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How do managers use management control systems in response to shareholder activism?

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Abstract

We study how managers interactively use management control systems (MCS) in response to shareholder activism in a context of performance declines. We predict that broad-scope MCS design is a key factor that helps explain variation in the level of interactive use. In addition, we argue that the extent to which diagnostic use of MCS alleviates shareholder pressures depends on analysts' recommendations. We empirically test our hypotheses with survey and archival data. Data on shareholder activism is hand-collected. The results provide support for our predictions, suggesting that managers use MCS interactively to assuage shareholder activism in the context of performance declines. This effect is less pronounced for managers equipped with broad-scope information from their MCS. Our findings indicate that in a setting of favorable analysts' recommendations, managers use MCS diagnostically instead of interactively to cope with shareholder activism. Overall, the findings may help inform our understanding of how firms manage shareholder activism from a management control perspective.

Keywords: *Shareholder activism; Interactive use; Diagnostic use; Management control systems; Broad-scope; Analyst recommendation.*

JEL codes: *G32, M40, M41.*

1. Introduction

In a context of performance declines and shareholder activism, what happens *within* a company? This is an important question against the current backdrop of an increasing role of shareholders in influencing managerial processes and decision-making (Knauer et al., 2018; Goranova & Ryan, 2014), and given that the extant knowledge on this issue is still limited. Prior work addresses this question by focusing on corporate governance at the firm level and on the links among the board, management, shareholders and other stakeholders (Dey, 2008). As organizational and finance scholars observe, one of the most important challenges faced by managers is to assuage shareholder concerns about earnings and profitability (Brown & Dillard, 2015; Yang & Modell, 2015). Although this line of research has yielded important insights, such as the design of proper incentives to align interests, or changes in corporate governance (Goergen & Renneboog, 2011; Ezzamel et al., 2008), we propose that a more complete understanding of the organizational implications of shareholder activism requires closer attention to how managers use management control systems (hereafter MCS) to alleviate shareholder pressures.

Based on Simons' levers of control (LoC), we develop a framework in which managers use MCS interactively to alleviate shareholder activism and address agency conflicts between shareholders and managers. To date, few studies analyze the effect of stakeholders on the *use* of MCS, and none at the shareholder level. Hence, we still do not understand much about the role of shareholder activism in the use of MCS.

Shareholder activism has influenced public firm behavior for decades, growing significantly in recent years (Garcia Osma & Grande-Herrera, 2021; Guo et al., 2021). Prior work shows that shareholder activism tends to have adverse effects on managers' wealth (i.e., increased CEO turnover, CEO dismissal or decreased CEO pay) but can

yield gains for shareholders (i.e., positive excess stock returns, corporate tax efficiency, divestiture of underperforming assets or an increase in voluntary disclosures) (Guo et al., 2021; Bourveau & Schoenfeld, 2017; Goranova & Ryan, 2014). We expect that, by introducing purpose and focusing the entire organization on the search for solutions, the interactive use of MCS becomes critical to alleviate pressures from active shareholders.

Shareholder activism in the context of performance declines plays a critical role in shaping business practices by sending powerful signals to managers and prompting their decisions (e.g., vote-against campaigns) (Goranova & Ryan, 2014). For managers to internally manage and respond to external pressures, the interactive use of MCS has a significant function (Garcia Osma et al., 2018; Janke et al., 2014). Interactive use is the unique LoC that addresses uncertainty and pressure (Bedford, 2015; Simons, 1995) in the search for strategic responses, integrating the objectives and measures associated with shareholders' interests and focusing the firm and its managers' attention on strategic uncertainties, external forces, and pressures. In addition, managers may feel more induced to signal their ability by taking alternative strategic actions derived from the interactive use of MCS when public scrutiny increases.

We expect that the influence on the interactive use of MCS of shareholder activism in a context of performance declines may depend on an important related factor: MCS design. A broad-scope MCS design may dampen the effect of such pressure on the interactive use of MCS by properly responding to shareholder demands and strategic issues (e.g., revealing cause-and-effect links and paths from strategic action plans to future shareholder returns). Managers with more broad-scope MCS have more relevant and forward-looking information with which to make quick and coordinated managerial decisions and align strategy with current conditions (i.e.,

earnings declines), thereby reducing the potential cognitive conflict and anxiety introduced by debates associated with the interactive use of MCS.

Because our main argument focuses on the effect of the interactive use of MCS in assuaging shareholder concerns, a question arises with respect to the potential role of the diagnostic use in this setting. Managers facing shareholder activism in the context of performance declines must shift their focus and change their course of action in assuaging the demands of these prominent capital providers. We conjecture that in situations of performance declines and shareholder activism, the diagnostic use of MCS will not allow the envisioning and forecasting of future earnings to appease shareholders' concerns. As firms facing shareholder activism need high managerial attention and proactivity, and diagnostic use is about tracking past performance targets and low levels of flexibility (Braumann et al., 2020), we expect that this lever is negatively associated with these shareholder pressures. However, we identify a setting in which the diagnostic lever potentially plays a role in managing shareholder pressures: when analyst recommendations are favorable in the short term. This context dramatically alters the pressure environment by offering additional publicly available information. Thus, in a setting in which managers are under shareholder scrutiny, they gain credibility due to favorable recommendations from analysts as they can continue with their strategies and mapping based on feedback derived from the diagnostic use of MCS, indicating that the numbers are on track.

To test our predictions, we use a survey from a sample of 168 firms matched with archival data from public databases (i.e., EIKON and Orbis databases) and hand-collected data (i.e., shareholder meetings). Our results reveal that managers use MCS interactively to assuage shareholder activism in the context of performance declines. Moreover, we find that the interactive use of MCS to appease shareholder activism is

conditional on the broad scope of MCS design. The negative interaction effect between shareholder activism and broad-scope MCS design indicates that the shift to an interactive use of MCS is low when managers are equipped with forward-looking, financial and nonfinancial information, or quantitative and qualitative data. Our results also reveal that the diagnostic use of MCS does not play a role in alleviating shareholder pressures. This finding is surprising since the prior literature calls attention to the potential role of diagnostic control in ensuring the accomplishment of performance targets (Braumann et al., 2020; Simons, 1995). However, we find a context of shareholder activism in which diagnostic use plays a significant role: when the current analyst recommendations are favorable. Furthermore, we perform additional analyses to examine the potential role of firm culture in our claims.

Our study makes the following contributions. First, there is limited prior empirical research on the impact of shareholder pressures on organizational processes such as MCS (Yang & Modell, 2015; Ezzamel et al., 2008). Although several management control studies have considered stakeholders as a contingent factor in shaping the use and design of control systems (Garcia Osma et al., 2018; Lisi, 2015; Pondeville et al., 2013; Rodrigue et al., 2013; Ferri & Sandino, 2009), the effect of shareholders as powerful stakeholders remains an open question (Yang & Modell, 2015). We add to this literature by providing empirical evidence on how managers interactively use MCS to assuage shareholder activism in the context of performance declines. This context is of interest as a major challenge for managers is providing shareholders an acceptable rate of return. In addition, we shed light on the conditions under which diagnostic control plays a role in this link. By doing so, we also contribute to the LoC literature by demonstrating the role of these levers in the management of shareholder pressures. Overall, this study enhances our understanding of how

shareholder pressures influence the use of MCS and identifies additional moderating effects (i.e., analyst recommendations and MCS design) as joint determinants of how managers tackle such pressures and agency problems.

Second, by examining the effect of shareholder activism and corporate governance mechanisms, our study introduces a new perspective in the discussion of determinants of the use of MCS (Garcia Osma et al., 2018; Janke et al., 2014; Bisbe & Malagueño, 2009). We also contribute to the corporate governance and agency conflict bodies of literature. Our results imply that when shareholders are active in a firm's operational environment, managers trigger an interactive use of their MCS. Moreover, we tackle this issue using a research design that allows us to measure these pressures using archival and hand-collected data instead of survey measures. Documenting this link offers potential new insights to address open questions in the literature regarding the use of MCS (e.g., weakness in how these concepts are applied to business operations) (Ferreira & Otley, 2009).

Third, by examining the use and design of MCS in a single study, we identify a mechanism through which the scope of MCS shapes interactive use, alleviating pressures from shareholder activism. Research on this topic incorporating *both* design and use in the same framework answers the call in the management control literature for a more complete understanding of the determinants and consequences of MCS (Bellora-Bienengräber et al., 2022; Garcia Osma et al., 2022; Garcia Osma et al., 2018; Bisbe & Malagueño, 2009; Naranjo-Gil & Hartmann, 2007).

2. Theoretical background

We mainly build on two broad streams of research: (i) shareholder activism and (ii) the use of MCS. Prior work on shareholder activism pivots around the fundamental issues

of corporate democracy and agency conflicts. Related to the use of MCS, the extant literature focuses on the efficient and effective use of resources in the accomplishment of the organization's objectives. Collectively, this research suggests that managers are aware of the different pressures on their companies and use all available information to manage them.

2.1. Agency theory and managerial responses to shareholder pressures and activism

Shareholder pressures and activism derive from the complex dynamic interactions between shareholders (principal) and managers (agent), usually under conditions of uncertainty, imperfect observability of managerial actions, and asymmetric information (Zhang & Gimeno, 2010). Prior management accounting work indicates that firms with enhanced shareholder orientations are more likely to use highly aggregated, financial performance measures for principal-agent contracting (Yang & Modell, 2015). Prior financial literature suggests that investors and shareholders in public firms use simple earnings-based benchmarks, such as zero earnings or earnings changes, in valuating firms and making decisions (Garcia Osma & Young, 2009; Beatty et al., 2002; Burgstahler & Dichev, 1997), enhancing the principal's ability to monitor the agent (Ittner et al., 2007). Thus, firms experiencing consecutive earnings increases are priced at a premium, whereas firms reporting declines in earnings suffer decreases in their premiums and, as a consequence, face shareholder pressures (Barth et al., 1999).

Although more broadly understood, shareholder value maximization remains the axiomatic firm goal. Thus, the pressures originating from capital providers such as shareholders are usually associated with low earnings, earnings decreases, or poor performance more generally. Deviation from this shareholder-oriented goal is an agency problem, which is adjusted by corporate boards, shareholder voice and/or exit, and the market (Goranova & Ryan, 2021).

The expression of shareholder dissatisfaction with managers is the fundamental notion of shareholder activism (Goranova & Ryan, 2014). Shareholder activism is often related to directing attention, raising awareness, and challenging managers to improve their performance through managerial actions (Flammer et al., 2021). Shareholders usually utilize a variety of tactics to influence managerial decisions (Martynova & Renneboog, 2008)—such as the selling of shares, voting-against actions or initiating takeovers and buyouts—as triggers to undermine managerial power and to compel managers to be more reactive to the needs of these capital providers through increased monitoring. As shareholders exert their power by voting for managers and on major firm issues, prior work focuses on voting in analyzing shareholder pressures (Garcia Osma & Grande-Herrera, 2021). The effect of shareholder activism increases when shareholders hold their shares and pursue changes within a firm and exert pressure on managers. Thus, by increasing shareholder activism, managers commit to taking action in signaling their loyalty to owners. Moreover, the managerial cost linked to opposing such proposals and activism is potentially high because these firms usually receive lower governance ratios and attract negative press coverage (David et al., 2001).

Shareholder pressures and activism have received a great deal of academic attention since the 1980s (Goranova & Ryan, 2021; Denes et al., 2017). While the prior research has analyzed various effects of this pressure on target firms—including executive compensation, accounting performance, governance structures and social issues (Michelon et al., 2020; Denes et al., 2017)—how managers internally cope with and address these challenges remains an underexplored topic. We focus on how shareholder activism in the context of performance declines shapes the use of MCS.

