

# Value-based management as a tailor-made management practice? A literature review

Kai Henning Blume<sup>1</sup>

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**Abstract** Value-based management is largely discussed as fundamental tool to manage organizations successfully. However, it is often criticized for its alleged incentive to maximize short-term profits. Thus, it is the aim of this study to shed more light on the role of value-based management for organizational success and discuss which firms seemingly benefit from the adoption of value-based management systems. Since adoption rates vary among firms, the implementation and its effect on organizational performance may be a matter of systematic circumstances. In particular, the extent of agency conflicts and arrangements to alleviate those conflicts designate where value-based management potentially serves as an effective monitoring instrument. Additionally, a more reactive strategic orientation and low growth opportunities imply a need for more efficient capital management as one lever to increase organizational performance. These conditions are accompanied by managerial characteristics and industry pressure that determine the use of value-based management systems, and do not undermine its incentive for efficient capital management. Hence, value-based management seems to be tailor-made for these specific circumstances.

**Keywords** Value-based management · Corporate governance · Contingency theory · Shareholder value · Literature review

**JEL Classification** G30 · M21 · M41

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✉ Kai Henning Blume  
kai-blume@web.de

<sup>1</sup> Management Accounting Research Group, School of Business and Economics, Philipps-Universität Marburg, Am Plan, 1, 35037 Marburg, Germany

## 1 Introduction

Value-based management is a management practice that has been discussed for more than two decades, helping executives to manage organizations successfully (e.g. Stewart 1991; Knight 1998; Ittner and Larcker 2001; Malmi and Ikäheimo 2003; Martin et al. 2009). In particular, value-based management includes the investor's risk (cost of capital) in management control and decision-making and thus, facilitates the efficient use of capital and increases shareholder wealth (Wallace 1997; Malmi and Ikäheimo 2003). Furthermore, using the firm's cost of capital as a benchmark in decision-making and for performance evaluation, shareholder's costs to monitor the management's activities decrease (Lovata and Costigan 2002; Ryan and Trahan 2007). In this view Elgharbawy and Abdel-Kader (2013) propose the role of value-based management contributing to organizational success by "keep[ing] the balance between conformance [with corporate governance standards] and [organizational] performance [...]" (Elgharbawy and Abdel-Kader 2013, p. 100). Moreover, the authors suggest that value-based management influences both corporate governance and corporate entrepreneurship as important drivers of organizational performance.<sup>1</sup>

However, the primary focus of value-based management, to maximize shareholder value (e.g. Knight 1998; Martin and Petty 2000), has been criticized for myopic profit maximization.<sup>2</sup> This criticism seems basically to be a problem of the common misunderstanding of value-based management as a synonym for greed (Martin et al. 2009). If so, the whole idea of value-based management would be outdated or even an abysmal organizational target in the view of sustainable growth.

The concept of value-based management has been discussed throughout the literature as useful for organizations—large or small, public or private—focusing on the creation of shareholder value (e.g. Knight 1998; Martin and Petty 2000). However, in practice, value-based management systems have only diffused to a fraction of firms (Knight 1998), that show on average a higher performance than comparable firms (Ryan and Trahan 2007; Lueg and Schäffer 2010; Rapp et al. 2011).

Hence, it is the aim of this study to shed more light on the role of value-based management to manage firms successfully. Based on the conceptual model for enterprise governance by Elgharbawy and Abdel-Kader (2013) this study discusses whether value-based management is an old-fashioned management practice from the 1990s or a tailor-made management practice to manage organizations successfully and that has diffused to those firms that seemingly benefit from its implementation.

<sup>1</sup> Elgharbawy and Abdel-Kader (2013) view the key function of corporate governance as "to protect shareholder rights and to [re]store investors' confidence in capital markets". Further, the authors define corporate entrepreneurship according to Zahra (1995, p. 227) as "the sum of a company's innovation, renewal, and venturing efforts. [...]" and state that corporate entrepreneurship is essentially important for organizational success.

<sup>2</sup> One of the most famous comments in this regard may be the one of Jack Welch, the former CEO of General Electric (GE), who states in the *Financial Times* on March 12, 2009: "[...] shareholder value is the dumbest idea in the world." (Guerrera 2009).

Thus, I focus on two research questions that should help to understand under what circumstances value-based management can be an effective tool for management control and decision-making:

(RQ1) What are organizational or contextual factors characterizing firms implementing value-based management systems?

(RQ2) Can these characteristics be linked to organizational performance?

Previous studies in value-based management research provide limited evidence on the likelihood for value-based management systems and its (causal) link to firm performance in a single study (see e.g. Garvey and Milbourn 2000; Lovata and Costigan 2002; Hogan and Lewis 2005). Thus, with the help of the conceptual model developed by Elgharbawy and Abdel-Kader (2013) and a comprehensive review of the value-based management literature, this study contributes to management accounting theories, that generally help managers, organizations, and society to understand what kind of management accounting system should be applied and in what circumstances (Malmi and Granlund 2009). Yet, value-based management as such is not a (formal) management accounting theory, but rather a theory of firm performance (Malmi and Granlund 2009). Therefore, to explain performance outcomes by value-based management, conceptual value-based management research can be extended by contingency-based research (Chenhall 2003, 2007; Lueg and Schäffer 2010; Elgharbawy and Abdel-Kader 2013).

Hence, this study extends previous research by arguing which firms seemingly benefit from value-based management and more precisely defining the relationship of contingency factors, value-based management and corporate governance. The results can then also support the design of empirical research frameworks that assess effects from value-based management systems on organizational performance as well as providing avenues for future research.

First, the conceptual model by Elgharbawy and Abdel-Kader (2013) is used to categorize the findings from the previous literature according to the four contingency dimensions, namely (1) size, (2) agency conflicts, (3) environmental uncertainty, and (4) strategy, supposed to determine the effectiveness of value-based management systems. This approach can therefore be seen as a follow up to the study by Lueg and Schäffer (2010). Second, the role of value-based management within the conceptual model by Elgharbawy and Abdel-Kader (2013) is discussed to shed light on the importance and conditions of value-based management for managing organizations successfully.

With respect to the first research question I find that value-based management has the potential to serve as mechanism to monitor agent's activities when organizations are more predisposed to agency conflicts. For example size, organizational structure and ownership structure determine the extent of owner-manager agency conflicts, as well as the availability of alternative monitoring capabilities. These findings give rise to adjust the introduced conceptual model by Elgharbawy and Abdel-Kader (2013). First, *organizational structure* constitutes an additional contingency dimension in assessing the role of value-based management in the corporate governance context. Second, the dimension *agency conflicts* is endogenous in its

relationship to corporate governance and value-based management and predetermined by the dimensions *size*, *organizational structure*, and *uncertainty*. These adjusted relationships should support the design of empirical research frameworks, aiming at examining performance effects from value-based management in more detail, including its role in corporate governance.

Second, adopters are more likely to be *defenders*, so their strategic orientation is more reactive (Lovata and Costigan 2002; Lueg 2008). This view is supported by the lower growth opportunities observed for adopters (Hogan and Lewis 2005; Ryan and Trahan 2007). So the need for more efficient capital use may be higher in firms that decide to implement a value-based management system.

These findings are accompanied by a behavioral perspective that is described by managerial characteristics, such as that younger managers with an accounting and finance background are more likely to implement value-based management systems (Bühner et al. 2004; Athanassakos 2007; Burkert and Lueg 2013) and industry pressure, since adopting firms cluster in the manufacturing industry. Furthermore, a higher performance prior to the adoption increases the likelihood for value-based management (Hogan and Lewis 1999, 2005; Ryan and Trahan 1999, 2007; Bühner et al. 2004). However, these circumstances do not undermine the incentive from value-based management for efficient capital management (e.g. Wallace 1997; Biddle et al. 1999; Hogan and Lewis 2005; Balachandran 2006; Ryan and Trahan 2007).

Considering the second research question, not many of these aspects are empirically linked to organizational performance outcomes.<sup>3</sup> Nevertheless, performance improvements through value-based management seem to be due to two fundamental layers: the reduction of monitoring cost, in particular for shareholders, and increases in efficient capital management by more efficient asset utilization and investments (e.g. Wallace 1997; Ryan and Trahan 2007). Further, keeping in mind the on average positive performance effects resulting from value-based management (e.g. Ryan and Trahan 2007; Lueg and Schäffer 2010; Rapp et al. 2011) and its implications for entrepreneurial activities described in the conceptual model by Elgharbawy and Abdel-Kader (2013) suggest that value-based management can be seen as a tailor-made management practice under the observed conditions.

The findings implicate that value-based management is important in the discussion about corporate governance arrangements. Future research could also consider the institutional environment as a forth dimension in the relationships of agency conflicts, value-based management and corporate governance as well as cultural backgrounds in the behavioral discussion.

The remainder of this study is as follows: The next section motivates value-based management research and describes its contribution to firm performance. Besides, it presents the conceptual model by Elgharbawy and Abdel-Kader (2013). In Sect. 3 the method of literature review is explained. Section 4 describes the current value-based management literature, examines its empirical results and assesses contingencies for value-based management as well as their meaning for firm performance. Section 5 discusses the findings and Sect. 6 concludes.

<sup>3</sup> For example firm size and management support (Duh et al. 2009) or higher previous performance (Hogan and Lewis 1999, 2005; Ryan and Trahan 1999, 2007; Bühner et al. 2004).

## 2 Theory of effective value-based management

### 2.1 Motivation for research in value-based management

The basic concept of value-based management, to take investor's risk into account, dates back to Adam Smith and Alfred Marshall (Biddle et al. 1997). However, its criticism to be an incentive for short-term profit maximization (e.g. Ballwieser 2009) is primarily based on spuriously perceiving value-based management as a synonym for greed (Martin et al. 2009). If this were true, the idea of value-based management would be antiquated and even controversial to sustainable organizational growth. Yet, shareholder value in the sense of Rappaport (1986) is the present value of the expected (risk-adjusted) future returns to shareholders, i.e. the value of the firm in the view of its owners (Knorren 1998).

