QUESTIONING THE CONTEXT OF CORPORATE PERFORMANCE MEASURES IN BENCHMARKING CEO COMPENSATION

Merwe Oberholzer*, Jaco Barnard**

Abstract

The purpose of the study was to reflect on existing practices in studying the CEO pay performance issue, with special reference to the context wherein the financial performance measurements were employed. In total, an in-depth content analysis of 40 published articles was done. Some flaws were identified in prior research, namely some studies only use either market-based or accounting-based measurements, only a single performance measurement, measurements without the context of the subjacent risks, monetary values without substance as performance measurements and without the context of a theory. The contribution of this study is that a framework is developed to guide future studies with regard to the context wherein financial performance measures should be employed and that some theories, additional to the agency theory, were identified that should be tested more frequently in pay performance-related studies.

Keywords: Accounting-Based Performance Measurements, CEO Compensation, Market-Based Performance Measurements, Motivation Theories, Risk-Return

** Potchefstroom Campus, North-West University, Private Bag X6001, Potchefstroom 2520, South Africa*
*** Potchefstroom Campus, North-West University, Private Bag X6001, Potchefstroom 2520, South Africa*

1 Introduction

This study follows the route of a meta-analytical approach questioning the context that performance measurements and subjacent theories are selected in studies benchmarking CEO compensation. There is globally a growing appetite for corporate governance (PwC, 2012) and the issue concerning CEO compensation has received a great deal of negative media attention, questioning whether it is out of control (Lamprecht, 2014). Stakeholders are especially concerned with regard to the discrepancy between CEO compensation and corporate performance (Gentry, 2012). The actuality of this issue had led to a stream of academic papers and the majority of them investigated the relationship between CEO compensation and corporate performance (Geiger and Cashen, 2007). In one of the earlier papers, Jensen and Murphy (1990) identified the core problem of researching the pay performance issue, namely that it leads to inconsistent results. Today, this issue is still controversial providing a stream of inconsistent results (Hussain et al., 2014). For example, researchers such as Bussin et al. (2013), Canyon (2013), Scholtz and Smit (2012) and Griffith et al. (2011) mainly found a positive relationship between CEO compensation and corporate performance, while researchers such as Farmer et al. (2013) found mixed results and Crespí-Cladera and Pascual-Fuster (2014), Bradley (2013), Theunissen (2010) and Grinstein and Hribar (2004) could not find a positive relationship.

Due to the complexity of the pay performance issue, it is understandable that research results are not always infallible and absolute and there is appreciation for the epistemic interest of researchers who continuously strive to find truthful descriptions, models and theories to shed light on the relationship between CEO compensation and corporate performance (Mouton, 2011). Our argument is that we as academics must direct the practice; however, in our opinion, the streams of mixed results from academia only contribute to confuse the practice. Therefore, executing one more correlation study will only further contribute to the confusion. The importance of this study is that this is rather a critical reflection of existing research, questioning firstly the selection of pay performance-related theories and secondly the selection of performance measurements that are used, and comment thereupon, to reveal new knowledge that may provide an enhanced basis for future research.

Performance measurement is a topic often discussed and defined as the process of quantifying action, where measurement is the process of quantification and action leads to performance (Neely et al., 2005). Otley (1999) is of the opinion that management accounting and performance measurement practices need to be evaluated not just from an economic perspective, but also from a social, behavioural and managerial perspective and that it is

these social, cross-national and cultural aspects that make the study of management control systems a fascinating topic for academic research. After studying relevant literature, Nita (2008) came to the conclusion that management accountants are the specialists dealing with the design, implementation and maintenance of performance management systems and the process of performance management and therefore the modern approach to performance management can be perceived as a result of the process of the evolution of management accounting.

Money is a very powerful motivator and it is so powerful that boards must make sure that their compensation system is not motivating the wrong kind of CEO behaviour (Rynes et al., 2005).There are many claimed advantages for performance-related pay, although its primary purpose in an organisation is to recruit, retain and motivate the workforce, including the CEO, as it is believed that high quality workers are attracted to an organisation where they believe their ability will be rewarded, while the current workforce is given the message that good performers are valued and poor performers are not (Chamberlin et al., 2002). Lawler (2003) found that performance appraisal systems are more effective when there is a connection between the results of the performance management system and the reward system and that organisations will err when they separate performance appraisals from determining pay changes. Atkinson (2007) sees incentive compensation, or pay-for-performance systems as reward systems that provide monetary rewards on achieving or exceeding some measured performance. Although there is support for and objection against performance-related pay schemes and it is widely accepted that such schemes have limitations, Rynes et al. (2005) suggest that such schemes should contain a balance between their sorting and incentive effects, their incentive intensity and risk, their use of behaviours versus results, and their emphasis on individual versus group measures of performance, so that the advantages of each scheme can be captured, while the disadvantages are minimised.

Problem statement, purpose and methodological preferences

This study has been conducted against the backdrop that corporate performance is linked to CEO performance, which is studied within the context of the subjacent theories of motivation. Furthermore, the measurement of corporate performance is studied from a management accounting context.