Three main approaches have been highlighted in the research on the management of these earnings pressures (Zhang & Gimeno, 2016; 2010): (i) the

disclosure of additional information during the period (Hutton, 2005), (ii) the use of discretionary accruals to manage earnings (Fan et al., 2021; Beatty et al., 2002; Burgstahler & Dichev, 1997), and (iii) making of decisions that affect business activities and cash flows (Garcia Osma & Young, 2009; Garcia Osma, 2008; Roychowdhury, 2006). Our study focuses on the mechanism prior to making any of these decisions. Because this pressure compels a management response, we expect managers to first internally manage and address it by using MCS (Garcia Osma et al., 2022; Garcia Osma et al., 2018; Janke et al., 2014).

2.2. Management control systems: Use and design

We define MCS as “formalized procedures and systems that use information to maintain or alter patterns in organizational activity” (Simons, 1987, p. 358), consisting of planning, reporting, and monitoring procedures. This is consistent with Malmi and Brown (2008, p. 290), since “management controls include all the devices and systems managers use to ensure that the behaviors and decisions of their employees are consistent with the organization’s objectives and strategies.” In this study, to analyze how managers cope with shareholder activism using MCS, we built on the LoC framework introduced by Simons (1995). LoCs are based on opposing forces of routines and procedures used to manage tensions, divided into either interactive or diagnostic uses (Heinicke & Guenther, 2020; Müller-Stewens et al., 2020; Tessier & Otley, 2012).²

² The LoC framework comprises four levers: interactive, diagnostic, beliefs and boundary systems. Due to our research question and hypothesis development, we focus mainly on the interactive and diagnostic uses. Shareholder activism and earnings pressures occur over a short period (a quarter or a year); thus, it is unlikely that there will be enough time for changes in these two value systems (i.e., beliefs and boundaries) to affect firm performance. For robustness, we include both beliefs and boundaries as control variables in our analyses.

The interactive use of MCS refers to “formal information systems that managers use to involve themselves regularly and personally in the decision activities” (Simons, 1995, p. 95). This lever allows top managers to focus attention on key issues such as latent threats, strategic uncertainties, or potential opportunities. Moreover, the interactive use fosters cross-hierarchy communications, triggering frequent dialog among managers to help firms gain a position within the market (Widener, 2007). Thus, the interactive use is a catalyst for continually challenging underlying assumptions and action plans (Heggen & Sridharan, 2021; Simons, 1995) with the capacity to produce knowledge about effective ways of managing contextual pressures. The underlying explanation for this trend is the usefulness of the interactive use in assuaging lenders’ demands (Garcia Osma et al., 2018), stakeholders’ pressure concerning social and environmental issues (Heggen & Sridharan, 2021; Gomez-Conde et al., 2019; Arjaliès & Mundy, 2013; Rodrigue et al., 2013), tax environment (Rossing, 2013), issues related to economic crises (Janke et al., 2014) and customer demands (Mundy, 2010). Thus, MCS are used interactively to scan the environment and, by implication, feed into decision-making and strategies (Widener, 2007). MCS are used interactively to gather information on market or competitive changes, acknowledging pressures from companies’ external environments, which include a wide variety of groups such as shareholders and investors with particular concerns. Hence, an inherent assumption is that the interactive use of MCS integrates notions about the pressures that companies may experience.

Diagnostic control systems are “formal information systems that managers use to monitor organizational outcomes and correct deviations from pre-set standards of performance” (Simons, 1995, p. 59). The diagnostic lever embodies the traditional feedback role and the implementation monitoring of the intended strategy, including a

strong focus on corrective actions (Chenhall & Moers, 2015; Bisbe & Otley, 2004). It embodies structured channels of communication and constrained flows of information (Henri, 2006a) that, overall, do not match the requirements of a shareholder pressure context. In addition, prior work shows that the diagnostic use is matched by low levels of strategic change and action (Naranjo-Gil & Hartmann, 2006). Accordingly, while a substantial body of the prior literature focuses on both the diagnostic and interactive levers (Heggen & Sridharan, 2021; Braumann et al., 2020; Müller-Stewens et al., 2020; Gomez-Conde et al., 2019), only the interactive use serves to send the message throughout the organization regarding the importance of identified strategic uncertainties, encouraging debate on both perceived pressures and information gathering (Garcia Osma et al., 2022; Garcia Osma et al., 2018; Janke et al., 2014).

We also expect that MCS design plays a role in our setting. MCS design refers to the technical and informational characteristics of the control systems implemented in a given organization and the substance of the matters embedded in them (Bellora-Bienengräber et al., 2022; Ferreira & Otley, 2009). This design influences short- and long-term planning and control, performance evaluation, and the cost and provision of information and assists in the decision-making process (Ferreira & Otley, 2009). The well-known work by Chenhall and Morris (1986) identifies four informational characteristics of MCS: aggregation, integration, timeliness, and scope. While aggregation refers to the amount of information by time period in different departments or functional areas, integration is explained as the extent to which departments and subunits act in ways that are aligned with firm goals (Chenhall, 2003). Timeliness is linked to the frequency and speed of reporting information and providing feedback in a timely manner (Chenhall & Morris, 1986). Due to the potential role of shareholder activism in the use of MCS, we focus mainly on the remaining dimension: scope, which

encompasses focus; quantification; and the horizon, whether narrow or broad (Chenhall, 2003).³ Thus, broader scope MCS include short- and long-term data and financial and nonfinancial or quantitative and qualitative information. Alternatively and even more significantly, data about cause-and-effect links and what-if scenarios are used to evaluate strategic action plans and to, for example, forecast future shareholder returns.

3. Hypothesis development

3.1. Shareholder activism in the context of performance declines and the interactive use of MCS

Our main premise is that the process of securing an acceptable rate of return for shareholders and alleviating potential concerns is a primary challenge for managers. Thus, agency problems arise when the management (agent) does not generate a fair return for the shareholders (principals) (Goergen & Renneboog, 2011). Firms with declining earnings will face a moderately high, or even urgent, pressure to change their status quo and alter their course of action (Mount & Baer, 2021; Garcia Osma & Young, 2009; Naranjo-Gil et al., 2009). Shareholders use vote-against strategies when managers “experience insufficient internal guilt over the corporation’s poor performance and thus need to be motivated by external shame” (Grundfest, 1993, p. 928). Managers are careful about their reputations, and even when shareholders lose the vote, the gesture might be enough for embarrassment to drive management to increase and focus attention on earnings pressures from shareholders (Del Guercio et al., 2008). Shareholders use their vote to express overall (dis)satisfaction with how the management is performing (Alissa, 2015). Thus, against votes are symptoms of

³ For completeness, we also test the effects of the three additional features in our model. We also include all these information dimensions as control variables in our analyses.

shareholders' lack of confidence in management, reflecting negatively on the board given its reputational issues and monitoring duties (Alissa, 2015).

The interactive use of MCS allows managers to involve themselves in the need to satisfy the demands of shareholders and address their activism, and it stimulates the development of new initiatives by focusing the entire organization on stakeholders' demands (Rodrigue et al., 2013). The interactive use of MCS fosters interactions between insiders and external parties (Garcia Osma et al., 2018; Rodrigue et al., 2013; Mundy, 2010). Thus, the interactive use integrates shareholder demands by providing insights into the pressures that the company experiences. In the context of shareholder activism, open channels of communication are urged among managers from affected functional areas to facilitate decision making, action plans, and task completion. These collaborations increase reciprocal interdependencies from managers who must be in close contact (Henri, 2006a).

Shareholder activism is an important source of uncertainty and hostility, as shareholders are important capital providers to the company. If management casts doubts on the company's financing capacity and available financial resources in the future, uncertainty will increase. Managers must address this uncertainty by enhancing the company's information-processing capacity by interactively using MCS (Janke et al., 2014). In pressured firms, this information-processing capacity is altered because (i) the increased information must be used in making decisions and (ii) the information that managers handle decreases (Janke et al., 2014). Thus, when managers settle with shareholders through the interactive use of MCS, they signal to the entire organization their willingness to work on ways to satisfy and assuage shareholder concerns. The interactive use of MCS enables changes in firm strategy by fostering debates and discussion and encouraging awareness about the financial environment. Hence,

managerial responses to resolve shareholders' pressure to increase firm performance are substantive changes and challenges that should conclude, through interactive use, in real improvements in firm decision-making, such as team decisions and debates including the different points of view of the entire management team.

Overall, firms with declines in performance may be targeted by shareholders and thereby experience significant pressures. In addition, managers performing below targets will be at risk, which requires increased vigilance and security (Mount & Baer, 2021). We expect that shareholder activism, through vote-against actions, is a way for such investors *to urge managers to take action*. Thus, we conjecture that shareholder activism in the context of performance declines increases the interactive use of MCS, which are a way of coping with such pressures. Shareholder activism increases the public scrutiny faced by a company, and managers may feel compelled to signal managerial quality through alternative strategic actions deriving from the interactive use of MCS. Based on the above reasoning and the findings of the prior literature, we predict that shareholder activism in the context of performance declines embodies a critical threat to firm strategy that increases the interactive use of MCS, which suggests the following hypothesis:

- H1.** *Shareholder activism in the context of performance declines increases the interactive use of MCS.*

3.2. Shareholder activism in the context of performance declines and interactive use: the role of broad-scope MCS

The effects of shareholder activism in the context of performance declines are likely not uniform across organizations, given that the interactive use of MCS is potentially costly to firms because it is highly time-consuming of managerial attention (Janke et al., 2014;

Widener, 2007). Our main prediction is that firms in period t experience high shareholder activism in a context of performance declines. This shareholder pressure means that scrutiny and demand for information are high in t , and this situation increases interactive use. In this setting, MCS design is not trivial; thus, we expect that this design fundamentally shapes the interactive use of MCS that are *already* implemented (Bedford, 2020)⁴ because managers would not have enough time to design and implement new MCS in time to alleviate pressures from these prominent stakeholders.⁵ In particular, we expect that such shareholder pressures are mitigated by the scope of MCS design. Broad-scope MCS offer external, forward-looking and nonfinancial information, allowing managers to be informed of events and trends influencing firm survival and success, such as competitors' movements, customer demands or market changes. Therefore, prior work suggests that broad-scope MCS enable interdepartmental planning and coordination (Bouwens & Abernethy, 2000), strategic change (Naranjo-Gil & Hartmann, 2007) or better managerial performance (Tillema, 2005). Consequently, we expect that the nature of broad-scope information reduces the pressure of shareholder activism in the interactive use.

Shareholder activism competes with strategic and business issues for high managerial attention (i.e., interactive use). Firms with more broad-scope MCS furnish managers with more relevant and forward-looking information to make decisions and align strategy with current conditions (e.g., earnings declines) (Henri & Wouters, 2020). MCS offering information about, for example, sales declines together with customers' and competitors' data may enable managers to formulate strategic and business actions

⁴ In his work, Bedford (2020) explains that management control is more effective when MCS are designed and adopted prior to initiating an interactive or diagnostic use.

⁵ This timing is the main reason we do not expect that broad-scope design is potentially a choice variable (i.e., shareholder activism as an antecedent of MCS design). Non-tabulated results confirm this view. We are grateful to an anonymous reviewer for this suggestion.

to remain competitive. Thus, broad-scope MCS across several informational fields (e.g., financial and nonfinancial, short- and long-term, past and future oriented, quantitative and qualitative, etc.) may enable managers to gain an understanding about the firm's current strategic status and, consequently, reduce the pressure of shareholder activism in the interactive use.

