase of the individual firms' IFRS accounting for the disclosure score as well as for the degree of earnings management (|*DA*|). This analysis shows significantly higher means and medians under IFRS for disclosure quality and, remarkably, also higher values for the degree of earnings management. This result holds when German GAAP is compared to the early phase of the individual firms' IFRS accounting. When comparing the early phase of the individual firms' IFRS accounting to the mature phase, there is no statistically significant increase in the disclosure quality score, whereas the t-test shows a decrease significant at the 1%-level for the degree of earnings management.

In summary, these simple analyses provide first evidence that IFRS adoption leads to better disclosure quality in terms of the content of disclosures. Contrarily, our analyses show that the extent of discretionary earnings management increases as a result of the change in the reporting regime, but decreases afterwards. However, a comparison of mean and median values does not account for alternative determinants of disclosure quality and the degree of earnings management, such as reporting incentives, firm characteristics and, most importantly, time effects. Therefore, the next subsection discusses our multivariate results.

5.2 Multivariate Analyses

Panel A of table 2 exhibits summary statistics of the variables used in our multivariate analyses and panel B shows frequencies of the dummy variables used. All variables are defined in Appendix 1. For the majority (69%) of our firm-year observations, financial statements are prepared in accordance with IFRS, whereas 31% are prepared under German GAAP. We differentiate between the early and the mature phase of the individual firms' IFRS accounting by assuming that the mature phase of IFRS reporting begins in the fifth year after the adoption. By doing so, we classify 45% of IFRS observations as early, and 55% as mature. Furthermore, 64% of the financial reports are audited by a Big 4 auditor, while 15% of the firm-year observations stem from firms that are cross-listed in the US.[70] With regard to the degree of earnings management, average (median) absolute discretionary accruals are at 0.078 (0.044). This indicates that discretionary accruals make up 7.8% (4.4%) of beginning of period total assets.

The lower (upper) triangle of table 3 presents Pearson (Spearman) correlations of the variables used in our analyses. The correlation between the degree of earnings management and the disclosure score is significantly negative. This is a first indication in support of our hypothesis of a constraining effect of disclosures on earnings management. With regard to the dummy variable *IFRS*, we see a significantly positive correlation with the disclosure score which strengthens the results from the univariate analyses. However, the correlation between *IFRS* and |*DA*| is insignificant (Spearman) or significantly positive (Pearson), respectively. As the latter result seems to be driven by the early phase of the individual firms' IFRS accounting, the correlation matrix provides some support for our hypothesis H2.

67 All variables have been windsorized at the 0.5 percentile and the 99.5 percentile.

68 Other researchers often treat IFRS and US GAAP equally and analyze the effect of the adoption of 'international standards' (e.g. Leuz and Verrecchia, 2000, or Daske and Gebhardt, 2006). We solely focus on the adoption of IFRS in our main analyses and use US GAAP observations for additional robustness checks.

69 There are two companies in our sample which reported in accordance with German GAAP in the year 2005.

70 Following Leuz and Verrecchia (2000), we include observations which are either listed in the US or are available on the US OTC market.

Table 1. Development of disclosure quality score and univariate analyses

Panel A: Development of disclosure quality score 1995-2012

		1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mean	*German GAAP*	60.74	56.61	55.51	58.04	58.94	57.72	59.72	57.59	59.90	55.55	53.48	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	IFRS	66.48	64.57	67.03	63.17	62.59	60.90	59.41	57.10	61.47	58.35	59.96	56.92	59.88	57.12	60.13	57.11	58.33	56.92
	Total	61.70	57.33	56.74	58.86	59.92	59.01	59.54	57.18	61.19	57.91	59.84	56.92	59.88	57.12	60.13	57.11	58.33	56.92
Median	*German GAAP*	64.16	56.00	53.54	56.18	56.57	56.76	57.41	56.17	61.92	56.08	53.48	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	IFRS	67.54	65.60	67.05	65.39	62.24	60.73	61.03	58.11	61.06	58.87	59.69	55.80	59.37	56.96	59.92	57.44	57.63	56.45
	Total	64.62	56.65	54.67	56.62	57.96	57.76	59.01	57.35	61.18	58.28	59.69	55.80	59.37	56.96	59.92	57.44	57.63	56.45
Standard deviation	*German GAAP*	10.03	6.75	7.12	6.40	6.09	6.88	7.62	8.51	9.82	9.53	9.40	n/a	n/a	n/a	n/a	n/a	n/a	n/a
	IFRS	4.07	7.72	8.81	10.02	6.44	9.38	6.82	8.82	6.96	9.17	8.39	8.37	8.22	7.54	7.45	8.30	8.57	8.79
	Total	9.49	7.16	8.09	7.27	6.35	8.00	7.10	8.70	7.46	9.22	8.41	8.37	8.22	7.54	7.45	8.30	8.57	8.79

Panel B: Comparison of means and medians

Variable		German GAAP	IFRS	Difference German GAAP / IFRS		Early IFRS	Mature IFRS	Difference German GAAP / Early IFRS		Difference Early IFRS / Mature IFRS	
DQ	*Mean*	57.47	58.88	1.40	**	58.04	58.89	0.56	*	0.85	
	Median	56.33	58.43	2.11	***	57.48	58.78	1.15	*	1.30	
|DA|	*Mean*	0.062	0.087	0.03	***	0.100	0.076	0.038	***	-0.024	***
	Median	0.034	0.048	0.01	***	0.048	0.048	0.014	***	-0.000	

*Panel A of Table 1 exhibits the development of disclosure quality over time. Panel B shows mean and median values of the disclosure quality score and discretionary accruals for German GAAP, IFRS, early IFRS and mature IFRS, respectively. Early IFRS is defined as the first four years of the individual firm's IFRS adoption, whether this adoption was voluntary or not. Data for the disclosure quality score has been extracted from the annual report 'beauty contest' of manager magazin. ***, ** and * indicate that the means (medians) are significantly different at the 1%-level, 5%-level and 10%-level, respectively, using a two tailed t-test with Satterthwaite's degrees of freedom (Mann-Whitney-Wilcoxon test). All variables are defined in Appendix 1.*

Table 2. Descriptive statistics and frequencies of dummy variables

Panel A: Descriptive statistics of variables used in multivariate analyses

Continuous Variables	Mean	Std. Dev.	Min	Q1	Median	Q3	Max	Firm-Years
DQ	58.32	8.15	39.33	52.67	57.76	63.52	79.83	1,577
|DA|	0.078	0.107	0.000	0.015	0.044	0.094	0.614	3,095
Total Assets	2.39	2.57	0.18	0.97	1.67	2.89	39.86	2,594
Leverage	1.76	3.20	0.02	0.40	0.91	1.97	45.86	2,882
Sales growth	0.23	1.86	-0.91	-0.01	0.07	0.17	57.92	2,821
Cfo	0.14	0.22	-0.62	0.04	0.11	0.21	1.22	2,594
Foreign sales	39.84	30.45	0.00	7.96	40.45	67.28	94.60	3,095
ROA	0.02	0.12	-0.65	0.01	0.03	0.07	0.26	3,092
Close	32.43	30.59	0.00	0.00	28.80	56.76	98.74	3,095
Beta	0.60	0.49	-0.15	0.07	0.60	0.98	1.67	3,095
Change PPE	0.02	0.16	-0.76	-0.01	0.01	0.04	0.92	2,594

Panel B: Frequencies of dummy variables

Dummy Variables	Firm-Years	0	1	1 in %
IFRS	3,095	965	2,130	69%
Early IFRS	3,095	2,139	956	31%
Mature IFRS	3,095	1,921	1,174	38%
German GAAP	3,095	2,130	965	31%
US-Listing	3,095	2,631	464	15%
LossD	3,095	2,495	600	19%
CfoD	3,095	2,648	447	14%
Big4	3,095	1,118	1,977	64%
New Market	3,095	3,053	42	1%

Panel A of Table 2 exhibits the summary statistics of the main variables used in our analysis, Panel B summarizes the frequencies of dummy variables. Data for the disclosure quality score has been extracted from the annual report 'beauty contest' of manager magazin. The data for all other variables is based on the Thomson Reuters Worldscope database. All variables are defined in Appendix 1.

Table 3. Pearson-Spearman Correlations among Regression Variables

	DQ	*|DA|*	*Total Assets*	*Leverage*	*Sales growth*	*Cfo*	*Foreign Sales*	*ROA*	*Close*	*Change PPE*	*IFRS*	*Early IFRS*	*Mature IFRS*	*German GAAP*	*US-Listing*	*LossD*	*CfoD*	*Big4*	*New Market*	*Beta*
DQ	**1**	-0.179	0.151	0.114	-0.076	0.236	0.148	0.031	-0.101	0.060	0.270	0.000	0.255	-0.270	0.081	-0.115	-0.190	0.181	-0.163	0.290
		(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.31)	(0.00)	(0.05)	(0.00)	(1.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
|DA|	-0.160	**1**	-0.119	-0.138	0.106	-0.165	-0.121	0.022	0.046	-0.029	0.030	0.012	0.017	-0.030	-0.018	0.089	0.228	-0.079	0.090	-0.151
	(0.00)		(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.48)	(0.13)	(0.34)	(0.33)	(0.69)	(0.58)	(0.33)	(0.55)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)
Total Assets	0.113	-0.085	**1**	0.857	-0.204	0.542	0.021	-0.532	-0.029	0.119	-0.142	-0.116	-0.029	0.142	-0.073	0.102	-0.035	0.116	-0.164	0.223
	(0.00)	(0.00)		(0.00)	(0.00)	(0.00)	(0.50)	(0.00)	(0.35)	(0.00)	(0.00)	(0.00)	(0.35)	(0.00)	(0.02)	(0.00)	(0.25)	(0.00)	(0.00)	(0.00)
Leverage	0.059	-0.040	0.665	**1**	-0.211	0.394	0.013	-0.619	-0.090	0.104	-0.124	-0.105	-0.022	0.124	-0.086	0.206	0.036	0.099	-0.060	0.217
	(0.02)	(0.03)	(0.00)		(0.00)	(0.00)	(0.67)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.47)	(0.00)	(0.00)	(0.00)	(0.23)	(0.00)	(0.05)	(0.19)
Sales growth	-0.103	0.182	-0.007	-0.029	**1**	-0.111	-0.016	0.276	-0.033	0.311	0.023	0.056	-0.029	-0.023	0.062	-0.215	-0.007	-0.037	0.104	0.040
	(0.00)	(0.00)	(0.71)	(0.13)		(0.00)	(0.60)	(0.00)	(0.28)	(0.00)	(0.46)	(0.07)	(0.34)	(0.46)	(0.04)	(0.00)	(0.82)	(0.23)	(0.00)	(0.00)
Cfo	0.154	-0.110	0.320	0.080	0.006	**1**	0.050	-0.100	0.001	0.087	-0.021	-0.040	0.016	0.021	0.037	-0.147	-0.524	0.108	-0.155	0.219
	(0.00)	(0.00)	(0.00)	(0.00)	(0.76)		(0.10)	(0.00)	(0.98)	(0.00)	(0.49)	(0.20)	(0.60)	(0.49)	(0.22)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Foreign Sales	0.165	-0.173	-0.006	-0.011	-0.058	0.043	**1**	0.108	-0.066	0.029	0.189	0.034	0.147	-0.189	0.101	-0.122	-0.094	0.096	-0.140	0.228
	(0.00)	(0.00)	(0.76)	(0.56)	(0.00)	(0.03)		(0.00)	(0.03)	(0.34)	(0.00)	(0.26)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
ROA	0.023	-0.053	-0.129	-0.266	0.006	0.169	0.074	**1**	0.064	0.026	0.122	0.026	0.092	-0.122	0.048	-0.593	-0.243	-0.002	-0.118	-0.033
	(0.37)	(0.00)	(0.00)	(0.00)	(0.76)	(0.00)	(0.00)		(0.04)	(0.40)	(0.00)	(0.40)	(0.00)	(0.00)	(0.12)	(0.00)	(0.00)	(0.94)	(0.00)	(0.29)
Close	-0.066	-0.024	-0.056	-0.084	-0.011	-0.009	0.046	0.083	**1**	0.013	-0.181	-0.168	-0.019	0.181	-0.061	-0.083	-0.120	-0.030	-0.111	-0.195
	(0.01)	(0.18)	(0.00)	(0.00)	(0.57)	(0.66)	(0.01)	(0.00)		(0.67)	(0.00)	(0.00)	(0.54)	(0.00)	(0.05)	(0.01)	(0.00)	(0.32)	(0.00)	(0.00)
Change PPE	-0.003	0.051	0.012	-0.130	0.208	0.036	0.010	0.132	0.021	**1**	-0.032	0.011	-0.040	0.032	0.025	-0.160	-0.037	0.000	-0.029	0.112
	(0.90)	(0.01)	(0.54)	(0.00)	(0.00)	(0.07)	(0.62)	(0.00)	(0.29)		(0.30)	(0.72)	(0.19)	(0.30)	(0.42)	(0.00)	(0.22)	(0.99)	(0.34)	(0.00)
IFRS	0.058	0.106	-0.080	-0.092	-0.013	-0.038	0.070	-0.044	-0.181	-0.037	**1**	0.419	0.565	-1.000	0.098	-0.007	-0.017	0.141	0.001	0.302
	(0.02)	(0.00)	(0.00)	(0.00)	(0.49)	(0.05)	(0.00)	(0.01)	(0.00)	(0.06)		(0.00)	(0.00)	(1.00)	(0.00)	(0.81)	(0.57)	(0.00)	(0.98)	(0.00)
Early IFRS	-0.021	0.134	-0.024	-0.045	0.049	-0.019	-0.044	-0.019	-0.145	0.029	0.450	**1**	-0.513	-0.419	-0.006	-0.006	0.007	-0.011	0.079	0.043
	(0.40)	(0.00)	(0.21)	(0.02)	(0.01)	(0.34)	(0.02)	(0.29)	(0.00)	(0.20)	(0.00)		(0.00)	(0.00)	(0.85)	(0.85)	(0.83)	(0.71)	(0.01)	(0.16)
Mature IFRS	0.068	-0.026	-0.050	-0.045	-0.058	-0.018	0.108	-0.024	-0.035	-0.059	0.526	-0.523	**1**	-0.565	0.098	-0.002	-0.023	0.143	-0.071	0.246
	(0.01)	(0.14)	(0.01)	(0.02)	(0.00)	(0.37)	(0.00)	(0.19)	(0.05)	(0.00)	(0.00)	(0.00)		(0.00)	(0.00)	(0.96)	(0.46)	(0.00)	(0.02)	(0.00)
German GAAP	-0.058	-0.106	0.080	0.092	0.013	0.038	-0.070	0.044	0.181	0.037	-1.000	-0.450	-0.526	**1**	-0.098	0.007	0.017	-0.141	-0.001	-0.302
	(0.02)	(0.00)	(0.00)	(0.00)	(0.49)	(0.05)	(0.00)	(0.01)	(0.00)	(0.06)	(0.00)	(0.00)	(0.00)		(0.00)	(0.81)	(0.57)	(0.00)	(0.98)	(0.00)
US-Listing	0.039	-0.011	-0.120	-0.094	-0.013	-0.021	0.103	0.039	-0.068	0.017	0.066	0.017	0.047	-0.066	**1**	-0.096	-0.059	0.104	-0.055	0.083
	(0.12)	(0.56)	(0.00)	(0.00)	(0.51)	(0.29)	(0.00)	(0.03)	(0.00)	(0.37)	(0.00)	(0.34)	(0.01)	(0.00)		(0.00)	(0.05)	(0.00)	(0.07)	(0.01)
LossD	-0.075	0.090	0.162	0.294	-0.020	-0.142	-0.092	-0.659	-0.098	-0.204	0.097	0.054	0.041	-0.097	-0.037	**1**	0.327	-0.002	0.131	-0.046
	(0.00)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)	(0.04)		(0.00)	(0.10)	(0.00)	(0.13)
CfoD	-0.146	0.227	0.051	0.129	0.030	-0.509	-0.118	-0.401	-0.090	-0.051	0.052	0.054	-0.001	-0.052	-0.039	0.345	**1**	-0.095	0.111	-0.067
	(0.00)	(0.00)	(0.01)	(0.00)	(0.12)	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.95)	(0.00)	(0.03)	(0.00)		(0.00)	(0.00)	(0.00)
Big4	0.143	-0.101	0.058	0.017	-0.049	0.066	0.127	-0.005	0.127	-0.003	0.062	0.001	0.058	-0.062	0.001	-0.011	-0.078	**1**	-0.052	0.161
	(0.00)	(0.00)	(0.00)	(0.35)	(0.01)	(0.00)	(0.00)	(0.77)	(0.00)	(0.89)	(0.00)	(0.98)	(0.00)	(0.00)	(0.95)	(0.55)	(0.00)		(0.09)	(0.00)
New market	-0.106	0.093	-0.072	-0.030	0.033	-0.073	-0.092	-0.020	-0.048	-0.067	0.025	0.091	-0.063	-0.025	-0.041	0.048	0.071	-0.040	**1**	-0.091
	(0.00)	(0.00)	(0.00)	(0.11)	(0.08)	(0.00)	(0.00)	(0.27)	(0.01)	(0.73)	(0.17)	(0.00)	(0.00)	(0.17)	(0.02)	(0.01)	(0.00)	(0.03)		(0.00)
Beta	0.217	-0.039	0.069	0.000	0.018	0.106	0.189	-0.049	-0.185	0.074	0.157	0.019	0.132	-0.157	0.087	-0.001	-0.018	0.135	-0.085	**1**
	(0.00)	(0.03)	(0.00)	(1.00)	(0.35)	(0.00)	(0.00)	(0.01)	(0.00)	(0.00)	(0.00)	(0.30)	(0.00)	(0.00)	(0.00)	(0.98)	(0.31)	(0.00)	(0.00)	

Pearson (Spearman) correlation coefficients are shown in the lower (upper) triangle of the table. Two-tailed p-values are presented in parentheses. All variables are defined in Appendix 1.

Table 4. Multivariate results for the effect of IFRS adoption on earnings management

Equation No.	***(I.)***		***(II.)***	
Dependent Variable	***|DA|***		***|DA|***	
Variables	***Coefficient***	***t-statistic***	***Coefficient***	***t-statistic***
IFRS	0.017 **	2.25		
Early IFRS			0.018 **	2.35
Mature IFRS			0.012	1.23
Total Assets	-0.004 **	-2.02	-0.004 ***	-2.03
Leverage	0.001	0.30	0.001	0.30
Sales growth	0.005	1.38	0.005	1.38
Cfo	0.028 ***	2.75	0.028 ***	2.73
Change PPE	0.035 ***	3.01	0.035 ***	3.01
CfoD	0.063 ***	8.55	0.063 ***	8.56
LossD	0.011	1.48	0.011	1.51
Big4	-0.013 **	-2.37	-0.014 **	-2.38
New Market	0.028	1.01	0.028	1.03
Industry dummys	Included		Included	
Year dummys	Included		Included	
Firm Years	2,590		2,590	
R^2	0.1481		0.1486	
Adj. R^2	0.1361		0.1362	

*This table shows the coefficients and t-statistics for estimating equations (I.) and (II.) as an OLS regression that includes fixed effects for fiscal year and industry (not tabulated). The analysis employs heteroskedasticity-adjusted robust standard errors clustered by firm and year (Petersen (2009)). The regression is estimated with an intercept included (not tabulated). ***, **, and * denote p-value significance at the 1%, 5% and 10% levels, with two-tailed tests. All variables are defined in Appendix 1.*

Table 4 shows the results of estimating equations (I.) and (II.) with discretionary accruals as the dependent variable.[71] First, when we solely compare IFRS reporting observations to German GAAP observations, the estimation of equation (I.) shows that discretionary accruals are higher under IFRS even when controlling for firm characteristics, reporting incentives and time, as the coefficient for *IFRS* is positive and significant at the 5% level. As was the case in our univariate results, this is contrary to our hypothesis H1 but consistent with prior short-term studies that document that IFRS observations exhibit more earnings management than German GAAP observations (van Tendeloo and Vanstraelen, 2005; Callao and Jarne, 2010).

With regard to the distinction between the early phase of IFRS reporting and the mature phase, the estimation of equation (II.) shows that the early phase exhibits significantly higher discretionary accruals as compared to German GAAP, whereas the mature phase does not. This result holds, when we estimate the equation without the early phase observations, which leads us to conclude that there is no significant change in the earnings management behavior of firms in the long run as the increase in earnings management through discretionary accruals in the first years of IFRS application ceases to exist. We suggest that this results from improving compliance, learning curves of preparers and auditors, decreasing effects of the first-time adoption rules of IFRS 1, emerging common guidelines and interpretations as well as the increased effectiveness of enforcement.

In a next step, we investigate the effect of IFRS adoption on disclosure quality by estimating equation (III.) as presented in table 5.[72] As the coefficient for *IFRS* is positive and significant, we conclude that IFRS adoption has a positive effect on the quality of disclosures. Together with our univariate results, this supports our hypothesis H1 and is in line with prior research (Leuz and Verrecchia, 2000; Daske and Gebhardt, 2006; Glaum et al., 2013).

Table 5 further shows the results of estimating equation (IV.) which differentiates between the early and the mature phase of the individual firms' IFRS accounting. This analysis shows that both the firms' early phase and the firms' mature phase exhibit significantly higher disclosure quality scores as compared to German GAAP. Moreover, the coefficient for *Mature IFRS* is significantly higher than the coefficient for *Early IFRS* at the 5% level, indicating that disclosure quality not only increases as a result of IFRS adoption but continues to increase in the more mature phase of IFRS reporting. Since our results suggest a concurrent decrease in the level of earnings management, hypothesis H2 is supported by both of our transparency metrics.

The finding of increased earnings management under IFRS while, concurrently, the quality of disclosures provided increased significantly is remarkable, especially in the light of our expectation of a negative relation between the two dimensions of transparency. Table 6 shows the results of estimating equation (V.) with discretionary accruals as the dependent variable. In these regressions, the disclosure quality score serves as an additional explanatory variable.

While the coefficient for *IFRS* is still significant but only at the 10%-level, the coefficient for *DQ* is significantly negative at the 1% level, indicating that disclosures limit the scope for earnings management. This is in line with prior research which generally finds a negative (positive) association between disclosure quality and earnings management (quality). Similarly, replacing *DQ* by prior year disclosure scores (DQ_{t-1}) reveals a significantly negative association between past

[71] With regard to our control variables, the insignificance of *Leverage* and *Sales Growth* is surprising. We attribute this to collinearity, which, however, should not cause trouble here because variance inflation factors are smaller than 3 for all control variables (except industry and year dummies).