The problem is that this study firstly questions the dominance of the agency theory in CEO pay performance studies and wants to find out what other theories were the foundation in prior research studying CEO compensation. The agency theory, which presumes shareholders as principles, and managers as agents, "is the golden thread that runs through past research on executive compensation and performance" (De Wet, 2012). Therefore, many researchers only focused on the agency theory in their CEO pay performance studies. For example, researchers such as Ozkan (2011), Sigler (2011) and Gunasekaragea and Wilkenson (2002) mentioned the agency theory; Hou et al. (2014), Geiger and Cashen (2007) and Nwaeze et al. (2006) discussed it and Chourou et al. (2007) discussed and tested it. Many alternative theories have been developed by researchers who have studied human behaviour to explain what motivates behaviour and what the effects of incentives on effort are. However, according to Atkinson (2007) and Bonner and Sprinkle (2002), the following four theories represent the dominant explanations offered for the effects of monetary incentives on effort direction, duration and intensity, or performance: Vroom's expectancy theory; agency theory; goal-setting theory; and social-cognitive theory. Vroom's expectancy theory also helps to provide a framework for a review of the literature on compensation systems, and the role of the management accountant in supporting those systems. This theory is not necessarily the most widely accepted, but it provides a good framework for a discussion on compensation systems and performance-related pay (Atkinson, 2007).

A second problem is that this study questions whether the performance measurements that are applied to measure corporate performance are within an appropriate managerial accountancy context, namely a variety of different ratios should be employed and they should be interpreted in conjunction with other relevant management accounting data and perspectives, such as risk factors. The literature reveals many different determinants of CEO compensation. Van Essen et al. (2012) and Doucouliagos et al. (2012) did meta-analytical studies, summarising 219 US-based and 44 UK-based studies and identified a number of different categories of determinants (16 and 26, respectively), including performance measurements, both accounting based and market based. Researchers used a variety of accounting-based performance measures, *inter alia*, return on equity (ROE), return on assets (ROA) and net profit margin (NPM) (Nulla, 2013; Van Essen et al., 2012). A variety of market-based performance measures are also used, *inter alia*, ratios such as return to share (RTS), market-to-book value (MB) and Tobins Q (Croci et al., 2012; Ozkan, 2011). These mentioned examples are all financial estimates, deduced from readily available companies' financial statements and market reports.

Analysts should employ a variety of the financial performance ratios since these ratios measure different performance aspects and the literature is unclear with regard to the importance of the different measures (Oberholzer, 2012). Unfortunately, it is evident from the literature that researchers sometimes only use a single financial ratio as a proxy for

corporate performance (Hearn, 2013; Sigler, 2011; Stanwick and Stanwick, 2001). In addition to the above-mentioned concern, another significant weakness is that ratios can be deceptive, for example when comparing two equally performing companies, the one may have a relatively high ROA as a result of using old and depreciated assets, whereas the other uses relatively new assets (Correia et al., 2011). Therefore, additional management accounting data and perspectives should be combined with financial ratios, which should be interpreted within their own context. Refinement of ratios should also be considered to make it more useful and comparable; for example, to calculate for the above-mentioned companies' returns before depreciation may partly move their ratios to a level closer for comparability.

The purpose of the study was to reflect on existing practices in studying the CEO pay performance issue, with special reference to the context wherein the financial performance measurements were employed. In this regard, the study found that some flaws in prior studies that urged the study to present a demonstration to enhance the employment of the different measurements and to develop a best practice framework. Set against the backdrop of a number of theories, especially pay performance and other motivational theories analysts used to measure their findings and conclusions against, the study also aims to reflect on the appropriateness of these theories within the context of benchmarking CEO compensation.

To fulfil the purpose, a meta-analytical approach was followed that firstly has a positivistic dimension where a content analysis was done by an in-depth content analysis of 40 randomly chosen published papers that investigated the relationship between CEO compensation and corporate performance. This study also has an interpretive dimension, including a discussion to evaluate the appropriateness of the performance measures and its links to the different theories. The study contributes to the existing literature by providing a framework emphasising the context of preferred financial performance measurements, namely how they complement each other and what additional information should be used in conjunction with these measurements. Furthermore, the study emphasises the existence of different theories that should be considered within the context of the CEO pay performance issue.

The remainder of the study will evolve as follows: The next section provides the conceptual scope, including a literature review, theories of motivation and performance measurements. This is followed by a section explaining the data, method and results of the content analysis. The next section is a discussion to demonstrate best practices and to develop a best practice framework. The study will be finally concluded thereafter.

2 Conceptual scope

Our main argument is that we as academics must direct the practice and not confuse them. This study is conducted from the researchers' perspective as management accountants, but certain concepts from the perspective of human resource management need to be incorporated to gain a better understanding of performance-related pay, specifically the theories behind the use of pay as a motivator. Our first claim is that when the CEO pay performance issue is investigated, the researcher must understand the subjacent theories. The second claim is that when performance measurements are selected, it should be done with care and in conjunction with other factors.