We expect that when firms are equipped with broad-scope MCS, managers can reduce interactive use from shareholder activism (meaning, a full—and costly—focus of the entire organization on resolving this risk and providing shareholders with decision-useful information and potential solutions), quickly and properly responding to shareholder demands and strategic issues by, for example, revealing cause-and-effect relationships from actual strategic action plans to future shareholder returns. Broad-scope information also allows managers to provide useful information to shareholders, such as specific timeframes, sequentially linked key deliverables and standards for current or future projects, and strategic actions plans, revealing paths to achieve firm goals and reducing shareholder uncertainty. In contrast, when MCS are narrow in scope, managers cannot alleviate shareholder activism by quickly offering potential forward-looking strategic actions based on economic and noneconomic information or short- and long-term-oriented data. Thus, firms facing shareholder activism are even more concerned with obtaining information that monitors current and future uncertainties. As most of these uncertainties will be both future oriented and external based, we expect that information and paths from a broad scope allow managers to assuage shareholder activism. Following this line of argument, it appears reasonable that managers furnished with broad-scope information, in comparable decision-making settings (i.e., performance declines), have a relative advantage in assuaging shareholder activism during the period. Therefore, we hypothesize the following:

H2. *Broad-scope MCS reduce the effect of shareholder activism in the context of performance declines in the interactive use.*

3.3. Shareholder activism in the context of performance declines and the diagnostic use of MCS

Our previous discussion focuses on firm pressures and the interactive use of MCS and raises the question of the extent to which the diagnostic use of MCS may also play a role in assuaging shareholder activism in the context of performance declines. While the link between firm pressures and the interactive use has been analyzed in prior work, the relationship with the diagnostic use has not attracted similar attention. We expect that firms facing shareholder activism must shift their focus and change the course toward appeasing the demands of these prominent capital providers. In the context of performance declines, it is plausible that the diagnostic use of MCS may not help in forecasting future earnings because currently available data, standards and targets rely highly on past actions and such use does not envision future actions to assuage shareholders' concerns. From an organizational learning perspective, the application of organizational routines in an uncertain environment "can produce experiences that are not easy to explain within the current interpretive scheme of the organization" (Lant et al., 1992, p. 588).

While the diagnostic lever is useful in a setting of "red lights," because it detects deviances, it is mechanistic in tracking and backing the attainment of expected goals as it is likely to offer automatic responses when variances are identified (Müller-Stewens et al., 2020; Henri, 2006a). This lack of flexibility that comes from the diagnostic use of MCS inhibits the firm's ability to take action in response to earnings declines and

shareholder activism.⁶ Such pressure is prone to uncertainty and responses and is difficult to schedule as it requires deep discussion instead of strict adherence to pre-established plans (Bisbe & Malagueño, 2015).

Overall, the effect of firm pressures in the diagnostic use is potentially negative (Müller-Stewens et al., 2020) for two main reasons. First, the diagnostic use is based on current or past information and data on preset objectives and targets, which would not be sufficient to meet the demands of shareholders given that they will be future-oriented. Thus, the lack of flexibility, inertial pressures and past cognitive biases involving the diagnostic use of MCS would not serve as catalysts to challenge the suitability of current action plans (Bedford, 2015). Second, when shareholder activism is high, managers will also be highly involved in decision-making. As noted by Simons (1991, p. 52), diagnostic use implies “little personal involvement” by the top manager, the delegation of operations to lower-level managers, and “[reliance] on others to inform him when his attention to the system [is] required.” In this context of pressures, lower-level managers and employees seek guidance and direction rather than autonomy (Braumann et al., 2020). Hence, as firms facing shareholder activism require high managerial attention and commitment, the diagnostic use is unlikely to be beneficial for managers to assuage these shareholder pressures. Based on the above arguments, we state the third hypothesis as follows:

H3. *Shareholder activism in the context of performance declines decreases the diagnostic use of MCS.*

⁶ Mundy (2010, p. 507) provides qualitative evidence related to this phenomenon by indicating that diagnostic control is used to monitor customer satisfaction but, if customers express dissatisfaction and the project is at risk, managers are encouraged to use interactive controls. Similarly, Garcia Osma et al. (2018) indicate that the diagnostic use is unlikely to help when the pressure comes from an external stakeholder (i.e., lender). As the diagnostic use focuses on deviations, without proper focus, manager involvement and open debate, “red lights going off across the board would only distract” managers (p. 42).

3.4. Shareholder activism in the context of performance declines and the diagnostic use of MCS: The role of analyst recommendations

We contend that part of the complexity of the link between shareholder activism and diagnostic use can be attributed to the pressure to report short-term earnings. While both the diagnostic and interactive control uses provide useful information, conventional theory suggests that the interactive control enables the search for new strategic opportunities and challenges to cope with potential risks that may not have short-term payoffs, whereas the diagnostic control is about ensuring that performance targets are achieved, and strategic actions are on track. Following some of the prior work on the effect of the performance time horizon and financial analysts explaining firm credibility (Mohanram et al., 2020; Luo et al., 2015), we expect that analyst recommendations play a prominent role in the connection among shareholder activism and the diagnostic use.⁷

Financial analysts are experts who make research reports that reveal their understanding of the management quality and the company's strategy together with detailed forecasts and stock recommendations (Beardsley et al., 2021; Wiersema & Zhang, 2011). These analysts frequently monitor management, industry, and macroeconomic issues; join conference calls; examine financial statements and nonfinancial information; and unravel the collected information to produce recommendations (Womack, 1996). Financial analysts are prominent information intermediaries and represent an important external control mechanism to reduce agency

⁷ Prior work has largely analyzed how managers react to pressures from analyst recommendations, mainly (i) by ignoring them; (ii) managing capital markets' expectations using, for example, earnings guidance; or (iii) using both earnings management strategies, real and accrual (Burgstahler & Eames, 2006; Graham et al., 2005). However, this literature remains silent about how firms internally manage these pressures, which would be a step previous to the actions described above.

issues (Beardsley et al., 2021; Wiersema & Zhang, 2011; Jensen & Meckling, 1976).

Earnings forecasts and financial recommendations, which are usually set forth on simple and straightforward scales,⁸ are widely disseminated to shareholders and play a significant role in shaping their expectations of a company's future earnings (Schulz & Wiersema, 2018), mainly in the short term. Consequently, analyst recommendations serve as a crucial mechanism by which shareholders can reduce uncertainty around firm future performance; thus, they have a significant effect in shaping shareholder activism in the context of earnings declines.

Prior work recognizes that analyst recommendations, notably if they supply a negative assessment (i.e., high values such as sell (4) or strong sell (5)), have a substantial effect on a firm's stock price, offering evidence that financial analysts influence how shareholders perceive a company (Wiersema & Zhang, 2011; Womack, 1996). Thus, firm stock prices suffer when management fails to reach earnings expectations, which is also referred to as a negative earnings surprise (Kinney et al., 2002). Diagnostic MCS are mainly used to check that everything is "on track," and on its own, this LoC is likely to be unsuccessful in generating the learning that is needed to address strategic complexities and uncertainties (Bisbe & Malagueño, 2015) in assuaging shareholder pressures. Moreover, debates prompted by a diagnostic use might, at best, show the way to incremental corrective actions and, at worst, trigger debates about unproductive issues and areas (Henri, 2006a).

We expect that firms facing shareholder activism will use diagnostic MCS when analyst recommendations in the short term (viz., current year or year t) are favorable (e.g., low values). Contrary to the interactive use, the diagnostic use of MCS acts as a mechanism through which managers focus on goal accomplishment by correcting

⁸ The standard recommendation scale is strong buy (1), buy (2), hold (3), sell (4), and strong sell (5).

deviations from preset performance measures (Braumann et al., 2020; Mundy, 2010), allowing managers to determine whether performance measures and accounting numbers to external reporting are on track.

Managers use diagnostic MCS as a mechanism to curb innovative actions grounded on future strategic scenarios when performance declines, showing a restricted response (Bisbe & Malagueño, 2015). By imposing constraints to safeguard short-term performance, the diagnostic use of MCS hinders firm strategic actions. Thus, this LoC would not be useful when analyst recommendations are high and unfavorable (e.g., sell (4) or strong sell (5)), even in conditions of earnings declines and shareholder activism. Long-term strategies require the unrestricted dissemination of information, high management involvement and flexible channels of communication offered through the interactive use of MCS. Moreover, diagnostic control systems alone are unlikely to provide sufficient input for decisions that directly involve a high-pressure situation (Garcia Osma et al., 2022; Bisbe & Malagueño, 2015).

Overall, we expect that, in the context of an unfavorable analyst recommendation, the diagnostic use has limited applicability in meaningfully managing shareholder pressure. If so, shareholder activism in the context of performance declines should have a negative effect in the diagnostic use when analyst recommendations show high values (unfavorable recommendation). Conversely, the diagnostic use of MCS might be expected to help control the progress of performance and accounting numbers throughout the year by stressing given milestones and managing pressures from shareholders when analyst recommendations are low (favorable). Therefore, we formulate the following hypothesis:

- H4.** *Shareholder activism in the context of performance declines will have a positive (negative) effect on the diagnostic use of MCS if analyst*

recommendations are favorable (unfavorable) (i.e., the values are low (high)).

4. Methodology

4.1. Data collection

We use archival, survey and hand-collected data to test our hypotheses. We gathered survey data in 2019 through a questionnaire that addressed the population of the companies listed on the B3—Brasil Bolsa Balcão S.A. (Brazil Stock Exchange and Over-the-Counter Market)—formerly the BM&FBOVESPA, which comprises 423 companies across all industries. This stock exchange is located in São Paulo, Brazil and is the second oldest in the country. We choose this large stock market setting for at least three reasons.⁹ First, our research model proposes a series of complex interrelationships that need a focus on different types of companies to increase validity. B3 comprises companies from different industries. This setting was also chosen because our study has greater complexity in its structure and tasks among managers as well as formal MCS, which are recommended for the present study. Second, B3 companies present financial data available for download, as it is not mandatory in Brazil to disclose accounting and financial data in private firms. Third, to increase the likelihood that the organizational and strategic variables of interest will apply and that formal MCS are implemented, companies must have a minimum number of employees and have operated for at least three years since small businesses are less likely to have sophisticated control systems.

⁹ Because we utilize a universal theoretical model, our results are potentially not limited to Brazil. Untabulated results indicate that Brazilian listed firms show nonsignificant differences, in terms of shareholder equity or earnings per share, with listed firms from Australia, Canada, Germany, Italy or the UK, settings widely used in prior work (Henri & Wouters, 2020; Firk et al., 2019; Bedford, 2015; Janke et al., 2014), and they display significant higher values in terms of employees compared with Australia and Canada.

In line with previous research, senior managers (CEOs, CFOs or other top management team members) were identified as the target individuals for this study as it can be assumed that they are knowledgeable about the design and use of MCS. Once the companies and their managers were identified, we established initial contact with 2,000 managers through LinkedIn messages and phone calls. Of these, 655 invitations to participate were accepted. We sent the online questionnaire to the respondents along with a brief cover letter explaining the research purpose. The survey implementation was in three steps: initial mailing, a first follow up (after five days), and a second follow up (ten days after the initial mailing). The initial survey instrument was drawn from the MCS literature. A draft of the questionnaire was pretested with two professional experts and three academics with experience in the field. Based on this procedure, minor research changes were made to improve the final reading. A pretest was also performed with two company managers. The comments received were related to the managers' understanding of the items (i.e., given the potential language barriers, the English items were translated into Portuguese), the length of the survey and the response time.

We obtained 254 questionnaires for a response rate of 38.8%, representing 168 individual firms (39.7% of the B3 stock exchange). To avoid concerns that our findings are affected by the use of responses from several managers in the same firm, we only use the first respondent per firm, yielding a response rate of 25.6%.¹⁰ We then matched the returned questionnaires with archival data from the Orbis (Bureau van Dijk) and EIKON (Refinitiv) databases. We also matched these data with hand-collected information about votes and topics at annual shareholder meetings, file sizes and number of meetings on the B3 website. Table A1, Panel A (see Appendix A) displays details about our sample. The industry classification indicates that our data represent a

¹⁰ Our results are unchanged if we run our models using the full sample.

broad range of industries. Table A1, Panel A also offers information about firm size and solvency, which are usually related to MCS adoption and use (Henri & Wouters, 2020; Garcia Osma et al., 2018). Furthermore, 83.3% of the respondents (not tabulated) have an economic or business administration background.