[72] Again, the insignificance of *Total Assets*, *Leverage* and *ROA* is surprising. However, *Leverage* is significantly correlated with *Total Assets* (ρ = 0.665) and *ROA* (ρ = -0.266). Without controlling for *Leverage*, the coefficients for *Total Assets* and *ROA* become significant, while our overall results remain unchanged. Furthermore, variance inflation factors are smaller than 3 for all control variables (except for the industry and year dummies). Therefore, we are not concerned about collinearity in the data. The coefficients for *Close* and *US-Listing* are insignificant. Exclusion of these variables does not change the results either.

disclosures and the degree of earnings management at the 5% level (not tabulated). This provides empirical support for the notion that disclosures limit earnings management opportunities in future periods. Together with our univariate results, these results support our hypothesis H3 that higher quality disclosures have a constraining effect on earnings management.

However, when estimating equation (V.) with the dummy variables *Early IFRS* and *Mature IFRS* as well as the interaction terms *Early IFRS*DQ* and *Mature IFRS*DQ*, the results show the following patterns: Compared to German GAAP, early IFRS observations show significantly higher discretionary accruals which is in line with our results above. Remarkably, this effect is partly offset by the level of disclosures, i.e. there is a constraining effect of disclosures on the association between earnings management and IFRS adoption (significantly negative coefficient for *Early IFRS*DQ*). With regard to the mature IFRS observations, both the impact of IFRS adoption on the level of earnings management (see results above) and the constraining effect cease to exist.

Table 5. Multivariate results for the effect of IFRS adoption on disclosure quality

Equation No.	***(III)***		***(IV)***	
Dependent Variable	***DQ***		***DQ***	
Variables	***Coefficient***	***t-statistic***	***Coefficient***	***t-statistic***
IFRS	2.381 **	2.00		
Early IFRS			2.025 *	1.71
Mature IFRS			3.608 **	2.32
Total Assets	0.100	0.50	0.077	0.41
Leverage	0.121	1.41	0.119	1.40
ROA	4.959	1.22	5.145	1.30
Foreign sales	0.034 **	2.44	0.035 **	2.47
Close	-0.012	-0.78	-0.013	-0.86
Beta	2.675 ***	3.32	2.683 ***	3.34
Big4	1.672 **	2.07	1.694 **	2.14
US-Listing	1.253	1.05	1.335	1.14
New Market	-4.839 **	-2.13	-4.81 **	-2.31
Industry dummys	Included		Included	
Year dummys	Included		Included	
Firm Years	1,502		1,502	
R^2	0.2153		0.2199	
Adj. R^2	0.1965		0.2008	

*This table shows the coefficients and t-statistics for estimating Equations (III.) and (IV.) as OLS regressions that include fixed effects for fiscal year and industry (not tabulated). The analysis employs heteroskedasticity-adjusted robust standard errors clustered by firm and year (Petersen (2009)). The regression is estimated with an intercept included (not tabulated). ***, **, and * denote p-value significance at the 1%, 5% and 10% levels, with two-tailed tests. All variables are defined in Appendix 1.*

We interpret this as follows: When accounting standards require a comparatively low level of disclosures (as under German GAAP) and/or when financial statements are influenced by low compliance, little experience, weak enforcement, and, importantly, lack of common guidelines and interpretations requiring judgmental decisions (as in the early IFRS phase), disclosures help to limit earnings management. When compliance, experience and enforcement improve and common guidelines and interpretations develop in the course of IFRS application, these factors likely help to limit earnings management so that the marginal effect of more disclosures is reduced.

Further, the fact that we find a negative association for the early phase of the individual firms' IFRS accounting strengthens our interpretation that disclosures have the potential to limit the scope for earnings management. Since IFRS require more disclosures and, as shown above, disclosure quality increases as a result of the adoption of IFRS; our setting offers a strengthening of disclosure regulation which makes disclosure quality more likely to be determined exogenously in the initial years of IFRS accounting.

5.3 Robustness Checks

Alternative discretionary accruals models and alternative sample compositions

We conduct various robustness checks to validate our results. First, we use alternative models of discretionary accruals, namely the standard Jones (1991) model and the modified Jones model from Dechow et al. (1995). All discretionary accruals models show similar results (not tabulated). Second, we check the robustness of our results for alternative sample compositions. To this end, we run our analyses only with firm-year observations which are included in the annual report ranking and without the individual adoption year, respectively. The latter is based on the notion that the adoption year is likely to be influenced by one-off effects which may influence our results. Both approaches show results similar to our main analyses (not tabulated).

Table 6. Multivariate results for the relationship between disclosure quality and earnings management

Equation No.	*(V.)*		*(V.) modified*	
Dependent Variable	*|DA|*		*|DA|*	
Variables	**Coefficient**	**t-statistic**	**Coefficient**	**t-statistic**
DQ	-0.001 ***	-2.73	-0.001 *	-1.79
IFRS	0.014 *	1.75		
Early IFRS			0.103 *	1.78
*Early IFRS * DQ*			-0.001 *	-1.65
Mature IFRS			0.003	0.09
*Mature IFRS * DQ*			0.000	0.41
Total Assets	-0.002	-1.27	-0.002	-1.19
Leverage	-0.002 *	-1.71	-0.002 *	-1.76
Sales growth	0.042 ***	5.37	0.041 ***	5.60
Cfo	0.028 ***	2.56	0.026 **	2.36
Change PPE	0.009	0.65	0.009	0.63
CfoD	0.046 ***	5.05	0.044 ***	4.91
LossD	0.015 **	1.97	0.014 **	1.96
Big4	-0.013 *	-1.71	-0.013	-1.59
New Market	-0.019	-0.79	-0.023	-1.04
Industry dummys	Included		Included	
Year dummys	Included		Included	
Firm Years	1,502		1,502	
R^2	0.1877		0.1926	
Adj. R^2	0.1677		0.1711	

*This table shows the coefficients and t-statistics for estimating Equation (V.) as an OLS regression that includes fixed effects for fiscal year and industry (not tabulated) as well as for estimating Equation (V.) including dummy variables for the early and mature phase of the individual firms' IFRS accounting and interaction terms for these dummy variables and the disclosure quality score. The analysis employs heteroscedasticity-adjusted robust standard errors clustered by firm and year (Petersen (2009)). The regression is estimated with an intercept included (not tabulated). ***, **, and * denote p-value significance at the 1%, 5% and 10% levels, with two-tailed tests. All variables are defined in Appendix 1.*

Alternative indicator for earnings management – PM/ATO diagnostic of Jansen et al. (2012)

Third, we take into account that discretionary accruals, despite their widespread use, are only one possible approach to proxy for earnings management and that this methodology has well-known shortcomings. To mitigate concerns regarding our main proxies, we use the PM/ATO diagnostic of Jansen et al. (2012) as an alternative earnings management measure. This diagnostic is based on the notion that contemporaneous changes of profit margin (PM) and asset turnover (ATO) in opposite directions could signal earnings management. For example, if a firm manages earnings downwards by overstating bad debt allowance, both net income and accounts receivable on the balance sheet will decrease. For a given level of sales, this results in a decreasing profit margin and in an increasing asset turnover.

Therefore, we construct a dummy variable *PM/ATO* equal to 1 if $\Delta PM > 0$ and $\Delta ATO < 0$ or $\Delta PM < 0$ and $\Delta ATO > 0$ and zero otherwise.[73] Table 7 shows univariate and multivariate results with regard to this measure. In general, the mean of *PM/ATO* increases significantly from 0.34 to 0.37 as a result of IFRS adoption. When comparing the mean for early and mature IFRS accounting, we see a further increase which is, however, statistically not different from zero.

In panel B of table 7, *PM/ATO* serves as dependent variable of logistic regressions with fixed effects for industries and years. Although the pseudo R^2 is low, the goodness of fit measures of Pearson and Hosmer-Lemeshow indicate that our model fits reasonably well. In general, our results above are supported by this analysis. The IFRS dummy is positively significant in equation (I.) which seems to be driven by the early IFRS observations as indicated in equation (II.). Furthermore, we also find a negative coefficient for the disclosure quality score in equation (V.) which supports our notion of a constraining effect of disclosures on earnings management.

Adoption of international standards – inclusion of US GAAP observations

Fourth, there are several firms which adopted US GAAP prior to 2005. To focus on IFRS, we exclude these observations in our main analyses. Table 8 presents the results of estimating equations (I.), (II.) and (V.) for the entire sample including US GAAP observations.[74] To this end, we construct the dummy variables *International*, *Early International* and *Mature International* which follow the same logic as before but consist of both IFRS and US GAAP observations.

For equation (I.), *International* is significantly positive though this association seems to be driven by the early phase of the individual firms' adoption of international standards as indicated in the results for equation (II.). As the coefficient for *Mature International* is not significant, we conclude that there is no statistically significant difference in discretionary accruals between German GAAP and the mature phase of accounting under internationally recognized standards.[75] Thus, our results for the effect of international standards on earnings management are robust to the inclusion of US GAAP observations.

[73] To prevent cases where the diagnostic is likely to detect only the reversal of earnings management, we require that upward earnings management is not followed by downward earnings management in the subsequent period and vice versa.

[74] Univariate results and results of the estimation of the disclosure models do not change due to the inclusion of US GAAP observations. Therefore, these results are not tabulated.

[75] Note that the proportion of IFRS observations as compared to US GAAP observations especially within the *Mature International* dummy increases over time as a result of the mandatory adoption of IFRS.

With regard to equation (V.), we again see a significantly negative coefficient for the disclosure quality score, which underpins our notion of a constraining effect of disclosures on earnings management. In this equation, however, the coefficient for *International* becomes insignificant. As the correlation between *International* and *DQ* is low (ρ = 0.059), we do not attribute the loss of significance to collinearity. Rather, a possible explanation is the following: When controlling for disclosure quality, the effect of the accounting regime on the degree of earnings management is reduced. This is also in line with our results above where the significance of the IFRS dummy drops from the 5% level to the 10% level once the disclosure quality score is included. Another possible explanation lies in the lower number of observations in equation (V.) as compared to equation (I).

Table 7. Results for robustness checks using the PM/ATO diagnostic of Jansen et al. (2012) as an alternative earnings management measure

Panel A: PM/ATO-diagnostic based on Jansen et al. (2012) - Comparison of means

Variable	*German GAAP*	*IFRS*	*Difference German GAAP / IFRS*		*Early IFRS*	*Mature IFRS*	*Difference German GAAP / Early IFRS*		*Diff. Early IFRS / Mature IFRS*
PM/ATO	0.34	0.37	0.03	*	0.36	0.39	0.02	*	0.03

Panel B: PM/ATO-diagnostic based on Jansen et al. (2012) - Multivariate analysis

Equation No.	*(I.)*			*(II.)*			*(V.)*		
Dependent Variable	*PM/ATO*			*PM/ATO*			*PM/ATO*		
Variables	*Coefficient*		*t-statistic*	*Coefficient*		*t-statistic*	*Coefficient*		*t-statistic*
IFRS	0.204	*	1.73				0.525	***	3.84
Early IFRS				0.239	**	2.14			
Mature IFRS				0.067		0.48			
DQ							-0.012	**	-2.17
Total assets	0.019		0.88	0.020		0.91	0.061		1.31
Leverage	-0.002		-0.12	-0.002		-0.13	-0.025		-0.97
Sales growth	-0.150		-1.23	-0.152		-1.23	-0.098		-0.81
CFO	-0.328		-1.24	-0.331		-1.24	-0.483		-1.15
Change PPE	0.054		0.23	0.051		0.22	-0.225		-0.85
CfoD	-0.168	**	-2.19	-0.170	**	-2.22	-0.416	***	-3.19
LossD	0.001		0.02	0.006		0.07	-0.068		-0.39
Big4	0.013		0.18	0.009		0.13	-0.048		-0.74
New market	-0.850	**	-2.26	-0.849	**	-2.27	-0.517		-1.06
Industry dummys	Included			Included			Included		
Year dummys	Included			Included			Included		
Firm Years	2,590			2,590			1,502		
p-value for Pearson goodness of fit Chi²	0.2739			0.2683			0.2320		
p-value for Hosmer-Lemeshow goodness of fit Chi² using 10 groups	0.8668			0.9546			0.6312		
Percent correctly predicted	0.6042			0.6062			0.6172		
McFadden's Pseudo R^2	0.0145			0.0151			0.0271		

*Panel A of this table shows mean values for another indicator for earnings management: The PM/ATO diagnostic based on Jansen et al. (2012). This measure is based on the notion that contemporaneous increases (decreases) in profit margin and decreases (increases) in asset turnover are a potential indicator for earnings management. ***, ** and * indicate that the means are significantly different at the 1%-level, 5%-level and 10%-level, respectively, using a two tailed t-test with Satterthwaite's degrees of freedom. Panel B presents regression results with the PM/ATO diagnostic as dependent variable. The regressions have been run as logistic regressions that include fixed effects for fiscal year and industry and an intercept (not tabulated). The analysis employs heteroskedasticity-adjusted robust standard errors clustered by industry. All variables are defined in Appendix 1.*

Distinction between mandatory and voluntary adoption of IFRS

Fifth, we run further analyses with regard to the distinction between voluntary and mandatory adoption, since prior research has shown that the effects of IFRS adoption may differ (see e.g. Soderstrom and Sun, 2007). For this reason, table 9 repeats our univariate analyses for voluntary and mandatory adopters. In this analysis, we define 'early' voluntary (mandatory) as the first four years of the individual firms' IFRS reporting as long as this period has been entirely voluntary (mandatory). For example, if a firm voluntarily adopted IFRS in the year 1997, the years 1997-2000 are defined as early voluntary, whereas the years 2000-2004 are defined as mature voluntary. In case the firm adopted IFRS in 2003, this firm is excluded from this analysis as we do not have sufficient mature voluntary observations.[76]

[76] The same logic applies for mandatory adopters, e.g. for firms which mandatorily adopted IFRS in 2005, the early phase is defined as the years 2005-2008 and the mature phase as 2009-2012.

In general, both voluntary and mandatory IFRS accounting years exhibit (significantly) higher means and medians for the disclosure quality score and for discretionary accruals as compared to German GAAP. When comparing the early and the mature phase of IFRS reporting, this analysis shows a significant increase in the disclosure quality score and a significant decrease in discretionary accruals for both voluntary and mandatory adoption years *(With regard to discretionary accruals, only the mean values decrease significantly (at the 1%-level)*.. Hence, we conclude that our overall results regarding the development of disclosure quality and earnings management do not differ substantially between voluntary and mandatory adopters. Moreover, since mandatory IFRS reporting and accounting enforcement by the German FREP have been introduced contemporaneously, this analysis suggests that our results are not primarily driven by the mere introduction of enforcement.

Table 8. Results for robustness checks including US GAAP observations

Robustness of earnings management results: The effect of the adoption of international standards

Equation No.	***(I)***			***(II)***			***(V)***		
Dependent Variable	*|DA|*			*|DA|*			*|DA|*		
Variables	***Coefficient***		***t-statistic***	***Coefficient***		***t-statistic***	***Coefficient***		***t-statistic***
International	0.017	*	1.90				0.013		1.57
Early International				0.025	***	3.60			
Mature International				0.010		1.31			
DQ							-0.001	***	-3.17
Total Assets	-0.004	**	-2.30	-0.004	**	-2.38	-0.002		-1.53
Leverage	0.000		0.26	0.000		0.25	-0.001	*	-0.76
Sales growth	0.007	*	1.65	0.007	*	1.67	0.039	***	5.52
Cfo	0.028	**	2.40	0.028	**	2.33	0.038	***	4.28
Change PPE	0.034	***	3.49	0.032	***	3.38	0.015		1.11
CfoD	0.063	***	9.30	0.063	***	9.14	0.063	***	9.14
LossD	0.010	*	1.73	0.011	*	1.84	0.008		1.30
Big4	-0.013	**	-2.28	-0.012	**	-2.15	-0.012	*	-1.87
New Market	0.043		1.31	0.044		1.35	0.049		1.39
Industry dummys	Included			Included			Included		
Year dummys	Included			Included			Included		
Firm Years	2,913			2,913			1,698		
R^2	0.1692			0.1729			0.1964		
Adj. R^2	0.1588			0.1623			0.1790		

*This table shows the coefficients and t-statistics for estimating equations (I.), (II.) and (V.) as an OLS regression that includes fixed effects for fiscal year and industry (not tabulated). The analysis employs heteroskedasticity-adjusted robust standard errors clustered by firm and year (Petersen (2009)). The regression is estimated with an intercept included (not tabulated). ***, **, and * denote p-value significance at the 1%, 5% and 10% levels, with two-tailed tests. All variables are defined in Appendix 1.*

Table 9. Analysis differentiating with regard to voluntary and mandatory adoption of IFRS

Panel A: Distinction between German GAAP and voluntary / mandatory IFRS adoption

		German GAAP	***Voluntary IFRS***	***Mandatory IFRS***	***Difference German GAAP / Voluntary IFRS***		***Difference German GAAP / Mandatory IFRS***	
	Mean	57.47	60.18	58.14	2.71	***	0.67	
DQ	*Median*	56.33	60.75	57.63	4.42	***	1.31	**
	Mean	0.062	0.099	0.081	0.038	***	0.020	***
|DA|	*Median*	0.034	0.048	0.048	0.013	***	0.013	***

Panel B: Distinction between early and mature voluntary adoption and between early and mature mandatory adoption

		Early Voluntary	**Mature Voluntary**	**Difference Early Voluntary / Mature Voluntary**		**Early Mandatory**	**Mature Mandatory**	**Difference Early Mandatory / Mature Mandatory**	
	Mean	59.44	61.84	2.40	**	56.92	58.57	1.65	**
DQ	*Median*	60.02	62.96	2.94	**	56.39	58.41	2.02	***
	Mean	0.107	0.067	-0.039	***	0.094	0.075	-0.019	***
|DA|	*Median*	0.048	0.049	0.001		0.050	0.047	-0.003	

*Panel A of this table shows mean and median values of disclosure quality scores and discretionary accruals for German GAAP as compared to voluntary and mandatory IFRS adoption. Panel B shows means and medians for early voluntary / mandatory versus mature voluntary / mandatory IFRS adoption. In this analysis, 'early' is defined as the first four years of the individual firms' IFRS adoption as long as this has been entirely voluntary or entirely mandatory. Data for the disclosure quality scores has been extracted from the annual report 'beauty contest' of manager magazin. ***, ** and * indicate that the means (medians) are significantly different at the 1%-level, 5%-level and 10%-level, respectively, using a two tailed t-test with Satterthwaite's degrees of freedom (Mann-Whitney-Wilcoxon test). All variables are defined in Appendix 1.*

6. CONCLUSION

The purpose of this study is to examine the effects of IFRS adoption on two different but related measures of the transparency of financial reporting, namely the degree of earnings management and disclosure quality. Based on a German sample ranging from 1995 to 2012, we not only investigate whether transparency increased in the course of IFRS adoption, but also whether there is a difference between the early and the mature phase of IFRS reporting. Furthermore, we assess the relation between disclosure quality and earnings management. Since IFRS require more disclosures than German GAAP, the regulatory change from national to international accounting standards offers a setting in which the tightening of disclosure requirements allows deeper insights into the constraining effect of disclosures on earnings management. Moreover, enhanced disclosures under IFRS have been brought forward as one argument to expect a decrease in earnings management as a consequence of the adoption of IFRS (see Doukakis, 2014) which makes the association between disclosure quality and earnings management around the regulatory change a matter of great interest.

Prior results for the effect of IFRS adoption on earnings management are mixed (e.g. Ahmed et al., 2013). For Germany, van Tendeloo and Vanstraelen (2005) and Callao and Jarne (2010) find no decrease of discretionary accruals studying some few years around voluntary and mandatory adoption of IFRS, respectively. We attempt to provide an alternative explanation to conflicting findings of prior research by studying a longer time period. Our results indicate that IFRS adoption initially leads to an increase in earnings management through discretionary accruals which is reduced in the mature phase of IFRS reporting. We attribute this to the following: In the early phase of IFRS accounting, compliance was lower as the parties involved (preparers, auditors, and users) were in the process of accumulating the necessary experience. Moreover, the extraordinary effects of the first-time adoption rules of IFRS 1 diminish over time. Further, both emerging guidelines and common interpretations and the creation and development of the German FREP are likely to have contributed to a stepwise increase in accounting quality and, thus, a reduction of earnings management. Considering the dimension of the IFRS adoption, financial reporting stakeholders should clearly be interested in the long-term development rather than in short-term, transitory effects. Thus, our study may mitigate concerns raised by prior studies examining short time horizons.

With regard to the quality of disclosures, we find a positive effect of IFRS adoption which is in line with the notion of enhanced disclosure requirements under IFRS as compared to German GAAP and supplements prior research (Leuz and Verrecchia, 2000; Daske and Gebhardt, 2006; Glaum et al., 2013). Moreover, our findings indicate that disclosure quality continues to improve under IFRS over time. Having documented these effects of IFRS adoption on our transparency metrics, we further show that disclosure quality and earnings management are significantly negatively related. This is in line with most prior studies which, however, focused on US and UK settings and therefore, only provide limited evidence for the IFRS reporting regime. Thus, we are among the first who consider a Continental European country and deliver evidence for a negative association between disclosures and the degree of earnings management under IFRS.

The negative relation holds for German GAAP and early IFRS observations. When compliance, experience and enforcement improve and guidelines and interpretations develop in the mature phase of IFRS application, these factors likely mitigate earnings management so that the marginal effect of better disclosures is reduced. Since we also find evidence for a negative association using prior year's disclosure levels and current year's earnings management levels and the switch to IFRS can be interpreted as an increase in disclosure quality that is more likely to be exogenous, our results support the notion that the greater the amount and the higher the quality of disclosures are, the smaller the room for earnings management is. This is in line with one of the IASB's intentions for disclosure requirements, i.e. to ensure that financial statements faithfully represent what they purport to represent. These findings are of interest to standard setters as well as users of financial reporting. The former should feel encouraged to demand high quality disclosures, especially with regard to management's estimates and assumptions, while the latter should be aware of the use of discretionary accounting in the absence of disclosures.

Our results are robust to various specifications of discretionary accruals, the alternative earnings management diagnostic developed by Jansen et al. (2012) and to other reasonable specifications of the early and the mature phase of IFRS accounting. Furthermore, we show that our results do not differ substantially for voluntary and mandatory adopters of IFRS and for the broader application of 'international standards' (IFRS and US GAAP).

However, the accounting numbers and disclosures observed are the results of not only accounting standards, but the whole financial reporting system, including accounting standards, their interpretation as well as enforcement and litigation (Barth et al., 2008) making it impossible to attribute any effects solely to changes in the standards applied.