Literature review

This literature review serves as a basis to get a better perspective on the pay performance issue and to get an idea of variables that should be coded in our content analysis. When prior research is evaluated and evidence appears that corporate performance only accounts for less than five percent of CEO pay (Alves et al., 2014; Tosi et al., 2000), we may have one of two reactions: Ignore the pay performance issue as a result of the insignificance thereof, supported by the fact that results are anyway inconsistent (Hussain et al., 2014); or see the actuality of the issue and solve the problem by questioning how performance is measured and the theoretical context wherein it is measured.

It is evident from prior research that there are many determinants of CEO pay. Some authors organise them into sensible groupings such as firm, CEO and governance characteristics (Brick et al., 2005), or size, performance and governance (Nulla, 2013), or performance, risk, size, leverage and ownership (Gunasekaragea and Wilkenson, 2002). From prior literature, firm size is indicated as the most significant determinant of CEO compensation and proved to be constant with a positive relationship (Sigler, 2011; Fulmer, 2009; Geiger and Cashen, 2007).

In the literature, it seems to be important for researchers to break CEO compensation up into different components, such as salary, benefits and pension, bonus, stock options and long-term incentive plans (Theunissen, 2012). The reason is that researchers have hypothesised that separate components of CEO compensation are differently related to determinants. For example, bonuses are more related to performance measurements than a fixed salary (Griffith et al., 2011); firm performance is significantly related to total pay, including long-term incentives, while it is not related to cash compensation (Gunasekaragea and Wilkenson, 2002); salaries are a function of firm size, while bonus is a function of performance (Stanwick and Stanwick, 2001).

As already indicated, firms' performances are measured with ratios such as RTS, ROE and ROA. Performance should always be evaluated with the subjacent risks in mind. Market-based performance measurements should not be seen in isolation, but together with firm-specific risk. Executives are risk adverse in comparison with well-diversified investors (Chourou et al., 2007). Therefore, as a result of the risk that may lead to negative performance outcomes, CEOs would have job security in mind and avoid exposure to be terminated, which forces them to make conservative decisions (Abraham et al., 2014). These decisions may not be in the best interest of well-diversified investors. To encourage CEOs to take on some risk, they should be compensated therefore (Sigler, 2011). Therefore, a positive relationship between CEO pay and firm risk is hypothesised (Faleye et al., 2013).

The returns measured by accounting-based performance measures should also be interpreted within the context of risks. For example, O'Connell and Sullivan (2013) included leverage for the potential influence of financial risk, and Alves et al. (2014) included leverage and hypothesised a negative relationship between debt and agency cost.

Finally, the agency theory seems to be dominant in prior studies investigating the CEO pay performance issue (Chen and Jermias, 2012; Callan and Thomas, 2012). Kuo et al. (2012) found in prior studies that the pay performance relationship is only weekly associated with the agency theory, but they still support this theory by hypothesising that especially bonuses should be highly related to performance. Chourou et al. (2007) also tested this theory in their study. Questioning the dominance of the agency theory will help to find other pay performance-related theories that should be brought within the context of CEO compensation (Geiger and Cashen, 2007).

Theories of motivation

The four most significant pay performance theories, as identified by Atkinson (2007) and Bonner and Sprinkle (2002), will next be explained. It must be noted that this is not a critical evaluation and discussion of motivational theories, but merely an attempt to place the concept of performance-related pay and motivation in perspective for use in a performance management system and an understanding of the impact thereof on the analysis of CEO compensation. A number of mechanisms have been proposed to explicate the incentives-effort link, including expectancies, self-interest, goal setting, and self-efficacy.

Vroom's expectancy theory

People act to maximise expected satisfaction with outcomes. People are motivated, firstly, by what they think the payoff is for a particular behaviour (in the case of performance-related pay, it is money), and secondly, how much they value that payoff (people value monetary payoff over non-monetary payoff). The combination of these two factors is what motivates people. People make more effort when performance-based incentives are used because they believe they will get money when they perform as expected and they really like money. Therefore, an individual's motivation and subsequent effort likely are significantly higher when compensation is based on performance, due to both an increased expectancy about the effort-outcome relationship and an increased valence of the outcome (Atkinson, 2007; Bonner and Sprinkle, 2002; Vroom, 1964).

Agency theory

Agency theory assumes that people are rational and will make choices on the choice's ability to increase either their wealth or leisure. Agency theory therefore suggests that individuals will evade a task unless it somehow contributes to their own economic well-being. Therefore, similar to expectancy theory, agency theory suggests that incentives play a fundamental role in the motivation and control of performance, because individuals have a need to increase wealth (Bonner and Sprinkle, 2002).

Goal-setting theory

Goal-setting theory proposes that personal goals are the primary determinant of, and immediate precursor to, effort. Therefore, personal goals are the stimulant of incentive-induced effort (Bonner and Sprinkle, 2002). Research has shown that challenging and specific goals are most effective at increasing effort because they require more effort to be achieved (Bonner and Sprinkle, 2002). According to Locke et al. (1981), there are three ways in which incentives can affect effort via goal setting: firstly, monetary incentives may cause people to set goals when they otherwise would not; secondly, they would set more challenging goals that they otherwise would; and thirdly, they may lead to higher commitment and therefore greater effort (Bonner and Sprinkle, 2002). Goal-setting theory provides an explanation of the effect of incentives on effort that goes beyond their effects on expectancies and outcomes (Bonner and Sprinkle, 2002).