We investigate the presence of self-selection bias in our sample. First, we compare nonrespondent firms to respondent firms using archival data (i.e., the number of employees and ROE). We do not find statistically significant differences between the characteristics of the respondents and those of the nonrespondents. Second, we employ an early-late respondents test. This comparison—in Table A1, Panel B (see Appendix A)—reveals that no variables have differences at a 10% significance level. Finally, we run Harman’s single-factor test to gauge the impact of common method bias in our findings. The unrotated solution produces 19 factors with eigenvalues exceeding 1. The first factor explains 30.82% of the total variance, which is well below the suggested threshold level of 50%. The overall results support the absence of significant bias.

4.2. Variable measurement

Our model comprises five main variables as well as several control variables. Below, we explain the archival-measured and hand-collected variables and the survey questions. All survey items are measured using seven-point Likert-type scales.¹¹ To assess the construct validity, we conduct an exploratory factor analysis and compute the Cronbach’s alphas. While Table 1 shows descriptive statistics of all the variables in the study, Table 2 displays the results of the factor analysis and the reliability tests. The multi-item constructs are computed by taking the means of the item scores.¹²

Shareholder activism in the context of performance declines

¹¹ Appendix B shows the survey items for the main variables in the study.

¹² For parsimony, descriptive statistics at the item level for the main variables in the study are displayed in Table C1 (see Appendix C).

We use archival and hand-collected data to measure shareholder activism in the context of performance declines. First, to conceptualize performance declines, we use archival data employing negative changes in return on equity (ROE) in the prior year ($t-1 - t-2$) as a proxy. This lagged variable allows us to avoid reverse causation. Following prior work, using ROE allows us to make inferences that are more comparable regarding shareholder wealth (Chen et al., 2018). Thus, we use the prior year's ROE as a target, as managers believe avoiding earnings declines is an important threshold for meeting shareholder expectations (e.g., Garcia Osma & Young, 2009; Dechow et al., 2003; Skinner & Sloan, 2002; Barth et al., 1999; Dechow et al., 1999; Burgstahler & Dichev, 1997). Previous work shows that shareholders use simple performance-based targets and heuristic cutoffs in evaluating managers, such as meeting the prior year's earnings levels (Dechow et al., 2010; Garcia Osma, 2008; McAnally et al., 2008; Beatty et al., 2002). In their seminal study, Burgstahler and Dichev (1997) state that investors and shareholders in public firms employ simple low-cost earnings-based benchmarks, such as zero changes in earnings, to evaluate firm value. Thus, shareholders discern value gains and losses in relation to a reference point instead of using an absolute rate level. DeAngelo et al. (1996) also demonstrate that a break in a pattern of earnings growth is linked to a significant decline in stock price and an increase in shareholder and investor pressure. The market penalties for falling short of prior earnings combined with the influence of stock price on a manager's wealth give managers of public companies an incentive to take action. In addition, the ROE ratio not only measures a firm's capacity to create value from the invested capital but also signals how management is likely to adjust the course of operations moving forward, thereby shaping shareholder pressure.

From the shareholders' perspective, a company's operations are expected to have performed poorly (well) if $\Delta ROE = ROE_{t-1} - ROE_{t-2}$ is negative (positive).¹³ Thus, this indicator variable takes a value of 1 when the difference is negative and zero otherwise. In the scenario of a firm facing earnings declines (i.e., not meeting the prior year's earnings level), managers face pressure to make value-maximizing decisions (Garcia Osma & Young, 2009; Gore et al., 2007).

Second, we hand collect data to measure shareholder activism from the annual shareholder meeting reports. Thus, poll voting data are obtained from the shareholder section on the B3 website. We use the proportion of votes against the annual financial statements and management report over total votes cast as our proxy for shareholder activism as follows:

$$\text{Shareholder activism} = \text{Against} / (\text{For} + \text{Against} + \text{Abstain})$$

where *against* (*for*) is the amount of votes that were cast in the annual shareholder meeting in year t (related to $t-1$ annual financial statements) to reject (approve) the proposal while abstain is the total number of votes withheld by shareholders (Alissa, 2015).

To measure shareholder activism in the context of performance declines, we use the interaction among the negative change in ROE and shareholder activism.¹⁴ The reason for using this variable is that pressure and activism increase when shareholder wealth decreases (Garcia Osma & Grande-Herrera, 2021; Ezzamel et al., 2008). Shareholders, as prominent capital providers, place pressure on corporations offering

¹³ As a robustness test, we run the model using four additional modified measures: (i) ROE in the prior year, (ii) change in ROE in the prior year, (iii) negative ROE in both $t-1$ and $t-2$, and (iv) ROE in prior year adjusted by industry. The results of these alternative measures triggering the interactive use of MCS are qualitatively similar than those reported in our main analysis, albeit slightly weaker.

¹⁴ We thank the editor for making this suggestion.

low returns. Such firms receive a higher degree of scrutiny and activism; consequently, they are more likely to make decisions in response to these pressures.

We also discuss and provide evidence for two additional measures capturing activism and complexity at the annual shareholder meeting: (i) number of topics at the shareholder meeting and (ii) file size of the shareholder meeting report (measured in kilobytes). Both variables are measured using hand-collected data from the B3 website, and they act as proxies for shareholder activism and for the complexity of the annual meeting that managers face (Hasan, 2020; Loughran & McDonald, 2014).

Interactive and diagnostic uses of MCS

We build on the validated scales used by Henri (2006a) to measure the interactive and diagnostic uses of MCS. These measures have been extensively employed in prior work (Müller-Stewens et al., 2020; Heinicke et al., 2016). The interactive use is a seven-item construct, while the diagnostic use is a four-item construct. Measurement of the interactive use of MCS includes (i) enabling discussions in meetings, (ii) enabling continual challenge and debate, (iii) holding a common view of the organization, (iv) tying the organization together, (v) focusing on common issues, (vi) focusing on critical success factors, and (vii) developing a common vocabulary.¹⁵ For the diagnostic measure, we include the following items, which reflect the main stages of a conventional cyber control cycle: (i) tracking progress toward goals, (ii) monitoring results, (iii) comparing outcomes to expectations, and (iv) reviewing key measures.¹⁶

¹⁵ As a sensitivity test and to assuage concerns that our interactive measure captures also diagnostic use, we run our analyses using only the first three items: (i) enabling discussions in meetings, (ii) enabling continual challenge and debate, and (iii) holding a common view of the organization. According to Simons (1995), these items are very close to his understanding and argumentation of interactive use. The results (untabulated) remain unchanged using this restricted measure. We thank an anonymous reviewer for making this suggestion.

¹⁶ These items—mainly those related to focusing attention, improving understanding (interactive use), and score keeping and monitoring results (diagnostic use)—can also be traced back to Vandenbosch (1999).

To assess measurement quality, we analyze the factor loadings, eigenvalues, variance explained, composite reliability and Cronbach's alphas. The results shown in Table 3 indicate that both constructs—interactive and diagnostic use—exceed established empirical thresholds (i.e., 0.70 for the Cronbach's alpha and composite reliability, 50% variance explained, 0.70 for loadings, and 1 for eigenvalue), yielding two factors with satisfactory internal reliability.

MCS design

The well-established instrument developed by Chenhall and Morris (1986) is used to measure the four information dimensions of MCS design: (i) scope, (ii) aggregation, (iii) timeliness, and (iv) integration. In this study, we hypothesized only the first (i.e., broad scope), while the remaining three are included for robustness as control variables in our models. In addition, we run some further tests to check the potential effect of these features in our models. We explain them in the next section.

Scope is usually divided into narrow scope, which includes internal financial information focused on the past, and broad scope, which includes both internal and external financial and nonfinancial information. This measure comprises four items: (i) noneconomic information, (ii) external information, (iii) nonfinancial production, and (iv) the nonfinancial market. *Aggregation* encompasses the amount of information over time in different departments ranging from basic raw to a variety of sources of aggregated information depending on the period of time, department or responsibility center. This measure includes three items: (i) sectional reports, (ii) temporal reports, and (iii) decision models. *Timeliness* involves the frequency and speed of reporting information and comprises three items: (i) automatic receipt, (ii) reporting frequency, and (iii) immediate reporting. The last informational dimension, *Integration*, refers to the coordination of various departments and subunits and is measured using the

following three items: (i) subunit interaction, (ii) precise targets, and (iii) organizational effects. The factor analysis shows that the four constructs are unidimensional and explain 71%, 72%, 75%, and 66% of the variance. The Cronbach's alphas are 0.86, 0.80, 0.83 and 0.74.¹⁷ The composite reliability is generally consistent with the Cronbach's alpha.

Analyst recommendations

We obtain analyst recommendations from the EIKON database, which standardizes them (strong buy (1), buy (2), hold (3), sell (4), and strong sell (5)). We obtain these data for year t , when we expect that managers use their MCS interactively or diagnostically based on the shareholder pressure they face. We assume that analysts who rate a low (high) recommendation assume a high (low) expectation for each firm (Luo et al., 2015; Wiersema & Zhang, 2011).

We analyze discriminant validity among the main constructs in this study. We run the heterotrait-monotrait (HTMT) ratio, which measures the between-trait correlations relative to the within-trait correlations. While higher coefficients are a sign that constructs are conceptually very similar, lower values indicate greater differences; thus, lower values prove discriminant validity (Bedford & Speklé, 2018). The HTMT ratios among our main latent variables are below the 0.85 cutoff, demonstrating that the constructs are sufficiently distinct. Moreover, all the survey items share more variance with their corresponding constructs than with any other construct, demonstrating discriminant validity at the item level (see Table D1 in Appendix D) (Bisbe et al., 2007). To offer additional evidence of the convergent and discriminant validity of our

¹⁷ We orthogonalize these variables before including them in the model to avoid multicollinearity problems.

constructs, we also run an untabulated confirmatory factor analysis for the proposed main latent constructs, resulting in acceptable model fit.¹⁸

Control variables

We include a set of control variables across models to account for contextual factors that might influence the dependent variables. We employ survey, archival and hand-collected data as the control variables. All the archival measures are retrieved from the Orbis and EIKON databases and thus offer “hard” data with which to test our hypotheses.

We include boundary and beliefs controls systems to holistically represent the LoC framework in the empirical models and to avoid omitted variable bias. We measure both constructs using four items for each (Kruis et al., 2016; Widener, 2007). *Boundary control systems* comprise (i) defining appropriate behavior, (ii) providing information about off-limit behaviors, (iii) communicating risks to be avoided, and (iv) making the workforce aware of the code of conduct. *Beliefs control systems* include the following items: (i) mission statement communicates values, (ii) top managers communicate values, (iii) workforce is aware of values, and (iv) mission statement inspires. All items are measured on a seven-point Likert-type scale. Factor analyses show that both constructs are unidimensional, explaining 76% and 69%, while the Cronbach’s alphas are 0.89 and 0.84.

At the firm level, the management control and organizational design literature proposes that firm size influences control processes and relationships among managers. In our models, we include *size*, proxied by assets and the number of employees. *Profit margin_{t-1}* is a control variable derived from Orbis. Firms with low profit margins are more likely to subsequently manage earnings downward (Jansen et al., 2012).

¹⁸ A CMIN/DF ratio of less than 5, a RMSEA of less than 0.08, and CFI above 0.90.

