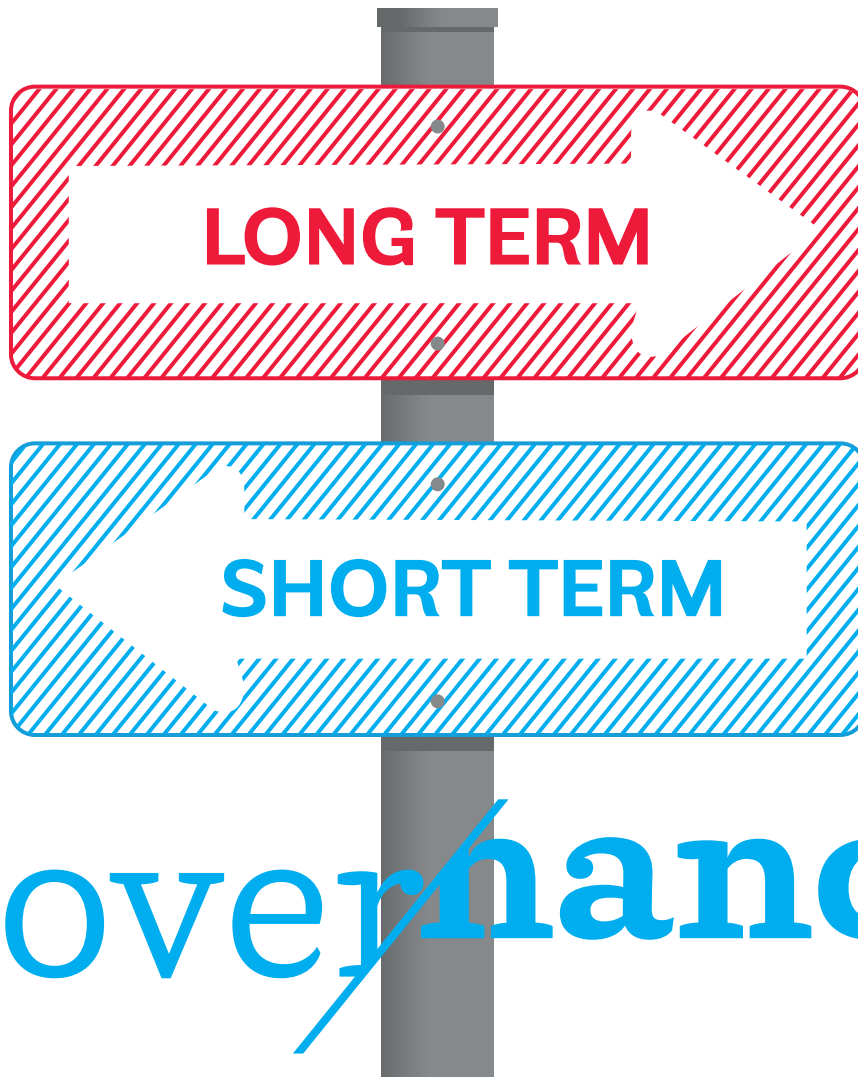




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Focusing on the Short or Long term?
The Causes and Consequences of the Time Horizon
of Management of Dutch Listed Companies

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Research highlights

(1) The time horizon of Dutch companies is clearly different from that of US-based companies, which have a relatively strong short-term orientation. Specifically, Dutch firms on average seem to focus on the long term as much as on the short term in their communication to investors during conference calls.

(2) The long-term orientation of Dutch companies has become somewhat stronger over the past ten years.

(3) The time horizon of management differs between companies depending on the industry.

(4) The time horizon of Dutch companies is mainly determined by the type of owners of the company as well as by the use of incentive-based remuneration policies.

(5) Management's time horizon does not seem to influence decision making, which may reflect the Dutch corporate governance context, which provides management discretionary power to make strategic decisions relatively independently from demands of shareholders.

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Executive summary

Short-termism refers to the tendency of company management to take actions that maximize reported short-term earnings and stock prices at the expense of long-term company performance. It has received quite some attention lately, in the public as well as in the academic domain. The debate in these domains focuses on understanding the causes and consequences of short-termism. Research on these causes and consequences is still in its infancy and is almost exclusively based on data from companies in Anglo-Saxon countries. Yet, analyzing the causes and consequences of managerial decision-making related to the trade-off between short- and long-term outcomes may be equally important in different contexts. This certainly also holds for the Netherlands.

Eumedion has a particular interest in researching the causes and consequences of short-termism, because it would like to know whether and to what extent Dutch companies focus on creating short-term value. Moreover, it would like to know more about the causes and consequences of the time horizon applied by Dutch company management in the decision-making process. This may be helpful in determining whether and to what extent institutional investors can play a role in influencing the time horizon of management and its consequences. Therefore, it has requested the Institute of Governance and Organizational Responsibility (*iGOR*) of the University of Groningen to carry out a research project with the aim of identifying to what extent management of Dutch listed companies focus on creating short-term value, i.e. to what extent are corporate policies characterized by short-termism. As a response to the request made by Eumedion, the research in this report focuses on the following three main research questions:

(1) To what extent does management of Dutch listed companies focus on creating short-term value; (2) what are the determinants of short-termism; and (3) what are the consequences for corporate decision-making, financial performance and long-term value creation?