Furthermore, although we only study a single country and control for a range of firm characteristics and incentives, we cannot be sure that our findings can solely be attributed to changes in the financial reporting system. Though, of course, we explicitly address factors which we suggest to contribute to the results observed, especially regarding the improvements over time. Moreover, since our sample is based on the firms covered by the "Best Annual Report" competition published in the *manager magazine* it is biased towards larger firms which may limit the generalizability of our findings. Nonetheless, bigger firms account for a large share of IFRS applicants and, in our view, there are no obvious reasons for contrary expectations regarding the development of financial reporting quality of smaller firms under IFRS.

With our study, we respond to the demand for studying a longer time horizon after IFRS adoption (Callao and Jarne, 2010) which might help to reconcile conflicting results of prior research and the underlying assumption of the European regulators introducing IFRS to improve comparability and transparency of financial statements. However, future research should study longer time series for countries other than Germany and different proxies for financial reporting quality. Additionally, further research needs to be done to disentangle the effects of different factors that are contributing to changes in financial reporting quality after the adoption of IFRS. Moreover, by showing that disclosures can have a constraining effect on earnings management, we shed light on the apparent association between these two constructs. This association and how standard setters and regulators can benefit from it could also be a worthwhile area for future research.

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Appendix 1. Variable Definitions

Variable	*Description*
TA	Total accruals used for the estimation of discretionary accruals. Calculated as change in current assets adjusted for change in cash less change in current liabilities adjusted for change in current portion of long term debt and change in income tax payable less depreciation and amortization expense.
A	Total assets used as denominator for the estimation of discretionary accruals.
Δ Sales	Change in sales used for the estimation of discretionary accruals.
Δ Receivables	Change in receivables used for the estimation of discretionary accruals.
DQ	Disclosure quality score from the best annual report 'beauty contest' of the German business journal manager magazine.
|DA|	Absolute value of discretionary accruals from the Kothari (2005) model as described in section 4.1.
Total Assets	Total assets scaled by beginning of period market value of equity.
Leverage	Total liabilities divided by beginning of period market value of equity.
Sales growth	Change in sales divided by beginning of period sales.
Cfo	Cash from operations divided by beginning of period market value of equity.
Change PPE	Change in property, plant and equipment divided by beginning of period market value of equity.
Foreign sales	Ratio of foreign sales to total sales.
ROA	Return on assets calculated as net income before extraordinary items plus interest expenses divided by total assets.
Close	Percentage of closely held shares.
Beta	Measure of systematic risk based on how returns co-move with the market.
IFRS	Dummy variable equal to 1 if the financial statements are prepared in accordance with International Financial Reporting Standards (IFRS) and 0 otherwise.
Early IFRS	Dummy variable equal to 1 if IFRS is applied and the observation belongs to the first four years of the individual firms IFRS reporting and 0 otherwise.
Mature IFRS	Dummy variable equal to 1 if IFRS is applied and the observation does not belong to the first four years of the individual firms IFRS reporting and 0 otherwise.
US-Listing	Dummy variable equal to 1 if the firm is cross-listed (either directly or OTC) in the United States and 0 otherwise.
LossD	Dummy variable equal to 1 if the firm encounters losses and 0 otherwise.
CfoD	Dummy variable equal to 1 if the firm encounters negative operating cash flows and 0 otherwise.
Big4	Dummy variable equal to 1 if the firm's financial statements are audited by a Big4 auditor (Ernst & Young, PriceWaterhouseCoopers, KPMG, Deloitte Touche Tohmatsu, (Arthur Andersen)) and 0 otherwise.
New Market	Dummy variable equal to 1 if the firm is listed at the German New Market and 0 otherwise.
International	Dummy variable equal to 1 if the financial statements are prepared in accordance with International Financial Reporting Standards (IFRS) or US GAAP and 0 otherwise.
Early International	Dummy variable equal to 1 if IFRS or US GAAP is applied and the observation belongs to the first four years of the individual firms IFRS/US GAAP reporting and 0 otherwise.
Mature International	Dummy variable equal to 1 if IFRS or US GAAP is applied and the observation does not belong to the first four years of the individual firms IFRS/US GAAP reporting and 0 otherwise.
PM/ATO	Earnings management diagnostic based on profit margin and asset turnover (Jansen et al., 2012)

CULTURE AND PROFITABILITY: EMPIRICAL EVIDENCE AT A EUROPEAN LEVEL

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Abstract

Organizational cultures distinguish different organizations within the same country or countries. When comparing the organizations within the same country differences in national cultures are not relevant but become relevant in comparison between different countries. This paper intends to evidence whether the profitability of companies can be influenced by the national culture. In order to characterize the culture of each country, we used the Hofstede measure of cultural dimensions (1. Power Distance (PDI); 2. Uncertainty Avoidance (UAI); 3. Individualism (IDV); 4. Masculinity (MAS); 5. Long-Term Orientation (LTO); and 6. Indulgence vs Restraint (IND)). Sample was based on the 500 largest European companies rated by the Financial Times 2015. Profitability was measured by the ratios Return on Assets (ROA) and Return on Equity (ROE). Statistical tests were performed to test whether the means of the variables used to measure profitability are statistically equal. The results indicate that companies with higher profitability are from countries with lower Power Distance, lower Uncertainty Avoidance, Long-Term Orientation, and Higher Indulgence.

Keywords: Culture, Cultural Dimension, National Culture, Profitability

1. INTRODUCTION

Cultural differences between nations are reflected mainly in their values. Differences in culture have considerable influence on both the personal and corporate domains of society. In organizations, cultural differences are noted primarily in their practices and have been recognized as one of the most influential factors when considering organizational performance. In this scope, Sagiv and Schwartz (2007) concluded in their research that company's values are more important than those of market forces. This improved importance of culture for researchers in organisational studies has become a source in the development of different theories, frameworks and models in order to clarifying organizational culture.

The relationship between organizational culture and performance has been underlined by several authors, such as Rousseau (1990), Kotter and Heskett (1992), Marcoulides and Heck (1993), Ogbonna and Harris (2000), Ehtesham et al. (2011), and Ahmad (2012)). Furthermore, national culture is another important consideration due to its deeply rooted connection with values, rooted in our daily life. The changes in national values are a matter of generation power; cultural values are part of our daily life. Similarly behaviour is produced by the adopted cultural values. Therefore, it is appropriate to say that national values have an impact on organizational culture as well. Hofstede (1991) states that behaviour at work is a continuation of behaviour learned earlier. Some managers have realized that any organization also has its own corporate culture. Thus, cultural values strongly affect all who are involved in the organization. Those values are almost invisible, but if we would like to improve performance and profitability, cultural values are the first question to be considered. Several papers have underlined the influence of culture on finance. Stulz and Williamson (2003) have demonstrated the effect of national culture on protection of creditor rights.

This paper aims to investigate the association between the national culture and the profitability of European companies. We focus on the role of national culture in explaining cross-country differences in profitability. There is considerable empirical support for the importance of country-level variables such as creditor rights and financial structure and firm-level variables such as firm size as determinants of profitability around the world (see, for example, Cho et al., 2014; Ozgulbas et al., 2006). In this paper, we introduce the cultural variable and we pretend to know that there is an association between each of the six dimensions of culture defined by Hofstede (2010) and the profitability.

It is organized as follows. Next section addresses the prior research and hypotheses while Section 3 describes the methodology and methods used in the research. Section 4 is dedicated to empirical results and discussion while final remarks and expected future outcomes are stated in the last section.

2. LITERATURE REVIEW

One of the more important questions in management has been why some organizations are well succeeded while others failed. It has been essential for managers to know which factors influence the organization's performance in order for to implement the appropriate strategies. Cohen et al. (1992) provide a framework for the examination of cultural and socioeconomic factors that could impede the acceptance and implementation of a profession's international code of conduct. Han et al. (2010) have studied whether the degree in which managers exercise earnings discretion relates to their culture, as well as the institutional features of their country. They found that *Uncertainty Avoidance* and *Individualism* dimensions of national culture explain managers' earnings discretion across countries and that this association varies with the strength of investor protection code of conduct. With a growing interest in how different cultural backgrounds affect markets, Curtis et al. (2012) have examined the impact of national culture on ethical decision making. To understand and to predict the behaviour of individuals with different cultural roots should lead not only to changes in the organizational structure but also change the practices in the world market. Probably these changes and practices will lead to more efficient and effective business practices (Curtis et al., 2012).

Chan and Cheung (2012) examines the differences in corporate governance practices in firms across different countries using the concept of ethical sensitivity and found that Hofstede's cultural dimensions can explain the differences in corporate governance practices. Furthermore, the results demonstrate the influence of culture on ethical sensitivity, which eventually determines the corporate governance practices in different regions. In essence, organisational practices are based on culture and most organisations avoid cultural risks to manage their businesses (Kanungo, 2006). Differences in culture comprise an important subject in the management area. Such differences affect almost every aspect of business particularly the strategic and organizational aspects.

Hofstede (1991) initially developed four dimensions of culture values, namely *Power Distance*, uncertainty avoidance, *Individualism* versus *Collectivism* and *Masculinity* versus *Femininity*; and later added two dimensions, long term versus short term orientation and *Indulgence* versus *Restraint*. Since then, researchers have used the Hofstede's measures to evaluate the different dimensions of a society's culture. Those measures have not been free from criticism and are definitely not exact or perfect measures of culture. However, it is fair to say that they have become the support of study of culture and their differences. This study has adopted the Hofstede's model once it is seen as the one that accurately fits with culture. Thus, it internationally used in a wide variety of empirical studies (Kirkman et al. 2006). The model integrates several dimensions, namely:

- *Power Distance* - The extent to which the less powerful members of an organization accept that power is unequally distributed. It suggests that a society's level of inequality is endorsed by the followers as much as by the leaders. Power and inequality are extremely fundamental facts of any society and anybody with some international experience will be aware that all societies are unequal, but some are more unequal than others.
- *Uncertainty avoidance* - The extent to which people feel threatened by ambiguous situations and have created beliefs and institutions that they try to avoid. The fundamental issue here is how a society deals with the fact that the future can never be known: should we try to control the future or just let it happen? Countries exhibiting strong UAI maintain rigid codes of beliefs and behaviours, and are intolerant of unorthodox behaviour and ideas. They are usually countries with a long history, the population is not multicultural, i.e. homogenous, risks, even calculated, are avoided in business and new ideas and concepts are more difficult to introduce People in *Uncertainty Avoidance* countries are also more emotional, and motivated by inner nervous energy. Weak UAI societies maintain a more relaxed attitude in which practice counts more than principles. Some of the common traits found in countries that score low on the *Uncertainty Avoidance* scale are usually a country with a young history, the population is much more diverse due to waves of immigration, risk is embraced as part of business and innovation and pushing boundaries is encouraged. People are more tolerant of opinions different from what they are used to; they try to have as few rules as possible, and on the philosophical and religious level they are relativist and allow many currents to flow side by side, are more phlegmatic and contemplative, and not expected by their environment to express emotions.
- *Individualism* – *Individualism* versus *Collectivism*. It embodies the degree to which individuals are integrated into groups. This dimension reflects an ethnic position of the culture, in which people are supposed to look after themselves and their immediate families, or a situation in which people belong to groups or collectives which are supposed to look after them in exchange for loyalty. A society's position on this dimension is reflected in whether people's self-image is defined in terms of "I" or "we". On the individualist side we find societies in which the ties between individuals are loose, a person's identity revolves around the "I". It is acceptable to pursue individual goals at the expense of others. *Individualism* is encouraged whether it is personality, clothes or music tastes. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive in-groups which continue protecting them in exchange for unquestioning loyalty, "We" is more important that "I", conformity is expected and perceived positively, Individual's desires and aspirations should be limited if necessary for the good of the group, the rights of the family are more important, rules provide stability, order and obedience.
- *Masculinity* - *Masculinity* versus *Femininity*. It refers to the distribution of emotional roles between the genders which is another fundamental issue for any society to which a range of solutions are found. The *Masculinity* side of this dimension represents a preference in society for achievement, heroism, assertiveness and material rewards for success. Society at large is more competitive. Its opposite, *Femininity*, stands for a preference for cooperation, modesty, caring for the weak and quality of life. Society at large is more consensus-oriented. In the business context *Masculinity* versus *Femininity* is sometimes also related to as "tough versus tender" cultures. In countries that score high on the *Masculinity* scale life's priorities are

achievement, wealth and expansion, it is acceptable to settle conflicts through aggressive means, women and men have different roles in society and professionals often "live to work", meaning longer work hours and short vacations. In countries that score low on the *Masculinity* in life the main priorities are the family, relationships and quality of life, conflicts should ideally be solved through negotiation, men and women should share equal positions in society and professionals "work to live", meaning longer vacations and flexible working hours

- *Long-Term Orientation* - Long-term oriented societies promotes pragmatic virtues oriented towards future rewards, in particular thrift, persistence, and adapting to changing circumstances. Short-term oriented societies promotes virtues related to the past and present such as national pride, respect for tradition, preservation of "face", and fulfilling social obligations. Countries that score low on this dimension prefer to maintain time-honoured traditions and norms while viewing societal change with suspicion. Those with a culture which scores high take a more pragmatic approach: they encourage thrift and efforts in modern education as a way to prepare for the future. In the business context this dimension is related to as normative (short term) versus pragmatic (long term) ".
- *Indulgence versus Restraint* - *Indulgence* stands for a society that allows relatively free gratification of basic and natural human drives related to enjoying life and having fun. *Restraint* stands for a society that suppresses gratification of needs and regulates it by means of strict social norms.

Table 1 evidences the six dimensions of national culture values and the consequences of each dimension to organizations. According to Blaško et al. (2000), cross-border mergers are more difficult and trickier to manage than domestic mergers due to divergences in corporate culture, reward systems and organizational structures, which are influenced by the national culture.

Taylor and Wilson (2012) analyses several independent datasets of culture and innovation from 62 countries and confirm that high-levels of cultural *Individualism* correlate with national innovation rates, implying that *Individualism* generally helps, and *Collectivism* generally damage, rates of technology patenting and scientific research publication.

The researches of Gerecke and House (2013) examined the demographic characteristics of the 57 TMTs, in the 2006 Fortune Global 500 banking sector, relative to their companies' change in return-on-assets from 2007 through 2009.Changes in corporate profitability during this period were found to be significantly correlated with Hofstede's national culture dimensions of LTO (+), IDV (-) and MAS (-).

Lievenbrück and Schmid (2013) examine whether cultural differences between countries help in explaining firms' hedging decisions. The analysis reveals a strong impact of a country's *Long-Term Orientation*, which reduces the probability for hedging and the hedged volume. Moreover, hedging with options is less common in countries with a high level of *Masculinity*. Overall, the results reveal that culture has a strong impact on the hedging behaviour of firms.

Shao et al. (2013) find that *Individualism* is positively associated with firms' risk taking behaviours, the firms in individualistic countries invest more in long-term (risky) than in short-term (safe) assets.

Griffin et al. (2015) examined why corporate governance varies widely across countries and across firms, and why such variation matters and find that the national cultural dimension of *Individualism* is positively associated with, whereas the national cultural dimension of *Uncertainty Avoidance* is negatively associated with, firm-level corporate governance practices.

Ahem et al. (2015) find strong evidence that three key dimensions of national culture (trust, hierarchy, and *Individualism*) affect merger volume and synergy gains. The volume of cross-border mergers is lower when countries are more culturally distant. In addition, greater cultural distance in trust and *Individualism* leads to lower combined announcement returns.

Using three of Hofstede's cultural value dimensions (*Individualism*, *Long-Term Orientation*, and *Indulgence*) Shi and Veenstra (2015) investigates how firm financial performance is affected by corporate social performance initiatives and national cultural values and find that the interactions between corporate social performance measures and *Individualism/Indulgence* negatively affect firm value whereas the interactions between corporate social performance measures and *Long-Term Orientation* positively impact firm value.

Based on the assumptions that culture can influence companies' performance indicators, we formulate our hypotheses as follows:

H1: Companies from countries with higher *Power Distance* has a different profitability of companies from countries with lower *Power Distance.*

H2: Companies from countries with higher *Uncertainty Avoidance* has a different profitability of companies from countries with lower *Uncertainty Avoidance.*

H3: Companies from countries with higher *Individualism* has a different profitability of companies from countries with lower *Individualism.*

H4: Companies from countries with higher *Masculinity* has a different profitability of companies from countries with lower *Masculinity.*

H5: Companies from countries with higher *Long-Term Orientation* has a different profitability of companies from countries with *Long-Term Orientation.*

H6: Companies from countries with higher *Indulgence* has a different profitability of companies from countries with lower *Indulgence.*

Table 1. Six dimensions According to Hofstede and their Organizational Consequences

Power Distance

Low (Austria, Denmark, Finland, Ireland, Norway, Sweden and Switzerland)	High (Belgium, France, Poland, Portugal, Romania, Russia and Turkey)
• Less centralization • Smaller wage differentials • Structure in which manual and clerical workers are in equal jobs. • Subordinates expect to be consulted • The ideal boss is a resourceful democrat	• Greater centralization • Large wage differentials • Structure in which white-collar jobs are valued more than blue-collar jobs. • Subordinates expect clear guidance from superiors • The ideal boss is a benevolent autocrat, or "good father

Uncertainty Avoidance

Low (Denmark, Ireland, Netherlands, Norway, Romania, Sweden, and UK)	High (Belgium, France, Poland, Portugal, Russia, Spain and Turkey)
• Managers are more involved in strategy • Managers are more interpersonal oriented and flexible in the styles • Managers are more willing to make individual and risky decisions • Lower satisfaction scores • Less power through control of uncertainty • Fewer written rules • Variability • Greater willingness to take risks	• Managers are less involved in strategy • Managers are more task-oriented and consistent in their styles • Managers are less willing to make individual and risky decisions • High satisfaction scores • More power through control of uncertainty • More written rules • Standardization • Less willingness to take risks

Individualism

Low (Austria, Czech Republic, Portugal, Romania, Russia, Spain, and Turkey)	High (Belgium, Denmark, Italy, Netherlands and UK)
• Involvement of individuals with organizations primarily moral • Employees expect organizations to look after them like a family and can become very alienated if organization dissatisfies them • Organization has great influence on member's well-being • Employees expect organization to defend their interests. • Policies and practices are based on loyalty and sense if there is duty and group participation • Promotion is from inside and seniority • Less concern with fashion in managerial ideas. • Policies and practices vary according to relations.	• Involvement of individuals with organization primarily calculative. • Organizations are not expected to look after employees from the cradle to the grave • Organization has moderate influence on member's wellbeing • Employees are expected to defend their own interests • Policies and practices should allow individual initiative • Promotion is from inside and outside and market value. • Promotion is based on market value. • Managers try to be up to date and endorse modern management ideas

Masculinity

Low (Denmark, Finland, Netherlands, Norway and Sweden)	High (Australia, Ireland, Italy, Romania and Switzerland)
• Sex roles are minimized • Organizations do not interfere with people's private lives • More women in more qualified jobs • Soft, yielding, intuitive skills are rewarded • Lower job stress • Social rewards are valued • Resolution of conflicts by compromise and negotiation	• Sex roles are clearly differentiated • Organizations may interfere to protect their interest • Fewer women in qualified jobs • Aggression, competition, and justice are rewarded • Higher job stress • Work is valued as a central life interest • Resolution of conflicts by letting the strongest win

Long-Term Orientation

Low (Denmark, Finland, Ireland, Norway, Poland and Portugal)	High (Belgium, Czech Republic, Germany, Russia and Switzerland)
• Meritocracy, rewards by abilities • Focus on the "bottom line"	• Wide social and economic differences are undesirable • Focus is on market position

Indulgence

Low (Czech Republic, Italy, Poland, Portugal, Romania and Russia)	High (Denmark, Netherlands, Sweden, Switzerland and UK))
• More neurotic personalities • Thrift is important • Strictly prescribed gender roles	• More extroverted personalities • Thrift is not very important • Loosely prescribed gender roles

Source: Adopted from Hofstede (2010)

3. METHODOLOGY

3.1 Data source

This research is based on 500 largest European companies included in the *Financial Times* 2015 classification, with reference to 2014 market value. From initial sample were eliminated fifty companies with extreme values of ROE variable since it had very high standard deviation values. Largest companies were selected towards the analysis of a set of companies that are economically important and that operate in multiple environments such as legal, institutional, economic and cultural conditions. The information about companies was obtained from *Datastream* database. These companies were aggregated in ten activity sectors: 1. Basic materials; 2. Consumer goods; 3. Consumer services; 4. Financials; 5. Health care; 6. Industrials;

7. Oil & gas; 8. Technology; 9. Telecommunications and 10. Utilities.

3.2 Variables

The cultural dimension was measured applying the six dimensions presented by Hofstede (2010): 1. *Power Distance* (PDI); 2. *Uncertainty Avoidance* (UAI); 3. *Individualism* (IDV); 4. *Masculinity* (MAS); 5. *Long-Term Orientation* (LTO); and 6. *Indulgence* vs *Restraint* (IND). Profitability was measured by the Return on Assets (ROA) and Return on Equity (ROE). These indicators are often used in financial and accounting literature in evaluating the performance of companies. ROA is calculated by dividing a company's annual earnings by its total assets giving an idea as to how efficient management is at using its assets to generate earnings. ROE is calculated by dividing a company's annual earnings by its Shareholder's Equity and shows how well a company uses investments to generate earnings growth.

4. RESULTS

4.1 Descriptive analysis

The 450 companies were integrated into ten activity sectors and the number of companies from each sector is shown in Table 2. The main representative (25.8%) is the sector *Financials* (which includes financial services, nonlife insurance, life insurance, banks, real estate investment and services and real estate investment trusts). The second most representative sector (19.2%) is the *Industrials* (which includes aerospace and defence, construction and materials, electronic and electrical equipment, general industrials, industrial engineering, industrial transportation and support services), followed by the sector *Consumer goods* (which includes automobiles and parts, beverages, food producers, household goods and home construction, personal goods, and tobacco) which represents 12.0%.

Table 3 evidences that the most represented country is United Kingdom (22.7%), France (16%), and Germany (12.4%). Austria, Czech Republic, Romania and Portugal evidence a very residual influence in this sample.