The owners perspective is prevalent in the value-based management discussion as well as in corporate governance. Since managers have the opportunity to expropriate shareholders due to information asymmetry resulting from the separation of ownership and control (moral hazard),<sup>4</sup> mechanisms of corporate governance aim to ensure that investors receive a return on their investment (Shleifer and Vishny 1997; Gompers et al. 2003). And if managers expropriate shareholders, measured as loss in shareholder value, this may also come at the expense of other stakeholders (see e.g. Tirole 2006; Monks and Minow 2011; Rappaport 2011). For example Rappaport (2011) argues that managers who run organizations in line with the principles of shareholder value recognize that the organization's long-term strength depends on a solid relationship with each stakeholder.<sup>5</sup> Neglecting corporate financing (cost of capital) in decision-making and management control can mean that organizations are not able to fulfill their responsibilities towards their stakeholders in the long run (Balachandran 2006; Martin et al. 2009; Abernethy et al. 2013). This means that managers should consider the economic dimension of running their business. More precisely, they have to earn their cost of capital.<sup>6</sup>

Besides the economic dimension, the legal perspective provides a pertinent argument for managing for shareholder value. Shareholders are the owners of the firm and the residual claimants of capital outflows and at least for that reason their interests should be included in managerial decision-making (Fama and Jensen 1983a, b).<sup>7</sup>

But how does all that work in managerial practice? In principle, value-based management is an integrated management strategy and financial control system intended to increase shareholder value (Ryan and Trahan 2007). It is further a management philosophy that installs a mind-set where everyone in the organization

<sup>4</sup> As there are many forms of agency conflicts resulting from managerial moral hazard, Tirole (2006) provides a comprehensive overview.

<sup>5</sup> For a more detailed discussion please see Rappaport (2011, p. 49).

<sup>6</sup> This basic idea goes back to Adam Smith's invisible hand meaning that investors put their money to the most successful opportunities in terms of returns (Martin et al. 2009).

<sup>7</sup> Following Tirole (2001), the advantages of long-term shareholder value creation are: (1) that it makes up for the dearth of pledgeable income, (2) that it provides more focus and sharper incentives for managers, and (3) that undivided control prevents foot-dragging and deadlock in decision-making.

learns to prioritize decisions based on their understanding of how those decisions contribute to organizational value (Knight 1998). Hence, managers are required to seek to maximize the net present value of shareholders' equity (Davies 2000). To ensure this pursuit, value-based management systems comprise key performance metrics (e.g. Davies 2000; Ryan and Trahan 2000). The fundamental idea of these performance metrics is to reveal the creation of shareholder wealth, as they account for returns from assets and the financing resources of these assets simultaneously, thereby making managers aware of investment opportunities that create or destroy value (e.g. Rapp et al. 2011). Although various performance metrics have been designed, especially by consulting firms in the 1990s (Myers 1996), no single metric has proven to be superior (Davies 2000; Martin and Petty 2000).<sup>8</sup> This seems intuitive from the perspective of the two fundamental dimensions of value-based management systems: (1) management control and (2) decision-making. All kinds of value-based management systems provide performance measures to ensure the pursuit of organizational objectives and strategies in line with the creation of shareholder value, a consistent basis for decision-making and effective target setting, if linked to the compensation system (Ameels et al. 2003; Malmi and Ikäheimo 2003). First, all types of value-based management "metrics are similar in that they are single-period measures of performance that take into account return on invested capital and the relevant cost of capital." (Ryan and Trahan 2007, p. 113).<sup>9</sup> Second, the link of the value-based management system to the compensation system ensures goal congruence between the management and the organization (the creation of shareholder value) (see e.g. Rogerson 1997; Bromwich and Walker 1998). Thus, firms adopting value-based management systems may also change their compensation system. Regardless of the underlying key performance indicator, measures reflecting the cost of capital in managerial incentive systems can be used to achieve behavior consistent with the organization's objective function (Abernethy et al. 2013). Hence, as it is the purpose of all kinds of value-based management systems to reveal the creation of shareholder value and to ensure congruence between managers' and firm objectives (Rogerson 1997; Ryan and Trahan 2007; Rapp et al. 2011), I generalize the findings from the literature regardless of the examined value-based performance measure to originate a uniform basis for further analysis.<sup>10</sup>

<sup>8</sup> The different kinds of value-based performance metrics can generally be described following the work by Ryan and Trahan (2007), who differentiate value-based metrics in absolute or relative figures on the basis of cash flows or accounting data.

<sup>9</sup> Although relative and accounting-based metrics do not directly consider cost of capital, the metrics are compared to cost of capital to assess performance (Ryan and Trahan 2007). Furthermore, all value-based management methods follow the idea of discounted cash flow valuation, as they take into account the investments required and the time value of money. Considering changes in the present value of the forecast period, contribution to shareholder value can also be measured for each period (Rappaport 1998; Ryan and Trahan 2007; Rogerson 2008).

<sup>10</sup> Beyond the scope of this study, a fruitful avenue for future research can be the study of contingency dimensions for different value-based management systems. However, on a detailed level, given various individual adjustments, different implementation levels and individual commitment to the control system (see e.g. Stewart 1991; Martin and Petty 2000; Young and O'Byrne 2000; Ameels et al. 2003; Lueg and Schäffer 2010), this future research may be based on the study of single cases of comparable firms. I thank an anonymous referee for comments on this issue.

## 2.2 A contingency-based framework for the effectiveness of value-based management

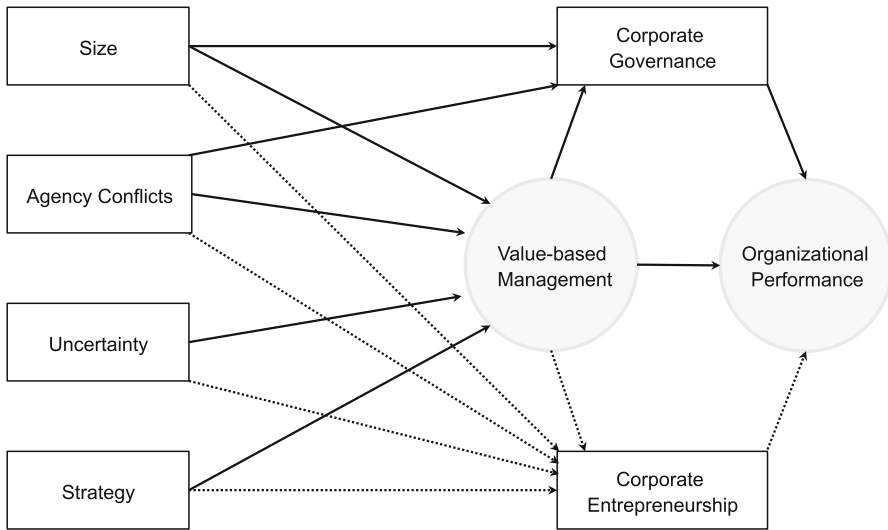
As previously discussed, value-based management accounts for shareholders' interests and provides then a monitoring instrument for shareholders, as well as aligns their interests with those of the management, when it is linked to their compensation (Knight 1998; Lovata and Costigan 2002; Ryan and Trahan 2007). Consequently, it is a mechanism of corporate governance. However, accounting for the firm's cost of capital in management control and decision-making (e.g. Knight 1998; Young and O'Byrne 2000; Ameels et al. 2003), does not improve firm performance because of the existence of such key performance metrics. Rather, value-based management needs a functional structure. This structure has been developed in the seminal work by Ittner and Larcker (2001), who developed the *VBM framework*, comprising six steps for proper value-based management. If managers follow the propositions in the *VBM framework*, firm performance will improve (Malmi and Granlund 2009). However, the *VBM framework* does not explain under which circumstances managers seem to follow the propositions. Furthermore, studies based on externally available information can hardly assess whether value-based management is applied properly, rather than observing organizational performance. Measuring the outcome and concluding on the appropriate initiative or treatment is a challenge for researchers, as performance is also driven by factors other than value-based management and the adoption of value-based management systems is further endogenously determined by organizational performance (see e.g. Morgan and Winship 2007; Angrist and Pischke 2009; Rapp et al. 2011). For example do successful firms implement value-based management systems (and do not apply the value-based management framework properly) or does value-based management (the proper application of the framework) make firms successful? (Ballwieser 2002).

To gain insights into conditions for effective value-based management, the *VBM framework* can be complemented by contingency theory which has a long tradition in the study of management control systems (Chenhall 2003, 2007). As organizations interact with their environment, the use of management techniques is also likely to vary with respect to the context in which they are applied (e.g. Ittner and Larcker 2001; Chenhall 2003; Sanders and Tuschke 2007). Moreover, enhanced performance outcomes depend on how different types of performance measurement systems best fit with contextual and organizational factors (Tillema 2005; Chenhall 2006; Elgharbawy and Abdel-Kader 2013). Consistently, there is no universal accounting system that is applicable to all organizations (Emmanuel et al. 1990).

Still, studies that consider endogeneity concerns, use sufficient data and an appropriate methodological scope in the sense of improved hypothesis testing according to Lueg and Schäffer (2010), (often) neglect the context in which value-based management systems are applied (Lueg and Schäffer 2010).

Hence, motives for value-based management and success in the process of improving performance, seems to be a matter of organizational and contextual factors. In this view Elgharbawy and Abdel-Kader (2013) develop a conceptual model on enterprise governance (see Fig. 1) that explains the fit between four





**Fig. 1** Contingency model for enterprise governance and value-based management. *Source:* Elgharbawy and Abdel-Kader (2013)

contingency dimensions and value-based management, affecting corporate performance using corporate governance and corporate entrepreneurship as mediating factors.

The initial aim of the introduced model is to apply value-based management to balance conformance with standards of corporate governance on the one hand and drive performance by corporate entrepreneurship on the other hand. Accordingly, to achieve greater performance the company should adopt a set of corporate governance mechanisms to ensure accountability. Meanwhile, the management of the company should be engaged in entrepreneurial activities that lead to value creation. Within the model four dimensions, namely (1) size, (2) agency conflicts, (3) environmental uncertainty, and (iv) strategy, are introduced. These dimensions represent circumstances under which value-based management, corporate governance and corporate entrepreneurship contribute to a greater organizational performance, by strengthening the corporate governance structure and facilitating entrepreneurial activities (Elgharbawy and Abdel-Kader 2013). I build on these four contingency dimensions that determine the effectiveness of value-based management in theory and aggregate the findings from the previous literature along these criteria. More precisely, these dimensions should help to classify the factors examined in various studies and provide a more detailed understanding under what circumstances value-based management seems to be an effective management practice. The continuous lines in Fig. 1 indicate the relationships that are examined in this study and that are also pertinent associations between the contingency factors, value-based management and organizational performance (please refer to Sect. 4). The dashed lines are related to associations that are not subject of further detailed analysis in this study.



### 3 Method of literature review and selection of studies

To search for relevant literature I apply a similar approach to Lueg and Schäffer (2010) and target studies whose primary objective is to empirically examine variables related to value-based management. This means that studies have to meet the following general criteria to qualify for inclusion in the analysis:

- (1) The study has to be empirical in the sense that it is based on primary or secondary data for analysis and interpretation (Birnberg et al. 1990).
- (2) The study has to claim that it deals specifically with value-based management in the sense that it investigates (management control) systems that are designed to create value for the shareholders of the organization and therefore include mechanisms to identify opportunities for value creation as well as measurement and reward systems that account for shareholder value creation (see e.g. Martin and Petty 2000).