In answering these research questions, we first briefly discuss how short-termism has been defined and measured in the academic literature. This overview is used to decide how we can measure short-termism in the context of this research project. In our empirical analysis we measure short-termism by evaluating the extent to which companies talk in terms of short-term goals and value creation during conference calls with analysts and investors. We use content analysis to identify the extent to which company management communicates in terms

of short-term goals, which enables us to develop an explicit measure of the company's time horizon. In particular, we count the number of short-term oriented words and divide this by the number of long-term oriented words used during conference calls as our main measure of the time horizon of a company. A value above 1 means a company can be characterized as being short-term oriented; the higher the value for this measure, the stronger the short-term orientation. Using this measure allows us to explicitly link potential determinants of the time horizon of management to actual corporate decision-making and outcomes. We use information from 1,444 quarterly conference calls for a maximum of 60 companies over the period 2003-2016. To the best of our knowledge, we are the first using this approach to measure the time horizon of management and examine its causes and consequences outside the Anglo-Saxon context.

Our analysis first of all shows that the time horizon of Dutch companies significantly differs from US-based companies. According to a similar study using American data, the time horizon of companies in the US is clearly focused on the short term as the average value of our measure is 1.48. Instead, Dutch companies on average are focused somewhat more on the long term rather than on the short term, which is exemplified by the fact that the value of the time horizon measure we apply is 0.98. These results suggest that Dutch companies are much less focused on the short term relative to US companies.

Second, while the values for our measure do seem to go up and down during the period of investigation, and while they are different depending on the industry to which a company belongs, the general trend seems to be of a weakly increasing focus on the long term.

Next, we evaluate the potential determinants of the time horizon of company management. In particular, we focus on the importance of the ownership structure of the company, the extent to which the company is covered by financial analysts, the structure of remuneration policies, the structure of the corporate management and supervisory board and the demographic characteristics of its members, and the extent to which companies use defense mechanisms against hostile takeovers. We find supportive evidence that companies that (1) have relatively more long-term oriented owners; and (2) use more incentive-based remuneration policies, tend to have a stronger long-term focus. Our findings for ownership match earlier findings in the literature, indicating that when the interests of owners with a long-term horizon and company management are similar, this leads to a longer-term orientation of management. With respect to remuneration policies, our outcomes suggest that

in the Dutch context remuneration contracts of CEOs provide incentives to focus more on the long rather than on the short term.

With respect to potential consequences, we do not find evidence for an association between the time horizon used by company management when making decisions related to either a short- versus long-term focus, and measures of these decisions. In particular, earnings management (which is often associated with a short-term focus), R&D expenditures, expenditures on marketing and branding campaigns and corporate social responsible (CSR) investments do not seem to be affected by the time horizon of management.

One potentially important explanation for this result is that, although company management may feel the pressure to respond to calls to focus more on the short term (which is the outcome of the first step of our analysis), in practice it does not really influence decision-making with respect to activities with a longer-term time horizon. So, while they may respond to the pressure for creating short-term value in their communication during conference calls, it does not significantly change their strategic plans.

This interpretation seems to be in line with the Dutch corporate governance context. In the Dutch corporate governance system, the management board (i.e. the executives) decides on the strategy of the company. The supervisory board (i.e. non-executives) monitors the decision-making process. The management board needs to report to the shareholders about the strategy during the annual general meeting of shareholders (AGM). Shareholders have no legal right to directly interfere with the decision-making process. Shareholders only have the right to vote on a number of resolutions made by the board decisions that may lead to an important change regarding the identity of the company. In such a corporate governance context company management may have more discretionary power to make strategic decisions without being influenced by demands from shareholders.

Summarizing our main findings, the time horizon of Dutch companies is clearly different from that of US-based companies, which have a relatively strong short-term orientation. Specifically, Dutch firms on average seem to focus on the long term as much as on the short term in their communication to investors during conference calls. This focus has become somewhat stronger over the past ten years. The time horizon of management differs between companies depending on the industry. The time horizon of Dutch companies is mainly determined by the type of owners of the company as well as by the use of incentive-based remuneration policies. At the same time, management's time horizon does not seem to influence decision making, which may indicate the importance of the Dutch corporate

governance context, giving management discretionary power to make strategic decisions relatively independently from demands of shareholders.

Our study adds to the debate on the causes and consequences of short-termism. As mentioned, research on these causes and consequences is almost exclusively based on data from companies in Anglo-Saxon countries. We are the first providing an analysis of these issues outside the Anglo-Saxon corporate governance context. The analysis suggests that context matters with respect to the extent to which company management takes a short- or long-term orientation, as well as regarding the consequences such an orientation may have for decision-making. We propose future research should focus on extending the research by analyzing the causes and consequences of short-termism in different corporate governance contexts.

The debate on the time horizon company management and how this affects long-term value creation is not likely to wane in the coming years. To the contrary, discussions in the media, the policy arena, but certainly also in the boardroom about the long-term sustainability of business activities, are expected to become more pressing during the coming decades. It therefore seems likely that managerial time horizon, and its possible causes and consequences, will be an increasingly salient topic on the agenda of researchers, managers, and policy makers. With this in mind, and based on the research in this report, we put forward the following suggestions that help creating a long-term oriented time horizon of management. First, companies may seek to develop stronger relationships with shareholders having a long-term time horizon. Our research shows that having a larger investor base consisting of shareholders with a long-term interest in the company is associated with a stronger long-term orientation. Increased shareholder engagement may therefore be important in developing stronger relationships between management and shareholders. Second, remuneration policies matter. In particular, developing remuneration contracts focusing more on long-term value creation helps in shaping a long-term orientation of company management.