Table 2. Activity sectors

Activity sector	*N*	*%*
Basic materials	43	9.6
Consumer goods	54	12.0
Consumer services	48	10.7
Financials	116	25.8
Health care	21	4.7
Industrials	89	19.8
Oil & gas	25	5.6
Technology	14	3.1
Telecommunications	16	3.6
Utilities	24	5.3
Total	450	100.0

Table 3. Countries

Country	*N*	*%*	*Country*	*N*	*%*
Austria	4	0.9	Poland	9	2.0
Belgium	9	2.0	Portugal	3	0.7
Czech Republic	2	0.4	Romania	1	0.2
Denmark	11	2.4	Russia	14	3.1
Finland	7	1.6	Spain	24	5.3
France	72	16.0	Sweden	27	6.0
Germany	56	12.4	Switzerland	39	8.7
Ireland	5	1.1	Turkey	14	3.1
Italy	23	5.1	UK	102	22.7
Netherlands	19	4.2			
Norway	9	2.0	**Total**	450	100.0

Table 4 evidences the dimensions scores applied in this study. A higher degree of the *Power Distance* index is shown by Russia (93) and Romania (90). On the other hand Austria (11) and Denmark (18) have a lower *Power Distance*. *Uncertainty Avoidance* scores are the highest in Portugal (104), Russia (95) and Belgium (94). They are lower for Denmark (23) and Sweden (29). Regarding the *Individualism* index is highest in UK (89) and Netherland (80); and lowest in Portugal (27), Turkey (37) and Russia (39). *Masculinity* is high in Romania (90) and Austria (79). In contrast, *Masculinity* is low in Sweden (5) and Norway (8). High *Long-Term Orientation* scores are found in Germany (83), Belgium (82) and Russia (81); and low in the Ireland (21) and Portugal (28). *Indulgence* scores are highest in Sweden (78), Denmark (70) and UK (69); and lowest in Romania and Russia (20).

Table 5 illustrates the main descriptive statistics measures considering the 500 companies and considering the sample composed by 450 companies.

Table 4. Six dimensions from Hofstede

Country	*PDI*	*UAI*	*IDV*	*MAS*	*LTO*	*IND*
Sweden	31	29	71	5	53	78
Norway	31	50	69	8	35	55
Netherlands	38	53	80	14	67	68
Denmark	18	23	74	16	35	70
Finland	33	59	63	26	38	57
Portugal	63	104	27	31	28	33
Russia	93	95	39	36	81	20
Spain	57	86	51	42	48	44
France	68	86	71	43	63	48
Turkey	66	85	37	45	46	49

Country	*PDI*	*UAI*	*IDV*	*MAS*	*LTO*	*IND*
Belgium	65	94	75	54	82	57
Czech Rep	57	74	58	57	70	29
Poland	68	93	60	64	38	29
Germany	35	65	67	66	83	40
UK	35	35	89	66	51	69
Ireland	28	35	70	68	24	65
Italy	50	75	76	70	61	30
Switzerland	34	58	68	70	74	66
Austria	11	70	55	79	60	63
Romania	90	30	42	90	52	20

Table 5. Descriptive measure

Variable	*N*	*Mean*	*Median*	*Standard deviation*
considering 500 companies				
ROA	500	5.32	4.25	6.471
ROE	500	16.31	11.69	48.792
considering the sample				
ROA	450	5.07	4.02	5.021
ROE	450	13.09	11.8	8.705

4.2 Hypothesis tests

We used the *t*-Student test to verify a difference between sample means. The null hypothesis is rejected in case of *Power Distance*, uncertainty avoidance, *Long-Term Orientation* (considering the profitability measured by ROE) and *Indulgence* evidencing that there is a difference between the mean of profitability obtained by the different groups considering the different dimension of culture.

In case of *Individualism* and *Masculinity* the null hypothesis is not rejected, which supports the evidence that there is no statistical differences between the mean of profitability obtained by the different groups considering the different dimension of culture.

4.2.1 Culture dimensions and the profitability

Power Distance and profitability

Table 6 evidence the descriptive measures of the *Power Distance* and profitability and the tests of the null hypotheses (H_0). This hypothesis states that the mean of ROA or ROE of European companies with high PDI is equal to the mean of ROA of European companies with low PDI. The results from *t*-Student test also supports the rejection of the null hypothesis evidencing that there is a difference between the indicator ROA and ROE obtained by companies from countries with high PDI and the same indicator obtained by companies from countries with low PDI. Empirical evidence supports that the larges mean is observed in the group with companies from countries with low PDI (Austria, Denmark, Finland., Ireland, Norway, Sweden and Switzerland)

Table 6. The Power Distance and the profitability

	Power Distance	*N*	*Mean*	*Standard deviation*
ROA	High PDI	190	4.05	4.316
	Low PDI	260	5.81	5.365
	t Test for equality of means: $t_{(448)} = -3.741$; $p = 0.00$			
ROE	High PDI	190	11.74	8.860
	Low PDI	260	14.07	8.471
	t Test for equality of means: $t_{(448)} = -2.832$; $p = 0.01$			

Uncertainty Avoidance and profitability

Concerning *Uncertainty Avoidance* and profitability the results from *t*-Student test supports the rejection of the null hypothesis evidencing that there is a difference between the indicator ROA and ROE obtained by companies from countries with high UAI and the same indicator obtained by companies from countries with low UAI (Table 7). Empirical evidence supports that the larges mean is observed in the group with companies from countries with low UAI (Denmark, Sweden, Romania, Ireland, UK, Norway, Netherlands, Switzerland and Finland).

Table 7. The Uncertainty Avoidance and the profitability

	Uncertain avoidance	*N*	*Mean*	*Standard deviation*
ROA	High UAI	231	4.28	4.480
	Low UAI	219	5.90	5.420
	t Test for equality of means: $t_{(448)} = -3.474$; $p = 0.00$			
ROE	High UAI	231	12.22	8.801
	Low UAI	219	14.00	8.523
	t Test for equality of means: $t_{(448)} = -2.178$; $p = 0.03$			

Individualism and profitability

Table 8 evidence the descriptive measures of *Individualism* and the ROA and ROE respectively and the results of *t*-Student test. The results derived from t-Student test indicate that there isn't a statistical difference between the profitability obtained by countries with low or high *Individualism*. These results do not support the results presented by Shi and Veenstra (2015) and Gerecke and House (2013).

Table 8. The Individualism and the profitability

	Individualism	*N*	*Mean*	*Standard deviation*
ROA	High IDV	164	5.02	4.606
	Low IDV	286	5.09	5.252
	t Test for equality of means: $t_{(448)} = -0.135$; $p = 0.89$			
ROE	High IDV	164	12.92	8.534
	Low IDV	286	13.1	8.815
	t Test for equality of means: $t_{(448)} = -0.297$; $p = 0.77$			

Masculinity and profitability

Table 9 relate to the descriptive measures of the *Masculinity* and profitability and the results of *t*-Student test. The results evidence that the null hypothesis cannot be rejected confirming that there is no difference between the ROA or ROE obtained be countries with high or low *Masculinity*. These results do not support the results presented by Gerecke and House (2013).

Table 9. The Masculinity and the profitability

	Masculinity	***N***	***Mean***	***Standard deviation***
ROA	High MAS	229	5.44	5.214
	Low MAS	221	4.68	4.793
	t Test for equality of means: $t_{(448)} = 1.594$; $p = 0.11$			
ROE	High MAS	229	13.61	8.491
	Low MAS	221	12.54	8.902
	t Test for equality of means: $t_{(448)} = 1.302$; $p = 0.19$			

Long-Term Orientation and profitability

Table 10 includes the descriptive measures of the *Long-Term Orientation* and profitability measured by ROA and ROE indicators and the results of *t*-student test. Considering the ROA the results evidence that the null hypothesis cannot be rejected confirming that there is no difference between the ROA obtained be countries with high or low *Long-Term Orientation*. Considering the ROE, the results evidence that there is a difference between the ROE obtained by companies from countries with high LTO and the same indicator obtained by companies from countries with low LTO.

Empirical evidence supports that the largest mean is observed in the group with companies from countries with low LTO (Ireland, Portugal, Denmark, Norway, Finland, Poland, Turkey, Spain, UK, Romania and Sweden).These results do not support the results presented by Shi and Veenstra (2015) and Gerecke and House (2013).

Table 10. The Long-Term Orientation and the profitability

	Long-Term Orientation	***N***	***Mean***	***Standard deviation***
ROA	High LTO	234	4.77	4.994
	Low LTO	216	5.38	5.042
	t Test for equality of means: $t_{(448)} = -1.285.$; $p = 0.20$			
ROE	High LTO	234	12.27	8.659
	Low LTO	242	13.98	8.687
	t Test for equality of means: $t_{(448)} = -2.100$; $p = 0.04$			

Indulgence and profitability

Table 11 evidence the descriptive measures of the *Indulgence* and profitability measured by ROA and ROE and the results of *t*-student test. Empirical evidence support the largest mean is observed in the group with high IND (Sweden, Denmark, UK, Netherlands, Switzerland, Ireland, Austria, Finland and Belgium). The results from *t*-Student test evidencing that there is a difference between the profitability obtained by the companies from countries with high *Indulgence* and companies from countries with low *Indulgence*. These results do not support the results presented in Shi and Veenstra (2015) study may be because this study does not incorporate corporate social performance measures.

Table 11. The Indulgence and the profitability

	Indulgence	***N***	***Mean***	***Standard deviation***
ROA	High IND	223	5.87	5.398
	Low IND	227	4.27	4.493
	t Test for equality of means: $t_{(448)} = 5.000$; $p = 0.00$			
ROE	High IND	255	14.02	8.506
	Low IND	245	12.17	8.819
	t Test for equality of means: $t_{(448)} = 2.372$; $p = 0.02$			

Our study contributes to show how culture can affect firm profitability. Our findings suggest that cultural values should be accounted for when designing government policies aimed at encouraging entrepreneurship, innovation, and growth. Our results can also be used by investors so that they can direct their investments to companies in countries with lower values of *Power Distance*, Uncertainty Avoidance, *Long-Term Orientation* and higher values of *Indulgence*. European countries represented in our sample with simultaneous low *Power Distance*, uncertainty avoidance, *Long-Term Orientation* and higher *Indulgence* are Denmark, Sweden, Ireland and Finland. However it is necessary to consider other factors that may influence the profitability of companies.

5. CONCLUSIONS

This paper aims to investigate the association between the national culture and the profitability of European companies. Based on the Hofstede's model (based on cultural dimensions), the results indicate that companies with higher profitability are from countries with lower *Power Distance*, *Uncertainty Avoidance*, *Long-Term Orientation*, and higher *Indulgence*. However, the dimensions *Individualism* and *Masculinity* do not influence the profitability.

European countries with simultaneous low *Power Distance*, uncertainty avoidance, *Long-Term Orientation* and higher *Indulgence* are Denmark, Sweden, Ireland and Finland and are the countries that tend to have higher profitability. On the other hand, European countries with simultaneous high *Power Distance*, uncertainty avoidance, *Long-Term Orientation* and low *Indulgence* are Germany, Italy, Czech Republic, France and Russia. These countries tend to evidence lower profitability levels. The results achieved in this research are not aligned Shi and Veenstra (2015) research. Our research does not incorporate the measures of corporate social performance, taking into account only the Hofstede's cultural dimensions. Not surprisingly, our results do not corroborate the achievements of Gerecke and House (2013), probably because this research is limited to banking sector. However, our findings can contribute for the literature with practical insights about the impact of cultural dimensions on European countries profitability. Regarding the limitations, this research was conducted only for one year and in the scope of the European companies. To extend the range of time and the number of counties under analysis will contribute to refute or corroborate the evidences achieved in the current research and the other approaches carried out over time.

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RESULTS BASED COSTING (RBC) SYSTEM: QUESTIONING THE UNIT OF ANALYSIS IN ABC

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Abstract

This paper aims to introduce Results Based Costing (RBC) System as an alternative accounting tool by questioning the unit of analysis in ABC. By focusing on 'Results' instead of 'Activities', it investigates its manifest and underlying agendas as a newly innovative idea, with a view to determining its degree of cost management focus and Results Based Management (RBM). Adoption of ABC in different countries especially developed countries has not fulfilled early expectations. Its influence on organizational performance, depending upon how successful performance is defined, has not been evident (see Langfield-Smith 2008). The study thus uses historical and website analysis methodologies for investigating innovative diffusion philosophies related to ABC practices and discourse. These are examined through the theoretical lenses of institutional logics theories. It thus distinguishes between institutional logics and situated logics, and their variances. ABC implementation can be characterized as an encounter between the ABC's inscribed institutional logic and the situated institutional logic that is embedded in the existing practices in a given organization. The paper moves on to consider the surrounding emergence of RBM approach and then introduces RBC as new accounting tool along with its developments, its processes, intentions and claimed advantages. RBC's dominant agenda are overhead cost reduction, cost management, performance management and results orientation. Accounting research into the management accounting system and its processes is much needed. This has been largely neglected in favor of management accounting change and innovative diffusion literature. In a world dominated by IT industries, RBC system as a center of organizational and accounting management merits greater attention by researchers. Practitioners in this way can better design and implement systems that build on past knowledge and learning. This study thus presents itself as a first study about RBC currently available in the accounting and management research literatures. It also represents one of the very few referred studies of the Results Based Accounting in the accounting research literature globally.

Keywords: Results Based Costing, ABC, Unit of Analysis, Institutional Logics, Innovative Diffusion

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1. INTRODUCTION

Although reducing costs as base in ABM has always been important for successful financial results, in the mid-1980s into early-1990s, reducing costs became a paramount priority at many organizations. An organization trying to reduce costs often clustered them into three types: materials costs, including raw materials, equipment, service, maintenance, and so on; labor costs, meaning the costs to an organization of its people, which show up in many places in the income statement, but are clearly recorded in the sales, general, and administration item of the corporate income statement; and process costs, the cost of turning materials into products or services. Some organizations tried to reduce all three costs simultaneously (Gunasekaran and Sarhadi 1998; Ulrich et al. 1999). During the last fifteen years, most executives have worked to meet organizational goals by focusing on cutting costs. Many initiatives - such as, ABC/ABM, total quality management, continuous improvement, downsizing, consolidation, reengineering, value based management, transformation, mergers and acquisitions, to name a few - focused implicitly or explicitly on reducing operating costs or improving efficiency. When successful, these initiatives, improve productivity and efficiency, which ultimately lower operating costs (ibid.).

More recently, leading organizations have begun to recognize that Results Based Management (RBM) approach provides a viable alternative to reducing costs as a way to organizational goals and continual growth. Results Based Management (RBM) is an approach to maintain the focus of organizational management on its mission and objectives, and to integrate performance information into decision-making, management, and reporting. It can be represented as a 'life cycle' where 'results' are central to planning, budgeting implementation, monitoring and evaluation, reporting and ongoing decision-making (Wholey 1999). By focusing on 'results' instead of 'activities', It assists organizational management to better articulate its vision and support for targeted results by minimizing overhead costs, and to monitor the progress using KPIs, targets and baselines. The Government Accounting Standards Board (GASB) (2012) defines the RBM approach as.

Is "a comprehensive approach to aiding public policy [i.e. organizational strategy] and administrative organizations to focus on their missions, goals, and objectives? It establishes the accomplishment of those goals and objectives as the primary endeavor for the organization, and provides a systematic method for carrying out that endeavor. It requires the (1) establishment of performance measures, (2) use, and (3) reporting of those measures; so that management, elected officials and the public can assess the degree of success the organization has in accomplishing its mission, goals, and objectives (see also, Aristigueta and Sikkander 2010:2,3).

The transition to the RBM approach is a major change for most organizations. Business leaders must be aware of the organizational culture and understand that they are leading organizational change. Building skills on the human side of change will help managers in overcoming resistance and facilitating RBM approach. This approach builds capacity in change management specifically related to strategic planning, cost management, and RBM practices (Wholey 1999; Lavergne and Branch 2002; Ortiz et al. 2004). A focus on results, as envisioned by the new financial management, implies that programs contributing to the same or similar results should collaborate to ensure that goals are consistent and, when appropriate, program efforts are mutually reinforcing. Organizations, whether (non-) profit seeking, can use their strategic and annual performance plans as tools to drive collaboration with other organizations and partners, and establish complementary goals and strategies for achieving results. Such plans can also reinforce accountability for the collaboration (teamwork) by aligning organizational goals and strategies with those of the collaborative efforts. Accountability for collaboration is reinforced through public reporting of results for each organization (ibid.).

RBM approach is thus a management as well as accounting approach focused on realizing results; it is a broad management strategy intended at changing the way the organization operates, with improved performance (realizing results) as the central orientation (OECD 2000). It must be supplemented by organizational policies and strategies, such as human resources, information technology and learning strategies, if it is to have the planned impact on organizational effectiveness. Thereafter, RBM has a strategic, future-oriented approach to the deployment of resources to achieve significant results. Notably, the RBM initiative works best in an atmosphere of TQM and a culture of performance excellence. TQM principles must be integrated with existing accounting practices and systems to result in quality and excellence in any organization (that is, quality products and services, and satisfied customers). Organizations use continuous improvement as one vehicle for promoting a "culture of performance" whereby organizations develop a RBM approach to administering programs and allocating resources to improve performance (Lavergne and Branch 2002; Ortiz et al. 2004; DBM 2012).

Results Based Accounting (RBA) can be considered as an integral part of RBM. Accordingly, the focus of management accounting has shifted from inputs and control of expenditure into accountability for results and efficient allocation of resources, with the emphasis on making management more accountable in financial terms (Humphrey et al. 1993; Gray and Jenkins 1995). In the Results Based Accounting (RBA) process, the costing and budgeting systems are considered as an integral part of planning process in management accounting. Planning process sketches the path and permits the setting of priorities and strategies. Costing and budgeting systems provide financial resources to implement the strategic plans, and to achieve organizational objectives. On the one hand, the organizational objectives and KPIs as in the strategic plan are normally used as a basis for budget demands; at the same time, the strategic plans drives the budget requests (Try and Radnor 2007; Sulle 2011; DBM 2012). KPIs, which are derived directly from strategic objectives, connect between strategic plan and budget, as key elements of the strategic management process (Poister and Streib 2005). One the other hand, Results Based Costing (RBC) has changed the focus of the costs on achieving the results instead of activities, and the allocation base of the overhead costs based on the outputs rather than inputs. This approach developed transparency and accountability for the purposes of resources allocation and the efficiency of their use. RBC can be viewed as a comprehensive integrated costing system including accounting subsystems: budget management system; costs management, revenue management; procurement management; payables and receivables management; cash management; and general ledger.

Since RBC is based on connecting budgeted costs with performance, it makes sense to compare the cost with the service or benefit. It is one of the main challenges of reporting on achieved results. It seeks to shift attention away from activities to communicating significant results that the program or project has achieved at the organizational output and outcome levels (UNDG 2010). The decision-making and reporting process along with RBC usually takes place after a series of organizational actions such as setting strategic objectives, keeping objectives in mind while allocating resources, managing programs to achieve results, measuring performance, and reporting results. These actions help the organization to determine its progress towards its desired ends (OCA 2002). Similarly, Results Based Budgeting (RBB) communicates management's plans throughout the organization. It forces managers to think about and plan for the future. The budgeting process provides a means of allocating resources to those parts of the organization where they can be used most effectively. The budget process can uncover potential bottlenecks before they occur. Budgets coordinate the activities of the entire organization by integrating the plans of its various parts, and define goals and objectives that can serve as benchmarks for evaluating subsequent performance (Garrison et al. 2003).

To summarize, the aim of the current study is to introduce RBC as an alternative accounting system to ABC. It investigates its manifest and underlying agendas as a newly innovative idea, with a view to determining its degree of cost management focus and Results Based Management (RBM) foundations. The study uses institutional logics and innovations diffusion as theoretical lens to inform the study and how they relate to its central aim. The paper begins with a discussion of recent research and evidence about the influence of RBM upon cost accounting systems especially RBC system. Research into ABC and ABM is then critically reviewed, particularly in the context of management accounting research, discussing the contemporary underlying agendas in management accounting innovation and change that researchers have identified. The paper moves on to consider the surrounding emergence of RBM approach and then introduces RBC as new costing system and management approach along with its developments, its processes, intentions and claimed advantages.

2. MANAGEMENT ACCOUNTING INNOVATIONS

A large proportion of management and accounting publications deal with the diffusion of innovation (Rogers 1995). "An innovation is an idea, practice, or object perceived as new by an individual or other unit of adoption" (ibid:1). Diffusion of innovation attempts to determine the innovation's diffusion curve over time and to recognize the factors explaining its shape. A large size of studies with a positivist and rational approach are concerned with the diffusion of innovation. However, the models and concepts employed by most of this type of research are not easily transposed to the study of managerial innovations (Lundblad 2003). Furthermore, positivist research in management (accounting) often prefers to ignore power struggles and conflicting logics, as well as rationalities other than technical ones, which are significantly influence the diffusion of new systems and practices (Baxter and Chua 2003). These boundaries lead us towards alternative research in management accounting, which is interpretive and non-positivist approach.

Unlike rational approach, interpretive approach examines accounting as a part of social system that is influenced by power and conflicting logics. It considers accounting as a discipline of the social science and it seemed important to us to understand it in the context of a broader set of discourses from the social sciences. Although many scholars have clarified that conflict and negotiation mark in the emergence of new institutional fields (Hoffman 1999; Hargrave and Van de Ven 2006; Purdy and Gray 2009), empirical research on conflicting logics has largely focused on change within mature fields (Greenwood et al. 2002; Greenwood and Suddaby 2006; Lounsbury and Crumley 2007; Lounsbury 2008) where a dominant logic has eventually prevailed. In some emerging fields, situations such as pressure and goal similarity enhance rapid consensus on a single organizing logic, making rapid institutionalization possible (Maguire et al. 2004). However, other scholars have clarified that institutional innovations may remain contested (Fligstein 1996; Scott et al. 2000; Marquis and Lounsbury 2007), that diffusion of innovations does not always result in institutionalization (Abrahamson 1991), and that emerging fields may not always mature toward stability and institutionalization (Greenwood and Suddaby 2006). Thus, under some situations, institutionalization of a single new organizational system may not be a taken for granted conclusion (Purdy and Gray 2009). Tension between these clarifications is particularly evident when one considers an emerging field marked by conflicting logics where a new population of organizations is struggling to become institutionalized (ibid.).