These positive criteria are specified in more detail by excluding studies that:

- (1) Do not gather distinct data sets, as well as studies that are of analytic evidence only or are based on notional data (e.g. Stewart 1991; Rappaport 1981).
- (2) Examine aspects following the terminology “value creation”, if they do not further specify the term “value” in the sense of shareholder value.
- (3) Examine value-based performance measures as a proxy for measuring the outcome of their suggestions without a link to management control systems.
- (4) Examine general performance measurement or strategic performance measurement systems, where there is no clear link to a value-based performance metric.
- (5) In general deal with the identification of value creating opportunities, strategy development, the design of business models,<sup>11</sup> employee management as well as other aspects of organizational design.
- (6) Apply the residual income model (RIM) (see e.g. Ohlson 1995; Feltham and Ohlson 1995; Ohlson and Juettner-Nauroth 2005), for example as a measure for accuracy of firm valuation (e.g. Lundholm and O’Keefe 2001) or studies on the efficiency of capital flows (e.g. Biddle et al. 2001). These studies more generally focus on valuation and measurement techniques than on management control systems.

To find studies that fulfill the above criteria, bibliometric search is applied for the period 2000 to 2012. To identify relevant English- and German-speaking studies I consider the VHB Ranking 2011. This survey-based ranking takes into account qualitative aspects of journals, as opposed to its impact by citations. Additionally the impact factor based on the Social Science Citation Index (SSCI) covers only 20 % of the journals considered relevant for business scholars in the VHB-JOURQUAL2<sup>12</sup> and

<sup>11</sup> For a further specification of the term “business model” please refer to Zott et al. (2011).

<sup>12</sup> “VHB-JOURQUAL2 represents the official journal ranking of the German Academic Association for Business Research. Since its introduction in 2003, the ranking has become the most influential journal evaluation approach in German-speaking countries, impacting several key managerial decisions of German, Austrian, and Swiss business schools” (Schrader and Hennig-Thurau 2009).

the journal selection based on SSCI would be biased towards the neglected journals (Schrader and Hennig-Thurau 2009). Nevertheless, I also report the impact factors for the considered journals as provided in the Thomson Reuters Journal Citation Report, based on the 2012 Social Science Edition if available.

To include high qualitative academic research, I only consider journals that are ranked in category A+, A and B. This approach results in 258 initial journals, out of which I extract all journals that are relevant for value-based management research following Zimmerman (2001), are relevant for research in management accounting and control following Hennig-Thurau et al. (2004), and are focusing on accounting and auditing as listed in Schrader and Hennig-Thurau (2009).<sup>13</sup> This leaves me with 17 relevant journals. To further extent the sample of relevant journals, I filter the remaining 241 journals for titles comprising “Accounting” or “Management” and review the aim and scope of each journal on whether the journals explicitly mention to capture topics on management accounting. From this step I add 12 journals to the list of relevant journals. In total I gain 29 highly-ranked journals from this procedure that are relevant for bibliometric search (see “Appendix” Table 7).

In a first step, I review all abstracts of the studies contained in 1874 issues of the identified 29 journals in the period 2000 to 2012. I identify 18 studies that meet the specified criteria.<sup>14</sup> Based on these studies, a second step of bibliometric search is to follow each footnote and literature appendix and apply exactly the same criteria the studies have to meet as mentioned above. I additionally identify 38 studies. In sum, my research is then based on 56 studies empirically examining value-based management systems.<sup>15</sup>

To analyze the sample studies with regard to the addressed research questions on the four contingency dimensions described in the conceptual model by Elgharbawy and Abdel-Kader (2013), I group the examined variables in the 56 studies into the four categories, (1) size, (2) agency conflicts, (3) environmental uncertainty, and (4) strategy (please refer to Sect. 4.2). Variables related to organizational size are assigned to the category *size*. The reasoning for considering size separately is that it seems that the resource (cost) intensive implementation of a value-based management system is more reasonable for firms that face a larger amount of investment opportunities that arise when firms grow (Cooper and Petry 1994). However, firm size also amplifies agency conflicts in several ways, that are mainly due to more complex organizational structures (Jones 1992).

Henceforth, I assign the following agency conflict related variables to the category *agency conflicts*. First, variables indicating organizational complexity in the sense of Bushman et al. (2004) are considered, since more diversified firms encounter larger agency conflicts. Second, risk related variables that are associated with agency costs (Lovata and Costigan 2002) are included. Third, I consider proxies for capital intensity which can be viewed as the tension inherent to the business model and forces the agent to act in accordance with the principal (Lueg

<sup>13</sup> Except for the journal *Auditing: A Journal of Practice and Theory*, since the scope of this journal does not match the criteria to cover research in value-based management.

<sup>14</sup> Which is an average success rate of 0.96 % over all reviewed issues.

<sup>15</sup> An alphabetic list of the identified studies is presented in “Appendix” Table 8.

and Schäffer 2010). Furthermore, to adhere corporate governance mechanisms to the dimension of agency conflicts, I include proxies for corporate financing and ownership structures. In particular, leverage and ownership concentration are assumed to reflect external monitoring power (e.g. Tirole 2006). In this regard I also consider variables on board structures and management compensation that influence the mitigation of agency conflicts (e.g. Eisenhardt 1989; Shleifer and Vishny 1997; Monks and Minow 2011). To cover findings on managers as the agents themselves and their decisions, I include variables on management characteristics and decisions in this category (e.g. Jensen and Meckling 1976; Malmi and Ikäheimo 2003; Burkert and Lueg 2013). Further, I consider variables on decision-making authority as that can increase agency conflicts (Aghion and Tirole 1997).

To the category *environmental uncertainty* I assign all those variables that are related to the external environment of the organization as described in Duncan (1972) and Elgharabawy and Abdel-Kader (2013).

Finally, the contingency category *strategy* includes all variables that are associated with the strategic focus in the sense of value-based management (Ittner and Larcker 2001) and the strategic orientation as described by Miles and Snow (1978). Furthermore, to consider life-cycle effects (see Lueg and Schäffer 2010), I also include proxies for the maturity of the business model to consider possible factors that indicate whether value creation mechanisms to increase organizational performance are obsolete (see e.g. Zott et al. 2011).<sup>16</sup> This procedure allows me to provide a comprehensive overview of the variables used throughout the value-based management literature, as well as characteristics of adopters of value-based management systems.

To identify those contingency factors related to the effectiveness of value-based management, I further consider the following questions reviewing each study:

1. Is the variable included in the research design of the containing study linked to the adoption of value-based management?
2. If yes, does the methodology of the study allow implications for a (causal) relationship of the variable and the adoption of value-based management?
3. If yes, does the study also examine at least one variable that describes organizational performance?
4. If yes, is this performance measurement linked (correlation or causal inference) to at least one of the contingency variables?

## 4 Determinants and effective use of value-based management

### 4.1 Overview of the sample studies

A general overview of the characteristics of the 56 studies identified from the critical screening procedure described in Sect. 3 is presented in Table 1. The studies

<sup>16</sup> Examples are firm age, or firms in new markets (e.g. NASDAQ). See e.g. Horváth and Minning (2001), Lueg and Schäffer (2010). However, there is only the study of Bühner et al. (2004) in the sample who include firm age in their analysis.

**Table 1** Overview of study characteristics included in the analysis

<b>Panel A: Study characteristics</b>					
Total number of studies in the sample	56				
Year of publication	1981–2012				
Periods of covered data	1980–2008				
<b>Panel B: Descriptives</b>					
	Mean	Median	Min	Max	
Average number of years covered per study	5.3	4.0	1.0	18.0	
Sample size (firm obs.)	234.7	103.5	6.0	1500.0	
Sample size (firm-year obs.)	2181.2	916.0	30.0	6789.0	
Number of countries covered	1.2	1.0	1.0	5.0	

**Panel C: Topic, data sources, VBM-measurement and method**

Topic	Implementation and use	Effects; decisions and incentives	Outcome	Valuation and information	Communication
Primary source of data	27.27 % Archival	18.18 % Survey	16.67 % Interview	22.73 %	15.15 %
VBM-measurement	67.86 % Dummy coding	28.57 % Scale coding	3.57 % Calculation of metrics	Verbal description	
Method	32.14 % Univariate	10.71 % Multivariate	28.57 %	28.57 %	
	35.71 %	64.29 %			

The classification of studies relate the several areas of value-based management research that have been examined, starting with the discussion about the design of value-based management systems (e.g. Ittner and Larcker 2001; Malmi and Kähkönen 2003), internal structures (e.g. Dekker et al. 2012), implementation-related factors (e.g. Ryan and Trahan 1999; Garvey and Milbourn 2000; Lovata and Costigan 2002; Bühner et al. 2004), differences in decision-making (e.g. Wallace 1997; Balachandran 2006), performance outcomes (e.g. Ryan and Trahan 2007; Lueg and Schäffer 2010; Rapp et al. 2011), to external communication-related aspects such as disclosure (e.g. Pellens et al. 2000a; PricewaterhouseCoopers 2000; Baetge and Noelle 2001; Fischer et al. 2001a, b; Günther and Beyer 2001; Fischer et al. 2002). It was possible for some sample studies to cover more than one topic, i.e. studies focusing on several aspects of the topics that are used to cluster the studies, are considered for topic allocation more than one time. In particular, 9 out of 56 studies were allocated to multiple topics, e.g. “Implementation and Use” and “Outcome” if these were purposes of the study

covered were published between 1981 and 2012 (see Panel A). Notably, when examining the frequencies of published studies in each year, there is a large increase up to 2002 with a cumulative amount of around 68 % of all sample studies. The sample studies cover observations from the period 1980 to 2008 with an average number of 5.3 (median 4.0) years per study. Sample sizes vary from 6 to 1500 firm observations with a mean (median) number of 234.7 (103.5).<sup>17</sup> Most of the studies cover only single countries, mainly the US and Germany. The maximum number of countries covered in a single study is five (see Panel B).<sup>18</sup> By looking at Panel C in Table 1, the topics of the studies are clustered in five categories by research question and aim of the study. The most prominent topics are *the implementation and use of value-based management systems* as well as *valuation and information*, which comprises e.g. the information content of certain value-based key performance metrics. The primary source of data is archival data and surveys. Two studies base their research on interviews. When value-based management is the dependent or key explanatory variable, it is mostly coded by a dummy variable on whether firms have implemented a value-based management system or not. Studies that test the explanatory power or correlations of value-based performance metrics and e.g. share prices often use calculated values to measure the extent of the value-based variable. Despite univariate or rather descriptive approaches, almost two-third of the examined studies take advantage of multivariate empirical methods to test their hypotheses.