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1. Introduction

There is an ongoing debate in the media, as well as among politicians, regulatory authorities, investors and academics on whether company management focuses too much on short-term value (“investing for the next quarter”), an approach also coined as short-termism.¹ Short-termism is the tendency of company management to take actions that maximize reported short-term earnings and stock prices at the expense of long-term company performance (Levitt, 2000). In particular, the debate is about the extent to which a focus on short-term value negatively affects long-term value creation (McCahery et al., 2016). It has been argued that short-termism may reduce investments in projects that generate long-term returns, such as spending on research and development projects and branding campaigns (Brochet et al., 2015; DesJardine, 2016), whereas it may increase spending on investments and/or other decisions aiming at obtaining short-term returns, such as mergers and acquisitions, and laying off employees.

Proponents of reducing the pressure for short-term results argue that shareholders holding substantial stakes in a company should counterbalance this pressure by being more actively involved in supporting management decisions that focus on the longer term, for example by discussing strategic decisions directly with management and/or by voicing their interests at the annual general meeting of shareholders (AGM). One potentially important group of shareholders holding relatively large stakes are institutional investors. By being more actively involved, these investors would serve their own interests, because they are generally believed to invest in companies for the longer term.

In some countries proposals have been to reward long-term investors by offering them so-called loyalty shares with enhanced voting rights or cash flow rights. These shares are expected to increase investor activism and involvement in decision-making with a focus on the longer term. This increased involvement may help management to take decisions that create long-term value. For example, the French Florange Act (passed in March 2014) allows for the automatic granting of double voting rights to shareholder that hold registered shares of a company for at least two years (also known as loyalty shares), unless the company has prohibited the issuing of double voting rights in its by-laws.² Moreover, the Italian “Growth decree” (effective from 2014) enables companies to grant double voting rights to shareholders

¹ As an illustration, in 2011 the Secretary of State for Business, Innovation and Skills of the UK commissioned John Kay to evaluate the extent to which UK companies focus on achieving short- versus long-term financial goals (Kay, 2012). The implementation of the recommendations made in Kay’s review was evaluated in 2014.

² Source: ISS (undated), The Impact of Florange Act (France), see: <https://www.issgovernance.com/file/publications/impact-of-florange-act-france.pdf>, accessed June 13, 2017

(i.e. loyalty shares) to discourage short-termism and reward long-term shareholders. This Decree was initiated to help family companies get access to external finance without losing control to investors who may put pressure on management to focus more on the short rather than the long term. Finally, the initiatives of the European Parliament (in 2015) to amend the Shareholders' Rights Directive of 2007 and add proposals to allow companies to issue shares with enhanced voting rights, tax incentives, loyalty dividends and loyalty shares, show the increased efforts of policy makers to change the time horizon of both shareholders and company management.

It has been claimed that investor short-termism may resonate in the boardroom and influence decision-making, i.e. when managers feel the pressure to respond to requests from investors. In line with this, corporate management sometimes complains that many investors and analysts are too much focused on short-term value. According to a recent survey study, almost 65 per cent of executives and directors report that the pressure to show short-term results has increased over the past five years (McKinsey, 2017). But is this really the case? And even if this is true, why is it a problem? Does a focus on short-term value really compromise long-term value creation? In other words, what are the causes and consequences of managerial decisions to focus on the short- versus the long-term value creation?

Research focusing on these questions is scarce. In most of the available research data for Anglo-Saxon companies has been used. Yet, analyzing the causes and consequences of managerial decision-making related to the trade-off between short- and long-term outcomes may also be important in different contexts. This certainly also holds for the Netherlands. As an illustration, in 2016 the Dutch government decided that listed companies are no longer obliged to publish quarterly financial reports.³ Publishing these reports, according to some, drives a focus on short-term value. Related to this, according to the new Dutch Corporate Governance Code (2016), management boards of Dutch listed companies are expected to formulate a vision on long-term value creation and explicitly discuss this in their annual report. Moreover, several Dutch listed companies recently were confronted with activist shareholders who proposed selling parts of the activities and/or accepting takeover bids from competitors. Examples are Unilever (2017), AkzoNobel (2017) and ASM International (2017). This has led to a call for stronger protection of Dutch listed companies against activist shareholders by Dutch captains of industry as well as by politicians. At the same time,

³ This decision stemmed from the EU Transparency Directive (2013/50/EU). According to this Directive, as of January 1, 2016 listed companies are no longer obliged to publish quarterly reports.

investors and their representatives have made it clear that they feel Dutch listed companies are already well protected and that no further protectionist measures are needed.

In light of these recent developments in the Dutch context, the research in this report focuses on three main research questions:

(1) To what extent does management of Dutch listed companies focus on creating short-term value; (2) what are the determinants of short-termism; and (3) what are the consequences for corporate decision-making, financial performance and long-term value creation?

In answering these research questions, we first briefly discuss how short-termism has been defined and measured in the literature. This overview is used to decide how we can measure short-termism in the context of this research project. In our empirical analysis we measure short-termism by evaluating the extent to which companies talk in terms of short-term goals and value creation during conference calls with their investors. We use content analysis to identify the extent to which company management communicates in terms of short-term goals. By using content analysis of conference calls we develop a measure of the company's time horizon. This allows us to explicitly link potential determinants of, or pressure to focus on short-term results, to actual corporate decision-making and outcomes. This measure has been used elsewhere in the literature (see, e.g., Brochet et al., 2015; DesJardine, 2016; Flammer and Bansal, 2017).