Existing models of institutionalization describe a diffusion stage in which a dominant logic emerges within a field (Strang and Meyer 1993; Greenwood et al. 2002). Stage models of field evolution characterize the final stage of institutionalization as "structuration," when practices acquire legitimacy (Morrill 2006), or as reinstitutionalization, when new logics become "taken for granted [...] as appropriate arrangements for all organizations within the field" (Hinings et al. 2004: 315). These models leave open the prospect that institutionalization may be weak (Hinings et al. 2004) or that "contradictory patterns of human activity" may "be organized, made sense of, and navigated" (Morrill 2006: 5-6), yet the processes by which this might occur remain underspecified. Some evidence suggests that geographic variations induce different diffusion rates and changes in what gets diffused (Hays 1996; Schneiberg and Soule 2005; Marquis and Lounsbury 2007; Purdy and Gray 2009). However, scholars have called for a fuller understanding of the mechanisms by which multiple institutional logics may be diffused and the conditions supporting the determination of multiple institutional logics within a field (Strang and Soule 1998; Davis and Marquis 2005). As Lounsbury (2008) discuses that,

"By focusing on how fields are comprised of multiple logics, and thus, multiple forms of institutionally-based rationality, institutional analysts can provide new insight into practice variation and the dynamics of practice. Multiple logics can create diversity in practice by enabling variety in cognitive orientation and contestation over which practices are appropriate. As a result, such multiplicity can create enormous ambiguity, leading to logic blending, the creation of new logics, and the continued emergence of new practice variants. Recent efforts to combine social movement analysis and institutional theoretic approaches have highlighted how collective action often underlies these processes ... (Lounsbury 2008: 354)".

Institutionalists suppose that practices are fundamentally embedded in cultural and cognitive systems that are "structured as an embodiment of the range of activities, social conflicts, and moral dilemmas that individuals are compelled to engage with as they go about negotiating the sorts of everyday events that confront them in their lives" (Mohr 1998: 353). Although an institutional approach to practice argues that action must be understood as fundamentally constituted by institutional rules and institutions, to be relevant to practice scholars, institutionalists must go beyond their structuralist treatment of practice as a cloud level observation of diffusion processes (Mohr 1998; Lounsbury 2008). ABC implementation can be characterized as conflicting logics between the ABC inscribed institutional logic and the legacy institutional logic that is embedded in the existing technology-supported practices in the adopting organization. Implementation of an ABC, thus, provides the ideal opportunity to explore how micro-level processes within an organization are activated to translate the ABC institutional logic. ABC has instigated a number of articles in accounting and management. For example, Bjørnenak (1997) examined the diffusion of ABC across the Norwegian manufacturing industry. He describes three types of diffusion processes. The first depends upon skilled workers moving about and causing change. Contagious diffusion, on the other hand, takes place when information is spread in a smooth and random way. Hierarchical diffusion happens when information is dispersed through a trickle down process. Bjørnenak studied how diffusion is affected by certain variables and looked at the relation between Cooper's (1988) statements of when ABC is necessary and adoption rates of ABC. Unlike Cooper's predictions, he found that ABC was more common in firms experiencing less competition, and with lower product diversity, than their adopter counterparts. Thus, he reported a weak correlation between the demand for information by organizations and adoption rates. A much fuller explanation arises if the suppliers of innovation are studied, where certain agents endorse the benefits and use of the innovation that they promote (Lapsley and Wright 2004).

In a similar way, Malmi (1999) examined ABC diffusion across Finnish firms, building on a conceptual matrix by Abrahamson (1991). Most adoptions are assumed to occur because of the benefits and efficiencies gained through implementation. However, Abrahamson adds three other perspectives to this 'efficient-choice' selection. Forced selection results if one supplier has influence over all interested parties and thus the motive of the adopter may not play a part in implementation. The fashion perspective is applied when many potential adopters are implementing the innovation yet still retain a choice over whether to implement or not. Finally, the fad perspective describes organizations adopting a technique in order to appear legitimate and retain a competitive advantage, rather than for reasons that are more rational. Malmi found the matrix useful in explaining the diffusion process. The earliest adopters usually fall under the efficient choice perspective, or forced selection. The fashion perspective plays a more important role in the increasing rate of adoption. Malmi concluded that there was little evidence of the fad perspective because it is unlikely that management accountants would implement a new technique without any rational basis—a perspective that we challenge, below. Malmi's paper provides a useful analysis of innovation diffusion and highlights the different reasons for adoption at different stages in the diffusion process. These findings have potential relevance to the public sector and its initiatives from the centre to operational points of public service (Lapsley and Wright 2004).

Innovations in management accounting are necessary to meet the developments in the business environment that have occurred. As a result of the lack of innovation, management accounting has lost its relevance today. Johnson and Kaplan (1987) assert that management accounting lost its relevance after the significant development in technology and information systems. Johnson and Kaplan (1987) introduce a great opportunity to discuss and encourage use of innovations techniques. New management accounting means that innovations or so-called advanced management accounting techniques, such as Activity-Based Costing (ABC), Operational Control System (OCS), and Balanced Scorecard (BSC) (Kaplan 1998), can be introduced. Although many companies modify their management accounting practices, the changes are in the methods of management accounting used, rather than the use of new systems or techniques (Scapens and Burns 2000). A variety of innovation systems have been suggested as a solution for the substitution of traditional management accounting systems in order to respond to the changes that have occurred within business environment. These innovation systems were: ABC (Cooper and Kaplan 1992; Granlund and Lukka 1998; Sharman 2003; Kaplan and Anderson 2004), balanced scorecard (Kaplan and Norton 1992; Kaplan and Norton 1996; Johnson 1998; Kaplan et al. 1998; Bach et al. 2001; García-Valderrama et al. 2009; Huang 2009), and strategic management accounting -SMA (Dixon and Smith 1993; Collier and Gregory 1995; Dixon 1998; Guilding et al. 2000; Lord 2007). However, the direction of the research, especially its assumptions, has been criticized by other researchers (Drury 1990; Bakke and Hellberg 1991; Drury et al. 1993; Drury and Tayles 1995; Tangen 2004; Geri and Ronen 2005; Thompson and Mathys 2008; Bobillo et al. 2009).

Furthermore, many researchers have criticized new management accounting systems. According to Malmi (1997), many companies suffer problems with implementing ABC (Malmi 1997). Although ABC is used by some of the UK's largest companies, Innes and Mitchell (1990) highlight that it has been rejected by around 13% of UK companies after assessment. Scapens and Burns (2000) points out that in many organizations, the change was taking place in management accounting systems and techniques. However, this change was in the methods of management accounting used, rather than the adoption of new advanced management accounting systems and techniques such as ABC, BSC, and SMA (ibid.). This led to look to the institutional logics that are manifested beyond this diffusion and implementation. While such innovations as RBC may carry potential for improved organizational performance, care is needed with respect to their balancing of agendas and suitability for their institutional and cultural environments. Institutional change has become a dominant part of social engineering in most knowledge based economies today. Such innovations as RBC must be considered in terms of the existing rules and routines into which they are introduced: how they reflect and adapt to these rules and routines? and what impacts they may also have on the prevailing culture itself?

3. INSTITUTIONAL LOGICS IN MANAGEMENT ACCOUNTING

The notion of institutional logics was introduced by Alford and Friedland (1985) to describe the contradictory practices and beliefs inherent in the institutions of modern Western societies. They describe capitalism, state bureaucracy and political democracy as three contending institutional orders which have different practices and beliefs that shape how individuals engage in power struggles. A separate, albeit related, notion of institutional logics was developed by Jackall (1988). In his ethnographic study of ethical conflicts in corporations, Jackall (1988:112) defines institutional logic as "the complicated, experientially constructed, and thereby contingent set of rules, premiums and sanctions that men and women in particular contexts create and recreate in such a way that their behavior and accompanying perspective are to some extent regularized and predictable. Put succinctly, an institutional logic is the way a particular social world works".

Friedland and Alford (1991:232) further developed the notion in the context of exploring the interrelationships between individuals, organizations and society. They view "institutions as supra-organizational patterns of activity rooted in material practices and symbolic systems by which individuals and organizations produce and reproduce their material lives and render their experiences meaningful". Jackall (1988), like Friedland and Alford (1985), views institutional logics as embodied in practices, sustained and reproduced by cultural assumptions and political struggles (Thornton and Ocasio 2008). But the emphasis, for Jackall (1988), is on the normative dimensions of institutions and the intra-institutional contradictions of contemporary forms of organization; in contrast, the focus for Friedland and Alford (1985) is on symbolic resources and the inter-institutional contradictions of the inter-institutional system (ibid.). Developing ideas by both Jackall (1988) and Friedland and Alford (1991), Thornton and Ocasio (1999:804) defined institutional logics as "the socially constructed, historical pattern of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality".

According to this definition, institutional logics offer a relation between individual agency and cognition and socially constructed institutional practices and rule structures. While Friedland and Alford's approach represents both the structural and symbolic, and Jackall's includes both the structural and normative, Thornton and Ocasio's (1999) approach to institutional logics integrates the structural, normative, and symbolic as three necessary and complementary dimensions of institutions, rather than separable structural (coercive), normative, and symbolic (cognitive) carriers, as suggested by alternative approaches (e.g., DiMaggio and Powell 1991; Scott 1995). However, institutional logics emphasize how historical and cultural change is important in understanding the patterns of power and control in organizations (Fligstein 1987; Brint and Karabel 1991). This notion dates back to Weber (1922) and his classification of historically situated ideal types: control by individual charisma, by tradition, and by legal bureaucracy (Thornton and Ocasio 1999). Institutional logics thus encompass both the material and symbolic - they present the formal and informal rules of action, interaction and interpretation that guide and constrain decision-makers in achieving the organization's actions and in obtaining social status, credits, penalties and rewards in the process (Ocasio 1997). These rules constitute a set of assumptions and values, usually implicit, about how to interpret organizational reality, what constitutes appropriate behavior, and how to succeed (Jackall 1988; March and Olsen 1989).

Although the institutional logics approach shares with Meyer and Rowan (1977), Zucker (1977), DiMaggio and Powell (1983, 1991) and Scott (1995) a concern with how cultural rules and cognitive structures shape organizational structures, it differs from them in its center of attention. The focus is no longer on isomorphism, be it in the world system, society, or organizational fields, but on the effects of separated institutional logics on individuals and organizations in a larger variety of contexts, including markets, industries, and populations of organizational forms. Hence institutional logics shape rational, mindful behavior, and individual and organizational actors have some hand in shaping and changing institutional logics (Thornton 2004). In doing so, institutional logics still focus on 'rationality' and 'ideal forms' and depend on mathematical models that are grounded in neoclassical theory. In addition, these studies emphasize institutional change as the replacement of a one dominant logic by another and assume that organizational practices are guided by a single logic; in fact, organizational practices that operate in multiple institutional spheres often have plural logics. This means that these studies have viewed the isomorphism from a single viewpoint (Dunn and Jones 2010). Furthermore, some scholars have studied the institutional change at societal level, such as Meyer and Rowan (1977), and others have focused on the organizational field level, such as DiMaggio and Powell (1983). More recently, Alsharari et al.(2015) and Alsharari (2013) have developed a new institutional framework which integrates multiple levels of institutional change. This framework has a more comprehensive view of accounting and reveals the multiple logics in the role of accounting in the institutionalization process. By providing a link between institutions and action, this alternative model of institutional logics provides a bridge between the societal-level, macro perspectives of Meyer and Rowan (1977), DiMaggio and Powell (1983) and Scott (1995; 2001) at organizational field level, and Zucker's more micro-process approach. Situated levels of analysis are linked with beliefs and practices in wider institutional environments in ways that address the study of power conflicts and diffusion studies (Hasselbladh and Kallinikos 2000; Thornton and Ocasio 2008).

Since the initial statement on institutional logics by Friedland and Alford (1991), there has been steady growth in the development of theory and empirical research. The Institutional Logics Perspective (Thornton et al. 2012) integrates this line of analysis into a multidimensional, cross-level model and framework, presenting a focal point for the gathering of scholars forging a new wave of institutional theorizing. Research on institutional logics, started in North America but with contributions now regularly produced by both European and North American scholars (almost equally), has extended over the past decade or so to focus not only on the effects of shifts in dominant logics, but also on understanding the implications of plural logics and how organizations respond to institutional complexity. This development reflects a growing recognition that conflicting and overlapping pressures stemming from multiple institutional logics create interpretive and strategic ambiguity for organizational leaders and participants (Greenwood et al. 2011). At the center of the imagery laid out is the notion of institutional contradiction and the fact that institutional logics must be understood as simultaneously material and symbolic (Lounsbury and Boxenbaum 2013). On the one hand, Greenwood et al.(2010) showed how potentially incompatible demands stemming from plural institutional logics are perceived and get worked out inside organizations. On the other, Greenwood et al. (2011) provide a theoretical framework to capture how the structural dimensions of fields and organizational attributes affect organizational responses to institutional complexity. This double volume contains numerous works that contribute to advancing insight into how organizations respond to multiple logics across an array of institutional fields. An additional approach to studying actions and interactions with institutional effects is reflected in the institutional entrepreneurship and work literatures (e.g., Lawrence and Suddaby 2006; Battilana et al. 2009). Engaging the theoretical conversation on logics, scholars have focused on how actors negotiate environments that are constituted by plural logics (Boxenbaum 2006; Kraatz and Block 2008). For instance, Battilana and Dorado (2010) showed how organizations can successfully hybridize two logics by attending to their human resource selection and socialization processes. Lawrence et al. (2009) further draw attention to the potentially unintended institutional effects of actors' behaviors and interactions in contexts characterized by multiple logics.

Some literature proposes that institutional change occurs when one logic is overthrown by another (Thornton 2002) through a dialectical process (Seo and Creed 2002). At the same time, others have suggested that competing institutional logics can co-exist (Reay and Hinings 2005; Marquis and Lounsbury 2007; Purdy and Gray 2009; Reay and Hinings 2009) even though they are contradictory (Smith-Doerr 2005). While some argue this co-existence occurs through separation (Lounsbury 2007), others indicate that actually people can accept living with contradictions, mobilizing one logic in the context of one decision or action and another in the context of a different decision or action (Swan et al. 2010; Kandathil and Newell 2011). In emerging fields, particularly, resolving the conflicts that ensue is difficult since "the greater the range and intensity of schisms, the more difficult will be the task of developing acceptable norms" (Greenwood et al. 2002: 75-76). To build acceptance of new institutional arrangements, institutional entrepreneurs promote opportunities for change, seek to fit into prevailing systems, mobilize support from institutionalized actors (Beckert 1999), and strive to prove the value of the new forms (Reay et al. 2006).

Institutional change ultimately happens when an alternative logic replaces a prevailing logic (Garud et al. 2002; Lounsbury 2002; Thornton 2002). However, the mechanisms institutional entrepreneurs use to diffuse new logics in emerging fields may differ from those they use in established fields. As multiple new ideas begin to diffuse, actors may draw selectively from them, exploiting some and ignoring others to advance their own interests; thus, variations emerge to suit local needs (Hays 1996; Scott et al. 2000; Lounsbury 2007). Besides, social learning, politics, and contextual factors can result in reinvention of innovations (Hays 1996). If no dominant logic emerges and common standards do not diffuse, organizations may deviate from their initial missions in order to secure needed resources (Oliver 1991) and seek the legitimacy (Suchman 1995) they need to survive (Purdy and Gray 2009). The implementation of ABC confirms the practice variance between the institutional logics and situated logics as evident in different companies. While ABC implementation does not automatically transfer the institutional logic of action inscribed in the software into the practices of the adopting organization (Dery et al. 2006; Grant et al. 2006). Research has demonstrated that this is because the logic inscribed in the ABC can conflict with the existing, structures, institutions and practices, that is, with the legacy institutional logic, of the adopting organization (Yoo et al. 2007). Nevertheless, most organizations do 'muddle through' with their ABC and eventually create a 'working information system' (Wagner and Newell 2006), albeit this often relies on significant customization (Brehm et al. 2001) as well as organizational change (Volkoff et al. 2007). Customization indicates that the institutional logic inscribed in the ABC has been modified in some way to accommodate certain local beliefs and practices (Pollock and Williams 2008). Thus, an ABC implementation can be characterized as an encounter between the ABC inscribed institutional logic and the legacy institutional logic that is embedded in the existing technology-supported practices in the adopting organization.

4. ABC AND ABM SYSTEMS: PROS AND CONS IN THE UNIT OF ANALYSIS

Adoption of ABC in developing countries, especially UK and USA, has however not fulfilled early expectations. Adoption rates internationally peaked at around 20-30% of various surveys' respondents, with 10-20% of respondents rejecting the whole notion even in its early manifestations in the early 1990s. By the mid 2000 period, the percentage of companies` adopting ABC had declined, the percentage of companies rejecting its adoption had increased, and a larger proportion of companies declared they would not consider it (Innes and Mitchell 1990; Innes et al. 2000; Cotton et al. 2003; Langfield-Smith 2008). While the reasons for this trend remain unclear, one recurring theme has been the perceived cost and complexity of installing and implementing such a system (Gosselin 2007). In Australia, research has shown up some unique features of adoption, namely that ABM practices are more widely employed than overseas, with up to 86% of business units surveyed claiming such use (Baird et al. 2004).

The question remains as to what the underlying intent and focus of ABC and ABM have proven to be? A veritable smorgasbord of potential uses has been identified: stock valuation, product and service design and pricing, output decision-making, cost reduction, value-adding analysis, budgeting, customer profitability analysis, cost modelling and performance measurement (Innes et al. 2000). However the evidence in general overwhelmingly points to two major foci upon which ABC and ABM have settled: cost reduction and performance improvement, the latter with a pronounced financial emphasis (Anderson and Young 1999; Innes et al. 2000; Ittner et al. 2002; Cotton et al. 2003; Gosselin 2007). In this focus and pursuit, ABC and ABM are intrinsically related and involved, targeting the elimination of non-value adding activities, and 'heat-seeking' cost efficiency opportunities. ABM is the process management cousin of the ABC approach, analyzing all activities and restructuring and streamlining them for cost advantage (Gosselin 2007; Langfield-Smith 2008). However their impact on organizational performance, depending upon how successful performance is defined, has not been noticeable (Langfield-Smith 2008). Survey respondents have been found to claim moderate financial benefits but not necessarily been able to quantify them (Cinquini and Mitchell 2005). Ittner et al's (2002) study found no significant effect on financial return on assets. Nonetheless, after more than 20 years of ABC and ABM application, there is a scarcity of evidence pointing to their significant impact on organizational performance (Gosselin 2007).

Armstrong (2002:101-2) mounts a persuasive argument regarding the overhead cost reduction agenda that ABC and ABM have been designed to prosecute. In his view, they commenced an attempt to dismantle the 'shelter' of fixed overhead, observing:

"The destruction of the staff department as a shelter is not incidental to ABM: it is the heart of it." (Armstrong 2002:102)

In this process, ABM transfers control and accountability from the staff performing their roles and actions to the ABC/ABM monitors, operating in and reinforcing a climate of suspicion. ABC and ABM thus become tools for invasive control of staff labor and for the axing of any activities and staff considered surplus to value-adding cost efficiency. Armstrong likens this dismantling of the staff office processual black box to scientific management's earlier breaking open the black box of craft production. Thus in his words:

"The destruction of the staff department as an employment shelter is not an unintended consequence of ABM; it is precisely the point…" (Armstrong 2002:109)

It must be said that all has not been 'beer and skittles' with ABC and ABM. Surveys reveal significant reservations about the system expressed by employees subjected to it, problems with its perceived narrow financial focus, and it's sometimes incommensurability with existing organizational culture (Malmi 1997; Innes et al. 2000). Often ignored by its proponents have been the social consequences of ABC/ABM employment, especially as its implementation and impacts are invariably a matter of perception by those involved and subject to them (Armstrong 2002). Many researchers have investigated the factors that influence the manner and outcomes of ABC implementation, more recently finding that the answers depend in part on the stage of implementation being examined. However the variety of influences is nonetheless considerable, including top management and trade union support, clarity of objectives, quality orientation, embedding within organization structure and practice, resourcing and staff training, non-accounting staff attitudes, potential complexity and associated implementation costs, links to performance evaluation and reward systems, likelihood of associated staff layoffs, and perceived relationship to successful financial impacts (Anderson and Young 1999; Innes et al. 2000; Ittner et al. 2002; Cotton et al. 2003; Cinquini and Mitchell 2005; Gosselin 2007). The authors studied different types of businesses and concluded that business units exhibiting an outcomes oriented culture including competitive expectations of high performance tend to adopt ABC/ABM processual approaches focusing on cost reduction, efficiency and effectiveness gains and competitively pitched product and service pricing (ibid.). This may offer some indications as to the drivers behind the introduction of RBC system as alternative to ABC.

As mentioned earlier, the implementation of ABC confirms the practice variance between the institutional logics and situated logics as evident in different companies. While ABC implementation does not automatically transfer the institutional logic of action inscribed in the software into the practices of the adopting organization (Dery et al. 2006; Grant et al. 2006). Research has demonstrated that this is because the logic inscribed in the ABC can conflict with the existing structures, institutions and practices, that is, with the legacy institutional logic, of the adopting organization (Yoo et al. 2007). The significant variances have been faced in the implementation of ABC, so that:

"Over the past 15 years, activity-based costing has enabled managers to see that not all revenue is good revenue and not all customers are profitable customers. Unfortunately, the difficulties of implementing and maintaining traditional ABC systems have prevented them from being adopted on any significant scale" (Kaplan and Anderson 2004:138).

There are two most common motives for ABC adoption in Finland; lack of trust in information from traditional costing in modern organizations and the failure of traditional systems to meet managers' requirements (Granlund and Lukka 1998). However, Parker et al. (2008) confirms that ABC causes many problems with managers at high organizational levels. Also, there has been considerable resistance to ABC from marketing managers (Parker et al. 2008). Sharman (2003) proclaims that ABC systems design was too complex. He declares that that may be true, although there are other issues to be considered over why ABC implementations have failed that can be summarized (Sharman 2003) as follows. First, software has not been information technology incorporated, because accountants and managers require cost accounting to be an important component of their integrated general ledger, monthly reporting, analysis, performance measurement and the associated network of operational systems. Second, ABC/M/B/P implementations are generally not integrated into organization measurement and management systems. Third, implementations have been applied very weakly, because problems have arisen over agreement of what ABC is and how it must be arranged. Also, there are some critical points when using the ABC-accounting philosophy, which can be summarized (Bakke and Hellberg 1991:14-16) as follows: First, ABC-analysis presents no obvious or non-controversial action alternatives. Second, there is a danger that ABC-analyses motivate conservative strategies that are possibly devastating in the light of the future competitive environment. Third, in some recent ABC-case studies from Sweden the cost of Work in Process (WIP) and other inventory costs are neglected. Fourth, the potential impact of the ABC-philosophy is unlimited to long-term strategies.