Additionally, when this value is greater, the firm is better able to offer products and services with high added value for customers, proxying for firm strategy, usually related to the interactive and diagnostic controls (Naranjo-Gil & Hartmann, 2006). Prior work also analyzes the potential effect of debt pressure on MCS (Garcia Osma et al., 2018); thus, we control for the *solvency ratio*. *Change in revenues* is included as a proxy for growth opportunities that ultimately alter information-processing and managerial strategies (Rahmandad, 2012). We include *firm uncertainty*, as it influences analyst recommendations and managers' judgments. Firm uncertainty is calculated as the standardized monthly volatility of the firm's stock in year t (the standard deviation of the firm's monthly closing price over the average of the firm's monthly closing price). Thus, higher values indicate more uncertainty (Beckman et al., 2004). *Environmental complexity* is measured using two Likert-scale items as in Gerdin et al. (2019), including the diversity of (i) product/service requirements and (ii) strategies of key competitors. We also control for the number of *subsidiaries* as a proxy for firm complexity. We include the number of live *patents* and *trademarks* as proxies for innovation orientation, usually related to interactive and diagnostic uses (Müller-Stewens et al., 2020). *Shareholder rights policy*, *shareholder engagement policy*, and *shareholder vote on executive pay* are also prominent variables in shareholder management, which affect managerial processes. These variables are taken from EIKON and included in our models.¹⁹ The first variable measures whether the company has a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement or limiting the use of anti-takeover devices. The second variable evaluates whether the firm has a policy to facilitate shareholder engagement,

¹⁹ If EIKON reports a missing value for a specific shareholder policy, we set that value to zero. Our results remain unchanged by this choice.

resolutions or proposals.²⁰ The third variable indicates whether the company's shareholders have the right to vote on executive compensation. We include the *number of topics at shareholder meetings*, the *number of shareholder meetings* in year *t*, and *vote against executive pay* as additional controls for shareholder activism to capture meeting complexity and intensity. These three variables were hand-collected from the B3 website. Last, we include *clan culture*²¹ and *commitment*.²² Both variables are usually related to MCS and shape their use and design (Einhorn et al., 2021).

The remaining five control variables are at the manager level and are usually related to management control system usage: age, tenure, education, gender and position (Gomez-Conde et al., 2019). *Age* and *tenure* are measured in years. *Education* is measured on a five-point scale, from (1) primary studies to (5) PhD, while *Business education* takes the value of 1 if the manager has a business education background and 0 otherwise. *Position* is also categorized on a four-point scale based on hierarchical responsibility: (1) general manager, (2) controller, (3) CFO, and (4) CEO. *Gender* is a dummy variable that takes a value of 1 if the manager is female and 0 otherwise.

[INSERT TABLE 1 ABOUT HERE]

[INSERT TABLE 2 ABOUT HERE]

²⁰ Two main points are as follows: (i) in scope, the company data facilitate shareholders' rights to ask questions to the board or management and (ii) the policy allows shareholders to table resolutions or shareholder proposals at shareholder meetings.

²¹ Clan culture is comprised of five items (seven-point Likert scale) (Quinn & Spreitzer, 1991): (i) personal and familiar place; (ii) leadership by mentoring or facilitating; (iii) teamwork and consensus; (iv) loyalty and mutual trust; and (v) human development.

²² Commitment comprises the exchanges that exist between business partners who believe that an ongoing relationship with each other is important such that they maximize their efforts to justify the relationship. We measure commitment using eleven items (seven-point Likert scale) (Cropanzano & Mitchell, 2005): (i) renegotiations benefit all managers involved; (ii) similar values are shared; (iii) managers are committed to partnering; (iv) there is loyalty among managers; (v) there are long and lasting relationships; (vi) managers strive for integration; (vii) managers are willing to invest resources; (viii) managers are proud to be part of the firm; (ix) additional efforts are made only if recognized; (x) maintaining relationships is important; and (xi) managers are willing to make sacrifices. One item loading was less than 0.7 but much higher than 0.5. Thus, we opt to retain it. Dropping the item has no substantive effect on the findings.

The correlation matrix is displayed in Table E1 (see Appendix E). Generally, no correlations among the variables included in a specific model are sufficiently high to warrant concerns about multicollinearity. Reported variance inflation factors (VIFs) across the regression models show that multicollinearity is not a concern in our tests.

4.3. Empirical models

We use a set of ordinary linear regressions to test our hypotheses. Hypothesis 1 posits an effect of shareholder activism in the context of performance declines on the interactive use of MCS. To test this link, we use model (1), as follows:

$$\begin{aligned} \text{Interactive use of MCS} = & \beta_0 + \beta_1 \text{ Shareholder activism in performance declines} + \\ & + \beta_2 \sum \text{Controls} + \varepsilon, \end{aligned} \quad (1)$$

For robustness, we also run model (1) using two additional proxies for shareholder activism: (i) number of topics at shareholder meetings and (ii) file size of shareholder meeting reports.

To test Hypothesis 2, which deals with the effects of the interaction effect of shareholder activism in the context of performance declines and broad-scope MCS design on the interactive use of MCS, we run model (2), as follows:

$$\begin{aligned} \text{Interactive use of MCS} = & \beta_0 + \\ & + \beta_1 \text{ Shareholder activism in performance declines} * \text{MCS design_Broad-scope} + \\ & + \beta_2 \text{ Shareholder activism in performance declines} + \beta_3 \sum \text{Controls} + \varepsilon, \end{aligned} \quad (2)$$

We use model (3) to test the potential effect of shareholder activism in the context of performance declines on the diagnostic use of MCS (H3). For completeness, we also run an adapted model (4) in which, in addition to our set of control variables, we control for analyst recommendations to isolate the primary effect of shareholder earnings pressures in the diagnostic use.

$$\begin{aligned} \text{Diagnostic use of MCS} = & \beta_0 + \beta_1 \text{ Shareholder activism in performance declines} + \\ & + \beta_2 \sum \text{Controls} + \varepsilon, \end{aligned} \quad (3)$$

Last, Hypothesis 4 states that managers use diagnostic controls under shareholder activism in the context of performance declines when analyst recommendations are favorable (low). Thus, in estimating Hypothesis 4, we run the following model (5), also including shareholder activism in the context of performance declines and analyst recommendations, to isolate the primary effects of the interaction (β_1), which is our coefficient of interest:

$$\begin{aligned}
 \text{Diagnostic use of MCS} = & \beta_0 + \\
 & + \beta_1 \text{ Shareholder activism in performance declines} * \text{Analyst recommendations} + \\
 & + \beta_2 \text{ Analyst recommendations} + \beta_3 \text{ Shareholder activism in performance declines} + \\
 & + \beta_4 \sum \text{Controls} + \varepsilon,
 \end{aligned} \tag{5}$$

5. Results

5.1. Main results

We next examine the effect of shareholder activism in the context of performance declines on the interactive use of MCS (H1) and the interaction effect of the scope of the MCS design (H2). Columns 1 and 2 in Table 3 report our regression results. The model fit is adequate in all columns. Model (1) tests the effect of shareholder activism in the context of performance declines on the interactive use of MCS. As expected, the result is positive and significant ($\beta = 0.138, p < 0.01$), providing support for H1. For robustness, we run model (1) using two additional proxies for shareholder activism: (i) number of topics at shareholder meetings and (ii) file size of shareholder meeting reports. Table F1 (see Appendix F) displays the results for these robustness tests. The coefficients are positive and significant for both proxies ($\beta = 0.094, p < 0.05$ and $\beta = 0.144, p < 0.05$). Overall, these findings provide support for H1.

Model (2) includes the interaction effect of shareholder activism in the context of performance declines and the scope of MCS design. The coefficient of this

interaction is negative and significant ($\beta = -0.120, p < 0.10$), as expected, providing support for H2 (see Table 3). This result means that for higher values of broad-scope MCS design, the effect of shareholder activism in the context of performance declines in the interactive use is lower (more negative) than it is at lower levels of broad-scope MCS.

[INSERT TABLE 3 ABOUT HERE]

For completeness, we also test the interaction effects using the three additional features of MCS design: aggregation, timeliness, and integration. We use a restricted empirical design to test this additional result by also including the interaction with broad-scope MCS in each model. The untabulated results show that the coefficients for the interactions of aggregation, timeliness, and integration with shareholder activism are not significant, suggesting that in the presence of broad-scope MCS, these features of MCS design are not enough to reduce the effect of shareholder activism on the interactive use of these systems.²³

We now examine whether shareholder activism influences the diagnostic use of MCS (H3). The results in Table 4, model (3) show that the effect of shareholder activism on performance declines is nonsignificantly associated with the diagnostic use ($\beta = 0.045, p > 0.10$). Thus, H3 is not validated. This finding offers evidence that shareholder activism does not affect this LoC and managers assuage shareholder concerns through the interactive use of MCS. Model (4), which includes analyst recommendations as an additional control variable, shows similar patterns. Finally, model (5) includes the interaction between shareholder activism in performance

²³ The interaction terms in these untabulated results are not significant (Shareholder activism in performance declines x MCS design_Aggregation: $\beta = 0.031, p > 0.10$; Shareholder activism in performance declines x MCS design_Timeliness: $\beta = 0.030, p > 0.10$; and Shareholder activism in performance declines x MCS design_Integration: $\beta = 0.027, p > 0.10$). The results are unchanged if we run a regression with all four interactions included simultaneously.

declines and analyst recommendations. The negative and significant effect of this interaction term on the diagnostic use of MCS ($\beta = -0.155, p < 0.01$) suggests that the effect of shareholder activism in the context of performance declines on the diagnostic use is positive for low values of analyst recommendations (i.e., favorable recommendations). Overall, this result provides support for H4.

[INSERT TABLE 4 ABOUT HERE]

5.2. Additional results

The effect of culture on the link between shareholder pressures and the use of MCS

Our results from testing H1 highlight that the interactive use of MCS is a channel through which managers can assuage shareholder concerns. To further investigate this link and broaden the scope of our analyses, we also consider the effect of organizational culture. Organizational culture is a broad concept, and no agreement on its definition has yet been reached in the literature; however, it is usually associated with shared beliefs, and values (Henri, 2006b). We focus on the notion of clan culture defined by Cameron and Quinn (2011), which emphasizes interpersonal relations among managers and employees, caring support, a friendly working atmosphere and the role of leaders as mentors. Employees are encouraged to communicate frankly, boosting the sharing of knowledge and being potentially useful in managing firm pressures. Moreover, clan culture pays attention to the participation of employees in decision-making and management, prompting the entire organization to engage with shareholder pressures. Prior work shows that clan cultures are important to shaping MCS and focusing managers and employees on achieving high-performance and, in turn, alleviating potential shareholder concerns (Einhorn et al., 2021).

Overall, clan culture firms are likely to have established information channels and to share knowledge that allows for pressure reduction in the interactive use of

MCS. The findings shown in Table F2 (see Appendix F) confirm this view, as the impact is concentrated in the low clan culture subsample (i.e., for the low clan culture subsample, $\beta = 0.274$, $p\text{-value} < 0.05$, while for the high clan culture subsample, $\beta = 0.044$, $p\text{-value} > 0.10$).²⁴

Alternative effects

First, our main results in the previous sections show that a broad-scope MCS design shapes the effect of shareholder activism in the context of performance declines in interactive use (H2). An alternative effect is the extent to which this design also affects the diagnostic use of MCS in the context of shareholder pressures and activism. We present the results of estimating Eq. (2) using the diagnostic use of MCS as a dependent variable in Table F3 (see Appendix F). The results in the first column suggest that the interaction among shareholder activism in performance declines and broad-scope MCS design does not affect the diagnostic use of MCS ($\beta = -0.042$, $p\text{-value} > 0.10$). Overall, as expected, this finding suggests that managers do not use the diagnostic lever to assuage shareholder activism.

Second, our findings show that analyst recommendations shape the diagnostic use of MCS (H4). An open question is the extent to which these recommendations affect the interactive use of MCS under shareholder pressures and activism. Although we do not hypothesize this assertion, we also test this effect. We expect that, in contrast to the diagnostic use, when analyst recommendations are favorable, managers will be unlikely to mobilize interactive use because it is potentially costly and time-consuming. Therefore, not surprisingly, the results (see Table F3, Column 2) show that the interaction of shareholder activism in performance declines and analyst

²⁴ Subsamples were created based on the median.

recommendations is nonsignificant on the interactive use of MCS ($\beta = -0.038$, $p\text{-value} > 0.10$).