Social-cognitive (or self-efficacy) theory

Self-efficacy expands both expectancy theory and goal-setting theory by explicating the cognitive factors that affect effort and therefore the possible mechanisms by which monetary incentives can affect effort. An individual's belief about whether he/she can execute the actions needed to attain a specific level of performance in a given task is an important

determinant of effort. The belief that one can achieve a task affects effort via goal setting such as when people who believe they are able to accomplish much, set high goals for themselves, which according to goal-setting theory would immediately precede effort (Bonner and Sprinkle, 2002).

Performance measurements

Einstein once said: "Not everything that can be counted counts, and not everything that counts can be counted" (Albert Einstein quotes, s.a.). This quote is relevant to performance evaluation, which is one of the most crucial functions of organisational life, but also one of the least understood (Szeto and Wright, 2003). When designing a performance management system, a clear understanding of exactly what is meant by performance should be developed, as one cannot measure performance if one does not know what is meant by it (Bae, 2006). The choice of performance measures is one of the most critical challenges facing organisations, as performance measurement systems play a key role in developing strategic plans, evaluating the achievement of organisational objectives and compensation (Ittner et al., 1998). Most economic theories analysing the choice of performance measures indicate that performance measurement and reward systems should include any financial or non-financial performance measures that provide additional information on managerial effort (Ittner et al., 1998). Unfortunately, the problem of using non-financial data for this study is that this is not readily available in the public domain.

Financial data are used in several ways, i.e. market based and accounting based. Market-based and accounting-based ratios are used as performance measurements, ROA/ ROE and RTS, respectively (Van Essen et al., 2012). All these ratios include a common variable, namely return. Return must be valued relative to underlying risks, because when risks are high, a high return is expected to compensate for that level of risk, and *vice versa* (Correia et al., 2011). Furthermore, financial data are used, accounting and market items, as proxies for firm size, e.g. sales revenue (Hearn, 2013) and total assets (Grinstein and Hribar, 2004), respectively;

To summarise, considering the theories and performance measurements, the open question is whether they are selected by researchers and employed within a sensible context?

3 Data, method and results

Data and method

The material for the study consists of 40 published studies on CEO/executive pay that were randomly selected. Searches on Google Scholar and EBSCOHost were helpful to select studies that investigate, *inter alia*, the relationship between CEO compensation and corporate performance. Therefore, this research is classified as an empirical study using content analysis of secondary textual data. The researcher is the measurement instrument who is responsible for the coding and the textual analysis is a non-reactive method. Therefore, the level of control is low with no specific theoretical (meta-theory) approach as a conceptual framework (Mouton, 2011).

This study has a positivistic dimension where the 40 published articles were coded to detect frequencies of specific variables such as components of CEO pay, market-based performance measurements, accounting-based performance measurements, risk factors including leverage, motivation to select performance measurements, proxies for firm size, number of determinants of CEO pay, lag times, and theories. All 40 articles are discussed in this section and included in the list of references. Each article was twice analysed by the researcher and an assistant. This double process was followed to ensure that the study is reliable, i.e. that the data are correctly extracted from the articles. This study also has and interpretive dimension where the appropriateness of performance measurements that were found in the articles is evaluated, within the context of the measurements relative to risk factors and theories. To ensure that the study is valid, the final draft was given to experts in corporate governance and performance management for comments.

Results

Theories

The first focus of this study is concerned with theories used in prior research. Table 1 exhibits in the last column that 24 (60%) articles mentioned/discussed subjacent theories for their studies and seven thereof clearly discussed and tested theories. From the four most significant pay performance theories identified earlier, only the agency theory features in the sample of studies. A further analysis of the data revealed that the 24 articles can be broken up into 17 (42.5%) that included the agency theory. The agency and expectancy theories are closely related. A possible reason why researchers prefer the agency theory is that it is probably easier to find a link between CEOs' pay and performance than to find a link between their pay expectations for an increased performance effort. Opposed to the agency theory is the shareholder theory; the principles of a firm are also owners, which eliminates the principle-agent conflict that arises in the agency theory (Callan and Thomas, 2012). This theory appears in one article (2.5%).