Geri and Ronen (2005:135) assert that ABC is essentially a refinement of absorption costing; it suffers from the weaknesses that are typical of absorption costing and may be criticized as follows. First, ABC is based on subjective arbitrary cost allocation. So the main difference between traditional absorption costing and ABC is the number of allocation bases, or cost drivers, in ABC terminology. Second, ABC ignores constraints and does not differentiate a bottleneck from resources with excess capacity. Third, ABC regards the relation between activities and resource consumption as linear, absolute and certain. ABC has been successful in large industrial companies in improving the operational performance by providing suitable and correct information on the allocation of resources (Gunasekaran and Singh 1999). However, in New Zealand companies were contrasting perceptions on the success and importance of some ABC applications (Cotton et al. 2003). Also, it has not received significant attention from small companies (Gunasekaran and Singh 1999). The adoption of ABC in small companies has received less attention than in larger companies (Askarany et al. 2010). Many companies are suffering complications with ABC implementation (Malmi 1997). In the UK‘s largest companies, ABC is used by some of them (Innes et al. 2000). They indicate that ABC has been refused by a large number. Also, they mention that about 13% of UK companies have rejected ABC after assessment. However, Scapens (2000) points out that many organizations were changing what was taking place in management accounting systems and techniques. There was change in the method by which management accounting has been employed, rather than the use of new management accounting systems and techniques, such as ABC (Scapens and Burns 2000).

In this way, an ABC implementation has been proven as practice variance in the unit of analysis, and as a conflict between ABC inscribed institutional logic and situated logic that is embedded in the existing practices in a such organization. As a result, many researchers claim that there is a need for more specific information about the organizational activities, as old management accounting systems especially ABC are unable to provide that analytical information to decision-makers (Johnson and Kaplan 1987; Cooper 1988; Cooper and Kaplan 1992; Drury et al. 1993; Drury and Tayles 2006). The requirement manner aids managers to make right decisions about product cost, design, pricing, marketing, and mix, performance evaluation, and encourages continual operating improvement and growth. Such observations raise the question of the underlying agenda and orientation of RBC design and management, to which the following analysis of RBC system and practices now turns, as a main component of RBA.

5. RESULTS BASED ACCOUNTING (RBA) PACKAGE

Management accounting system is supposed to produce relevant information for the decision-maker, and a system producing information leading to decisions or actions that maximize decision-makers expected utility is therefore selected. If a proposed system leads to better decisions than the existing system, and the expected benefits from the proposed system exceed the cost of its implementation, the new system is adopted (Feltham 1972; Demski 1980). Management accounting change is also seen as a reform where innovations are created and adopted to bring practice into line with advances in information technology (Kaplan 1986; Johnson and Kaplan 1987; Anderson 1995). Except for those studies that find the origins of accounting in the social conflicts and power struggles inside organizations (i.e. using dialectics as a frame of reference); (Cooper 1980; Tinker et al. 1982; Hopper et al. 1986; Covaleski and Dirsmith 1988a; Hopper and Armstrong 1991), the literature explains development and change via teleology; the organization's goals are the cause for action (Malmi 1999). In this way, Results Based Accounting can be considered as an integral part of the Results Based Management (RBM).

RBA is defined as a management and accounting tool toward RBM approach that can facilitate collaboration among organizations, as a system of decentralizing services, and as an innovative regulatory process. At a minimum, the term implies that expected results (also known as goals) are clearly articulated, and that data are regularly collected and reported to address questions of whether results have been achieved. RBA can be developed and used at different levels: state, organization, community, agency, or program. A cohesive RBA system includes the following components: a strategic planning process, goals and indicators, benchmarks or targets, and mechanisms for regular public reporting. Strategic planning process is an essential first step in the development of a RBA system. Successful systems begin by stepping back and examining core values, then articulating a plan for the future based on these values. A strategic plan includes a vision or conceptual image of the core values of the state, organization, community, agency, or program; goals; and targets to measure progress. Organizations most successful in designing RBA efforts have developed processes to include all stakeholders in the articulation of the strategic plans. Articulations of goals and objectives as well as specification of measurable indicators are the next steps in RBA efforts. The articulated goals - or expected results - reflect the values identified in the strategic plan and are statements of the desired conditions of well-being. Objectives, derived from the goals, are statements of the short-term conditions needed to achieve the desired conditions of well-being for communities in the long-term. Indicators are quantifiable measures which enable decision-makers to assess progress towards achievement of intended outputs, outcomes, goals, or objectives. They always specify time-frames and are expressed in measurable terms. An important component of a RBA approach is the articulation of target levels of performance expressed in measurable terms and specified time-frames, against which actual achievement is compared. Regular reporting of results to the public is an essential aspect of a RBA effort. While public reporting of data is one of the last steps in developing a RBA approach, it is important to consider audience, reporting criteria, and mechanisms early in the design and implementation of the effort. Failure to consider these vital components can jeopardize usefulness of RBA data. Public reports of RBA data should include the strategic planning framework (including the vision), goals and objectives, benchmark or targets, and indicators (measures of progress). Often, the first public reports will include goals and objectives that do not yet have measurable indicators. Nonetheless, such goals are important because they provide the public with information about organizational values and priorities[77] (see also, Alsharari 2013).

RBM together with RBA approaches deal with the tasks that any business has to discharge for results, performance, and cost management. They attempt to organize these tasks so that decision-makers can perform them systematically, purposefully, with understanding, and with reasonable probability of accomplishment. They also try to develop the perspectives, concepts and approaches for finding what should be done and how to go about doing it. That decision-makers give neither sufficient time nor sufficient thought to the future is a universal complaint. Every decision-maker voices it when he talks about his own working day and when he talks or writes to his associates. It is a recurrent theme in the articles and in the books on management and accounting. It is a valid complaint. Decision-makers should spend more time and thought on the future of their business. They also should spend more time and thought on a good many other things, their social and community responsibilities for example. Both they and their businesses pay a rigid penalty for these neglects. And yet, to complain that decision-makers spend so little time on the work of tomorrow is futile. The neglect of the future is only a symptom; the decision-maker slights tomorrow because he cannot get ahead of today. That too is a symptom. The real disease is the absence of any foundation of knowledge and system for tackling the tasks in business and managing for results approach (Drucker 1999). Like RBM, RBA assumes that,

"Firstly, neither results nor resources exist inside the business. Both exist outside. There are no profit centers within the business; there are only cost centers. The only thing one can say with certainty about any business activity, whether engineering or selling, manufacturing or accounting, is that it consumes efforts and thereby incurs costs. Whether it contributes to results remains to be seen. Results depend neither on anybody within the business nor on anything within the control of the business. They depend on somebody outside - the customer in a market economy, the political authorities in a controlled economy. It is always somebody outside who decides whether they become so much waste and scrap. Indeed, business can be defined as a process that converts an outside resource, namely knowledge, into outside results, namely economic values. Secondly, results are obtained by exploiting opportunities, not by solving problems. All one can hope to get by solving a problem is to restore normality. All one can hope, at best, is to eliminate a restriction on the capacity of the business to obtain results. The results themselves must come from the exploitation of opportunities. Thirdly, resources, to produce results, must be allocated to opportunities rather than to problems. Needless to say, one cannot shrug off all problems, but they can and should be minimized. The pertinent question here is not how to do things right but how to find the right things to do, and to concentrate resources and efforts on them. Finally, economic results are earned only by leadership, not by mere competence. Profits are the rewards for making a unique, or at least a distinct, contribution in a meaningful area; and what is meaningful is decided by market and customer" (Drucker 1999: 4-5).

Accounting and accountability became important weaponry in the tracking and controlling of efficiency targets and cost/profit outcomes (Parker 1986), through costing systems, standard costing and budgetary control (Parker and Lewis 1995). The underlying agenda was one of improving productivity so that efficiency gains and associated cost reductions would lead to higher profits. Hard work was eulogized, while at the same time indolence and waste were viewed as an anathema (Parker and Ritson 2011; Dent and Bozeman 2014). Engineers, managers, accountants, and consultants experimented with its application, from operational efficiency standards, to standard costing, to budgetary control. Efficiency was the name of the game (Parker 1986), supported by the underlying institutional logics principles of authority-based control, results orientation, costs management, disciplinary control, coordinative control, control tools, and exception control (Parker 1986; Parker and Lewis 1995).

Many accounting changes in organizations are direct consequences of the diffusion of innovations. Although management accounting history is not rich in such innovations (Johnson and Kaplan 1987), the introduction of RBC system, as a main part of RBA, can provide an interesting opportunity to study the mechanisms of such innovative diffusion. Studies on the implementation of RBC system among organizations might also enrich our understanding of the motivation for change at the level of a single organization (Malmi 1999). RBA style whereby a set of objectives is used to determine if results are contributing to an organization's mission and goals. RBC is mainly based on the concepts of "RBA" and "cross functionality": Before being a costing system, RBC is first and foremost a mode of modeling the functioning of organizations. Such an approach is a lot more ambitious than a simple cost calculation

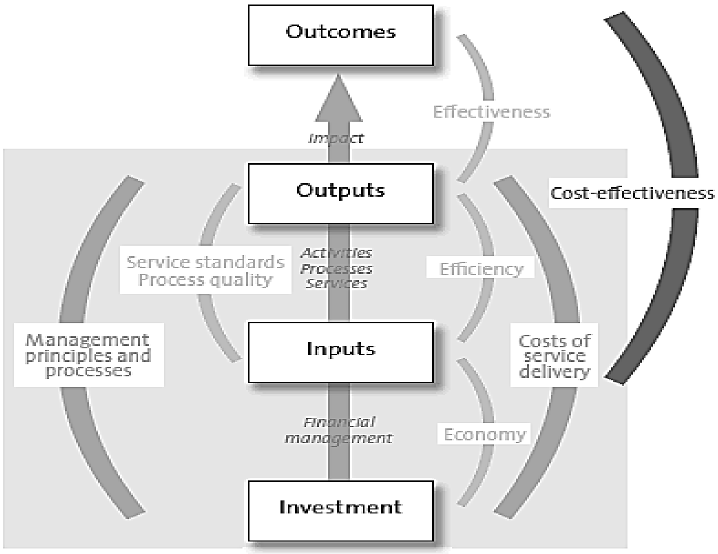
[77] See for more details, http://www.hfrp.org/publications-resources/browse-our-publications/overview-of-results-based-accountability-components-of-rba

technique. Instead of picturing an organization as a juxtaposition of responsibility centers, the organization becomes a network of processes or activities (Alcouffe et al. 2008).

5.1 Results Based Costing (RBC) System: An Overview

RBC system emerges as an alternative unit of analysis to ABC, by focusing on 'Results' and/or 'outcomes' instead of 'Activities' (see figure 1). This innovative model enables organizations to link products and services back to their mission value and costs. This allows better investment decisions and costs management in relation to the results orientation. Since RBC is based on connecting standard costs with performance, it makes sense to compare the cost with the service or benefit. It is one of the main challenges of reporting on achieved results. It seeks to shift attention away from activities to communicating significant results that the program or project has achieved at the organizational output and outcome levels. The decision-making and reporting process along with RBC usually takes place after a series of organizational actions such as setting strategic objectives, keeping objectives in mind while allocating resources, managing programs to achieve results, measuring performance, and reporting results. These actions help the organization to determine its progress towards its desired ends (Wholey 1999; OCA 2002; Ortiz et al. 2004).

Figure 1. RBC Orientation



RBC as other costing systems can be considered as an information system. It requires a specific type of information or cost drivers such as direct labor hours and units produced, to be of value. It starts from the input data that product costs and other information are determined according to followed methodology. The results obtained in RBC system are used in different ways than ABC system. As RBC system can provide information to help minimize waste and cost reduction, at the same time it is not wasteful in itself. In other words, the resources required to design, implement and maintain RBC system will be less than the benefit derived from the use of the system as usage cost of ABC. It has been developed for tracking spending and activities of organizations in relation to the results they are trying to achieve. It is a way to recast planning, budgeting, management, and reporting in direct relation to what organization wants (or is expected) to accomplish. The ideas behind RBC (like RBA) are necessary approach: to identify the needs an organization is trying to address; to develop an overall plan (mission, goals, objectives, and strategies) for addressing those needs; to come up with policies, programs, and services to meet those needs; to organize and implement budgeting, accounting, and management systems that support the strategies, goals, and objectives laid out in the overall plan; and finally, to develop and track cost and performance data that allow the organization to measure its progress in reaching its goals and objectives, and changing (or modifying) strategies, programs, policies, management systems, or budgets when necessary.

Approaching organization operations, whether profit or not-profit seeking, in such terms can have powerful impacts on organizational decision making and results. RBC system is comprised of a set of forms, processes, controls, and reports that are designed to aggregate and report to management about revenues, costs, and profitability. The areas reported upon can be any part of an organization, including: management, customers, departments, activities, processes, products and services, research and development, and value chain. It is designed to monitor the costs incurred by an organization, to trace products and services directly to specific, measurable mission results, and to make informed decisions. It thus helps business owners and managers figure out the cost for certain activities and processes. Through the use of financial computations or cost allocation bases, companies can take basic information relating to resources, such as raw materials and direct labor as well as inputs, and transform the data into useful costs for setting the price of goods and services.

Organizations can put together different cost models based on their needs, whether financial or operational. RBC can be used in both private and public organizations in their daily operations. Because the goal of private organizations is to maximize the economic value for owners and shareholders, finding ways to lower costs is a crucial step in achieving this goal. Since RBC is based on connecting budgeted costs with performance, it makes sense to compare the cost with the objective or result. Efficiency KPIs[78] and targets in public organizations can be developed, as a rather to cost drivers in private organizations, as a way of demonstrating that public organizations are not wasting government revenue. RBC system is a useful system for tracking the use of resources and measuring efficiency KPIs in the public sector.

RBC system thus is a management accounting approach focused on realizing results; it is a broad management strategy intended at changing the way the organization operates, with improved performance (realizing results) as the central orientation (OECD 2000). It must be supplemented by organizational policies and strategies, such as human resources, information technology and learning strategies, if it is to have the planned impact on effectiveness. Thereafter, RBC has a strategic, future-oriented approach to the deployment of resources to achieve significant results. Notably, the role of technology can play a critical role in the implementation of RBC system through providing an alternative to the traditional ABC plant-wide and departmental approaches to defining cost classifications and selecting allocation bases. RBC has appeal in today's business environment because it uses more cost classifications and unique measures of activity to better understand the costs of managing and sustaining products and services in the organizations (Garrison et al. 2003).

RBC system can contribute to institutional stability, and helps to make 'organizing durable' and 'scaffolding' organizational practices (Orlikowski 2007). Besides, IT can play a significant role as a carrier and diffusion vehicle for institutional change across an organizational field. This is especially the case in relation to packaged software, which organizations increasingly resort to rather than developing custom-built software. Such packages, hereafter referred to as RBC system, are material carriers of institutional logics - of beliefs, norms and rationalities about how best to structure different kinds of organizational activities (Gosain 2004). However, despite the rhetoric of software vendors, RBC implementation does not automatically transfer the institutional logic of action inscribed in the software into the practices of the adopting organization (Dery et al. 2006; Grant et al. 2006). Rather, it will take place progressively over the time through enacting and reenacting the processes and practices of RBC implementation in the adopting organization. Moreover, top management support and cross-functional team should be created to design and implement the RBC system. They should have a good knowledge of different departments of an organization's operations that is necessary for designing an effective RBC system. This will reduce the resistance to change because they will be involved in the implementation process. On the other hand, if the accountants have tried to implement the RBC system on their own without top management support and cross-functional involvement, their results will be ignored.

5.2 RBC System: Unit of Analysis

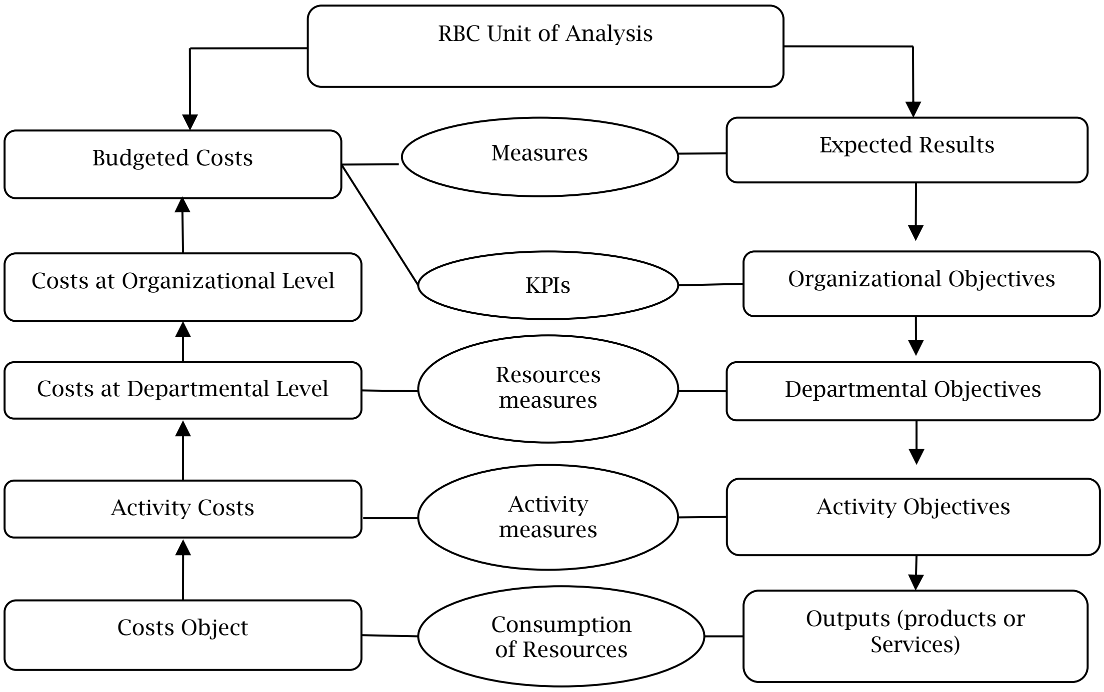
Since RBC is a new system of planning, budgeting, and performance measurement that highlights the relationship between costs budgeted and results expected and achieved, it has become an inclusive approach that involves all organizational members through the development of the organizational strategy, identifying costs priorities and performance measures (indicators). RBC also has a long-term perspective by linking cost with strategic planning, and by focusing on results it makes sure managers are held accountable for certain performance indicators. The following model shows the main processes within the implementation of RBC system. The main assumption of RBC system, as set out in the following figure, is that the costs at different levels of the organization should be hierarchy linked to the objectives of these levels through correlated performance measures. Cost objects at bottom level such as products or services can generate activities that are followed to related department. Such an activity consumes resources. A resource causes costs. RBC system thus helps to trace and link the costs with objectives through identifying how products and services affect costs at different levels among the organization.

The next figure shows that the implementation of RBC unit of analysis by using RBC Model as a unit of analysis can be achieved by following a top-down approach, where the objectives – at organizational level - introduced monitoring practices and organizational priorities including production and customer service policy. At the same time, the implementation of RBC system can be prepared by following a bottom-up approach, where the system is first implemented at bottom level to prepare the consumption of resources and related costs that are required for expected outputs (products or services). RBC is thus a life-cycle approach to management that integrates strategy, resources, outputs and measurements to improve decision-making, transparency and accountability. The approach focuses on achieving results, implementing performance measurement, learning and changing, and reporting performance. Thereafter, RBC generates performance information to support the decision-making process during planning and implementation of organizational policies (OECD 2004). The main aim of this system is to ensure the payments should be based only on the results (see figure 3).

The process of measuring performance and taking action to ensure desired results are the main components of the RBC system. The purpose of this process is to make sure that actual performance meets the set objectives, and to ensure that employees comply with organizational strategy and objectives.

[78] KPIs: Key Performance Indicators

Figure 2. RBC Model



Source: The Author

Figure 3. The Main Objective of RBC System

The first process is establishing objectives and standards. These standards can be divided into two standards: output standards and input standards. On the one hand, output standards measure the performance results in terms of quantity, quality, and cost. On the other hand, input standards measure effort in terms of amount of work expended in task performance. The second process is measuring the actual performance, and identifying the differences between the actual results and original plan, based on selected performance measures. The third process aims to compare the actual results (performance) with the set objectives and standards (desired performance). The final process is taking corrective action when a discrepancy or variance exists.

6. CONCLUDING OBSERVATIONS

RBC's application in today's business world reflects two preceding influences: results based management and activity based cost management. Their manifestation through the RBC system and process bears characteristics of institutional logics theory and innovative diffusion theory. RBC system also shares common ideas and orientations with its predecessors ABC, ABM and RBM. All three have tended to be adopted by organizations having very strong outcomes orientations. ABC and ABM have tended to prosper better in organizations with competitive performance cultures that are particularly focused upon securing cost reductions and cost efficiencies. RBC shares this same focus, arguably inherited from RBM philosophies. Interestingly, the experience of implementing ABC and ABM may provide forewarnings for RBC system.

The former processes have after many years still only been taken up long term by a minority of corporate, and indeed many have rejected ABC or experimented with and then discarded it. While numerous reasons have been advanced, most often cited have been the high cost and complexity of implementing ABC. These may prove to be similar for the significant physical, structural, and technical factors required for implementing RBC system. It has been argued that ABC and ABM are tools for controlling costs and associated activities, particularly being intent upon reducing overhead cost activities and volumes seen to be surplus to requirements. This philosophy, albeit manifested in variant forms, has evidently flowed through to RBC system.

RBC system by focusing on growth to improve organizational performance has a number of advantages over cost-cutting measures based ABC. First, growth based RBC system has no upper limit, whereas with cost reductions based ABC; organizations are limited by what they actually spend. Second, growth based RBC excites and invigorates a work force. Focusing on cost may be demoralizing and discouraging to organizational employees, especially when they are let go and processes are reengineered. Growth based RBC offers new ideas and creative approaches to old problems. Third, growth generally has a positive impact over a longer term than does cost cutting, the benefits of which tend to be short term.

RBC system thus emerges as a rather more complex cost management and accountability development that may have first appeared. This study set out to ascertain the primary strategic agenda underpinning the RBC development and has found it to be predominantly a cost management agenda. This has become clear through the conclusions regarding the study's two supporting research questions. In response to the first research question, cost management has indeed emerged as the dominant focus. This has become manifest via RBC unit of analysis -sponsored cost reductions, results orientation and productivity design strategies. This agenda has clearly been centre stage in both RBC implementation process as a new unit of analysis. With respect to the second research question concerning any persistent undercurrent of RBM philosophy, the latter has clearly been at the heart of the RBC intent. It bears close similarities to the management accounting concepts. This has indeed been acknowledged directly in the contemporary accounting research literature on system design and management as well as implicitly within RBA literature discourse of the present day.