6. Conclusions

The purpose of this study is to address the question of how managers using MCS cope with shareholder activism in the context of performance declines. We posit that this question is important due the prominent role of shareholders in shaping managerial processes and decision-making. To do so, we analyze the role of interactive and diagnostic use in assuaging these shareholder pressures, including potential moderating variables (i.e., broad-scope MCS design and analyst recommendations), to explain the mechanism by which the uses of these two LoCs vary. Overall, we find that managers use MCS interactively to assuage shareholder activism in the context of earnings and profitability declines. This contribution is important, as, through the lens of agency theory, we offer a deeper understanding of what happens within the company when shareholder activism is prevalent. This analysis resulted in three main implications.

The first and most immediate implication of our results is that they broaden the scope of the managerial consequences of shareholder activism. We assess the organizational consequences of such pressures by analyzing their association with the likelihood of using MCS interactively. We add to the accounting literature that relates stakeholder pressures to MCS (Lisi, 2015; Ezzamel et al., 2008; Otley, 2001), by offering novel evidence regarding a direct mechanism that activates the interactive use of MCS. The prior work does not isolate the effect of these powerful stakeholders and the underlying processes that allow managers to alleviate such pressures and thus make them more manageable. We build on the prior literature on MCS by extending Simons's work to the domain of corporate governance. Specifically, our study suggests

considering the interactive use of MCS to focus the entire organization and involve all managers in the search for solutions to assuage shareholder activism in the context of performance declines.

Second, while strong support is found for the hypothesized positive direct effect of shareholder activism in performance declines on the interactive use, we also offer insights into the variations in the level of this LoC, which occur under a specific condition—broad-scope MCS design—since managers furnished with this information better understand the current firm market and strategic status, which decreases the effect of shareholder activism on the interactive use. Beyond presenting new evidence regarding the use and design of MCS based on prior work (Garcia Osma et al., 2018; Bisbe & Malagueño, 2009), we also contribute to the management accounting area by including a variable from the corporate governance literature that has been little analyzed, i.e., shareholder activism, which has a significant effect on managers' behaviors and how they manage the pressures they face (Armstrong et al., 2013).

Third, we provide evidence of the unsuitability of the diagnostic use of MCS to cope with the pressures addressed here. These results imply that the monitoring role of this LoC is not enough to assuage shareholder concerns. This finding is surprising since prior work has pointed out the role of diagnostic controls in ensuring the achievement of performance targets, often with a short-term focus. However, we find a context in which the diagnostic use plays a significant role: firms with favorable analyst recommendations. Managers in this context use diagnostic controls to track accounting numbers throughout the year by highlighting given milestones and managing earnings pressures from shareholders. In a setting of unfavorable analyst recommendations, the diagnostic use is unlikely to provide enough resources for making decisions that directly address high-pressure situations (Bedford, 2015; Bisbe & Malagueño, 2015).

Overall, the analysis of both LoCs in the same framework is in line with recent calls (Kruis et al., 2016; Mundy, 2010).

Our study opens up various possibilities for future research. First, future research could evaluate which specific types of shareholder pressures (e.g., media, boards, etc.) are most likely to activate the interactive use of MCS. Second, our framework calls for qualitative studies that systematically analyze the processes whereby organizations and managers respond to shareholder pressures. While our findings shed some light on how organizations respond to shareholder activism in the context of performance declines, some limitations must be noted and should be addressed in future studies. First, we use data gathered from a convenience sample in a Brazilian setting, which increases internal validity. The results are based on data from public firms across a variety of industries, and the size of the firms in our sample is similar to that in extant prior work on MCS. We are not aware of nor do we assume a response bias in our sample. However, generalizing the results to a broader or different sample should be done with caution. Thus, although we have no ex-ante arguments for substantially different results in other countries, further research should be conducted to assess the generalizability to different regions because cultural issues could shape these connections (Malmi et al., 2020). Second, we do not examine the implications of these shareholder pressures at lower intraorganizational levels. Future studies could analyze organizational processes and consequences at lower firm levels. Third, a limitation of our research is inherent in the survey methodology. We use a large and cross-sectional sample to analyze links at a given point in time. This methodological choice may raise concerns about endogeneity and causality (Bisbe & Malagueño, 2015; Mahlendorf et al., 2014). To partially avoid this problem, we use hand-collected and archival data in t , $t-1$ and $t-2$ to test the impact of shareholder pressures on management control processes,

thereby overcoming some of these limitations. However, despite these limitations, our research offers novel insights regarding management accounting and shareholder activism that are relevant for theory and practice by hypothesizing and empirically testing managerial responses to shareholder activism.

Supplemental Data and Research Materials

Additional materials are available in an online Supplement at the journal's Taylor and Francis website.

Appendix A. Respondent demographics.

Appendix B. Main variables scales.

Appendix C. Descriptive statistics on the main constructs at the item level.

Appendix D. Discriminant validity on the main survey variables at the item level.

Appendix E. Multitrait matrix.

Appendix F. Robustness tests and additional results.

References

- Alissa, W. (2015). Boards' response to shareholders' dissatisfaction: the case of shareholders' say on pay in the UK. *European Accounting Review*, 24(4), 727-752.
- Arjalès, D.-L., & Mundy, J. (2013). The use of management control systems to manage CSR strategy: A levers of control perspective. *Management Accounting Research*, 24(4), 284-300.
- Armstrong, C. S., Gow, I. D., & Larcker, D. F. (2013). The efficacy of shareholder voting: Evidence from equity compensation plans. *Journal of Accounting Research*, 51(5), 909-950.
- Barth, M. E., Elliott, J. A., & Finn, M. W. (1999). Market rewards associated with patterns of increasing earnings. *Journal of Accounting Research*, 37(2), 387-413.
- Beardsley, E. L., Robinson, J. R., & Wong, P. A. (2021). What's my target? Individual analyst forecasts and last chance earnings management. *Journal of Accounting and Economics*, 72, 101423.
- Beatty, A. L., Ke, B., & Petroni, K. R. (2002). Earnings management to avoid earnings declines across publicly and privately held banks. *The Accounting Review*, 77(3), 547-570.
- Beckman, C. M., Haunschild, P. R., & Phillips, D. J. (2004). Friends or strangers? Firm-specific uncertainty, market uncertainty, and network partner selection. *Organization Science*, 15(3), 259-275.
- Bedford, D. S. (2015). Management control systems across different modes of innovation: Implications for firm performance. *Management Accounting Research*, 28, 12-30.
- Bedford, D. S. (2020). Conceptual and empirical issues in understanding management control combinations. *Accounting, Organizations and Society*, 86, 101187.
- Bedford, D. S., & Speklé, R. F. (2018). Construct validity in survey-based management accounting and control research. *Journal of Management Accounting Research*, 30(2), 23-58.
- Bellora-Bienengraber, L., Radtke, R. R., & Widener, S. K. (2022). Counterproductive work behaviors and work climate: The role of an ethically focused management control system and peers' self-focused behavior. *Accounting, Organizations and Society*, 96, 101275.
- Bisbe, J., & Malagueño, R. (2009). The choice of interactive control systems under different innovation management modes. *European Accounting Review*, 18(2), 371-405.
- Bisbe, J., & Malagueño, R. (2015). How control systems influence product innovation processes: examining the role of entrepreneurial orientation. *Accounting and Business Research*, 45(3), 356-386.
- Bisbe, J., & Otley, D. (2004). The effects of the interactive use of management control systems on product innovation. *Accounting, Organizations and Society*, 29, 709-737.
- Bisbe, J., Batista Foguet, J. M., & Chenhall, R. (2007). Defining management accounting constructs: A methodological note on the risks of conceptual misspecification. *Accounting, Organizations and Society*, 32(7-8), 789-820.
- Bourveau, T., & Schoenfeld, J. (2017). Shareholder activism and voluntary disclosure. *Review of Accounting Studies*, 22(3), 1307-1339.
- Bouwens, J., & Abernethy, M. A. (2000). The consequences of customization on management accounting system design. *Accounting, Organizations and Society*, 25, 221-241.

- Braumann, E. C., Grabner, I., & Posch, A. (2020). Tone from the top in risk management: a complementarity perspective on how control systems influence risk awareness. *Accounting, Organizations and Society*, 84, 101128.
- Brown, J. & Dillard, J. (2015). Dialogic accountings for stakeholders: On opening up and closing down participatory governance. *Journal of Management Studies*, 52, 961-985.
- Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 24(1), 99-126.
- Burgstahler, D., & Eames, M. (2006). Management of earnings and analysts' forecasts to achieve zero and small positive earnings surprises. *Journal of Business Finance & Accounting*, 33, 633-652.
- Cameron, K. S., & Quinn, R. E. (2011). *Diagnosing and changing organizational culture: Based on the competing values framework*. San Francisco: John Wiley & Sons.
- Chen, Y-C., Hung, M., & Wang, Y. (2018). The effect of mandatory CSR disclosure on firm profitability and social externalities: Evidence from China. *Journal of Accounting and Economics*, 65(1), 169-190.
- Chenhall, R. H. (2003). Management control systems design within its organizational context: findings from contingency-based research and directions for the future. *Accounting, Organizations and Society*, 28(2/3), 127-168.
- Chenhall, R. H., & Moers, F. (2015). The role of innovation in the evolution of management accounting and its integration into management control. *Accounting, Organizations and Society*, 47, 1-13.
- Chenhall, R. H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting systems. *The Accounting Review*, 61(1), 16-35.
- Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review of conceptual and definitional issues. *Journal of Management*, 31(6), 874-900.
- David, P., Hitt, M. A., & Gimeno, J. (2001). The influence of activism by institutional investors on R&D. *Academy of Management Journal*, 44, 144-157.
- DeAngelo, H., DeAngelo, L., & Skinner, D. (1996). Reversal of fortune: Dividend policy and the disappearance of sustained earnings growth. *Journal of Financial Economics*, 40, 341-371.
- Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: a review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50, 344-401.
- Dechow, P., Richardson, S., & Tuna, I. (2003). Why are earnings kinky? An examination of the earnings management explanation. *Review of Accounting Studies*, 8(2-3), 355-384.
- DeGeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *Journal of Business*, 72(1), 1-33.
- Del Guercio, D., Seery, L., & Woidtke, T. (2008). Do boards pay attention when institutional investor activists "just vote no"? *Journal of Financial Economics*, 90, 84-103.
- Denes, M. R., Karpoff, J. M., & McWilliams, V. B. (2017). Thirty years of shareholder activism: A survey of empirical research. *Journal of Corporate Finance*, 44, 405-424.
- Dey, A. (2008). Corporate governance and agency conflicts. *Journal of Accounting Research*, 46, 1143-1181.