Table 1. Analysis of 40 articles

No	CEO pay		Market-based					Accounting-based					Moti-	Size	Det	Lag	Theory
	Multi	LT	RTS	M-B	Other	Q	Risk	ROA	ROE	EPS	Other	Lever-age	vation				
1	yes	yes					yes		yes					yes	4		yes
2	yes	yes	yes					yes	yes					yes	5		yes
3	yes	yes							yes				prior	yes	3		
4	yes	yes	yes				yes	yes						yes	11	yes	test
5	yes	yes	yes					yes						yes	7	yes	
6	yes	unc.					yes	yes						yes	8		yes
7	yes	yes		yes			yes					yes	yes	yes	11		test
8		unc.									yes		yes	yes	8		
9			yes				yes	yes						yes	14		
10	yes	yes		yes			yes	yes				yes		yes	14		
11	yes	yes	yes				yes	yes				yes	prior	yes	13	yes	
12		yes				yes	yes	yes			yes		yes	yes	14		test
13	yes	unc.						yes	yes	yes	yes			yes	17		
14	yes	yes	yes			yes						yes	partly	yes	8		yes
15			yes											sev.	4		yes
16			yes									yes	prior		3		yes
17	yes	yes		yes				yes						yes	5		
18	yes	yes	yes				yes						yes	yes	9	yes	yes
19	yes	yes	yes			yes								yes	13	yes	yes
20		unc.							yes					yes	9	yes	
21	yes	yes	yes				yes			yes				yes	12	yes	test
22	yes	yes	yes					yes					prior	yes	10	yes	
23		unc.	yes	yes			yes	yes					prior	yes	14	yes	
24	yes	yes					yes				yes		prior	yes	12	yes	test
25	yes	yes				yes	yes	yes				yes		yes	6		yes
26		yes	yes		yes		yes					yes	yes	yes	27	yes	yes
27	yes	yes		yes								yes	yes	yes	9		test
28	yes	yes	yes		yes	yes	yes						yes	yes	10	yes	
29	yes	yes	yes	yes			yes	yes					prior	yes	13		yes
30	yes	yes					yes	yes						yes	8	yes	yes
31	yes	yes	yes			yes	yes	yes				yes		yes	18		yes
32		yes			yes			yes	yes			yes	partly		5		yes
33							yes	yes	yes	yes			yes		9	yes	
34	yes	unc.							yes	yes		yes		yes	6		
35	yes	yes	yes	yes			yes			yes			partly	yes	13		test
36	yes	yes	yes				yes			yes			yes	yes	5	yes	yes
37	yes	yes		yes			yes	yes						yes	13	yes	yes
38	yes	yes				yes	yes	yes				yes	partly	yes	19	yes	
39		yes	yes	yes			yes						yes	yes	7	yes	yes
40		yes	yes			yes		yes				yes		yes	16		

Another theory that is concerned with both pay and performance is the relative performance evaluation (RPE) theory. Two articles (5%) refer to RPE that postulates that CEOs' performances should be benchmarked against their peers who are exposed to similar risks. Compensation is then determined relative to the performance (Farmer et al., 2013; Farmer et al., 2010). Theories that include pay as a component are firstly the human capital theory. Four articles (10%) refer to this theory, which stipulates that CEO characteristics such as education increases over time and that leads to higher compensation (Alves et al., 2014; Abraham et al., 2014). Secondly, the economic theory, where demand and supply of CEOs determine compensation, appears in two articles (5%) (Faleye et al., 2013; Core et al., 1999). Thirdly, two articles mention the managerial power theory, i.e. where CEOs aim to control factors such as firm size that are linked to pay (Farmer et al., 2010). Fourthly, two articles mentioned the tournament theory, i.e. CEOs with additional responsibility such as CEO/chairman duality receive higher compensation (Ntim et al., 2013; Lee et al., 2008). A theory that includes performance is the stakeholder theory, i.e. people with high ethical standards will not harm the performance of the firm (Alves et al., 2014). Another theory that is related to the motivational theories of goal setting theory and the social cognitive theory is the stewardship theory, included by de Wet (2012), where personal goals and challenges are more dominant than pay for performance.

CEO compensation

The second focus of the study is mainly on performance measurements and related aspects. Table 1 exhibits that the majority of articles (28/70%) break CEO pay up into multiple components, i.e. they use multiple dependent variables (Multi). The majority (30/75%) also clearly indicated that they include long-term (LT) incentives, i.e. stock option gains, as part of CEO pay. Studies such as Abraham et al. (2014), Faleye et al. (2013), Conyon (2013), Callan and Thomas (2012) and Geiger and Cashen (2007) use a simple, but very sensible analysis by splitting CEO pay into long-term and short-term components, where the short-term pay combines components such as salary/base pay and bonus. It is a sensible practice to keep these two components separate, since the stock option gains are a function of the number of stock units and the prevailing stock price at the time when the option is exercised. A CEO's performance may influence the stock price to a limited extent, but it is mainly affected by company-specific and market factors that cannot be controlled by the CEO (Theunissen, 2012). Studies such as Hou et al. (2014), Farmer et al. (2013), Schultz et al. (2013), Ozkan (2011), Walker (2010), Farmer et al. (2010) and Chhaochharia and Grinstein (2009) also include long-term and short-term components, where the short-term pay is broken up into components such as base pay and bonuses. It is also sensible practice to keep these two components separate, since short-term pay mainly consists of a fixed salary and a bonus that may be performance based; the hypotheses stated that these different components relate differently to firm performance (Hou et al., 2014; Farmer et al., 2010).