Next, we evaluate the potential determinants of short-termism. In particular, we focus on the importance of the type of dominant shareholders of the company, the extent to which the company is covered by financial analysts, the structure of remuneration policies, the structure of the corporate management and supervisory board and the demographic characteristics of its members, and the extent to which companies use defense mechanisms against hostile takeovers.

We then dig deeper into the consequences of short-termism, that is how it is connected to policy decisions affecting long- rather than short-term value, such as investments in research and development (R&D), branding campaigns, investments in corporate social responsibility (CSR) projects, and human resource management policies, such as staff training programs and lay-off policies. Moreover, we analyze whether it also affects so-called earnings management behavior.

The remainder of this report is organized as follows. In section 2, we discuss the literature on short-termism. We provide an overview of what is meant by short-termism and

review the literature on its determinants and consequences for corporate decision-making and outcomes. The overview is used to derive testable hypotheses on determinants and consequences. In section 3, we discuss the research methodology and the data collection used to carry out the empirical analysis into the determinants and consequence of short-termism. The outcomes of the analysis are then discussed in section 4. The report ends with a discussion of the main conclusions and implications of the research outcomes in section 5.

2. Short-termism: A review of the literature

2.1 Defining short-termism

Decision-making by company management is confronted, at least potentially, with an important intertemporal tension. Whereas financial markets and managerial contracts may stress the importance of short-term success, societal demands tend to require decisions that stress long-term challenges. In many cases, the short-term and long-term demands made by the various stakeholders of the company may be conflicting. In the words of Smith and Lewis (2011, p.389): “The demands of today differ from the needs for tomorrow.” Balancing the present with the future is at the heart of intertemporal decision-making. In practice, companies deal with this balancing act in different ways. An interesting question, therefore, is what determines the choices company management makes in trading off present and future returns (Slawinski and Bansal, 2015, p.532). Moreover, it raises important questions regarding the consequences of these choices for the performance of the company in the short and long run.

Short-termism is the tendency of corporate decision-makers to take actions that maximize reported short-term earnings and stock prices, but that may be sub-optimal for long-term company performance (Laverty, 1996; Levitt, 2000; Brochet et al., 2015). Over the years, short-termism seems to have increased. In the 1970s the average holding period of shares was seven years. In the early 1980s it was reduced to only three years, whereas early 2010s it went further down to 7-10 months (Barton, 2011). Nowadays, around 70 per cent of all US equity trading is carried out by hyper-speed traders (Barton, 2011). Proprietary trades, hedge funds and high frequency traders are responsible for 72 percent of the daily share turnover in the UK (Kay, 2012). At the same time, institutional investors usually take a longer interest in a company. According to a recent study, institutional investors active on the Dutch stock market have low turnover in the largest part of their portfolio (De Roon and Slager, 2012).

It seems that there is a consensus that short-termism may endanger the long-term viability of individual companies as well as of society at large (Souder et al., 2016; Slawinski and Bansal, 2015). As Paul Polman, CEO of Unilever, put it: “...[t]oo many CEOs play the quarterly game and manage their businesses accordingly. But many of the world’s challenges cannot be addressed with a quarterly mindset” (Semuels, 2016). The potential economic and social costs of the short-term orientation of management have been acknowledged by academia as well as by policy makers. This has led to calls from investors to put more emphasis on a long-term orientation. For example in a recent appeal, Larry Fink, BlackRock's CEO, pleads for a more long-term perspective in periodical reporting. According to him,

“...CEOs should be more focused in these reports on demonstrating progress against their strategic plans than a one penny deviation from their EPS targets or analyst consensus estimates” (Turner, 2016).

Also policy makers seem to be inclined to stimulate company management to focus more on a longer term perspective. This certainly holds in the Dutch context, which is the focus of this report. For example, in the new version of the Dutch Corporate Governance Code of 2016 the Monitoring Committee has included best practices regarding the role of management and supervisory board in developing and communicating an explicit strategy on creating long-term value. This should include a discussion of the implementation of the strategy and its feasibility, its risks and opportunities and an explanation of how the interests of the company's stakeholders have been considered in developing the strategy. Moreover, Dutch Minister of Finance Jeroen Dijsselbloem openly questioned the role of quarterly financial reports. In particular, he pointed at the short-term pressures that publishing quarterly figures may at least potentially trigger.

In the academic literature, short-termism is also generally seen as a concern, because it may have adverse consequences for innovation, social and environmental interests and job opportunities. Investments in R&D, marketing and advertisement campaigns, CSR projects, and/or employee development programs do not maximize short-term profits, but they may be essential to creating long-term company value (Bansal and DesJardine, 2014; Slawinski and Bansal, 2015). Managers may reduce spending on R&D and innovation as a means to increase short-term profits (Bushee, 1998; Cheng, 2004; Manso, 2011). At the same time, however, this may undermine the company's long-term competitiveness (Ofori-Dankwa and Julian, 2001). Moreover, a focus on short-term profits may encourage managers to cut back spending on investment in new capital equipment (Souder and Bromiley, 2012), which may reduce the long-term viability of the company. A focus on short-term profits may also increase the willingness to invest in acquisitions (Gaspar et al., 2005), and underinvest in marketing and advertising campaigns (Mizik and Jacobson, 2007; Currim et al., 2012). Again, these decisions may contribute to reducing the long-term performance of the company.⁴