- Einhorn, S., Heinicke, X., & Guenther, T. W. (2021). Management control packages in family businesses: a configurational approach. *Journal of Business Economics*, 91, 433-478.
- Ezzamel, M., Willmott, H., & Worthington, F. (2008). Manufacturing shareholder value: The role of accounting in organizational transformation. *Accounting, Organizations and Society*, 33(2-3), 107-140.
- Fan, Z., Radhakrishnan, S., & Zhang, Y. (2021). Corporate governance and earnings management: Evidence from shareholder proposals. *Contemporary Accounting Research*, 38(2), 1434-1464.
- Ferreira, A., & Otley, D. (2009). The design and use of performance management systems: An extended framework for analysis. *Management Accounting Research*, 20(4), 263-282.
- Ferri, F., & Sandino, T. (2009). The impact of shareholder activism on financial reporting and compensation: The case of employee stock options expensing. *The Accounting Review*, 84, 433-466.
- Firk, S., Schmidt, T., & Wolff, M. (2019). CFO emphasis on value-based management: Performance implications and the challenge of CFO succession. *Management Accounting Research*, 44, 26-43.
- Flammer, C., Toffel, M.W., & Viswanathan, K. (2021). Shareholder activism and firms' voluntary disclosure of climate change risks. *Strategic Management Journal*, 42(10), 1850-1879.
- Garcia Osma, B. (2008). Board independence and real earnings management: The case of R&D expenditure. *Corporate Governance*, 16(2), 116-131.
- Garcia Osma, B., & Grande-Herrera, C. (2021). The role of users' engagement in shaping financial reporting: Should activists target accounting more?. *Accounting and Business Research*, 51(5), 511-544.
- Garcia Osma, B., & Young, S. (2009). R&D expenditure and earnings targets. *European Accounting Review*, 18(1), 7-32.
- Garcia Osma, B., Gomez-Conde, J., & Heras, E. (2018). Debt pressure and interactive use of control systems: Effects on cost of debt. *Management Accounting Research*, 40, 27-46.
- Garcia Osma, B., Gomez-Conde, J., & Lopez-Valeiras, E. (2022). Management control systems and real earnings management: Effects on future firm performance. *Management Accounting Research*. In press.
- Gerdin, J., Johansson, T., & Wennblom, G. (2019). The contingent nature of complementarity between results and value-based controls for managing company-level profitability: A situational strength perspective. *Accounting, Organizations and Society*, 79, 101058.
- Goergen, M., & Renneboog, L. (2011). Managerial compensation. *Journal of Corporate Finance*, 17(4), 1068-1077.
- Gomez-Conde, J., Lunkes, R. J., & Rosa, F. S. (2019). Environmental innovation practices and operational performance. The joint effects of management accounting and control systems and environmental training. *Accounting, Auditing & Accountability Journal*, 32(5), 1325-1357.
- Goranova, M., & Ryan, L. V. (2014). Shareholder activism: A multidisciplinary review. *Journal of Management*, 40(5), 1230-1268.
- Goranova, M., & Ryan, L. V. (2021). The corporate objective revisited: the shareholder perspective. *Journal of Management Studies*. In press.

- Gore, P. O., Pope, P. F., & Singh, A. (2007) Earnings management and the distribution of earnings relative to target: UK evidence. *Accounting and Business Research*, 37(2), 123-150.
- Graham, J. R., Harvey, C. R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40, 3-73.
- Grundfest, J. A. (1993). Just vote no: a minimalist strategy for dealing with barbarians inside the gates. *Stanford Law Review*, 45, 857-937.
- Guo, F., Lin, C., Masli, A., & Wilkins, M. S. (2021). Auditor responses to shareholder activism. *Contemporary Accounting Research*, 38(1), 63-95.
- Hasan, M. M. (2020). Readability of narrative disclosures in 10-K reports: Does managerial ability matter?. *European Accounting Review*, 29(1), 147-168.
- Heggen, C., & Sridharan, V.G. (2021). The effects of an enabling approach to eco-control on firms' environmental performance: A research note. *Management Accounting Research*, 50, 100724.
- Heinicke, A., Guenther, T. W., & Widener, S. W. (2016). An examination of the relationship between the extent of a flexible culture and the levers of control system: The key role of beliefs control. *Management Accounting Research*, 33, 25-41.
- Heinicke, X., & Guenther, T. W. (2020). The role of management controls in the higher education sector: An investigation of different perceptions. *European Accounting Review*, 29(3), 581-630.
- Henri, J. (2006a). Management control systems and strategy: A resource based perspective. *Accounting, Organizations and Society*, 31(6), 529-558.
- Henri, J. (2006b). Organizational culture and performance measurement systems. *Accounting, Organizations and Society*, 31(1), 77-103.
- Henri, J., & Wouters, M. (2020). Interdependence of management control practices for product innovation: The influence of environmental unpredictability. *Accounting, Organizations and Society*, 86, 101073.
- Hutton, A. P. (2005). Determinants of managerial earnings guidance prior to regulation fair disclosure and bias in analysts' earnings forecasts. *Contemporary Accounting Research*, 22(4), 867-914.
- Ittner, C. D., Larcker, D. F., & Pizzini, M. (2007). Performance-based compensation in member-owned firms: An examination of medical group practices. *Journal of Accounting and Economics*, 44, 300-327.
- Janke, R., Mahlendorf, M. D., & Weber, J. (2014). An exploratory study of the reciprocal relationship between interactive use of management control systems and perception of negative external crisis effects. *Management Accounting Research*, 25(4), 251-270.
- Jansen, I. P., Ramnath, S., & Yohn, T.L. (2012). A diagnostic for earnings management using changes in asset turnover and profit margin. *Contemporary Accounting Research*, 29, 221-251.
- Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Kinney, W., Burgstahler, D., & Martin, R. (2002). Earnings surprise "materiality" as measured by stock returns. *Journal of Accounting Research*, 40, 1297-1329.
- Knauer, T., Silge, L., & Sommer, F. (2018). The shareholder value effects of using value-based performance measures: Evidence from acquisitions and divestments. *Management Accounting Research*, 41, 43-61.
- Kruis, A. M., Speklé, R. F., & Widener, S. K. (2016). The levers of control framework: An exploratory analysis of balance. *Management Accounting Research*, 32, 27-44.

- Lant, T. K., Milliken, F. J., & Batra, B. (1992). The role of managerial learning and interpretation in strategic persistence and reorientation: an empirical exploration. *Strategic Management Journal*, 13(8), 585-608.
- Lisi, I. E. (2015). Translating environmental motivations into performance: The role of environmental performance measurement systems. *Management Accounting Research*, 29, 27-44.
- Loughran, T., & McDonald, B. (2014). Measuring readability in financial disclosures. *Journal of Finance*, 69(4), 1643-1671.
- Luo, X., Wang, H., Raithel, S., & Zheng, Q. (2015). Corporate social performance, analyst stock recommendations, and firm future returns. *Strategic Management Journal*, 36(1), 123-136.
- Mahlendorf, M. D., Kleinschmit, F., & Perego, P. (2014). Relational effects of relative performance information: The role of professional identity. *Accounting, Organizations and Society*, 39, 331-347.
- Malmi, T., Bedford, D. S., Brühl, R., Dergård, J., Hoozée, S. et al. (2020). Culture and management control interdependence: An analysis of control choices that complement the delegation of authority in Western cultural regions. *Accounting, Organizations and Society*, 86, 101116.
- Malmi, T., & Brown, D. A. (2008). Management control systems as a package - Opportunities, challenges and research directions. *Management Accounting Research*, 19(4), 287-300.
- Martynova, M., & Renneboog, L. (2008). A century of corporate takeovers: what have we learned and where do we stand? *Journal of Banking & Finance*, 32, 2148-2177.
- McAnally, M. L., Srivastava, A., & Weaver, C. D. (2008). Executive stock options, missed earnings targets, and earnings management. *The Accounting Review*, 83(1), 185-216.
- Michelon, G., Rodrigue, M., & Trevisan, E. (2020). The marketization of a social movement: Activists, shareholders and CSR disclosure. *Accounting, Organizations and Society*, 80, 101074.
- Mohanram, P., White, B., & Zhao, W. (2020). Stock-based compensation, financial analysts, and equity overvaluation. *Review of Accounting Studies*, 25, 1040-1077.
- Mount M. P., & Baer, M. (2021). CEOs' regulatory focus and risk-taking when firms perform below and above the bar. *Journal of Management*. In press.
- Müller-Stewens, B., Widener, S. K., Möller, K., & Steinmann, J. C. (2020). The role of diagnostic and interactive control uses in innovation. *Accounting, Organizations and Society*, 80, 101078.
- Mundy, J. (2010). Creating dynamic tensions through a balanced use of management control systems. *Accounting, Organizations and Society*, 35(5), 499-523.
- Naranjo-Gil, D., & Hartmann, F. G. H. (2006). How top management teams use management accounting systems to implement strategy. *Journal of Management Accounting Research*, 18(1), 21-53.
- Naranjo-Gil, D., & Hartmann, F. G. H. (2007). Management accounting systems, top management team heterogeneity and strategic change. *Accounting, Organizations and Society*, 32(7-8), 735-756.
- Naranjo-Gil, D., Maas, V. S., & Hartmann, F. G. H. (2009). How CFOs determine management accounting innovation: An examination of direct and indirect effects. *European Accounting Review*, 18(4), 667-695.
- Otley, D. (2001). Extending the boundaries of management accounting research: developing systems for performance management. *British Accounting Review*, 33(3), 243-261.

- Pondeville, S., Swaen, V., & De Rongé, Y. (2013). Environmental management control systems: The role of contextual and strategic factors. *Management Accounting Research*, 24(4), 317-332.
- Quinn, R., & Spreitzer, G. (1991). The psychometric of the competing values culture instrument and an analysis of the impact of organizational culture on quality of life. In: Woodman, R.W. and Pasmore, W.A., Eds., *Research in Organizational Change and Development*, Vol. 5, JAI Press, Greenwich, 115-142.
- Rahmandad, H. (2012). Impact of growth opportunities and competition on firm-level capability development trade-offs. *Organization Science*, 23(1), 138-154.
- Rodrigue, M., Magnan, M., & Boulianne, E. (2013). Stakeholders' influence on environmental strategy and performance indicators: A managerial perspective. *Management Accounting Research*, 24(4), 301-316.
- Rossing, C. P. (2013). Tax strategy control: The case of transfer pricing tax risk management. *Management Accounting Research*, 24, 175-194.
- Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, 42(3), 335-370.
- Schulz, A-C., & Wiersema, M. F. (2018). The impact of earnings expectations on corporate downsizing. *Strategic Management Journal*, 39, 2691-2702.
- Simons, R. (1987). Accounting control systems and business strategy: An empirical analysis. *Accounting, Organizations and Society*, 12(4), 357-374.
- Simons, R. (1991). Strategic orientation and top management attention to control systems. *Strategic Management Journal*, 12(1), 49-62.
- Simons, R. (1995). *Levers of control: How managers use innovative control systems to drive strategic renewal*. Boston: Harvard Business School Press.
- Skinner, D. J., & Sloan, R. G. (2002). Earnings surprises, growth expectations, and stock returns: don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies*, 7(2/3), 289-312.
- Tessier, S., & Otley, D. (2012). A conceptual development of Simons' Levers of Control framework. *Management Accounting Research*, 23(3), 171-185.
- Tillema, S. (2005). Towards an integrated contingency framework for MAS sophistication. Case studies on the scope of accounting instruments in Dutch power and gas companies. *Management Accounting Research*, 16, 101-129.
- Vandenbosch, B. (1999). An empirical analysis of the association between the use of executive support systems and perceived organizational competitiveness, *Accounting, Organizations and Society*, 24(1), 77-92.
- Widener, S. K. (2007). An empirical analysis of the levers of control framework. *Accounting, Organizations and Society*, 32(7-8), 757-788.
- Wiersema, M. F., & Zhang, Y. (2011). CEO dismissal: The role of investment analysts. *Strategic Management Journal*, 32, 1161-1182.
- Womack, K. (1996). Do brokerage analysts' recommendations have investment value? *Journal of Finance*, 51(1), 137-167.
- Yang, C., & Modell, S. (2015). Shareholder orientation and the framing of management control practices: a field study in a Chinese state-owned enterprise. *Accounting, Organizations and Society*, 45, 1-23.
- Zhang, Y., & Gimeno, J. (2010). Earnings pressure and competitive behavior: Evidence from the U.S. electricity industry. *Academy of Management Journal*, 53(4), 743-768.
- Zhang, Y., & Gimeno, J. (2016). Earnings pressure and long-term corporate governance: Can long-term-oriented investors and managers reduce the quarterly earnings obsession?. *Organization Science*, 27(2), 354-372.

Table 1. Descriptive statistics ($n = 168$).