Performance measurements

A number of performance measures were used in the articles, i.e. market based and accounting based. The main reason to include performance measures as independent variables to CEO pay is the result of the agency theory, which assumes that a firm's performance relates to shareholders' wealth maximisation and the latter is an incentive for CEOs to improve their performance (Croci et al., 2012). Half of the articles (20/50%) used both market-based and accounting-based performance measurements; 10 (25%) only used the former and 10 (25%) only used the latter. Studies such as Farmer et al. (2013) prefer market-based performance measures because they "have a clear and intuitive link to shareholder interests." Nevertheless, both market-based and accounting-based performance measurements provide important information. Therefore, the best practice would be to include both measurements, because the former reflects the market's future expectations of a firm, while the latter reflects the historical performance and financial position of a firm.

Market-based performance measurements

A number of market-based performance measurements were used; RTS was used by 20 (50%) articles and another article only used share price as a proxy for market performance. RTS, the annual stock return plus dividend pay-outs, is included because stock price performances support the agency theory (Alves et al., 2014). The articles mainly used a one-year RTS. The best practice would be to use the method found in two studies that used a three-year average RTS and argue that CEO pay is influenced by the immediate and medium-/long-term performance. A three-year average was chosen because it is proved to be more significant than a one-year or five-year RTS (Conyon, 2013; Griffith et al., 2011). Furthermore, two studies applied both a one-year and a three-year return to take the short-term and medium-/long-term performance into account (Farmer et al., 2013; Gunasekaragea and Wilkenson; 2002).

Nine articles (22.5%) applied MB. The stock market price to its book value is a performance measurement based on how a firm is regarded by the market (investors). Studies such as Chourou et al. (2007), Faleye et al. (2013), Croci et al (2012), Kuo et al. (2012), and Walker (2010) clearly indicate that MB is used as a proxy for firm growth, and similarly, Crespí-Cladera and Pascual-Fuster (2014) and Core et

al. (1999) emphasised MB as a proxy for investment opportunities. Another alternative measure of market performance is Q/Tobins Q. Q or Tobins Q is a variation of MB. This differs from MB, market value of equity to its book value, while Tobins Q is the market value of equity to the total asset value of a firm at replacement cost (InvestingAnswers, 2015). When debt is included, it is known as Tobins Q, and only Q when debt is excluded from the calculation (Smithers, 2015). Q/Tobins Q can be used as a proxy for firm growth (Ozkan, 2011) or a proxy for future performance (Gunasekaragea and Wilkenson, 2002). Eight articles (20%) applied Q or Tobins Q.

Alves et al. (2014) includes dividend yield, not as a performance measure, but as a firm characteristic. Finally, Griffith et al. (2011) included market value added (market value of capital less capital invested) as one of four performance measures. De Wet (2012) applied both MVA (present value of future EVA) and EVA, which are value-based measurements of the creation of shareholders' wealth. De Wet's motivation is that these two value-based measures are superior to the traditional executive performance measures such as ROE, ROA and EPS, which do not include risk measurements.

Twenty-one of the 30 articles that used market-based performance measurements also took market-related risk factors into consideration. Another three that did not use market-based performance measurements also used market-related risk factors. These risk factors vary from measures such as beta (Sigler, 2011), standard deviation of returns (Core et al., 1999), market- or industry-related measures, mainly using peer, industry or market indices (Farmer et al., 2013; Grinstein and Hribar, 2004). It is sensible to use market-related risk factors in conjunction with market-based performance measures, because when performance is measured by some kind of return, the risk factor should be controlled.

Accounting-based performance measurements

An analysis of the accounting-based performance measurements revealed that ROA, ROE and earnings per share (EPS) are the most used ratios, i.e. 21 (52.5%), eight (20%) and six (15%), respectively. Some articles indicated the equation for ROA (profit to total assets) differently, i.e. profit after tax (Bradley, 2013; De Wet, 2012; Zhou, 2000), net income (NI) before extraordinary items (Chhaochharia and Grinstein, 2009), operational income after depreciation (Faleye et al., 2013), operating profit (Ntim et al., 2013; Lee et al., 2008), net income plus interest, net of taxes (Crespí-Cladera and Pascual-Fuster, 2014), and industry-adjusted ROA, i.e. net income (NI) to total assets minus median industry ROA (Croci et al., 2012). The best practices seem to define return rather as EBIT (earnings before interest and taxes) (Schultz et al., 2013; Core et al., 1999) or EBITDA (earnings before interest, taxes, depreciation and amortization) (Brick et al., 2005; Grinstein and Hribar, 2004) instead of return after tax (NI). Assume two similar firms with exactly the same operating income (EBIT) performance may have different net incomes as a result of differences in the firms' leverage, which result into different finance costs and finance risks. Therefore, EBIT is more suitable to compare CEOs' performance, which has no or little influence on the financing structure and tax rates. Using EBITDA as the return is even better, since the effect of depreciation is also excluded.

Some articles used a year's average assets (Bradley, 2013; Zhou, 2000), and prior year's assets (Faleye et al., 2013; Crespí-Cladera and Pascual-Fuster, 2014; Core et al., 1999). These articles are in line with the argument that CEO pay is more likely to be influenced by performance based on previous periods. Other articles used year-end total assets in their ROA calculation, but took a one-year lag time into account (Chhaochharia and Grinstein, 2009; Lee et al., 2008), and some articles only used year-end total assets (Schultz et al., 2013; Ntim et al., 2013 Brick et al., 2005). The study by O'Connell and Sullivan (2013) calculated a three-year average ROA.