⁴ Admittedly, short-termism is not always necessarily bad. Active short-term oriented shareholders may at least potentially be effective monitors of management and generate short- as well as long-term benefits. Brav et al. (2008) find that activist hedge fund proposals are (partially) successful in two-thirds of the cases. According to their research, target companies experience increases in pay-out, operating performance, and higher CEO turnover after activism. Becht et al. (2010) study the consequences of interventions of the activist Hermes UK Focus Fund. They argue that this Fund executes shareholder activism predominantly through private interventions and provide evidence that it substantially outperforms benchmarks, which are largely associated with active shareholder engagements rather than with stock picking. Brav et al. (2015) investigate the long-term effect of hedge fund activism on the productivity of target companies. Target companies on average improve

Notwithstanding the potential corporate and societal costs short-termism may generate, there is empirical evidence suggesting that companies, under certain conditions, are inclined to focus their attention on the short term. Based on a survey among top management teams of US-based companies, Graham et al. (2005) reported that in fact roughly 80 percent of managers admit they would willingly sacrifice long-term performance to smooth earnings or meet short-term earnings targets. A recent study reports that 55 per cent of executives and directors say they are willing to postpone investments to improve quarterly results even if they know this may destroy value (McKinsey, 2017). Similar results are reported in a study by Brunzell et al. (2015).

2.2 Measuring short-termism

Studying the causes and consequences of short-termism requires a clear measurement of the concept. Several studies have made attempts to measure short-termism. The approaches used differ considerably. Some studies use surveys asking board members, such as CEOs, CFOs and/or board chairs, about their perceptions and choices concerning the trade-off between the short and long term in decision-making (Graham et al., 2005; Marginson and McAulay, 2008; Wang and Bansal, 2012; Brunzell et al., 2015). The outcomes of these surveys are then correlated with variables measuring the extent to which a company is exposed to financial market pressures demanding a focus on the short term, such as the presence/absence of active and long-term focused institutional investors, and/or with decision-making reflecting trade-offs between the short and the long term, such as CEO compensation design, dividend policy, long-term investments, hiring/layoff decisions, R&D expenditure, financial reporting practices and corporate governance design.

Yet, the usual problems related to survey-based data also apply in this case. That is, response rates usually are rather low, especially when directed to top management team members of listed companies. Moreover, respondents tend to provide socially desirable answers. In this case, this probably means that they underrate the short-term view they have in

production efficiency in the three years after an intervention from an activist hedge fund. These improvements are strongest when interventions are focused on changing the company's business strategy. Brav et al. (2015) conclude that their overall evidence shows that hedge fund intervention has a real and long-term effect on the value of target companies. Bebchuk et al. (2015) provide evidence that activist hedge funds create long-term value. In other words, short-term oriented activist shareholders may add value if they exert pressure for changes that contribute to long-term value creation. In contrast, long-termism is not necessarily good. Controlling shareholders who usually have a long-term interest in the company may focus on maximizing private benefits at the expense of minority shareholders, particularly when they hold voting rights in excess of their cash flow rights (Ben Ali, 2009). Some studies have shown that long-term shareholder interests do not necessarily align with creating long-term value (Fried, 2015).

practice. Finally, answers may be biased, because respondents may have difficulties in correctly remembering their perceptions with respect to trading off decisions focusing on the short and long term (DesJardine, 2016).

Other studies use accounting-based proxies, such as R&D expenditures, net capital expenditures and spending on advertisement campaigns to measure the time horizon used for decision-making (Bushee, 1998; Gibbons and Murphy, 1992; Cheng, 2004; Desyllas and Hughes, 2010; Chrisman and Patel, 2012; Souder and Bromiley, 2012; He and Tian, 2013; McKinsey, 2017; Martin et al., 2015). The problem with these accounting-based measures is that they are outcomes of short-termism, rather than actual measures of short-term behavior and perceptions of time horizon itself. That is, several of these studies focus on the relationship between antecedents such as shareholder characteristics, analyst following, CEO remuneration and/or CEO characteristics, and actual corporate policy decisions and outcomes, and argue that these outcomes are the result of the time horizon taken by the management of the company. Yet, time horizons are not really empirically measured in any of these studies. Thus, they directly link these antecedents to corporate outcomes, making assumptions about pressure to focus on the short-term, without actually measuring how pressure results into changing corporate behavior.

For example, McKinsey (2017) uses CEO tenure as an indirect measure of the time horizon of corporate management and finds that a longer CEO tenure is associated with higher capital expenditures. He and Tian (2013) show that the higher the company's coverage by analysts, the lower the level of its investments in innovation. Again, in this study the time horizon is included only implicitly by arguing that a higher coverage by analysts means a higher pressure to obtain short-term results. Other studies (directly) link various antecedents to earnings management (Balsam et al., 2002; Roychowdhury, 2006; Bhojraj, et al., 2009), capital investment (Benner and Ranganathan, 2012), mergers and acquisitions (Gaspar et al., 2005), corporate governance practices (Honoré et al., 2015), and advertising (Currim et al., 2012).⁵

Only a few studies have made attempts to more directly measure the time horizon preference of company management. These studies use voluntarily disclosed information provided by companies to measure the extent to which they communicate about the time horizon they predominantly have in mind when taking decisions. In particular, studies by Brochet et al. (2015), DesJardine (2016) and Kleinknecht and Muller (2017) use conference

⁵ We provide a more elaborate discussion of the content of some of these studies in section 2.4 in which we deal with the literature on the consequences of short-termism.

calls as a channel for voluntary disclosure of the company management's dominant time horizon. They apply content analysis using a dictionary of words related to the short and long term to develop a proxy for the disclosure horizon at the company level. These conference calls provide a wealth of information about how company management communicates with their investors and analysts about its time horizon and how they respond to questions about how they deal with the trade-off between short- and long-term value creation.⁶

In the empirical analysis of this report, we will use an approach similar to Brochet et al. (2015) and DesJardine (2016) to measure the short-term focus on company management of Dutch listed companies. By using text analysis of conference calls we develop an explicit measure of the company's time horizon. This allows us to explicitly link potential determinants of, or pressure to focus on short-term results to actual corporate decision-making and outcomes. The details of this methodology are discussed in section 3 of this report.