	Mean	SD	Min	P25	P50	P75	Max
Shareholder activism in performance declines	0.001	0.008	0.000	0.000	0.000	0.000	0.091
ROE _{t-1}	11.860	37.197	-304.054	7.555	13.230	19.959	97.689
Shareholder activism_Vote-against	0.022	0.125	0.000	0.000	0.000	0.000	1.000
Analyst recommendations _t	2.432	0.256	1.818	2.366	2.434	2.584	3.545
Interactive use of MCS	5.747	1.009	1.857	5.429	6.000	6.429	7.000
Diagnostic use of MCS	6.177	0.919	2.500	5.750	6.500	7.000	7.000
MCS design_Broad-scope	5.667	1.081	1.000	5.250	6.000	6.500	7.000
MCS design_Aggregation	5.784	0.969	2.667	5.083	6.000	6.667	7.000
MCS design_Timeliness	5.563	1.198	1.333	5.000	6.000	6.333	7.000
MCS design_Integration	5.661	1.019	2.000	5.000	6.000	6.333	7.000
Boundary control systems	5.865	1.018	1.500	5.562	6.000	6.500	7.000
Beliefs control systems	5.865	0.946	1.500	5.500	6.250	6.500	7.000
Environmental complexity	5.902	1.064	2.000	5.500	6.000	7.000	7.000
Clan culture	5.487	1.125	1.800	5.000	5.800	6.200	7.000
Commitment	5.544	0.871	2.182	5.091	5.727	6.182	7.000
Assets _{t-1} (thousands)	8,843.977	40,326.496	0.021	182.572	1,022.616	4,112.651	332,272.999
Employees	5,740.804	11,389.743	50.000	762.500	2,000.000	6,375.000	98,000.000
Profit margin _{t-1}	8.881	24.387	-96.950	2.850	9.413	16.250	96.740
Solvency ratio _{t-1}	36.927	28.228	-95.480	25.248	37.412	53.853	92.500
Revenues_change _{t-1} (thousands)	-150.068	1,270.763	-7,889.083	-119.284	-15.638	6.769	4,987.929
Firm uncertainty	0.191	0.115	0.029	0.111	0.191	0.214	0.651
Patents	150.387	383.636	1.000	11.000	146.000	154.000	3,535.000
Trademarks	8.762	32.417	0.000	0.000	0.000	4.000	259.000
Subsidiaries	160.988	813.813	0.000	1.000	8.000	27.000	7,205.000
Shareholder rights policy	0.250	0.434	0.000	0.000	0.000	1.000	1.000
Shareholder engagement policy	0.065	0.248	0.000	0.000	0.000	0.000	1.000
Shareholder vote on executive pay	0.137	0.345	0.000	0.000	0.000	0.000	1.000
Number of topics at shareholder meetings	5.364	2.263	1.000	4.000	5.000	6.000	19.000
Number of shareholders meetings	2.097	2.031	0.000	1.000	2.000	3.000	12.000
File size of shareholder meetings	724.482	1,488.962	26.000	164.000	302.500	514.250	11,862.000
Vote-against executive pay _t	0.066	0.165	0.000	0.000	0.000	0.047	1.000
Vote-against executive pay _{t-1}	0.069	0.153	0.000	0.000	0.000	0.062	1.000
Manager age	41.208	8.359	26.000	36.000	40.000	46.000	66.000
Position	1.554	1.008	1.000	1.000	1.000	2.000	4.000
Gender	0.232	0.423	0.000	0.000	0.000	0.000	1.000
Tenure	5.482	4.996	1.000	2.000	4.000	7.000	31.000
Business education	0.833	0.374	0.000	1.000	1.000	1.000	1.000

Table 2. Factor and reliability analyses.

Construct	Factor loadings (range)	Eigenvalues	% Variance explained	Cronbach's alphas	Composite reliabilities	KMO
Interactive use of MCS	0.745-0.830	4.522	64.605	0.908	0.927	0.904
Diagnostic use of MCS	0.821-0.896	2.899	72.472	0.870	0.913	0.824
MCS design_Broad-scope	0.818-0.864	2.825	70.628	0.861	0.905	0.807
MCS design_Aggregation	0.837-0.853	2.147	71.559	0.800	0.882	0.711
MCS design_Timeliness	0.846-0.895	2.260	75.334	0.833	0.901	0.713
MCS design_Integration	0.793-0.846	1.975	65.842	0.736	0.852	0.676
Boundary control systems	0.829-0.891	3.048	76.190	0.894	0.900	0.825
Beliefs control systems	0.745-0.881	2.771	69.278	0.843	0.927	0.797
Environmental complexity	0.905-0.905	1.637	81.832	0.776	0.900	0.500
Clan culture	0.770-0.903	3.579	71.581	0.896	0.917	0.872
Commitment	0.557-0.861	5.793	52.663	0.907	0.918	0.928

Table 3. Effects of shareholder activism in the context of performance declines on the interactive use of MCS (H1 and H2) ($n = 168$).

	<i>Interactive use of MCS</i>	
	Coefficient (t-value)	
	(1)	(2)
Shareholder act. perf. declines \times MCS design_Broad-scope		-0.120 (-1.390)*
Shareholder activism in performance declines	0.138 (2.427)***	0.047 (0.550)
Shareholder activism_Vote-against	-0.009 (-0.181)	0.012 (0.227)
Negative ΔROE_{t-1}	0.059 (1.092)	0.075 (1.388)*
MCS design_Broad-scope	0.375 (5.205)***	0.385 (5.323)***
MCS design_Aggregation	0.193 (2.234)**	0.205 (2.368)**
MCS design_Timeliness	0.182 (2.187)**	0.196 (2.341)**
MCS design_Integration	0.088 (1.214)	0.093 (1.289)
Beliefs control systems	0.086 (1.475)	0.080 (1.366)
Boundary control systems	0.280 (4.174)***	0.268 (3.960)***
Assets _{t-1}	0.199 (2.448)**	0.202 (2.481)**
Employees	-0.109 (-1.762)*	-0.106 (-1.708)*
Profit margin _{t-1}	0.043 (0.767)	0.045 (0.799)
Solvency ratio _{t-1}	-0.035 (-0.661)	-0.039 (-0.728)
Revenues_change _{t-1}	0.015 (0.237)	0.017 (0.270)
Trademarks	-0.018 (-0.329)	-0.029 (-0.514)
Subsidiaries	-0.069 (-1.312)	-0.077 (-1.456)
Firm uncertainty	-0.033 (-0.596)	-0.028 (-0.502)
Environmental complexity	0.066 (1.086)	0.075 (1.226)
Patents	-0.041 (-0.729)	-0.053 (-0.947)
Shareholder rights policy	-0.078 (-1.273)	-0.077 (-1.264)
Shareholder engagement policy	-0.157 (-2.429)**	-0.162 (-2.521)**
Shareholder vote on executive pay	0.033 (0.632)	0.038 (0.729)
Number of shareholders meetings	0.037 (0.674)	0.036 (0.656)
Number of topics at shareholder meetings	0.091 (1.696)*	0.095 (1.771)*
Vote-against executive pay _t	-0.035 (-0.558)	-0.051 (-0.802)
Vote-against executive pay _{t-1}	0.004 (0.063)	0.009 (0.146)
Clan culture	0.026 (0.361)	0.030 (0.410)
Commitment	0.144 (1.988)**	0.144 (1.994)**
Manager age	0.019 (0.332)	0.023 (0.405)
Position	-0.022 (-0.417)	-0.021 (-0.395)
Gender	-0.086 (-1.644)	-0.097 (-1.824)*
Tenure	-0.018 (-0.308)	-0.018 (-0.323)
Business education	0.002 (0.036)	0.008 (0.158)
F-test statistic	10.686***	10.478***
R ²	0.725	0.728
R ² adj.	0.657	0.659
Max. VIF	3.636	4.127

*** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$ (one-tailed for hypothesized links, two-tailed otherwise)

Table 4. Effects of shareholder activism in the context of performance declines on the diagnostic use of MCS (H3 and H4) ($n = 168$).

	<i>Diagnostic use of MCS</i>		
	Coefficient (t-value)		
	(3)	(4)	(5)
Shareholder act. perf. declines \times Analyst recommend _t			-0.155 (-2.420)***
Analyst recommendations _t		0.136 (1.960)**	0.159 (2.319)**
Shareholder activism in performance declines	0.045 (0.632)	0.051 (0.731)	0.039 (0.561)
Shareholder activism_Vote-against	-0.074 (-1.141)	-0.089 (1.376)*	-0.049 (-0.753)
Negative Δ ROE _{t-1}	0.032 (0.478)	0.034 (0.509)	0.055 (0.836)
MCS design_Broad-scope	0.370 (4.119)***	0.377 (4.238)***	0.394 (4.493)***
MCS design_Aggregation	0.300 (2.791)***	0.300 (2.815)***	0.321 (3.060)***
MCS design_Timeliness	0.310 (2.988)***	0.296 (2.873)***	0.301 (2.973)***
MCS design_Integration	0.271 (3.018)***	0.283 (3.172)***	0.295 (3.363)***
Beliefs control systems	0.156 (2.139)**	0.145 (2.106)**	0.137 (1.937)*
Boundary control systems	0.280 (3.345)***	0.283 (3.413)***	0.274 (3.364)***
Assets _{t-1}	0.126 (1.238)	0.156 (1.536)	0.176 (1.759)*
Employees	0.028 (0.356)	0.019 (0.253)	0.004 (0.049)
Profit margin _{t-1}	0.081 (1.166)	0.049 (0.691)	0.037 (0.526)
Solvency ratio _{t-1}	-0.050 (-0.746)	-0.042 (-0.635)	-0.031 (-0.484)
Revenues_change _{t-1}	0.087 (1.111)	0.088 (1.136)	0.091 (1.197)
Trademarks	-0.080 (-1.152)	-0.072 (-1.043)	-0.062 (-0.918)
Subsidiaries	0.052 (0.791)	0.032 (0.481)	0.035 (0.539)
Firm uncertainty	-0.041 (-0.589)	-0.036 (-0.525)	-0.060 (-0.890)
Environmental complexity	0.100 (1.311)	0.070 (0.917)	0.046 (0.604)
Patents	-0.047 (-0.679)	-0.039 (-0.562)	-0.048 (-0.713)
Shareholder rights policy	-0.058 (-0.755)	-0.029 (-0.374)	-0.034 (-0.448)
Shareholder engagement policy	0.008 (0.095)	-0.037 (-0.450)	-0.047 (-0.584)
Shareholder vote on executive pay	-0.089 (-1.366)	-0.056 (-0.843)	-0.060 (-0.919)
Number of shareholders meetings	-0.051 (-0.739)	-0.052 (-0.753)	-0.048 (-0.716)
Number of topics at shareholder meetings	0.013 (0.199)	0.017 (0.251)	-0.003 (-0.045)
Vote-against executive pay _t	-0.041 (-0.534)	-0.037 (-0.487)	-0.036 (-0.476)
Vote-against executive pay _{t-1}	-0.077 (-0.968)	-0.082 (-1.048)	-0.086 (-1.117)
Clan culture	0.004 (0.046)	0.047 (0.507)	0.006 (0.071)
Commitment	-0.052 (-0.575)	-0.078 (-0.865)	-0.036 (-0.400)
Manager age	-0.052 (-0.732)	-0.042 (-0.599)	-0.027 (-0.391)
Position	0.013 (0.204)	0.022 (0.340)	0.005 (0.073)
Gender	0.019 (0.285)	0.046 (0.701)	0.039 (0.601)
Tenure	-0.015 (-0.206)	-0.011 (-0.156)	-0.030 (-0.434)
Business education	-0.026 (-0.420)	-0.034 (-0.564)	-0.027 (-0.454)
F-test statistic	5.441***	5.506***	5.712***
R ²	0.573	0.585	0.602
R ² adj.	0.467	0.478	0.497
Max. VIF	3.636	3.636	3.662

*** $p < 0.01$, ** $p < 0.05$, and * $p < 0.10$ (one-tailed for hypothesized links, two-tailed otherwise)