In total, eight (20%) articles applied ROE as performance measurement. Some articles exhibit the equation, e.g. income before extraordinary items to average equity at book value (Sigler, 2011); after tax income to average equity (Zhou, 2000); after tax profit (De Wet, 2012); and net income to equity, also taking a one-year lag into account (Bradley, 2013). The best practice can be found in two studies that control the effect of the capital structure (financial risk), namely De Wet (2012) and Bussin et al. (2013), who also took WACC and leverage, respectively, into account.

Six (15%) articles used EPS, defined by two articles as the earnings (profits) to the number of shares in issue (Bradley, 2013) and headline EPS (Bussin et al., 2013). Nulla (2013), Bradley (2013), Bussin et al. (2013) and Farmer et al. (2010) indicate clearly that EPS is a performance measurement. Gregory-Smith and Main (2014) used EPS in a sensible way to calculate a relative EPS. The problem with firms' EPSs is that they are not comparable between firms, since they indicate the monetary yield of shares of different values.

Some studies employed other accounting-based ratios, i.e. Lee et al. (2008) used several ratios, Nulla, (2013) used net profit margin and cashflow per share and Callan and Thomas (2012) also used net profit margin. The study by Chen et al. (2008) did not use ratios, but accounting line items to determine, by means of data envelopment analysis, the relative efficiency of how inputs, e.g. assets and equity, are converted into outputs, e.g. revenue and profit.

Chourou et al. (2007) used free cashflow as a measure, but did not indicate clearly whether this is a performance measure. Since it is not relative to

'something', this is merely a measure of size in conjunction with their size measure of total assets. Nulla (2013) indicates common stock outstanding (issued) and the book and market value thereof as performance measures in conjunction with size measures, total assets and total employees. Scholtz and Smit (2012) indicate clearly the following as firm performance measures: total assets, turnover, EBITDA and share price. Theunissen (2010) indicates profit and turnover growth as performance measures and used total assets, total equity and total turnover as size measurements. Griffith et al. (2011) used change in funds from operations as a performance measure and motivate it well that this measure is extensively used in the literature studying real estate investment trusts. Bussin et al. (2013) used profit after tax and EBITDA as firm performance measurements in conjunction with total assets as a proxy for firm size. The problem of all these performance measurements is that they are expressed in monetary terms without any substance.

Except for De Wet (2012), who measured capital structure risk by WACC, 11 other studies also employed leverage (debt-to-equity), and Gunasekaragea and Wilkenson (2002) employed a variation, i.e. debt-to-assets. Leverage is a measure of financial risk and studies have different hypotheses in this regard. For example, it is hypothesised that leverage has a positive or negative influence on CEO pay (Nwaeze et al., 2006; Alves et al., 2014; Chourou et al., 2007). It is sensible to include financial leverage to control for potential capital structure influences (O'Connell and Sullivan, 2013).

Sundry

Only ten (25%) articles provided a clear motivation why they selected their specific performance measurements, while another four (10%) partly motivated their selection. Seven (17.5%) justified their selection by indicating that prior studies have used those measurements and 19 (47.5%) did not provide any explanation for their selection.

Thirty seven (92.5%) articles included one or more proxies to control for size in their regression lines. Most of the studies used accounting line items, i.e. 19 sales (revenue), 12 total assets, one total expenditure and one book value of equity. Market-based data are also used, e.g. five used market capitalisation. Non-financial data are also used, e.g. four used number of employees. Most of these values are converted to logarithms to avoid heterogeneity problems.

The complexity of studying CEO compensation is confirmed by the analysis that the 40 articles used on average 10.3 determinants (Det) of CEO pay. This analysis was only done to present the performance measures used within context with other determinants of CEO compensation. The following three meta-analytical studies can be consulted for an extensive list of determinants: Van Essen et al. (2012), Doucouliagos et al. (2012) and Tosi et al. (2000).

In total, 18 (45%) articles lagged performance measures, i.e. to bring a year's performance in relationship with the next year's CEO compensation. This is sensible, since the pay of CEOs is probably based on previous performances.

4 Discussion

This section firstly summarises the results, comments thereupon and demonstrates the context wherein performance measurements should be employed. Secondly, in this section, a best practice framework is developed to deal with variables in studying the CEO pay performance issue.

To summarise the findings, the study mainly found: Firstly, the agency theory is dominant in the sample of articles, which makes sense because money is probably the most significant motivator for performance. Other theories are probably also relevant, because money is not the only motivator, and for some people probably not the primary motivator; secondly, in most of the articles, the CEO compensation is broken up into sensible components; thirdly, almost half of the studies employed both market-based and accounting-based performance measurements; and fourthly, some flaws were identified with regard to the employment, and the context wherein performance measurements were employed. A brief demonstration follows.