So, to conclude, whereas most studies directly link various company-level characteristics to managerial decisions and organizational outcomes without actually measuring short-termism as such, this study focuses on explicitly and directly measuring short-termism by using a method that aims at measuring how managers communicate about the time horizon they typically have in mind when taking decisions. This time horizon is assumed to influence the actual decisions they take.⁷

2.3 Determinants of short-termism

In this section we provide a concise overview of the literature on the potential determinants of short-termism. We use this overview to establish which determinants may be taken into account in the empirical analysis of this report (see sections 3 and 4).⁸

The empirical literature has explored several potential determinants of managerial short-termism. One dominant factor discussed in this literature is the role played by *financial market pressures*. Recent literature suggests that financial markets may place excessive pressures on managers to act in ways that overemphasize short-term results. Stock market pressure for short-term results may lead to undervaluing investments that will pay off only in

⁶ We elaborate on the advantages of using content analysis and apply this to a company's conference calls in section 3.1 when we explain our measurement of the time horizon of management.

⁷ As a final remark regarding the measurement of short-termism, it is important to note that decisions concerning the trade-off between the present and future are partly based on perceptions of company decision-makers and stakeholders with respect to what concerns the present and the future and whether and to what extent trade-offs between the two exist. This remark holds regardless of the approach one takes to measure short-termism.

⁸ Please note that the overview in this section is not intended to be exhaustive. We restrict the overview to the most influential and/or most recent contributions in the field of determinants of short-term behavior of company managers.

the long run, such as innovation (Holmström, 1989). At the same time, whether or not stock markets put pressure on managers to focus on the short term remains subject to debate. On the one hand, some studies show that companies investing in R&D experience positive stock price responses (Doukas and Switzer, 1992; Chan et al., 2001; Desyllas and Hughes, 2010; Honoré et al., 2015). On the other hand, several studies discuss problems related to asymmetric information, causing investors to disproportionately discount investments that have a pay-out in the long term (Marginson and McAulay, 2008, p.275).

The role of financial markets in pushing or, instead, relaxing short-termism is dependent on a number of other factors. One of these is the *type and characteristics of shareholders*. Studies have shown that characteristics such as institutional shareholder ownership (Bushee, 1998), shareholder horizons (Cadman and Sunder, 2014; Gaspar et al., 2005), shareholder turnover (Froot et al., 1992), shareholder cross-shareholdings (Shuto and Iwasaki, 2014) and block holder ownership (Edmans, 2009) may be important in determining the impact financial market pressure has on the time horizon of management. Also *media attention* may play a role in linking financial market activity on the one hand and the time horizon of management decisions on the other hand. A higher level of media attention may push managers to focus more on short-term returns to meet the expectations expressed in the media. Finally, the extent to which companies *voluntarily disclose* information may be related to the time horizon of management. Higher levels of disclosure improve the potential of monitoring management by stakeholders. With higher levels of disclosure the relationship between the interests of stakeholders in pushing for short-term or long-term returns and the time horizon of management may be stronger. So, disclosure influences the relationship between stakeholder incentives and managerial decision-making either for the short or long term.

Another channel through which company management may feel pressure to aim for the short term is *financial analysts* setting overly optimistic near-term earnings targets (Hong and Kubik, 2003). If these targets are not met stock prices may fall, resulting in lower levels of management compensation in case the company uses incentive-compatible remuneration schemes.

Moreover, it increases the risks of (hostile) takeovers, which raises management's level of job insecurity (Stein, 1989). Consequently, managers may prioritize short-term targets over longer-term value creation when making decisions (Thakor, 1990; Bebchuk and Stole, 1993) to satisfy financial analysts' expectations (Fuller and Jensen, 2002). This suggests that financial analysts and investors are believed to encourage managers to focus on achieving

short-term goals to the detriment of long-term outcomes (He and Tian, 2013). The relationship between financial analysts following the company and its time horizon is supported by DesJardine (2016) who shows that organizational time horizons shorten (lengthen) when analysts downgrade (upgrade) companies. This relationship turns out to be asymmetric, that is downgrades have a stronger impact on organizational time horizons than upgrades do.

Yet, some studies offer a competing view by arguing that managers themselves are the source of their own short-termism, while at the same time financial analysts and investors encourage managers to make long-term, rather than short-term investments (Brochet et al., 2012). According to this view, financial analysts may actually help extending organizational time horizons by reducing information asymmetry between managers and investors. Moreover, some studies show that managers are often short-term focused, even when investors are not and analysts and investors reward companies that make long-term investments (Brochet et al., 2012).