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CORPORATE GOVERNANCE, OWNERSHIP AND SUSTAINABILITY

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Abstract

The main finding of this article is that sustainability and the broader concept of social responsibility imply a change in the spirit of governance, which promotes the so-called 'de facto convergence' between the different corporate governance systems existing all over the world. Substantial corporate governance convergence suggests that different countries may have different companies' ownership structure, rules and institutions but the corporate boards may still be able to perform common goals, with attention to similar key performance indicators, such as ensuring fair disclosure or accountability. Companies that perform better with regard to the triple bottom line can increase shareholder value contributing, at the same time, to the sustainable development of the societies in which they operate.

Keywords: Corporate Governance Systems, Ownership Structure, Sustainability, Corporate Social Responsibility (CSR), Corporate Governance Convergence

1. INTRODUCTION

One of the most striking differences between countries' corporate governance systems is about the firms' ownership and control (OECD, 1999). According to the degree of ownership and control, corporate governance systems can be distinguished in outsider systems (characterised by wide dispersed ownership) and insider systems (characterised by concentrated ownership).

All over the world, shareholders have always had a significant role in the attribution of the mandate of corporate governance. In fact, the general shareholder meeting is often the only body responsible for the election and the removal of board members. Even with worker participation (as in Austria, Denmark, Germany, Luxembourg and Sweden, where employees of companies of a certain size have the right to elect some members of the supervisory board), it generally tends to intervene significantly in the conferment of the mandate of governance bodies. This has contributed to the affirmation of the shareholder view, which has long dominated the orientation of corporate governance emphasising the shareholders' interests and the economic performance.

In the past, the choices of corporate governance have therefore favoured profit maximisation (Berle and Means, 1932; Friedman, 1962; Jensen and Meckling, 1976), with a clear focus on the consent by shareholders. Such behaviour was particularly evident in outsider systems, but dominated the majority of companies in industrialised countries.

In fact, for listed companies, a governance approach oriented to shareholders implied important differences about management activities in outsider and insider systems. This situation was connected to the diverse degree of separation between ownership and management and to the consequent implications in terms of market and control value.

In the outsider systems, the high dispersion of share capital tied the corporate success with the maximization of the short-term profit, with the aim to guarantee positive judgments by the market in regard to the actions of managers, these last characterized by a high level of independence. In this context, shareholders appreciated the governance effectiveness referring to their expectations of short-term remuneration and their approval conditioned the board members' appointment and the shares' market value.

Vice versa, in the insider systems the high capital's concentration and the frequent engagement in management by majority shareholders, who was often executives directors, caused governance activity oriented to the maximization of the value creation over time. In fact, the majority shareholders' behaviour deeply influenced corporate governance because of their lasting participation in ownership determined the preponderance of goals oriented to the maximization of economic performance in the long-term (OECD, 1999; Salvioni and Gennari, 2014).

Governance practices vary not only across countries but also across firms and their spirit of governance. Today, boards are expected to accept corporate social responsibility (CSR) and sustainability as business drivers shifting their attention from profit to the "triple bottom line" (Salvioni, 2003; King, 2008; McDonnell and King, 2013; Salvioni and Astori, 2013; Salvioni, Astori and Cassano, 2014), which encompasses profit, people and planet. It is an approach based on a modern interpretation of the links between the long-term success of enterprise and the equitable balance of all stakeholders' interests (including those of shareholders, employees, creditors, customers, suppliers and local communities). We think this approach is intended to apply to whatever company ownership and board structure, helping to effectively reduce the differences between outsider and insider systems of corporate governance.

The latest arise of new concepts referring to sustainability, social responsibility and stakeholder relation management (Steurer et al., 2005; Salvioni and Astori 2013) is inducing a new approach about the role of companies in society, with clear consequences in terms of strategic guidance and performance.

Corporate sustainability does not mean that the creation of value and the adequate remuneration for shareholders are less important; vice versa, the interdependence among stakeholder relation management, economic and socio-environmental responsibility, results (economic and not economic ones), capability to obtain consents and resources is opportunely emphasized.

A governance approach directed to the enhancement of value creation for shareholders over time, by means of opportunities' exploitation and economic, social and environmental risk management, is gaining ground (Esty and Winston 2008; Brochet et al., 2012; Salvioni and Astori 2013).

A sustainable company is clearly aware of its own responsibilities towards shareholders and other stakeholders and it adopts governance methods and tools with the aim to improve its economic, social and ecological performances. This is an approach based on a wide concept of responsibility and on a modern interpretation of the link between the long-lasting company's success and fair settlement of all stakeholders' interests (Salvioni 2003; Salvioni and Bosetti 2006; G20/OECD 2015).

In global markets the need of corporate governance improvement is spreading, according to these objectives:

- to favour the convergence in governance systems for dealing with the fall of time and space barriers in the information and capital circulation;
- to appreciate the links among economic, competitive and socio-environmental management variables;
- to develop strategies and accountability tools with the aim to favour stakeholder engagement and to improve the transparency about global performances.

These are phenomena strictly connected, implying a greater attention towards principles and values that lead internal and external relations and innovation in processes for a systematic, coordinated, effective and efficient sustainable development.

In particular, the statement and the diffusion of responsible governance principles favour a global convergence in the governance tendencies towards value creation and growth in the long-term. This condition removes a substantial divergence factor between insider and outsider corporate governance systems and it represents a prerequisite for a better capitals' circulation and for the crossing of speculative investment logics, which are often characterized by a high shareholders' turnover.

CSR and sustainability require good corporate governance, grounded on stakeholder engagement, high ethical standards, fairness, transparency and accountability. All these principles are related with boards more externally focused and determine a governance approach directed to the growth of sustainable value over time. Worldwide this focus by boards has increasingly shifted to excellence every corporate governance systems.

The main finding of this paper is that sustainability and the broader concept of social responsibility imply a change in the spirit of governance, which promotes the so-called de facto convergence between the different systems of corporate governance existing all over the word. This spirit is inextricably linked to the culture and performance of an organisation, and it implies a stronger focus on the principles and values that dominate internal and external relations, the innovation of the internal processes for the behavioural orientation and the enhancement of transparency requirements and multidimensionality of responsibilities, objectives and results.

In this sense, the orientation towards sustainability promotes the substantial convergence of the different systems of corporate governance. Substantial corporate governance convergence suggests that different countries may have different ownership structure of the companies, rules and institutions but the corporate boards may still be able to perform the same functions, with attention to the same key performances indicators such as ensuring fair disclosure or accountability.

2. SUSTAINABILITY, OWNERSHIP AND CORPORATE GOVERNANCE SYSTEMS

Sustainability is a long-term vision that characterizes the socially responsible companies (Carroll, 1999; Dahlsrud, 2008; European Commission 2011). In fact, Corporate Social Responsibility (CSR), basing on a concept of global corporate responsibility referred to all governance dimensions (legal, economic, social and environmental), is oriented to the maximisation of value for all relevant stakeholders in the long-term. This approach implies the balance of the interests of all who contribute to the current and future company's success by means of a sustainable value creation that satisfies both the shareholder and other stakeholder (Rajan and Zingales, 1998). Socially irresponsible companies are subject to legal sanctions and other punishments; this situation compromises not only the economic aspects, but also the companies' reputation and image and, consequently, the stock market value and the attractiveness for future investors.

In turn, the link between CSR and corporate governance has been extensively studied: well-designed corporate governance systems would align managers' incentives with those of stakeholders, according with the triple bottom line approach (Elkington, 2006). Hence, firms with effective corporate governance should place a greater emphasis on the maximization of sustainable value in the long-term (Jo and Harjoto, 2012).

Several studies investigate the possible links between corporate governance structure and CSR decisions (Oh et al., 2011); this firstly depends on the way owners can affect corporate decision-making processes nominating the members of the board of directors, according to agency theory (Jensen and Meckling, 1976; Fama and Jensen, 1983). In fact, the board is the focal point for a company's sustainable approach considering that the awareness of sustainability's principles and the adoption of responsible behaviours towards stakeholders tend to influence the corporate governance activities. In this context: 'The board is not only accountable to the company and its shareholders but also has a duty to act in their best interests. In addition, boards are expected to take due regard of, and deal fairly with, other stakeholder interests including those of employees, creditors, customers, suppliers and local communities. Observance of environmental and social standards is relevant in this context.' (G20/OECD, 2015).

Hence, the differences in companies' ownership structure should have a significant impact on corporate governance by means of the appointment of board of directors and the control procedures on management activity.

Concentrated and stable ownership characterizes insider systems of corporate governance. The majority shareholders (not rarely corresponding to founder families) are involved in the management, often holding the role of executive directors, and they are able to influence corporate governance and decision-making processes. This situation is caused by the less development of financial markets, together with a cultural heritage little inclined towards both the opening of corporate capital to market and the presence of outside directors in the boards. Furthermore, this circumstance implies the risk of the preponderance of major shareholders' interests if rules and tools for minority shareholders' protection are not provided. In insider systems (notably Continental Europe and Japan) the mandate of corporate governance is generally multiyear (Salvioni, 2008; Yermack, 2010) and this situation favours the longer-term investment horizon (James, 1999; Salvioni and Gennari, 2014).

Vice versa, in outsider systems, typical of Anglo-Saxon countries, large listed companies with very fragmented and diffused ownership (public companies) and characterized by the separation between ownership and management dominate. When the capital markets function efficiently, thanks to fair and transparent communications, the markets themselves control the administrative activity of companies. In fact, the approval or disapproval for the work of boards is reflected in a change in share values, resulting from the dynamics of shares' demand and supply, and in the turnover of board members (who typically have a one-year mandate). In the outsider systems, the high dispersion of share capital risks to tie the corporate success with the maximization of the short-term profit. A sprinkled shareholding tends to have expectations of short-term remuneration, conditioning the board members' appointment and the shares' market value.

So, the real point for the development and realization of a CSR approach is the board of directors, as expression of the ownership structure. In fact, the board defines and implements corporate strategy balancing the interests of key stakeholders (Mason and Simmons, 2014; Wang and Dewhirst, 1992; OECD, 2004; Kakabadse and Kakabadse, 2007). Furthermore, the board's commitment in CSR matters is crucial for the creation of a sustainability culture in the entire organization. Evidence suggests that what really influences company's approach towards CSR matters is not the criteria in the board's composition (e.g. inside or outside managers) but the substantial commitment of the board in the sustainability principles (Ricart et al., 2005; Spitzeck, 2009; Ayuso and Argandona, 2009; Jo and Harjoto, 2015).

Therefore, sustainable companies' boards, because of the combined consideration of economic and socio-environmental dimensions in corporate goals definition, tend to overtake the traditional division related to the differences in ownership structure drawing towards a gradual convergence between outsider and insider corporate governance systems.

3. SUSTAINABILITY AND CONVERGENCE IN CORPORATE GOVERNANCE SYSTEMS

Corporate approach towards the creation of sustainable value is a source of global competitive advantage nurturing a gradual path of convergence in corporate governance systems. According to several scholars (Carati and Tournai, 2000; La Porta et al., 2000; Mallin, 2002; Aguilera and Jackson, 2003; Gilson, 2004; Khanna et al., 2006; Yoshikawa and Rasheed, 2009; Lazarides and Drimpetas, 2010) this path mainly depends on the globalisation phenomena, both in the financial and products markets, and it can be observed according to these dimensions: convergence in form or de jure and convergence in function or de facto.

Convergence in form or de jure refers to convergence of rules at international level. In fact, the growing wish of both investors and issuers to operate in international capital markets requires some degree of acceptance of common values and standards (e.g. OECD Principles on Corporate Governance, UN Global Compact Principles, EU Papers). These shared and market-driven standards about good governance condition, on one hand, national legislators and, on the other hand, the practices voluntary adopted by companies to adequately compete on global markets.

In addition, the globalization of products markets influences corporate governance: when competition intensifies, companies increase awareness that more effective and efficient governance is essential to maintain success. This might include the way stakeholders interact with the firm and connected stakeholders' engagement, the balance between the owners' remuneration and the R&D investments, the board's capacity to take decisions in a context characterized by time-based competition and so on. These good practices are sometimes officialised, as the model for stakeholder engagement (IFC, 2007).

Convergence in function or de facto refers to corporate behaviours and consists in the replication of the same corporate practices abstract from corporate governance systems' characteristics. Specifically, the search for competitive advantage in global markets leads companies to emulate successful competitors, with the aim of attracting the best financial and human resources in a context characterized by a lack of the same. This situation gives rise to hybrid behavioural responses that are in part driven by the institutional pressures and partly by the result of free strategic choices for the satisfaction of different stakeholders' categories.

The two dimensions of convergence influence each other: de jure convergence tends to make some companies' behaviours uniform stimulating de facto convergence; de facto convergence can stimulate de jure one when, for example, legislative void or gap exists and companies autonomously adopt existing best practices to deal with competitive pressure (Gilson, 2004).

In our opinion the corporate approach towards CSR and sustainability matters is a factor that favors first of all de facto convergence and consequently that can be a driver for de jure convergence.

According with Yoshikawa and Rasheed (2009) 'If there is divergence in the socially accepted objectives of the firms across countries, it is entirely possible that the ideal corporate governance structure may also be different across countries'. Similarly, if companies are led by the same objectives of sustainable value creation in the long-term, a gradual convergence in corporate governance structure that is independent from the corporate ownership characteristics cannot be excluded.

An intense debate about the strengths and weaknesses of insider and outsider systems has characterized the studies about convergence, wondering which system could be the best. It is important to underline that the corporate governance systems derive from financial markets' characteristics and ownership structure. These factors are scarcely changeable in the short term, although globalization of markets and information.

Actually corporate governance systems are the results of cumulative processes, which create regulatory and cultural substratum, influencing contingent attempts of adaptation to different models (the so-called path dependence) (North, 1990; Bebchuk and Roe, 1999). Hence, it is not possible that the better corporate governance practices are implemented in each environment with the predicted results (Puchniak, 2007). Indeed, countries seem to be characterized by situation of multiple optima in which the corporate governance best practices are accepted and executed respecting the existing bounds (Khanna et al., 2006).

In this context, the emerging factor of convergence can be the fair implementation of responsibility and commitment principles. Irrespective of prevailing characteristics of national stock markets, corporate ownership structures and existing governance systems, the adoption of sustainability and the broader concept of social responsibility establish convergence and comparability of governance and related companies' performance.

4. THE ANALYSIS

To go in depth the previous considerations we done a qualitative analysis on companies those governance is worldwide identified as strong oriented to sustainability. We first compared them in terms of corporate governance ownership and structure and then we searched for their sustainable commitment and engagement for long-term value creation for stakeholders' interests.

Companies analyzed are extracted by the Global100 Index, which collects the most sustainable corporations all over the world on the base of a cluster of variables referred to different aspects of corporate global responsibility (www.corporateknights.com). The analysis concerns companies included in the Index for five consecutive years (from 2011 to 2015) because of, in our opinion, this time space reflects a continuous commitment in CSR matters. Companies that respect this criterion are twenty (eleven belonging to insider systems and nine belonging to outsider corporate governance systems).

The following Tables show the companies 'major shareholders high lightening the level of ownership's concentration or dispersion.

As we can see, in insider systems (Table 1) the market capitalization is included between around 2 billion dollars and around 154 billion dollars; five companies have a capitalization under 10 billion dollars and the average market cap is about 32 billion dollars. In outsider systems the market capitalization is between 14 and 134 billion dollars; the average level of market cap is about 44 billion dollars and this difference with insider systems can be explained by the greater development of financial markets. The analysis on these data and the important gap between the smallest and the biggest companies let us to say that the sustainability approach is not a prerogative only for big corporations.

The development of financial markets and cultural factors are the causes of the ownership characteristics. Table 1 highlights a relevant role of founder families which hold shares' percentage from 14% (Bollorè in Vivendi) to 40% and more: Kwek Family in City Developments (37.40%); Persson Family in H&M (37.69%); Cunha Seabra, Leal and Passos Families in Natura Cosmeticos (49.49%).

A common characteristic to founder families is that family's members often hold top management positions: families' members are present in administrative (City Developments, H&M, Natura Cosmeticos) or in control (Vivendi) corporate governance bodies (Colarossi et al., 2008). This can entail two consequences (Giovannini, 2010): the easier alignment of family and business interests; the risk that family members, holding the top positions, should exclude more capable and talented outsiders. Regarding this last issue, some Authors consider the engagement of family members as a positive situation for company's success because of their service attitude (Devis et al., 1997) and their role for the creation of a shared corporate culture (Anderson and Reeb, 2003).

This situation confirms that the founder families' engagement in CSR can be coherent with the value creation for relevant stakeholder in addition to the families themselves. So, taking City Developments (a company in Singapore) as example, we are not completely in agreement with hypotesys that, in Asian countries in particular, managers tied to the founding families tend to adopt policies that benefit the families at the expense of other stakeholders (Claessen et al., 2000; Chang, 2003; Oh et al., 2011).

Differently from the insider systems, the major shareholders in outsider systems (Table 2) don't exceed the 13% of shares and they are exclusively represented by large funds and investment companies (Table 2). There are not companies owned by families, but big corporations with sprinkled capital prevail.

Table 1. Market capitalization and major shareholders: companies belonging to insider systems

Company	*Market Cap (Bil USD)**	*Major shareholders (shares ≥3%)*	
Adidas	19.7	Fidelity Management & Research Co. Capital Research & Management Co. Southeastern Asset Management, Inc. Adidas AG Groupe Bruxelles Lambert SA	3.27% 3.02% 3.01% 3.00% 3.00%
City Developments	4.5	Kwek Family Aberdeen Asset Management Ltd.	37.40% 11.80%
H&M	58.9	Stefan Persson and family Lottie Tham and family Alecta pensionsförsäkring	37.69% 5.32% 4.09%
Kesko	3.5	Skandinaviska Enskilda Banken AB Nordea Bank Finland Plc K-retailers´ Association Vähittäiskaupan Takaus Oy Kruunuvuoren Satama Oy	12.90% 11.00% 3.84% 3.49% 3.44%
Koninklijke Philip electronics	23.6	Dodge & Cox Southeastern Asset Management, Inc.	3.31% 3.25%
Natura Cosmeticos	3.6	Antonio Luiz da Cunha Seabra Leal Family Estate of Anizio E Pinotti Lazard Asset Management LLC First State Investment Management (UK) Ltd. Pedro Luiz Barreiros Passos Comgest SA	23.10% 22.00% 5.44% 4.93% 4.55% 4.39% 3.14%
Neste Oil	7.7	Government of Finland	50.10%
Novo Nordisk	153.9	Novo Nordisk Fonden Capital Research & Management Co.	7.94% 7.80%
Statoil	43.4	Government of Norway Folketrygdfondet	67.00% 3.50%
Storebrand	1.7	Folketrygdfondet Franklin Mutual Advisers LLC Nordea Investment Management AB (Norway) Keskinäinen Eläkevakuutusyhtiö Ilmarinen	9.58% 4.46% 3.41% 3.07%
Vivendi	29.3	Group Bollorè Caisse Des Dépôts & Consignations Vivendi SA Employees Stock Ownership Plan	14.4% 3.41% 3.07%

** http://www.morningstar.com/. Data extracted on 15/12/15.*
§ http://www.4-traders.com/; http://investors.morningstar.com/ownership. Data extracted on 15/12/15.

Tables 1 and 2 show that the large and institutional investors (governments, banks, insurance companies, mutual funds etc.) have a significant percentage of equity. According to some Authors (Teoh and Shiu, 1990; Sethi, 2005; Ho et al., 2011) the situation of the companies analysed suggests that the effect of institutional ownership on CSR is positive. In fact, institutional investors offer services characterized by significant information asymmetry in front of their clients (Siegel and Vitaliano, 2007): investing in socially responsible businesses and sustaining companies' CSR is the first way by which the institutional investor can signal to potential clients its engagement in CSR and so, it can differentiate its services from the competitors' ones. Furthermore, the institutional investors, having a significant percentage of equity, are often unable to easy divest their share without significantly lowering the stock price (Ho et al., 2011). So, this situation tends to induce a long-term engagement in business favouring the overtaking of a short-term vision. A study by Eccles et al. (2011) confirms that sustainable organizations attract long-term rather than transient investors.

In conclusion we can affirm that owner families and institutional investors, although with different reasons, when possess a significant percentage of share tend to give to decision-making processes a long-term sustainable approach in favour of ample stakeholders' categories. This situation represents a first point of convergence between insider and outsider systems.

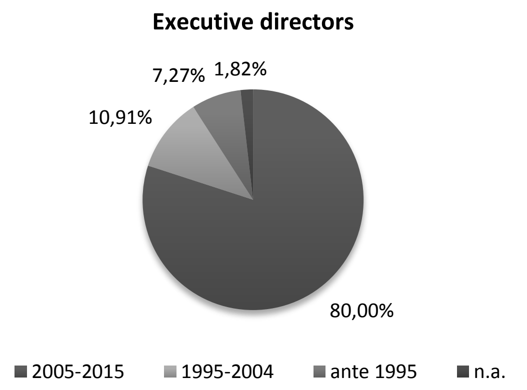
Table 2. Market capitalization and major shareholders: companies belonging to outsider systems

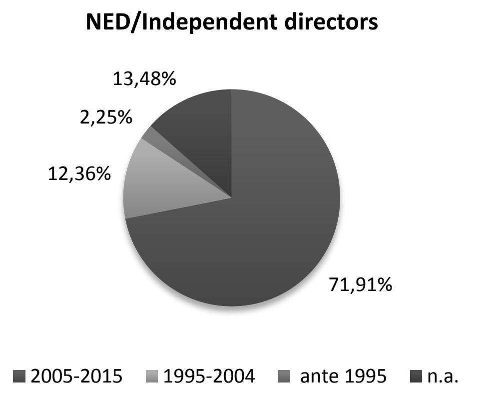
Company	*Market Cap (Bil USD)**	*Major shareholders (shares ≥3%)*	
Agilent Technologies	13.9	T. Rowe Price Associates, Inc Fidelity Management & Research Co The Vanguard Group, Inc. BlackRock Fund Advisors SSgA Funds Management, Inc. Wellington Management Co. LLP Putnam Investment Management LLC	9.97% 5.93% 5.81% 4.22% 3.95% 3.38% 3.22%
BG Group	49.0	BlackRock Investment Management (UK) Ltd. Norges Bank Legal & General Investment Management Ltd.	4.12% 3.73% 3.10%
Centrica	16.0	Schroder Investment Management Ltd. Newton Investment Management Ltd. Invesco Asset Management Ltd. Aberdeen Asset Managers Ltd.	5.72% 5.29% 4.96% 4.81%
Enbridge	28.7	Kayne Anderson Capital Advisors LP Enbridge Energy Partners LP Energy Income Partners LLC Royal Bank Of Canada Capital World Investors Advisory Research, Inc. Salient Capital Advisors LLC Eagle Global Advisors LLC Caisse De Depot Et Placement Du Quebec Neuberger Berman LLC VA CollegeAmerica WA Mutual 529B	12.7% 11.0% 9.59% 9.01% 7.99% 6.91% 5.11% 4.18% 3.60% 3.30% 3.08%
Prologis	22.5	The Vanguard Group, Inc. BlackRock Fund Advisors SSgA Funds Management, Inc Invesco Advisers, Inc. APG Asset Management US, Inc. JPMorgan Investment Management, Inc.	13.0% 6.62% 5.60% 4.36% 3.25% 3.03%
Sun Life Financial	19.1	Royal Bank Of Canada TD Asset Management, Inc 1832 Asset Management LP	7.00% 4.11% 3.83%
Suncor Energy	37.3	Royal Bank Of Canada Capital Research & Management Co. RBC Fidelity Management and Research Company	4.18% 3.54% 3.15%
Unilever	133.1	-	0.00%
Westpac Banking	77.4	-	0.00%

** http://www.morningstar.com/. Data extracted on 15/12/15.*
§ http://www.4-traders.com/; http://investors.morningstar.com/ownership. Data extracted on 15/12/15.