## 4.2 Applying the contingency-based research framework

### 4.2.1 Size

The first dimension of interest is the category *size* which comprises variables that are related to organizational size and are examined in the context of value-based management. With an overall frequency of 33.9 %, around one third of the sample studies consider organizational size within their research and measure it mostly on the basis of total assets (see Table 2).<sup>19</sup> The first implication is that adopters of value-based management systems tend to be relatively larger (Scapens and Sale 1981; Ryan and Trahan 1999; Bühner et al. 2004; Athanassakos 2007; Duh et al. 2009; Lueg 2010; Dekker et al. 2012). Contrary, in the peak of the normative discussion of value-based management, proponents argued that value-based management is basically useful for all firms focusing on the creation of shareholder

<sup>17</sup> The number of firm-year observations ranges from 30 to 6789 with a mean (median) of 2181.2 (916).

<sup>18</sup> The study by PricewaterhouseCoopers (2000) covers the United States of America (USA), Canada, United Kingdom (UK), Continental Europe, and Australia. It is worth noting here that Continental Europe is not further specified, wherefore it is counted as one country. This is rather conservative, nevertheless this study covers most of the countries compared to the other studies. Overall, the studies examined in this study cover Australia, Canada, China, Continental Europe, Denmark, Finland, Germany, Greece, Netherlands, New Zealand, Portugal, Sweden, UK, and USA.

<sup>19</sup> Peterson and Peterson (1996), Lehn and Makhija (1997), Wallace (1997), Hogan and Lewis (1999), Ryan and Trahan (1999), Garvey and Milbourn (2000), Lovata and Costigan (2002), Ittner et al. (2003), Balachandran (2006), Athanassakos (2007), Ryan and Trahan (2007), Duh et al. (2009), Rapp et al. (2011).

**Table 2** Frequencies of observed size variables

Variable	Total amount	As percent of all studies (%)
Overall category frequency	19	33.9
Assets/log(assets)	13	23.2
Sales/log(sales)	7	12.5
Employees/log(employees)	7	12.5
Market value of equity	5	8.9

The variables reported in the table reflect all different kinds of variables that were used in the studies to proxy for the size of the firm

value, irrespective of their size or whether they are public or private (see e.g. Knight 1998; Martin and Petty 2000). However, the findings on firm size reflect the empirical finding by Cooper and Petry (1994) that shareholder wealth maximization techniques are more likely in large size companies. Thus, it seems that the resource (cost) intensive implementation of a value-based management system is more reasonable for large firms. Moreover, size also indicates the complexity of organizational structures (Jones 1992) and therefore simultaneously also has implications on the usefulness of value-based management when internal and external agency conflicts are potentially stronger.

#### 4.2.2 Agency conflicts

The frequencies of the variables examined in the second category of the contingency framework are reported in Table 3.

Organizational complexity measured as diversification levels relates to larger agency conflicts (see Sect. 3). The diversification level of firms is analyzed using the number of segments (Garvey and Milbourn 2000; Hogan and Lewis 2005), the relative size of business units (Hogan and Lewis 2005; Bouwens and Lent 2007), the specialization ratio measured as the sales of the largest segment divided by total sales, or one minus the ratio (Bühner et al. 2004; Rapp et al. 2011), or the calculation of the Herfindahl index (Garvey and Milbourn 2000).<sup>20</sup> As a matter of decentralization, the scope of value-based management utilization is further included in the work by Peixoto (2002) and Dekker et al. (2012). Peixoto (2002) finds only small percentages of adopters who implement the system on divisional or departmental level.

The empirical results from these studies indicate that adopters seem to be more diversified (Hogan and Lewis 2005) and show a higher interdependence of their business units (Lueg 2008). This is in line with the idea that limited transparency increases the demand for corporate governance systems to alleviate moral hazard problems (see Bushman et al. 2004). Furthermore, Lovata and Costigan (2002)

<sup>20</sup> The latter measurements of diversification levels show that also some studies seem to take advantage from other disciplines in economics such as the strategic management literature (e.g. Jacquemin and Berry 1979; Palepu 1985; Amit and Livnat 1988).

**Table 3** Frequencies of observed agency conflicts variables

Variable	Total amount	As percent of all studies (%)
<i>Overall category frequency</i>	33	58.9
<b>Complexity</b>	<b>8</b>	<b>14.3</b>
Number of segments	2	3.6
Relative size of business units	2	3.6
Specialization ratio / Diversity	2	3.6
Decentralization on divisional level	2	3.6
Decentralization on product level	1	1.8
Herfindahl index or similar	1	1.8
Independence of business units	1	1.8
<b>Risk</b>	<b>1</b>	<b>1.8</b>
<b>Capital intensity</b>	<b>11</b>	<b>19.6</b>
Intensity of fixed assets	5	8.9
Invested capital	2	3.6
Operating assets	2	3.6
Intensity of capital in use	2	3.6
Intangible assets	1	1.8
<b>Corporate financing</b>	<b>10</b>	<b>17.9</b>
Leverage	8	14.3
Liquidity	3	5.4
Share repurchases	3	5.4
Dividends	2	3.6
<b>Ownership structure</b>	<b>11</b>	<b>19.6</b>
Inside ownership	7	12.5
Large shareholdings	4	7.1
Institutional ownership	3	5.4
Outside ownership	2	3.6
Free float	1	1.8
State ownership	1	1.8
Foreign ownership	1	1.8
<b>Board structure</b>	<b>3</b>	<b>5.4</b>
<b>Management compensation</b>	<b>9</b>	<b>16.1</b>
<b>Managerial decisions</b>	<b>12</b>	<b>21.4</b>
Acquisitions / Investments	7	12.5
Asset utilization	5	8.9
Restructuring	4	7.1
Asset disposals	2	3.6
Capital expenditures	2	3.6
<b>Management characteristics</b>	<b>10</b>	<b>17.9</b>
CEO age	4	7.1
CEO education	4	7.1
Change in top-management	3	5.4
Evaluation of management performance	3	5.4



**Table 3** continued

Variable	Total amount	As percent of all studies (%)
Managerial capability / Reputation	2	3.6
CEO background	1	1.8
<b>Decision-making authority</b>	<b>5</b>	<b>8.9</b>

The variables reported in the table reflect those variables that were used in the sample studies and that are related to agency conflicts. The variables are arranged in subgroups according to the different determinants of agency conflicts. According to Bushman et al. (2004) organizational complexity indicated by a firm's level of diversification determines the scope for managerial moral hazard. Further, risk is intended to influence managerial behavior with regard to value-enhancing activities that amplify uncertainty, once compensation structures increase managerial sensitivity towards risk (Lovata and Costigan 2002). Also, capital intensity is used to model the tension inherent to the business model, which forces the agent to act in accordance with the principal (Lueg and Schäffer 2010). In the seminal corporate governance literature (see e.g. Tirole 2006), corporate financing, ownership and board structures as well as managerial compensation are fundamental determinants and mechanisms of corporate governance. As enhanced decision-making (operational and strategic) under value-based management systems is related to the extent of the agency conflicts (Malmi and Ikäheimo 2003), managerial decision form another subgroup. Management characteristics provide a separate subgroup as the management itself is part of the principal-agents relationship (see e.g. Jensen and Meckling 1976). Finally, "authority" is also determining the agency conflict (Aghion and Tirole 1997)

include a proxy for risk (beta) in their study, but find no significant relationship with value-based management.

Capital intensity is considered throughout the value-based management literature by asset structures, or more broadly, invested capital (O'Byrne 1996; Ryan and Trahan 2007), intensity of capital in use (Mouritsen 1998; Bühner et al. 2004), the intensity of fixed assets,<sup>21</sup> operating assets (Ryan and Trahan 1999; Forker and Powell 2008) or intangible assets (Lovata and Costigan 2002). The findings from these studies indicate that adopters are characterized by a high asset intensity or tangibility (Ryan and Trahan 1999; Garvey and Milbourn 2000; Lueg 2008; Dekker et al. 2012). Contrary to these findings Hogan and Lewis (2005) show that adopters in their sample have fewer tangible assets. In combination with a lower financial slack,<sup>22</sup> they argue that this might suggest that firms avoid adopting a value-based management system, if they have high levels of invested capital, but no opportunity to sell under-performing assets.

The studies of Hogan and Lewis (1999), Kleiman (1999), Hogan and Lewis (2005) include aspects of liquidity, but, as mentioned previously, only Hogan and Lewis (2005) find a significant (lower) association of liquidity and value-based management.

From the control perspective, leverage indicates monitoring power by debt holders (e.g. Tirole 2006). For example Brockman and Unlu (2009) find that creditors exert significant influence over corporate decision-making, in the context

<sup>21</sup> Ryan and Trahan (1999), Garvey and Milbourn (2000), Hogan and Lewis (2005), Balachandran (2006), Dekker et al. (2012).

<sup>22</sup> Calculated as the ratio of cash and liquid assets to total assets.

of the agency conflict between the management and debt holders (e.g. banks). Yet, although studies include proxies for leverage,<sup>23</sup> surprisingly, it turns out that leverage is not significantly related to adoption of value-based management systems. Only Wallace (1997) provides a rather weak conclusion on a positive relation to the introduction of value-based management systems.<sup>24</sup> These findings expose that also other, non-value-based management systems take debt holder's objective into account, so that this is not a special feature of value-based management systems. Further, share repurchases and dividends are considered in the previous research (Wallace 1997; Biddle et al. 1999; Pellens et al. 2000a), but do not turn out to be related to value-based management.

In the owner-manager agency conflict, substantial monitoring power is reflected in ownership structures (see e.g. Shleifer and Vishny 1997). The significant interest for ownership structures throughout the value-based management literature is indicated by the large variability of examined ownership proxies. For example inside<sup>25</sup> or outside<sup>26</sup> ownership, large shareholdings<sup>27</sup> or free float<sup>28</sup>, as well as institutional<sup>29</sup>, state<sup>30</sup> and foreign<sup>31</sup> ownership are investigated. From this strand of research it seems that adopters tend to have a more dispersed ownership structure, and especially that large shareholders negatively influence the adoption (e.g. Bühner et al. 2004; Lueg 2010). In more detail, inside ownership is negatively related to the adoption of value-based management systems, which can be explained by lower incentives for shareholders to ensure that their interests are in line with the management (Lovata and Costigan 2002). Further, Lovata and Costigan (2002) also find that institutional ownership is positively related to the adoption of value-based management systems.

Further, Hogan and Lewis (1999), Homburg et al. (2004), Duh et al. (2009) examine board structures. In this regard Hogan and Lewis (1999) include board composition<sup>32</sup> in their analysis and find significantly larger boards for adopters of value-based management systems, maybe, as a response to higher costs of managerial discretion.<sup>33</sup> From a descriptive perspective, Homburg et al. (2004)

<sup>23</sup> Wallace (1997), Hogan and Lewis (1999), Kleiman (1999), Ryan and Trahan (1999), Garvey and Milbourn (2000), Hogan and Lewis (2005), Balachandran (2006), Rapp et al. (2011).