Several studies focus on the importance of *remuneration policies* in shaping the time horizon of company management. In particular, the use of bonus payments and options may create deliberate incentives for managers to focus on short- rather than long-term results (Cheng, 2004; Souder and Shaver, 2010; Currim et al., 2012; Flammer and Bansal, 2017). If managers' remuneration is linked to short-term goals, they may be tempted to forego investments that contribute to long-term value creation (such as R&D projects) and invest in projects that generate short-term results instead. Moreover, managers may choose projects with a short-term pay-off as a signal of performance to shareholders and/or to fence off the threat of a takeover. Such decisions by managers may be dictated even further by recent trends of increased managerial labor market mobility and higher levels of CEO turnover (DesJardine, 2016).

In particular, Currim et al. (2012) investigate to what extent executive compensation focusing on incentivizing a longer-term orientation has an impact on advertising and R&D spending. They find evidence that increasing the equity-to-bonus compensation ratio is positively associated with an increase in advertising and R&D spending as a share of sales. Moreover, increased spending on advertising and R&D as a result of the longer-term focus of management also leads to improving stock returns. Souder and Shaver (2010) analyze whether the pay-off horizon of stock options determines decisions regarding short- and long-term investments. They find that managers are more likely to make more short-term investments when they hold higher levels of exercisable stock options. Cheng (2004) looks at

the association between changes in R&D spending and changes in the value of CEO annual option grants and finds evidence that this relationship is particularly strong when the CEO is close to retirement and the company is faced with a small decline in its earnings. Based on these results, he concludes that boards respond to potential opportunistic reductions in R&D spending by effectively using remuneration incentives. Flammer and Bansal (2017) find strong evidence that providing long-term incentives to managers in terms of long-term executive compensation improves company performance. In particular, they show that companies that use long-term incentives have higher levels of R&D investments and are more engaged in CSR projects.

Other studies have focused on *board effectiveness* (or board quality) and its impact on managerial time horizons. Gonzalez and André (2014) find that more effective boards are associated with lower levels of short-term risk, which they associate with a focus by management on projects with higher long-term returns. The main argument for the positive association between board effectiveness and better long-term results is that these types of boards are better in monitoring management and holding them accountable for their decisions. This is assumed to contribute to a stronger focus on a longer-term orientation of decision-making by corporate boards.

Yet another line of research investigates the association between company-level *anti-takeover measures* and the time horizon of management. These studies argue that if management feels protected by anti-takeover measures against outside involvement and pressure that pushes for certain (short-term oriented) decisions, it may have more discretionary power to choose projects that have a longer-term value-creating impact. Evidence supporting this view is supported by Chemmanur and Tian (2017). They study the effect of anti-takeover provisions on innovation and find a positive, causal effect of these provisions on innovation. This positive effect is stronger when companies are subject to higher levels of information asymmetry and/or operate in more competitive product markets. Their results suggest that anti-takeover measures stimulate innovation by insulating managers from pressures from investors to focus on the short term. In a related study Chemmanur and Jiao (2012) find that executives of companies using dual-class share structures have more opportunity to focus on value maximization without distractions from outsiders. Kacperczyk (2009) also looks at anti-takeover provisions to analyze whether a shift towards (higher levels of) these provisions changes the focus of managers towards more long-term value creating investments. He finds evidence that an increase in anti-takeover measures leads to higher corporate attention to community and the natural environment and that shift in attention is

associated with an increase in long-term shareholder value. Again, this result suggests that anti-takeover measures may insulate managers from short-term pressures stimulating them to focus more on long-term value-creating projects.

Some studies stress the importance of *industry-level characteristics*. Companies in some industries are more dependent on business cycles than companies in other industries. To begin with, the extent to which sales are dependent on cyclical (or anti-cyclical) trends may determine the time horizon of managerial decisions. That is, the more a company's sales depend on the business cycle, the shorter the time horizon of management will be. The stronger dependence on these cycles makes planning for the future more difficult. Next to the cyclical character of an industry, the competitiveness of an industry may have an impact on the time horizon of management. The higher the level of competition within an industry, the shorter the time horizon of management will be. Nadkarni and Chen (2014) show that the introduction of new products depends on the industry, in combination with the predominant temporal focus of the CEO (that is, the past, present or future).

With respect to *CEO individual-level characteristics*, there is quite an extensive literature on the determinants of time horizon in decision-making based on individual/personal characteristics. Empirical studies in this literature point at behavioral biases influencing decision-making and the trade-off between the short and long term. Examples of these behavioral biases are loss aversion, hyperbolic discounting, and procrastination (Frederick et al., 2002). Cultural differences may also influence individual preferences for short- versus long-term decision-making. Shao et al. (2013), for example, show that managers in individualistic countries invest more in long-term assets, and in particular in R&D projects, as compared to managers in collectivistic countries. Personal characteristics such as experience of being a top manager, age, time to retirement, the size and nature of the outside network, etc. have been used as proxies for the extent to which a CEO is able to act and think independently and/or is powerful when it comes to taking decisions (Van der Laan et al., 2010). These characteristics may be instrumental in being able to resist pressure from shareholders, analysts and other market participants to choose projects that contribute to short-term success.

2.4 Consequences of short-termism

After having discussed the potential determinants of the focus of management on short-term returns, we are also interested in analyzing the potential consequences of such a focus. What type of decisions may be expected if management's time horizon is focused more on the short

rather than on the long term? In this section we discuss the literature on the consequences of short-termism. This discussion is instrumental for determining the variables we may focus on when we want to analyze the potential consequences of short-termism in the case of management of Dutch companies (see sections 3 and 4).⁹ In particular, we discuss earnings management practices, R&D expenditures, mergers and acquisitions, strategies focusing on sales growth, expenditures on marketing and branding campaigns, and CSR investments as potential company-level decisions that may be affected by a focus on short-term returns of its management.