The study found that RTS is the most frequently used market-based performance measurement, followed by a proxy for growth/investment opportunity in the form of MB or Q/Tobins Q. It is important to judge these performances (share values) relative to their subjacent risks, i.e. the volatility of share values. For example, assume two companies, one in the commodity industry (e.g. a gold mining company) and one in the food retail industry. The former's share is probably relatively more volatile as a result of its higher price elasticity, while the food retailer operates in a more stable industry. Say the gold price drops severely, which may affect a gold mining company's share price dramatically negatively, while the share price of the food retailer would stay unchanged. The CEO of the gold mine will compare unfavourably to the retailer's CEO, while the first CEO's performance has no influence on the changes in the global market price of gold. (The opposite will be experienced when there is a severe increase in the global gold price).

ROA was indicated as the most frequently used accounting-based performance measurement. It is important to calculate ROA in such a manner that CEO performances are fairly compared. Assume two hypothetically similar firms with equal performance, but the one has a relatively higher asset value and also a relatively higher depreciation cost that will result in a lower profit. Even when these two companies and

CEOs perform equally, the one with the new asset's ROA will compare unfavourably to the other as a result of its relatively high asset value and lower profit. Employing EBITDA, which excludes depreciation, as a proxy for return will help to bring the ROA ratios of the two firms closer to each other.

ROE was indicated as the second most frequently used accounting-based performance measurement. It is important to use ROE in conjunction with the firm's financial risk. Assume two similar and equally performing firms with the same EBITs, but the only difference is in the way they are financed. The first is relatively higher levered, which will result in a higher volatility in ROE (NI/book value of equity). When the EBIT of both firms decreases, the first CEO will compare unfavourably with the other, but will be favoured when the EBITs increase. To compensate for this unequal volatility in ROE, leverage (debt to equity) should also be used in conjunction with ROE in the regression equation.

EPS was also indicated as a frequently used measurement. The problem of using EPS is that it indicates the yield of shares of different values. Assume two similar firms need $100, where the first has issued one share of $100 and the other ten shares at $10 each. The profit performance of the two firms is exactly the same, say $12; the EPS for the first is $12 and for the second $1.2 per share. Using EPS gives the impression that the first firm performed ten times better than the second. EPS can only be used if it is expressed as a percentage, in this case 12 percent for each of the companies.

Except for EPS, it was also found that researchers used other performance measurements that are in monetary terms. It is important that a performance measurement should be sensible, for example the monetary value of say sales (or the growth in sales) can be used to indicate performance, but such an amount, e.g. $1 million, only has substance if it is compared to another firm or to previous sales amounts. For a big firm, $1 million is a poor performance, but for a small firm it is an excellent performance. Obviously, a relatively big firm will produce relatively high monetary values such as sales, assets, equity at book or market value, and profits, e.g. NI, EBIT and EBITDA. This implies that monetary values can only be used as a proxy to control for firm size. Furthermore, assume there is no change in a firm's performance and the real CEO pay, but both the monetary values used as performance measurements and the CEO pay increase with exactly the same percentage, which only compensates for inflation, an analysis will indicate a 100 percent fit that a change in firm performance leads to a change in CEO pay.

The best practices that are learned from the study are indicated in the framework exhibited in Table 2.

Table 2. Best practice framework

Theories • Studying CEO pay performance should be done within the context of a theoretical framework. • The agency theory is the most dominant pay performance theory. • Other theories should also be considered, such as shareholder, RPE, human capital, economic, managerial power, tournament, stakeholders and stewardship theories.
CEO compensation • The compensation should be broken up into components, such as short-term and long-term; fixed and performance-based pay.
Performance measurement • A combination of market-based and accounting-based measures is more powerful than only one of them. • Lag times should be included as CEO pay relates more to previous performances.
Market-based performance measurements • RTS is the most prominent measurement. • MB or Q/Tobins Q can be added as a proxy for growth/investment opportunity. • These measurements should be used in conjunction with the relevant risk of share volatility.
Accounting-based performance measurements • ROA is the most prominent measure, but EBITDA should be a proxy for return. • ROE can only be used in conjunction with financial risk, i.e. leverage. • EPS and other monetary values (e.g. sales or profit) can only be used in terms of a percentage.
Firm size • Monetary values, e.g. sales, assets, equity and profits, or changes in those values cannot be used as performance measures, but only as proxies to control for firm size.

5 Conclusions

The purpose of the study was to reflect on existing practices in studying the CEO pay performance issue, with special reference to the context wherein the financial performance measurements were employed. In total, an in-depth analysis of 40 published articles was done. The study found that a variety of financial performance measurements, market based and accounting based, were employed in the prior studies and within the context of different theories, mainly the agency theory. To answer the open question, some flaws were identified in prior research, namely some studies only used either market-based or accounting-based measurements, only a single performance measurement, measurements without the context of the subjacent risks, monetary values without substance as performance measurements and without the context of a theory. Therefore, the study concludes that these flaws contribute to the mixed results that academia provides to the practice. The contribution of the study is that a framework is developed to guide future studies with regard to the context wherein financial performance measures should be employed and that some theories, additional to the agency theory, were identified that should be tested in pay performance-related studies. The value of the study is that researchers with limited accounting/management accounting experience can make use of the framework to select a sensible combination of variables in future pay performance-related studies.

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