<sup>24</sup> The findings may also be due to sample-specific effects, especially because other studies do not find such evidence.

<sup>25</sup> Wallace (1997), Hogan and Lewis (1999), Höpner (2001), Lovata and Costigan (2002), Hogan and Lewis (2005), Balachandran (2006), Ryan and Trahan (2007).

<sup>26</sup> Hogan and Lewis (1999), Höpner (2001).

<sup>27</sup> Höpner (2001), Bühner et al. (2004), Duh et al. (2009), Lueg (2010).

<sup>28</sup> Rapp et al. (2011).

<sup>29</sup> Höpner (2001), Lovata and Costigan (2002), Bühner et al. (2004).

<sup>30</sup> Duh et al. (2009).

<sup>31</sup> Duh et al. (2009).

<sup>32</sup> Measured as number of board members, percentage of independent directors, percentage of independent directors employed by (1) manufacturing firms, (2) bank-like institutions, (3) investment banking firms, (4) venture capital institutions, (5) insurance companies.

<sup>33</sup> Nevertheless, it can be argued that larger boards observed are positively correlated with organizational size (see e.g. Yermack 1996), and adopters are more likely to be large-size firms (see earlier in this section).

consider non-executive board (Aufsichtsrat) compositions of German firms and observe a small amount of bank representatives.

Next, many studies include compensation structures or the design of compensation contracts in their research.<sup>34</sup> Almost all studies report only descriptive or qualitative results on the relationship of value-based management and managerial compensation,<sup>35</sup> e.g. that the success of value-based management firms is higher when compensation programs are more widespread. Only Hogan and Lewis (2005) find that the percentage of total compensation from bonuses is negatively related to the adoption of value-based management practices.

With regard to managerial decisions (see e.g. Malmi and Ikäheimo 2003), for example, Wallace (1997), Hogan and Lewis (2005), Balachandran (2006) and Kyriazis and Anastassis (2007) examine investments and their relationship to value-based management. Additionally, Wallace (1997), Hogan and Lewis (2005) also include divestments in their analysis. Hogan and Lewis (2005) find lower capital expenditures of firms adopting value-based management systems. This is in line with the idea that value-based management increases hurdle rates, and therefore a decrease in investments is expected after the adoption (Wallace 1997; Ryan and Trahan 2007). Further, asset utilization is examined by using e.g. asset turnover, replacement of depreciated property, plant and equipment, or net working capital divided by assets.<sup>36</sup> For example, Ryan and Trahan (2007) find a negative and significant coefficient for the ratio of net working capital to total assets for adopters. Therefore, it seems that value-based management provides an incentive towards a more efficient capital management with the theoretical advantage of achieving congruence between organizational and managerial objectives (see e.g. Rogerson 1997; Wallace 1997).

The subgroup management characteristics covers aspects such as CEO age<sup>37</sup>, CEO education<sup>38</sup> or CEO background<sup>39</sup>. Managers' attitudes and education seem to be a matter of implementing a value-based management system. For example Athanassakos (2007) finds that adopters have younger and more educated executives with an accounting and finance background.<sup>40</sup> Further, three studies examine change in top-management (Lehn and Makhija 1997; Bühner et al. 2004; Lueg 2008) and the evaluation of management performance (Scapens and Sale

<sup>34</sup> Hogan and Lewis (1999), Pellens et al. (2000a), Haspeslagh et al. (2001), Höpner (2001), Malmi and Ikäheimo (2003), Homburg et al. (2004), Hogan and Lewis (2005), Bouwens and Lent (2007), Lueg (2008).

<sup>35</sup> Hogan and Lewis (1999), Pellens et al. (2000a), Haspeslagh et al. (2001), Höpner (2001), Malmi and Ikäheimo (2003), Homburg et al. (2004), Bouwens and Lent (2007), and Lueg (2008) identifies no direct linkage between value-based management adoption and compensation structures.

<sup>36</sup> Wallace (1997), Biddle et al. (1999), Hogan and Lewis (2005), Balachandran (2006), Ryan and Trahan (2007).

<sup>37</sup> Hogan and Lewis (1999), Bühner et al. (2004), Athanassakos (2007), Lueg (2008).

<sup>38</sup> Höpner (2001), Bühner et al. (2004), Athanassakos (2007), Lueg (2008).

<sup>39</sup> Athanassakos (2007).

<sup>40</sup> Although not considered among the sample studies, because of its publishing in 2013 Burkert and Lueg (2013) examine in this regard the relationship of CEO and CFO attributes and perceptions on the sophistication of value-based management systems. They find that CFOs substantially more affect value-based management sophistication than CEOs and in particular, cognitive styles (educational background in business) of CFOs.

1981; Riceman et al. 2002; Bouwens and Lent 2007) is considered. A new management increases the likelihood of adoption (Bühner et al. 2004). However, CEO turnover is significantly inversely related to these systems. (Lehn and Makhija 1997). Following the examined value-based management research, one motive for the implementation of value-based management systems is the management itself.

The extent of decision-making authority determines agency conflicts (Aghion and Tirole 1997). Five studies examine delegation or decision-making authority.<sup>41</sup> Overall, the notable finding from these studies is that organizations with a stronger delegation of decision authorities take more advantage from the use of accounting-based performance metrics and value-based performance metrics (Bouwens and Lent 2007; Dekker et al. 2012).

In sum, adopters are more predisposed to owner-manager and manager-manager agency conflicts. Conclusively, it seems that value-based management supports such organizations by constituting a monitoring instrument.<sup>42</sup> Furthermore, its incentive towards a more efficient capital use is accompanied by managerial motives for value-based management, such as age or education, that do not mitigate the underlying incentive to focus on efficient capital management, due to the implied hurdle rate (cost of capital). Finally, some researchers argue that managers who are rewarded by relatively high fractions of variable compensation prior to the adoption, expect to increase their rewards by the adoption (Hogan and Lewis 2005). Consequently, the motivation for implementing value-based management systems has a salient behavioral perspective.

#### 4.2.3 Environmental uncertainty

The third group of contingency factors relates to *environmental uncertainty* (Table 4), to which I assign variables that deal with the external environment of organizations (see e.g. Duncan 1972; Elgharbawy and Abdel-Kader 2013). Although 58.9 % of the sample studies examine variables that describe the organizational environment, the primary focus in this dimension is the consideration of industry affiliation (39.3 %) and topics related to investor relations (21.4 %) or value reporting (14.3 %). Since industry-related issues are widely addressed in the value-based management literature, a separate meta-analysis is performed later in this section. Investor communication includes variables such as media coverage<sup>43</sup>, disclosure<sup>44</sup>, or investor relations<sup>45</sup>. The factor that seems to determine the adoption of value-based

<sup>41</sup> Scapens and Sale (1981), Haspeslagh et al. (2001), Athanassakos (2007), Bouwens and Lent (2007), Dekker et al. (2012).

<sup>42</sup> Yet, when governance structures of organizations are not characterized by large external or internal agency conflicts, e.g. in classical owner-manager firms (Jensen and Meckling 1976; Fama 1980), in firms with large shareholdings (Demsetz and Lehn 1985; Shleifer and Vishny 1997) or when agency conflicts within management teams that can arise from hierarchical structures are low (e.g. Jones 1992; Fulghieri and Hodrick 2006), the effects of value-based management might be rather low.

<sup>43</sup> Höpner (2001), Bühner et al. (2004).

<sup>44</sup> Pellens et al. (2000a), PricewaterhouseCoopers (2000), Baetge and Noelle (2001), Fischer et al. (2001a), Fischer et al. (2001b), Günther and Beyer (2001), Fischer et al. (2002).

<sup>45</sup> Günther and Otterbein (1996), Lueg (2008), Lueg (2010).

**Table 4** Frequencies of observed environmental uncertainty variables

Variable	Total amount	As percent of all studies (%)
<i>Overall category frequency</i>	33	58.9
Industry	22	39.3
Investor relations (communication/media)	12	21.4
Value Reporting	8	14.3
Legal / Regulatory environment	5	8.9
Consultant	3	5.4
Competitors	2	3.6
Uncertainty	1	1.8

The variables reported in this table relate to the area of environmental uncertainty as suggested in the work by Elgharbawy and Abdel-Kader (2013) to influence the adoption of value-based management systems. Basically, environmental uncertainty covers variables related to the external environment as described in Duncan (1972), since this work provides a fundamental understanding of environmental uncertainty and helps to categorize observed variables

management systems from the external environment is media coverage of shareholder value practices (Bühner et al. 2004). Also, many studies in the beginning of the 2000s analyze disclosure or related aspects, such as Value Reporting which is a special feature of disclosure about value-increasing activities.<sup>46</sup> Additionally, many studies consider applied accounting standards in their research.<sup>47</sup> Examining the institutional environment beyond disclosure rules, the legal or regulatory environment can reveal conditions for value-based management implementation and its role in corporate governance. But the study by Bühner et al. (2004) is the only one that includes the variable “legality”. This variable proxies for the legitimization of value-based management practices by new laws. Since most of the studies are single-country studies it might be argued that the scope of the studies’ samples is not directly applicable for a comparison of different institutional aspects determining the implementation of value-based management systems. However, the study of the institutional environment or cultural differences in managerial backgrounds and its relation to value-based management systems, e.g. in cross-country settings, can provide fruitful avenues for future research. First, the institutional environment also determines the effectiveness of a set of governance mechanisms (Aguilera et al. 2008). Second, local institutions such as corporate governance regulation, employment law or contracting law, to name but a few, can influence both the design and effects of an organization’s management control systems (Merchant and Van der Stede 2012). Hence, similar to Ernstberger and Grüning (2013), who find for example that transparency increasing arrangements of corporate governance are more likely for firms in weak institutional environments, future research could consider the institutional environment in analyzing the role of value-based management in corporate governance (see e.g. Aguilera et al. 2008). Third, from the perspective of

<sup>46</sup> Pellens et al. (2000a), Pellens et al. (2000b), PricewaterhouseCoopers (2000), Fischer et al. (2001a), Fischer et al. (2001b), Fischer et al. (2002), Ruhwedel and Schultze (2002), Aders et al. (2003).

<sup>47</sup> Pellens et al. (2000a), Fischer et al. (2001a), Fischer et al. (2001b), Ruhwedel and Schultze (2002).

contingency-based research (e.g. Chenhall 2003, 2007), the study of (different) managerial backgrounds may further contribute to the discussion why firms implement value-based management systems (successfully).