The following Figures show the length of top managers' presence in corporate governance bodies: the reconfirmation of mandate expresses the satisfaction, which extends in a medium-long term period, by shareholders for company's performances. We have considered the first year of nomination in the present role for each board member; the time intervals are ten years long from 2015 back (2015-2005; 2004-1995; ante 1995) as to include at least two mandates in insider systems (characterized by longer expire term than the annual one typical of outsider systems).

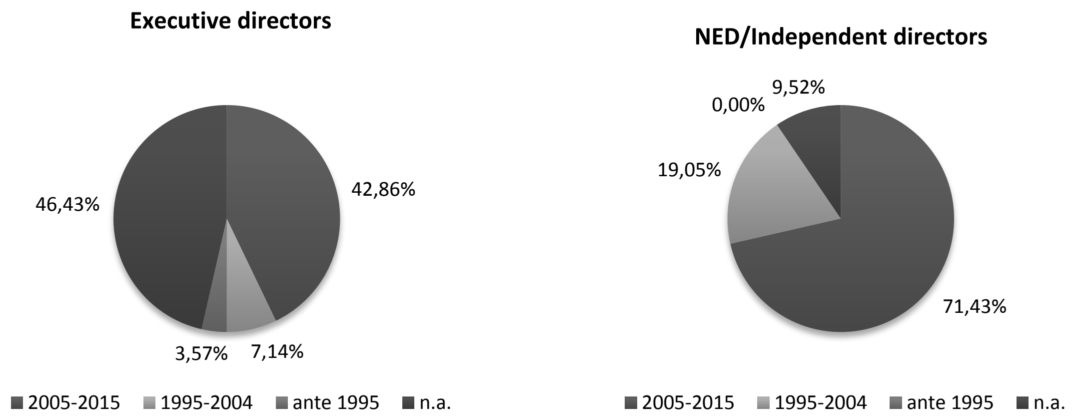
Figures 1 and 2. First nomination of board members, insider systems companies





In insider systems companies, in average, executive directors represent the 38.19% on total board members, while non-executive (NED) and non-executive independent directors represent the 61.81%. Figures 1 and 2 show that the majority of board members has been elected for the first time in the last ten years, but there is also a significant percentage of directors with an older mandate. In particular, we can notice a 7.27% of executive directors nominated for the first time twenty or more years ago (a member of founder family is executive director in City Development from 1969). Generally, the older members are part of founder families and this situation explains their role as executive directors.

Figures 3 and 4. First nomination of board members, outsider systems companies



In outsider systems companies the 25.00% on total board members is represented by executive directors, while the 75.00% by non-executive and non-executive independent directors. Many dates about the first engagement as executive directors are not available and this circumstance limits our considerations. In any case, we can notice, as in insider systems companies, a large presence of directors appointed in the last ten years while the situation changes with reference to directors nominated in the period 1995-2004. In fact, looking at 1995-2004 first designation, in insider systems there is a similar percentage of executive and NED/independent members, whereas in outsider systems companies the percentage of NED/independent is about three times higher than the executive directors' percentage. We can interpret these data as an additional form of control on executive members' activity: the stable presence of non-executive and independent directors guarantees the continuity of corporate choices, even if executives' turnover. The presence of executive directors appointed more than twenty years ago is very limited (3.57%), according to the outsider systems financial markets' characteristics and the consequent fragmented ownership.

In conclusion, we can affirm that in spite of the typical differences in corporate governance, due to the historical, cultural and economic characteristics of insider and outsider systems, the sustainable companies show something in common as the presence of stable investors and a long-term part of board members.

After the analysis about the corporate governance differences of companies observed, we wanted to have a confirmation on their engagement in long-term value creation analysing the companies' information available on their websites (visions, missions, corporate governance reports, sustainability reports, integrated reports, etc.). In fact, the long-term perspective means that the ultimate goal of an organization is the sustainability (Schaefer, 2004; Porter and Kramer, 2006; Mostovicz et al., 2009) with impacts on corporate objectives and strategies.

Both for insider and outsider corporate governance systems, all the companies declare a long-term business orientation; this refers to the crossing of divergence in time orientation about economic results that traditionally have characterized insider (oriented to long-term) from outsider systems (oriented to short-term). The aim of these companies is to create value satisfying equally ample stakeholders groups. Furthermore, these companies emphasize the systematic commitment of the board in sustainability goals, believing that a sustainability-oriented board can be the fulcrum to ensure the CSR matters are integrated into corporate objectives and business operations.

Although the limits of our research – connected to the unavailability of some data and the awareness that the announcement declared by companies could not correspond with the effective companies' (irresponsible) behaviours – we think that the change in business orientation towards sustainability should produce corporate conducts, inspired by the long-term value creation, that are not substantially affected by the rules characterizing different countries. This situation tends to stimulate a functional convergence worldwide.

5. EMERGING ISSUES

The diffusion of the principles of sustainability and a broader concept of responsibility have, undoubtedly, promoted a review of the relevant companies' performances, creating significant preconditions of operational convergence between insider and outsider corporate governance systems. In fact, in successful companies, corporate governance is characterized by a widening scope of the goals, having to take an interest in the entire network of internal and external relations, according to an approach based on the exchange of information and the optimisation of behaviour in relation to the stakeholders' expectations.

Regardless of the nature of stock markets and the concentration of ownership, socially responsible companies have therefore amended their strategic guidance, giving importance to the creation of sustainable value as a condition for growth and development in the medium-long term.

Historical, cultural and economic differences between insider and outsider systems exist and companies we have analysed reflect these differences in term of ownership structure, according to the stock markets' characteristics. Nevertheless, the same companies give us the confirmation that their sustainability approach is based on long-term business orientation in both insider and outsider systems. Furthermore, this approach seems to be sustained by shareholders (founder families or large investors) more interested to the long-term development of companies' business and value creation than to their short-term profits. This means that the major factor of divergence between insider and outsider corporate governance systems attenuates, because of the different time orientation in the results statement, conditioning objectives, strategies and operational activities.

We should, however, consider that globalisation – together with the gradual reduction of differences between spatial differences, cultures, information systems, traditions and institutions - tends to require greater uniformity in the corporate governance approaches worldwide. In addition, the lowering of barriers among markets and the capitals' flow has increased the alternatives for investors and the belief that the orientation to value creation in the long-run may be a significant factor in reducing investment risk.

An area of increasing importance for corporate governance, closely related to corporate strategy, is the oversight of company's risk management. Regardless of the existing corporate governance structure, the change in business orientation towards sustainability virtually shifts every corporate governance system to excellence, ensuring greater stability of the board members and improving the company's risk profile.

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STUDY OF DIVIDEND POLICIES IN PERIODS PRE AND POST- MERGER

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Abstract

This study examines the policies of pre- and post- merger dividends. The emphasis here is on the timing of payment of dividends and its signal role when the merger is considered successful. Our analysis is purely descriptive and involves the merger of CVS and Caremark listed on the NY Stock Exchange and conducted in 2006. The findings indicate the relevance of dividend payment timing as the merger of success signal since acquiring company tries to improve its payment timing and the amount to be paid. This proves the existence of complementarities between the signaling hypothesis by the amount of dividend to be paid and payment timing and confirms the existence of a dynamic adjustment process to a target level.

Keywords: Merger, Signaling, Timing of Dividend Payment, Dividend Policy, Market Timing, American Data

1. INTRODUCTION

The studies over the last 25 years show that some Merger and Acquisition transactions are unfortunately marked by failure. The reconciliation is usually done by use of shares (Andrade et al. 2001). Almost more than half of mergers during the 90 were conducted by securities. The review of the current literature seeks to identify the causes and effects of failures of mergers financed by securities relative to other types of merger. In this context, we want to study the capacity of the dividend policy to conduct the success of a merger. Walking through the studies done since the 2000s on the relationship between the dividend policy and merger and acquisition transaction (Banchit et al., 2012, Brahler et al., 2011, Jeon et al 2010, and Tanna Nnandi 2010 and Olson Pagano 2003), we raised that companies adjust their dividend policy to a state of balance to stabilize the situation of confrontation of two different structure requests to shareholders for the dividend amount and payment timing. In this context, research on the dividend payment timing and ability to regain equilibrium after the merger are nonexistent. We recall that according to Ben Letaifa (2013), the dividend payment is the timing delay between the date of the general meeting of shareholders and the dividend payment date.

Our research question is how the timing of dividend payment can serve as a signal for determining the success of a merger. In our paper, we look for a descriptive study to explain the choice of dividend-payers about the best timing of dividend announced. For this purpose, we focus on the merger realized between CVS Caremark in the American context. Our database includes financial and non financial data from the Annual reports-cvscaremark.com et CRSP-Compustat Merged.

The rest of this paper is structured as follows. In Section 2, we review previous studies on merger and dividend policy before developing our hypothesis. Section 3 outlines the data sources and we discuss our results in Section 4. We conclude in section 5 and present some limits.

2. LITERATURE REVIEW

As the dividend policy, mergers and acquisitions are among the most important financial decisions for the company. The term Merger and acquisition is linked to the growth of the company. For the majority of shareholders, the merger and acquisition generate value. This value is the result of the new coalition of the two entities. But in reality, this value is often related to the benefit that managers want to achieve a good result in market valuation. In accordance to Shleifer and Vishny (2003), mergers are related to a stock market overvaluation. However, other authors believe that mergers and acquisitions are often doomed to failure. In terms of dividend policy, MM (1961) advocate that the value of the company is independent of the level of the dividend.

Nevertheless, in a context of perfect market, this situation is far from the reality seen tax considerations, clientele effect and informational side. In general, dividends are taxed differently from one investor to another. Several studies suggest the effect on the customer dividend (from Black-Scholes 1974 and Miller and Scholes 1978) and companies face a number of challenges to change existing dividend policy, particularly because of the clientele effect. From there, the heavily taxed investor no longer needs to hold an action that has a high dividend. Just hold the share on the dividend detachment date investors little taxed. According to Mori (2010), investors are attracted by dividends that are adjusted by time and called "time-preference-fitted Dividends" in case the tax remains constant. We also believe that companies that pay dividends faster are preferred by investors because of the advantage they can offer cash to shareholders. And from there, our goal is to study the dividend payment timings in a particular context which is that of mergers and acquisitions. But to fix it, we think it is very useful to study the information content of the timing of the dividend payment to whether it is used as a signal by the enterprise merger. According to Ben Letaifa (2013) the dividend payment timing functions as a signal by the large company with strong earnings and cash available and previous payment timing affects the setting of this timing of dividend payment. This confirms the results of De Angelo et al (2008) and Skinner and Soltes (2011) showing that report dividends on the company's earnings outlook. To return to the context of mergers, shareholders may reconsider their position in the company - by reduction or liquidation of their shares in capital in companies with dividend policies are unfavorable. For Jeon et al. (2010), the shareholders of the acquiring companies prefer payments of stock dividends in takeovers of firms of similar dividend policies.

3. METHODOLOGY

We study the timing of payment of dividends in the pre- merger. The dividend is measured by the dividend payout ratio is the ratio of dividend per share paid to earnings per share generated. This assessment of the dividend is made on just three years preceding the merger. The dividend is an ordinary one, it was paid in cash. We collected the day of announcement of the dividend, the ex-dividend day and dividend payment day from annual reports available online on the website "cvscaremark.com" and the "Associated Press Report" for CVSCaremark society.

4. RESULTS

Study of the pre- melting dividend Policy and CVS Caremark

Table 1 shows the timing of payment of dividends and payout ratios CVS dividend from the end of 2003 until payment of the final dividend before the merger. We also calculated the dividend payment timing.

Table 1. Details DPA, BPA timing and payment of dividends from CVS Corp.

Jour de déclaration	*Jour ex-dividende*	*Jour de paiement*	*Dividende par action*	*Type de versement*	*Bénéfice par action*	*Ratio de distribution*	*Timing de versement*
10/09/03	17/10/03	31/10/03	0.0575	Cash ordinaire	0.47	0.1223	51
09/12/03	20/01/04	03/02/04	0.0575	Cash ordinaire	0.66	0.0871	56
03/03/04	21/04/04	03/05/04	0.0663	Cash ordinaire	0.61	0.1086	61
07/06/04	20/07/04	02/08/04	0.0663	Cash ordinaire	0.58	0.1143	56
14/09/04	20/10/04	01/11/04	0.0663	Cash ordinaire	0.45	0.14733	48
05/12/05	20/01/05	04/02/05	0.0663	Cash ordinaire	0.63	0.1052	61
02/03/05	20/04/05	02/05/05	0.0725	Cash ordinaire	0.71	0.1021	61
12/05/05	07/06/05	06/06/05	-	Dilution 2 pour 1	-		-
07/06/05	19/07/05	01/08/05	0.0363	Cash ordinaire	0.34	0.1067	55
14/09/05	19/10/05	01/11/05	0.0363	Cash ordinaire	0.31	0.1170	48
01/12/05	19/01/06	03/02/06	0.0363	Cash ordinaire	0.49	0.0740	64
01/03/06	20/04/06	03/05/06	0.0388	Cash ordinaire	0.40	0.097	63
07/06/06	19/07/06	01/08/06	0.0388	Cash ordinaire	0.41	0.0946	55
20/09/06	19/10/06	01/11/06	0.0388	Cash ordinaire	0.34	0.1141	42
01/11/06 Date d'annonce							

Source: *Annual reports-cvscaremark.com Compustat and CRSP- Merged*

This table shows the quarterly evolution of the dividend metrics (amount to be paid DPA, BPA and payment timing). It shows two phases of evolution of these indicators. The first phase is the foregoing dilution and shows a variation of the distribution ratio of the dividend around 10%. This percentage varied after dilution between 7% and 11%. This variation is the result of the instability of quarterly earnings per share. The average payout ratio is in the order of 10.69%. It is considered low. But after dilution, the dividend per share becomes more stable. Finally, the CVS dividend policy appears stable over the two years preceding dilution, but the amount payable was down compared to the policy of payment of the dividend prior to dilution of capital. For the whole period of analysis, we note that the payment rate has not exceeded 14%. This may be due to the expansion strategies for CVS at the expense of shareholder interests. Nevertheless, the timing of payments declined, this could be due to improved availability in the company, which could be used to offset the decline in the amount of the dividend payable.

Table 2. Descriptive Statistics of indicators for measuring CVS dividends before the merger

	Mean	*Median*	*Standard deviation*	*Min*	*Max*
Dividend payout ratio	0.1069	0.1067	0.0178	0.074	0.1473
Timing of payment	55,46	56	6,67	42	64

In order to study the binding of the payment timing after the merger, we also opt for the analysis of the target "Caremark» dividend policy. Table 3 displays the evolution of indicators for measuring the dividend policy (DPA, EPS and dividend payment of timing). We calculated, as with CVS, the payout ratio and timing of dividend payment. Table 3 displays the amount of stability to be paid during the period which runs from 2003-2006 with a gradual uptrend. However, earnings per share increased gradually during the study period by reducing the dividend payout ratio of 26 % in 2003 to 14% by the end of 2006.

Table 3. Details DPA, EPS and dividend payment timing of CVS
Before the merger with Caremark

Declaration day	*ex-dividend day*	*Day of payment*	*Dividend per share*	*Type of dividend*	*Earnings per share*	*Dividend payout ratio*	*Timing of payment in days*
14/12/03	29/12/03	04/01/04	0.079	Cash ordinaire	0.3	0.2633	20
24/01/04	09/02/04	25/02/04	0.0788	Cash ordinaire	0.32	0.2462	31
05/04/04	1/05/04	15/05/04	0.0788	Cash ordinaire	0.30	0.2626	40
04/07/04	29/07/04	15/08/04	0.0788	Cash ordinaire	0.30	0.2626	32
4/09/05	19/10/05	24/11/04	0.0878	Cash ordinaire	0.38	0.2310	81
21/01/05	09/02/05	15/02/05	0.0878	Cash ordinaire	0.46	0.1908	25
10/03/05	27/03/05	14/04/05	0.0878	Cash ordinaire	0.44	0.1995	35
09/06/05	25/06/05	12/07/05	0.0978	Cash ordinaire	0.48	0.2037	33
08/09/05	13/09/05	29/10/05	0.0978	Cash ordinaire	0.52	0.1880	51
17/11/05	26/12/05	05/01/06	0.0978	Cash ordinaire	0.65	0.1504	49
30/01/06	15/02/06	02/03/06	0.0988	Cash ordinaire	0.52	0.19	30
04/05/06	30/06/06	17/07/06	0.1	Cash ordinaire	0.59	0.1694	74
17/08/06	29/09/06	16/10/06	0.1	Cash ordinaire	0.68	0.1470	60
01/11/06	Date d'annonce						

Source: Associated Press Report Compustat and CRSP- Merged

Table 4 shows the descriptive statistics for measuring indicators of Caremark's dividend policy. The average timing of dividend payment is 43 days. The average payout ratio is about 20.8 %. It is almost twice the average payout ratio of CVS. We also calculated by us on the dividend payment timing.

In sum, it is clear from the univariate analysis of the two policies Caremark pays a higher and more stable dividend than the acquiring CVS over the years preceding the merger. But Caremark better dividend varies depending on earnings. For CVS, the adjustment of the dividend per share earnings seems slower. This difference payment of dividend policy pushes us to think about the post- merger dividend policy of the new combined entity.

Table 4. Descriptive statistics of indicators for measuring Caremark dividend before the merger

	Mean	*Median*	*Standard deviation*	*Min*	*Max*
Dividend payout ratio	0.2080	0.1995	0.0414	0.147	0.2633
Timing of payment	43,15	35	18,82	20	81

Study Of Post- Fusion Dividend Policy Cvs Caremark

Analysis of the CVS post-merger dividend policy that emerges from Table 5 shows an improvement of the dividend per share between 2007 and 2010. The DPA has almost doubled from 0.0388 to 0.0875 dollar per share dollar after three years. Over this period, earnings per share have fluctuated a lot. However, the dividend payable was chosen to overcome this variation of BPA and thus neutralize its variation. We also calculated the dividend payment timing.

Table 5. Details DPA, EPS and dividend payment timing
After the merger with Caremark

Declaration day	*ex-dividend day*	*Day of payment*	*Dividend per share*	*Type of dividend*	*Earnings per share*	*Dividend payout ratio*	*Timing of payment in days*
14/12/03	29/12/03	04/01/04	0.079	Cash ordinaire	0.3	0.2633	21
24/01/04	09/02/04	25/02/04	0.0788	Cash ordinaire	0.32	0.2462	32
05/04/04	1/05/04	15/05/04	0.0788	Cash ordinaire	0.30	0.2626	40
04/07/04	29/07/04	15/08/04	0.0788	Cash ordinaire	0.30	0.2626	42
4/09/05	19/10/05	24/11/04	0.0878	Cash ordinaire	0.38	0.2310	91
21/01/05	09/02/05	15/02/05	0.0878	Cash ordinaire	0.46	0.1908	25
10/03/05	27/03/05	14/04/05	0.0878	Cash ordinaire	0.44	0.1995	35
09/06/05	25/06/05	12/07/05	0.0978	Cash ordinaire	0.48	0.2037	33
08/09/05	13/09/05	29/10/05	0.0978	Cash ordinaire	0.52	0.1880	51
17/11/05	26/12/05	05/01/06	0.0978	Cash ordinaire	0.65	0.1504	50
30/01/06	15/02/06	02/03/06	0.0988	Cash ordinaire	0.52	0.19	30
04/05/06	30/06/06	17/07/06	0.1	Cash ordinaire	0.59	0.1694	74
17/08/06	29/09/06	16/10/06	0.1	Cash ordinaire	0.68	0.1470	60
01/11/06	Date d'annonce						

Source: Annual reports of cvscaremark.com Compustat and CRSP- Merged

Table 6. Descriptive statistics of indicators for measuring dividend CVS- Caremark after the merger

	Mean	*Median*	*Standard deviation*	*Min*	*Max*
Dividend payout ratio	0.1200	0.1132	0.0203	0.0776	0.1562
Timing of payment	44,92	40	20,18	21	91

Table 6 presents descriptive statistics of the timing of payment of dividends and the distribution ratio of the combined entity.

Note that the average payout ratio posted a slight increase. By comparing the payout ratio before the merger of Caremark (20.8 %) and CVS Caremark after the merger (12%) , we note a downward trend in the payment policy of the combined entity , yet this policy s' pays more to adjust to Caremark 's dividend policy. The dividend payment timing has also evolved to position than Caremark, hence it is possible to infer that the combined entity rather stay true to its distribution patterns and do not change the interests of its shareholders.

5. CONCLUSION

Referring to previous research, it can be argued that the confrontation of two different decision structures can lead to some conflicts should be resolved in order to finalize the merger. These factors to approximate, we can include the dividend policy via its key factors that are determining the amount to be paid and the appropriate timing of dividend payment. Therefore, the post-merger dividend policy is at stake in various shareholdings in various applications. This customer fact already raised by Black and Scholes (1974) must balance the interests of shareholders of the target company and the acquiring company; for fear that the shareholders of the target entity sell their shares if they are not satisfied after fusion. The sale of units may also cause the destruction of value of the combined entity, hence the growing interest in the study of post-merger dividend policy and its scope is critical to the success of any merger. For this, we examined the merger of two American companies CVS Caremark and operating in the pharmaceutical sector and which took place towards the end of 2006. This study found that both companies had two different policies for payment of dividends but that the merger was actually successful. However, we raise the higher post-merger dividend of the purchaser in the direction followed by the target company's dividend policy.

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