Additionally, Höpner (2001) and Duh et al. (2009) include the issue of competitors in their analyses, albeit with no significant association with value-based management. Furthermore, Lueg (2008) examines the predictability of the environment by considering the perceived environmental uncertainty following Duncan (1972) in his research. He finds that firms perceiving their environment (e.g. competitors or customers) as very uncertain are less likely to implement value-based management systems in a comprehensive way, which seems reasonable since value-based management demands exact forecasts in terms of cash (Lueg 2008).<sup>48</sup>

Finally, the variable “consultant” captures whether studies somehow consider a consultancy that is involved in the implementation process of a value-based management system, with no significant results (Ryan and Trahan 1999; Balachandran 2006; Athanassakos 2007). So far, the rather weak evidence on the relation of the organizational environment and value-based management might be due to the difficult measurement of external conditions as well as large biases and disturbances occurring in that measurement.

The industry environment, however, seems to be the focal point in the discussion about the adoption of value-based management systems, as the industry determines the competitive rules of the game as well as the strategies potentially available for the firm (see e.g. Porter 1980). Hence, the industry sets boundaries towards the business model as a system of creating competitive advantages and increasing firm performance (see e.g. Thommen and Achleitner 2006; Zott et al. 2011). Also, the industry might reflect certain aspects of the external environment such as customers, suppliers, competitors, regulation and technology (Duncan 1972). This constitutes circumstances for organizations (adopters and non-adopters) that illustrate growth expectations with regard to available technology (see e.g. Chenhall 2003, 2007) as well as the motive for value-based management induced by industry peers (Rapp et al. 2011). Therefore, I provide a meta-analysis for the industry frequencies given in sample studies.<sup>49</sup> Referring to Table 5, the largest amounts of firms examined by the selected studies show a concentration of firms in the manufacturing sector, identified by SIC Code classes 2000 to 3999 (66.8% of all comparable observations). These findings confirm what is intended by single studies, i.e. firms implementing value-based management systems concentrate in the manufacturing industry.<sup>50</sup> The clustering in the manufacturing sector might be explained by herding behavior or industry pressure (Garvey and Milbourn 2000; Ryan and Trahan

<sup>48</sup> Burkert and Lueg (2013) confirm the result regarding the effect of perceived uncertainty on the sophistication of value-based management systems.

<sup>49</sup> Please note that not every single study that considers the distribution of firms among industries in its analysis provides an overview of the frequencies. Therefore the meta-analysis is biased towards those studies that do not provide this information.

<sup>50</sup> Nevertheless, in case of German firms Lueg (2010) finds that the financial sector has highest rates of implementation. This finding, however, is hardly comparable to the other studies, since most of these studies exclude financial firms from their research, due to governance or business model reasons.

**Table 5** Industry distribution of sample firms (meta-analysis)

SIC codes	0100–0199	1000–1999	2000–3999	4000–4999	5000–5999	6000–6999	7000–7999	≥9000 and other	Total
Division	A	B+C	D	E	F+G	H	I	–	
Major group	Agriculture, forestry, fishing	Mining, construction	Manufacturing	Transportation, utilities	Wholesale & retail trade	Financial services	Miscellaneous services	–	
<i>Panel A: Studies included in the meta-analysis</i>									
Wallace (1997)	0	0	27	5	2	3	3	0	40
Hogan and Lewis (1999)	0	0	39	0	0	0	5	7	51
Kleiman (1999)	0	1	48	9	6	4	3	0	71
Garvey and Milbourn (2000)	0	2	30	4	5	1	4	0	46
Lovata and Costigan (2002)	0	2	82	14	14	4	10	0	126
Hogan and Lewis (2005)	0	0	73	6	6	0	7	16	108
Balachandran (2006)	0	6	103	27	18	10	13	1	178
<b>Total</b>	<b>0</b>	<b>11</b>	<b>738</b>	<b>70</b>	<b>53</b>	<b>25</b>	<b>48</b>	<b>24</b>	<b>969</b>
Conservative industry distribution average	0.0 %	1.5 %	66.8 %	9.4 %	7.3 %	3.4 %	7.4 %	4.2 %	100.0 %
<i>Panel B: Studies not meaningful for the meta-analysis</i>									
Wallace (1998)	0	0	27	5	2	3	3	0	40
Ryan and Trahan (1999)	0	0	186	0	0	0	0	0	186
Dekker et al. (2012)	0	0	123	0	0	0	0	0	123

The numbers taken from Balachandran (2006) are rather conservative, since three observations classified in category “computers” were taken from manufacturing and wholesale and retail trade industries and could not be identified and are therefore removed. Further, results are somewhat biased, since the studies performed by Hogan and Lewis (1999), Hogan and Lewis (2005) did not consider regulated utilities and financial firms in their research due to business model or governance reasons. Additionally, studies are not included in this meta-analysis that do not display industry distribution or frequencies in their research. The studies in Panel B are not included in the meta-analysis due to certain reasons with regard to a more conservative estimation: the sample of Wallace (1997) and Wallace (1998) is the same. Therefore, to avoid double counting, the observations from Wallace (1998) are excluded from the calculation of industry distribution averages. The studies by Ryan and Trahan (1999) and Dekker et al. (2012) concentrate their samples only on manufacturing firms. Henceforth, the observations from these studies are also excluded from the further analysis of industry distribution averages



2007; Rapp et al. 2011). It can also be argued that using similar management and control practices facilitates comparisons to competitors (Homburg et al. 2004).

#### 4.2.4 Strategy

In Table 6 all frequencies for variables in the fourth dimension of interest, *strategy*, are summarized. First, I capture all variables that are related to an organization's strategic objective or focus. Studies examining the focus of corporate or business level strategies,<sup>51</sup> for example, analyze whether corporate strategy is focused on shareholder value (Pellens et al. 2000b; Haspeslagh et al. 2001; Homburg et al. 2004).

Second, with regard to the strategic orientation of organizations, (e.g. as described by Miles and Snow (1978) or Porter (1980)), indicated by RnD expenditures or growth (opportunities), the results depict a more reactive than proactive strategic orientation of adopters (Lovata and Costigan 2002; Lueg 2008; Duh et al. 2009). Studies often include measures for research and development<sup>52</sup> as well as for growth opportunities<sup>53</sup> in their analysis. Growth is also considered as sales growth (Ittner et al. 2003; Balachandran 2006; Bouwens and Lent 2007; Rapp et al. 2011) or asset growth (Balachandran 2006; Chen and Dodd 1997), but also as an inverse growth measure which is the ratio of book value of assets and market value of equity (Ittner et al. 2003; Ryan and Trahan 2007). Lower growth opportunities are observed for adopters (Hogan and Lewis 2005; Ryan and Trahan 2007), what supports the finding by Lovata and Costigan (2002) and Lueg (2008) that prospectors (defenders) are less (more) likely to implement value-based management systems, at least in the US and in Germany. Also, a strategy that puts emphasis on the increase of market share (build strategy) is positively related to the use of discounted cash flow (DCF) methods for Chinese firms (Duh et al. 2009). Additionally, Balachandran (2006) finds that the implementation of residual income-based performance measures is not associated with changes in research and development expenditures. These findings allow the proposition that value-based management contributes to organizational performance when strategic (growth) perspectives are rather low. Finally, Bühner et al. (2004) include firm age as a proxy for the maturity in the firms' life-cycle (see.g. Lueg and Schäffer 2010) in their analysis, but find no significant association.

### 4.3 A linkage to organizational performance

Complementary to the discussion of the four contingency dimensions that provide insights under which circumstances organizations adopt value-based management systems, it is of focal interest but also challenging to link these factors to

<sup>51</sup> Pellens et al. (2000b), Haspeslagh et al. (2001), Lovata and Costigan (2002), Ittner et al. (2003), Malmi and Ikäheimo (2003), Homburg et al. (2004), Lueg (2008), Duh et al. (2009).

<sup>52</sup> Stark and Thomas (1998), Hogan and Lewis (1999), Lovata and Costigan (2002), Balachandran (2006), Rapp et al. (2011).

<sup>53</sup> Hogan and Lewis (1999), Lovata and Costigan (2002), Ittner et al. (2003), Hogan and Lewis (2005), Balachandran (2006), Rapp et al. (2011).

**Table 6** Frequencies of observed strategy variables

Variable	Total amount	As percent of all studies (%)
<i>Overall category frequency</i>	17	30.4
Strategic focus or objective	8	14.3
Market-to-book ratio (equity)	6	10.7
RnD expenditures	5	8.9
Sales growth	4	7.1
Market-to-book ratio (assets)	2	3.6
Asset growth	2	3.6
Asset disposals	2	3.6
Firm age	1	1.8

The variables reported in this table relate to the area of strategy that is suggested in the work by Elgharbawy and Abdel-Kader (2013) to influence the adoption of value-based management systems. The variable “Strategic focus or objective” captures those variables that are used in the studies to describe the firms’ strategic objective or focus, such as the “maximization of shareholder value”. Further, growth opportunities and research and development expenditures are reflecting a firm’s strategic orientation in the sense of Miles and Snow (1978), see also Lovata and Costigan (2002), Lueg and Schäffer (2010). Finally, firm age reflects life-cycle effects, capturing whether mature firms are more likely to adopt value-based management systems (Lueg and Schäffer 2010)

organizational performance. On average, most studies agree on positive performance outcomes after the adoption of value-based management systems (Lueg and Schäffer 2010). For example, Ryan and Trahan (2007) and Rapp et al. (2011) find a positive long-term performance increase following the adoption of value-based management systems. Yet, not many of the described determinants of value-based management systems are empirically linked to organizational performance outcomes. For example firm size and management support (Duh et al. 2009) or higher previous performance (Hogan and Lewis 1999; Ryan and Trahan 1999; Bühner et al. 2004; Hogan and Lewis 2005; Ryan and Trahan 2007) increase the likelihood for value-based management and are conditional in the assessment of performance differences.

A higher previous performance goes in line with the expected performance by executives to increase their own compensation (Hogan and Lewis 2005). This becomes clear in the discussion by Hogan and Lewis (2005), who observe a lower bonus compensation prior to the adoption compared to their sample peers, but a higher percentage of total variable compensation. The authors argue that the decision to implement a value-based management system is motivated by the managerial incentive to increase their own compensation. This possibility is also covered in the results by Ryan and Trahan (2007).

However, if the higher previous performance of adopters compared to their sample peers indicates the inherent motivation of managers to increase their compensation following the adoption (Hogan and Lewis 2005; Ryan and Trahan 2007), this is not per se contradictory to the underlying incentive to use capital efficiently.<sup>54</sup> When governance structures are generally weak in organizations, then

<sup>54</sup> Wallace (1997), Biddle et al. (1999), Hogan and Lewis (2005), Balachandran (2006), Ryan and Trahan (2007).

also compensation contracts can help to better align the interests of shareholders and managers (Fahlenbrach 2009). I therefore argue that even if organizational performance is relatively high prior to the adoption and managers have an incentive to implement a value-based management system to increase their own compensation, their incentive is still to focus on efficient capital management through the implied hurdle rate (see e.g. Knight 1998; Martin and Petty 2000).

Yet, at this stage of research, similar to the findings by Lueg and Schäffer (2010), there is no clear set of factors that are linked to the adoption of value-based management systems *and* cause performance improvements. Nevertheless, implementation-related factors can be identified that characterize adopters of value-based management systems and contribute to the discussion for which firms it has the potential to pay out.

## 5 Discussion of the findings from the literature

To discuss what firms are seemingly benefiting from value-based management, the previous findings from the current value-based management literature are discussed in the context of the conceptual model suggested by Elgharbawy and Abdel-Kader (2013). This discussion also extends the study by Lueg and Schäffer (2010) who also review the value-based management literature with a specific focus on organizational performance.

The empirical results identifying what firms implement value-based management systems, reveal that adopters exhibit more complex (diversified) organizational structures (Garvey and Milbourn 2000; Hogan and Lewis 2005; Bouwens and Lent 2007; Lueg 2008), a higher interdependence of their business units (Lueg 2008), a higher capital intensity (Ryan and Trahan 1999; Garvey and Milbourn 2000; Lueg 2008; Dekker et al. 2012) and are more likely to delegate decisions to other authorities (Bouwens and Lent 2007; Dekker et al. 2012). Thus, adopters are more predisposed to owner-managers or manager-manager agency conflicts due to their *organizational structure*. The tendency towards a larger firm size of adopters<sup>55</sup> supports these findings, because firm size often corresponds to more complex organizational structures (and thus increases agency conflicts) (Jones 1992).<sup>56</sup>

Further, adopting firms show on average a more dispersed ownership structure and larger amounts of external shareholders such as institutional investors (Lovata and Costigan 2002; Bühner et al. 2004; Lueg 2010; Rapp et al. 2011). These owners generally encounter larger agency conflicts towards executives, as compared to large shareholders and inside owners, who are, in contrast negatively associated with the use of value-based management practices (Höpner 2001; Lovata and Costigan 2002). Conclusively, it seems that value-based management supports organizations encountering relatively stronger agency conflicts by providing a

<sup>55</sup> (Scapens and Sale 1981; Ryan and Trahan 1999; Bühner et al. 2004; Athanassakos 2007; Duh et al. 2009; Lueg and Schäffer 2010; Dekker et al. 2012).

<sup>56</sup> However, as discussed in Sect. 3, firm size may also indicate the amount of resources firms have available for the costly implementation of value-based management systems. This may also indicate why value-based management might be less beneficial for small firms.

monitoring instrument for owners (top-level managers) as principals. In particular, the findings on the role of value-based management in addressing owner-manager agency conflicts give rise to adjust the conceptual model by Elgharbawy and Abdel-Kader (2013), since the four contingency dimensions, value-based management and corporate governance are modeled in one-direction relationships. The extent of the owner-manager agency conflict determines the relevance and need for corporate governance arrangements that can potentially mitigate it (e.g. Dey 2008). Also, the extent of these agency conflicts increases the likelihood for value-based management, what itself can potentially mitigate those conflicts (Lovata and Costigan 2002; Ryan and Trahan 2007). Thus, other mechanisms of corporate governance and value-based management systems may substitute each other in mitigating the owner-manager agency conflict. Consequently, I suggest to model the dimension *agency conflicts* endogenously in its relationship to corporate governance and value-based management. Additionally, I introduce *organizational structure* as driver of agency conflicts, value-based management and corporate governance. Furthermore, agency conflicts are, however, also predetermined by other contingency dimensions. Hence, *size*, *organizational structure* and *uncertainty* are also determinants of the extent of agency conflicts. The other (contingency) relationship in the model remain. I present an adjusted version of the conceptual model by Elgharbawy and Abdel-Kader (2013) in Fig. 2.

Furthermore, the strategic orientation (see Miles and Snow 1978) of adopting firms may also help to clarify the usefulness of value-based management systems. Adopters are more likely to be *defenders*,<sup>57</sup> so their strategic orientation is more reactive (Lovata and Costigan 2002; Lueg 2008). This view is supported by the lower growth opportunities observed for adopters (Hogan and Lewis 2005; Ryan and Trahan 2007) as well as lower intensity of research and development expenditures (Lovata and Costigan 2002; Rapp et al. 2011). So the need for more efficient capital use may be higher in firms that decide to implement a value-based management system.

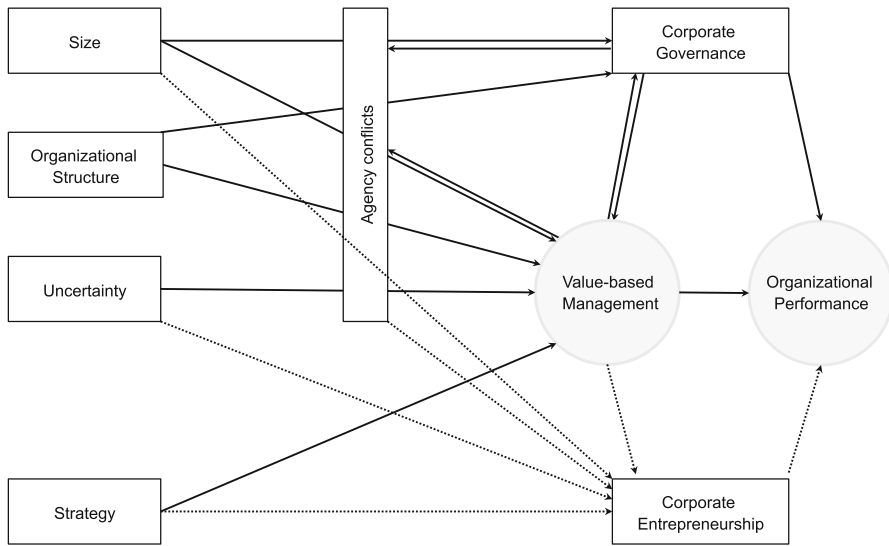
These findings are accompanied by a behavioral perspective that is described by managerial characteristics, such as that younger managers with an accounting and finance background are more likely to implement value-based management systems (Bühner et al. 2004; Athanassakos 2007; Burkert and Lueg 2013) and industry pressure or herding behavior (Garvey and Milbourn 2000; Rapp et al. 2011; Dekker et al. 2012), since adopting firms cluster in the manufacturing industry. The latter may explain why some firms apply value-based management only merely rhetoric as discussed by Malmi and Ikäheimo (2003).<sup>58</sup> Thus, the behavioral perspective on managers is an important stream in value-based management research.

However, these circumstances do not undermine the incentive from value-based management for efficient capital management,<sup>59</sup> as discussed in Sect. 4.3. For

<sup>57</sup> *Defenders* are characterized by narrow and stable product-market domains, highly qualified and specialized top-managers in their limited area of operation and not tending to search for new opportunities outside their narrow domains (Miles and Snow 1978).

<sup>58</sup> However, in none of the firms they examine, value-based management is applied as comprehensive as suggested by the normative literature.

<sup>59</sup> Wallace (1997), Biddle et al. (1999), Hogan and Lewis (2005), Balachandran (2006), Ryan and Trahan (2007).



**Fig. 2** Adjusted contingency model for enterprise governance and value-based management. *Source:* Own work based on Elgharbawy and Abdel-Kader (2013)

example managers decrease (increase) investments (divestitures) as well as restructure operating assets (Wallace 1997; Biddle et al. 1999; Hogan and Lewis 2005; Ryan and Trahan 2007) and show lower levels of liquidity (Hogan and Lewis 2005; Ryan and Trahan 2007) following the adoption. Yet, studying managerial backgrounds, e.g. by cultural aspects may also help to explain why organizations implement value-based management systems (successfully) beyond economic rationales.

Considering the second research question, only few factors can be linked to organizational performance in further detail.<sup>60</sup> Nevertheless, performance improvements through value-based management seem to be due to two fundamental layers: the reduction of monitoring costs and efficient capital management by more efficient asset utilization and investments. Furthermore, keeping in mind the on average positive performance effects resulting from value-based management (e.g. Ryan and Trahan 2007; Lueg and Schäffer 2010; Rapp et al. 2011) and its implications for entrepreneurial activities described in the conceptual model by Elgharbawy and Abdel-Kader (2013) suggest that value-based management is tailor-made for performance improvements under the observed conditions. Elgharbawy and Abdel-Kader (2013) describe performance effects on the one hand through the organizational conformance with corporate governance standards as this is necessary for confidence in capital markets. This is in line with the general finding that appropriate corporate governance mechanisms can contribute to organizational

<sup>60</sup> For example firm size and management support (Duh et al. 2009) or higher previous performance (Hogan and Lewis 1999; Ryan and Trahan 1999; Bühner et al. 2004; Hogan and Lewis 2005; Ryan and Trahan 2007).

performance (Gompers et al. 2003). On the other hand, the key driver of organizational success should be seen in corporate entrepreneurship. As “*the sum of a company’s innovations, renewal, and venturing efforts*” (Zahra 1995, p. 227) corporate entrepreneurship contributes substantially to corporate performance (Elgharbawy and Abdel-Kader 2013).<sup>61</sup>

Thus, the findings from the literature review help to describe role of value-based management and its significance in managing particularly owner-manager agency conflicts and contributing to firm performance in the adjusted conceptual model.

Additionally, the role of value-based management as an alternative monitoring instrument is in line with the idea that governance mechanisms can substitute each other (see e.g. Aguilera et al. 2008; Fahlenbrach 2009). However, one could also argue that governance mechanisms complement each other in the sense that strong internal mechanisms are needed to enforce external mechanisms and vice versa (Cremers and Nair 2005; Aguilera et al. 2008) and value-based management may then be part of a set of governance mechanisms that endogenously arise from the organization and its institutional environment (e.g. Aguilera et al. 2008; Dey 2008). Hence, the institutional environment and its association with value-based management systems can provide fruitful insights to value-based management and its role in corporate governance. But so far, external mechanisms such as the regulatory environment are rather unexplored.

The results extend the study by Lueg and Schäffer (2010), who also include performance context variables in their research, but find no dominant and coherent set of relevant context variables. With the help of the conceptual model suggested by Elgharbawy and Abdel-Kader (2013) I am able to systematically group the examined factors throughout the value-based management literature and discuss the role of value-based management in managing organizations successfully in more detail. Furthermore, the identification process defined in Sect. 3 helps to identify characteristics of adopters, although these can also hardly be causally linked to organizational performance. Still, there are overlaps in the studies considered in the study by Lueg and Schäffer (2010). However, I consider 28 different studies, due to some different journals included as well as the extended time frame up to 2012.

Nevertheless, the findings of this study are limited to the variables and research approaches of the underlying sample studies and no own primary data on value-based management systems is gathered. Further, implications are drawn from these studies regardless of any mistakes that are inherent in the data used by the sample studies. But by applying a bibliometric search strategy in highly ranked journals, this concern should be minimized. Further, similar to Lueg and Schäffer (2010), the variables examined in the sample studies are taken as they were included in each of the studies.

Additionally, as a robustness test for the above discussion, I review the journals identified in Sect. 3 for the first half-year of 2013 and on the Social Science Research Network for these six months for forthcoming or early stage studies that

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<sup>61</sup> As it is the purpose of this analysis to identify circumstances for value-based management and possible linkages of these factors to organizational performance, the role of corporate entrepreneurship is not further discussed in this study. However, when discussing dimensions of organizational performance, corporate entrepreneurship should not be omitted. For a further discussion of corporate entrepreneurship and its contribution to organizational performance please refer to Elgharbawy and Abdel-Kader (2013).

challenge my discussion. The only study I find is the one performed by Burkert and Lueg (2013) which contributes to the above discussion.

## 6 Conclusion

Value-based management can be seen as a valuable management practice to manage organizations successfully in certain circumstances. Although, the primary target of value-based management, to maximize shareholder value (e.g. Knight 1998), has been criticized for myopic profit maximization (e.g. Ballwieser 2009), the idea of value-based management is not outdated. It is a common misunderstanding that value-based management is a synonym for greed. Rather, it makes managers aware of the organization's financing resources, in particular the investor's risk (cost of capital), as an economic condition to retain the ability for sustainable growth (e.g. Malmi and Ikäheimo 2003; Martin et al. 2009; Rappaport 2011).

The conceptual model of Elgharbawy and Abdel-Kader (2013) was used to group the contingency factors examined throughout the value-based management literature to shed more light on the role of value-based management to manage organizations successfully.

First, organizations seemingly benefit from value-based management when they have room to improve their corporate governance structure and thereby also benefit most from improvements in efficient capital management. These economic rationales constitute a reasonable motivation for the implementation of value-based management systems. The findings on value-based management, agency conflicts and corporate governance, however, give rise to adjust the introduced conceptual model. I suggest to include *organizational structure* as an additional contingency dimension in assessing the role of value-based management in the corporate governance context. Furthermore, the dimension *agency conflicts* is endogenous in its relationship to value-based management and corporate governance and predetermined by the dimensions *size*, *organizational structure*, and *uncertainty*. These adjusted relationships may support empirical research designs examining performance effects from value-based management, including its role in corporate governance.

Second, the implementation (and effective use) of value-based management systems is accompanied by a behavioral perspective, that does not undermine the incentive for efficient capital management.

The implications from this study are that value-based management is important in the discussion about corporate governance arrangements and the adjusted conceptual model exhibits potential drivers of firm performance applying value-based management. Future research could also address the role of the institutional environment when examining value-based management in the corporate governance context. Additionally, managerial motives beyond economic rationales, such as the cultural background can provide avenues for future research.

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## Appendix

**Table 7** List of journals in the first research step

Journal	Ranking <sup>a</sup>	Rating <sup>a</sup>	Impact factor <sup>b</sup>	Number of studies
Management Science	13	A+	1.859	1
Journal of Financial and Quantitative Analysis	18	A	1.636	1
Journal of Accounting and Economics	23	A	3.912	0
Review of Accounting Studies	26	A	1.364	0
The Accounting Review	27	A	2.319	0
Strategic Management Journal	39	A	3.367	1
Accounting, Organizations and Society	45	A	1.867	1
Contemporary Accounting Research	66	A	1.564	0
Management Accounting Research	67	A	1.366	2
Journal of Accounting Research	71	A	2.192	2
Journal of Business Finance and Accounting	79	B	1.010	2
Journal of Management Accounting Research	83	B	n/a	0
Journal of Accounting and Public Policy	101	B	0.770	0
Critical Perspectives on Accounting	115	B	n/a	0
European Accounting Review	119	B	0.654	2
Accounting History Review	120	B	n/a	0
Review of Quantitative Finance and Accounting	146	B	n/a	1
Journal of Accounting and Organizational Change	162	B	n/a	0
European Financial Management	177	B	0.738	1
Financial Analysts Journal	182	B	0.952	0
Journal of Accounting, Auditing and Finance	207	B	n/a	0
Zeitschrift für betriebswirtschaftliche Forschung	208	B	n/a	2
Schmalenbach Business Review	214	B	n/a	0
Behavioral Research in Accounting	217	B	n/a	0
Review of Managerial Science	226	B	0.273	1
Journal of International Accounting Research	242	B	n/a	1
Accounting and Business Research	243	B	0.533	0
Journal of Accounting Literature	250	B	n/a	0
Journal of Business Economics	255	B	n/a	0

<sup>a</sup> Presented as given in the VHB JOURQUAL 2011

<sup>b</sup> Presented as given in the Thomson Reuters Journal Citation Report, based on the 2012 Social Science Edition

**Table 8** Research studies on value-based management captured in the analysis

No.	Author(s)	Year	Title	Topic <sup>a</sup>
1	Aders, Herbertinger, Schaffer, Wiedemann	2003	Shareholder Value-Konzepte	1
2	Athanassakos	2007	Value-based management, EVA and stock price performance in Canada	1, 3
3	Bacidore, Boquist, Milbourn, Thakor	1997	The search for the best financial performance measure	4
4	Baetge, Noelle	2001	Shareholder-value-Reporting sowie Prognose- und Performancepublizität	5
5	Balachandran	2006	How does residual income affect investment?	2
6	Bao, Bao	1998	Usefulness of value added and abnormal economic earnings: an empirical examination	5
7	Biddle, Bowen, Wallace	1999	Evidence on EVA	4
8	Biddle, Bowen, Wallace	1997	Does EVA beat earnings?	4
9	Bouwens, van Lent	2007	Assessing the performance of business unit managers	2
10	Bühner, Stiller, Tuschke	2004	Legitimität und Innovation	1
11	Chen, Dodd	1997	Economic value added: an empirical examination	4
12	Chen, Dodd	1998	Usefulness of operating income, residual income and EVA: a value-relevance perspective	4
13	Copeland	2002	Want to create value?	4
14	Dekker, Groot, Schoute, Wiersma	2012	Determinants of the use of value-based performance measures for managerial performance evaluation	2
15	Duh, Xiao, Chow	2009	Chinese firms use of management accounting and controls	1, 3
16	Fernandez	2001	EVA, economic profit and cash value added do not measure shareholder value creation	4
17	Fischer, Becker, Wenzel	2001	Internetbasierte wertorientierte Berichterstattung	5
18	Fischer, Becker, Wenzel	2002	Wertorientierte Berichterstattung	5
19	Fischer, Wenzel, Kühn	2001	Value reporting	5
20	Forker, Powell	2008	A comparison of error rates for EVA, residual income, GAAP-earnings and other metrics using a long-window valuation approach	4
21	Garvey, Milbourn	2000	EVA versus earnings	1, 3
22	Günther, Beyer	2001	Value based reporting—entwicklungspotentiale	5
23	Günther, Otterbein	1996	Die Gestaltung der investor relations	5
24	Haspeslagh, Noda, Boulos	2001	Managing for value	1
25	Hawawini, Subramanian, Verdin	2003	Is performance driven by industry-or firm-specific factors?	1
26	Hogan, Lewis	2005	Long-run investment decisions, operating performance and shareholder value creation	2

**Table 8** continued

No.	Author(s)	Year	Title	Topic <sup>a</sup>
27	Hogan, Lewis	1999	The long-run performance of firms adopting compensation plans based on economic profit	2
28	Homburg, Toksal, Gödde	2004	Corporate governance und value based management	1
29	Höpner	2001	Corporate governance in transition	1
30	Ittner, Larcker, Randall	2003	Performance implications of strategic performance measurement in financial services firms	3
31	Kames	1999	Unternehmensbewertung durch Finanzanalysten als Ausgangspunkt eines value based measurement	4
32	Kleiman	1999	Some new evidence on EVA companies	3
33	Kyriazis, Anastassis	2007	The validity of the economic value approach	4
34	Lehn, Makhija	1997	EVA, accounting profits, and CEO turnover	2, 3
35	Lovata, Costigan	2002	Empirical analysis of adopters of economic value added	1
36	Lueg	2008	Value based management—empirical evidence on its determinants and performance effects	1
37	Lueg	2010	Shareholder value und value-based management	1
38	Machuga, Pfeffer, Verma	2002	Economic value added, future accounting earnings, and financial analysts' earnings per share forecast	4
39	Malmi, Ikäheimo	2003	Value based management practices	1
40	Mouritsen	1998	Driving growth	2
41	O'Byrne	1996	EVA and market value	4
42	Peixoto	2002	Economic value added: an application to Portuguese public companies	1, 4
43	Pellens, Hillebrandt, Tomaszewski	2000	Value reporting	5
44	Pellens, Tomaszewski, Weber	2000	Wertorientierte Unternehmensführung in Deutschland	1, 2
45	Peterson, Peterson	1996	Comparison of alternative performance measures	4
46	PwC	2000	Value reporting forecast 2001	5
47	Rapp, Schellong, Schmidt, Wolff	2011	Considering the shareholder perspective	3
48	Riceman, Cahan, Lal	2002	Do managers perform better under EVA bonus schemes?	2, 3
49	Ruhwedel, Schultze	2002	Value reporting	5
50	Ryan, Trahan	2007	Corporate financial control mechanism and firm performance	3
51	Ryan, Trahan	2000	Value-based management systems	1, 3
52	Ryan, Trahan	1999	The utilization of value-based management	1
53	Scapens, Sale	1981	Performance measurement and formal capital expenditures controls in divisionalized companies	1, 2
54	Stark, Thomas	1998	On the empirical relationship between market value and residual income in the UK	4
55	Wallace	1997	Adopting residual income-based compensation plans	2

**Table 8** continued

No.	Author(s)	Year	Title	Topic <sup>a</sup>
56	Wallace	1998	EVA financial systems: management perspectives	2

<sup>a</sup> The topic category is related to area of value-based management examination: Implementation and Use (1), Effects: Decisions & Incentives (2), Outcome (3), Valuation & Information (4), Communication (5). The categories are based on own definitions on the basis of the research questions examined by each of the study

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**Kai Henning Blume** is Ph.D. student of the Management Accounting Research Group at Philipps-Universität Marburg, School of Business and Economics. In 2014 he was visiting scholar at Aalto University Helsinki, School of Business at the Department of Accounting. His research interests are in the area of corporate governance, management accounting and, in particular, value-based management.

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