Several studies have investigated and found evidence that *earnings management* is a practice that tends to be associated with managers being short-term oriented (Balsam et al., 2002; Bhojraj et al. 2009; Roychowdhury, 2006). In the literature, earnings management tends to be associated with deliberately reporting corporate results in ways that short-term outcomes look better. Other studies have shown that *R&D expenditures*, innovation and investments new capital equipment are lower in case of a short-term focus of management (Bushee, 1998; Manso, 2011; He and Tian, 2013; Benner and Ranganathan, 2012). These types of expenditures are typically seen as creating value in the longer-term. Honoré et al. (2015) investigate the relationship between corporate governance practices installed to align shareholders' and managers' interests, and R&D expenditures. The results suggest that the presence of anti-takeover devices and voting rights restrictions, and an incentive-based remuneration contract for the top management team have a negative association with R&D expenditures. In other words, governance practices that are designed to respond to the short-term expectations of financial markets are detrimental to long-term R&D investments.

Short-termism has also been associated with higher activity with respect to *mergers and acquisitions* (Gaspar et al., 2005), corporate strategies focusing on *increasing sales growth*, which is typically a short-term corporate strategy, instead of improving profit margins per unit sold. To succeed achieving the latter requires investments in product innovations and improvements, which demands a longer-term orientation (Aghion and Stein, 2008).

Asker et al. (2015) investigate whether short-termism distorts *investment decisions*. In their analysis, they compare the investment behavior of similar public and private companies and find that public companies invest substantially less and are less responsive to changes in

⁹ Again, please note that the overview in this section is not intended to be exhaustive. Similar to the overview provided in section 2.3, we restrict the overview in this section to the most influential and/or most recent contributions in the field of the consequences of short-term behavior of company managers.

investment opportunities. They take this as evidence for the fact that pressure from short-term oriented investors forces management to focus less on long-term value creation.

A short-term time horizon may also be associated with more active *corporate restructuring* (Salter, 2013). In particular, decisions to lay-off employees and cuts in production may reduce costs and increase profits in the short-run. Also, cutting *expenditures on marketing, advertisement and branding campaigns* is a short-term strategy as the pay-off from these activities generate higher income only in the longer run (Chapman and Steenburgh, 2011; Mizik, 2010; Mizik and Jacobson, 2007; Currim et al., 2012).

Finally, a number of studies have addressed the question whether short-termism of management affects decisions regarding *CSR investments*. These studies suggest that this type of investment projects gets less attention when management is focused more on short-term results (Fabrizi et al., 2014; Frye et al. 2006; Mahoney and Thorne, 2005; McGuire et al., 2003; Graafland, 2016). In other words, they conclude that when managers focus predominantly on the short term and systematically favor investments in projects that generate short-term profits, this leads to lower levels of investment in CSR projects.

2.5 Causes and consequences of short-termism: A summary

Figure 1 summarizes the discussion of the previous two sub-sections. It shows the three main components on which we will focus in the empirical part of this report.



Figure 1: Graphical expression of the research set-up

Starting from the middle part of the figure, we first deal with the measurement of the time horizon of the management of Dutch listed companies. Next, we focus on analyzing the determinants of the time horizon of company management. Based on the discussion of previous literature (and driven by data availability) we focus on the type and characteristics of shareholders of the company, financial analysts following and monitoring company

performance, the structure of CEO remuneration, the presence of anti-takeover measures, industry-level characteristics and CEO personal characteristics. Finally, we investigate the potential consequences of the time horizon of management. Again, based on the discussion of the previous literature (and data availability), we evaluate company decisions and outcomes in terms of earnings management, R&D investments, marketing expenses, and CSR investments. In section 3, we discuss how we measure management's time horizon, followed by an empirical investigation of the determinants of the time horizon, as well as its consequences, in section 4.¹⁰

¹⁰ Only very few studies have followed the research strategy as described in figure 1. In appendix I, we briefly discuss three recent examples of empirical studies on short-termism that closely resemble the approach we take in this report. These studies can be viewed as reference points for the analysis in our research report.

3. Methods and data

3.1 Measuring management's time horizon

We measure time horizon (or short-termism) of management by applying two different approaches, one proposed by Brochet et al. (2015) and the other developed by DesJardine (2016). These authors apply content analysis to develop a measure of time horizon. Content analysis is a methodology that is applied to transform written text, spoken words or visual representations into quantitative (i.e. numerical) descriptions. These descriptions can then be used in empirical and statistical analyses.¹¹

In both Brochet et al. (2015) and DesJardine (2016) transcripts of quarterly conference calls of listed companies have been used to measure the extent to which company management communicates in terms of the short or the long term. Usually conference calls are organized on a quarterly basis and are used to communicate and discuss the earnings results with interested market participants, including institutional and individual investors, as well as buy- and sell-side analysts. The calls include a presentation during which the company's management highlights the most important developments regarding the financial results of the last quarter. In addition, the presentation also discusses earnings prospects for the near future. Conference call participants representing the company usually include the chairman, CEO and CFO. Occasionally, other executives participate, that is when they are asked to provide specific information about issues that affected the company's performance during the last quarter. A conference call generally ends with a question and answer (Q&A) session during which analysts and investors can ask questions with respect to the past and future earnings prospects of the company.

In both Brochet et al. (2015) and DesJardine (2016) the measure of time horizon is based on the number of words that are related to the short-term and long-term orientation as communicated during the conference calls. Using the transcripts of these conference calls to measure management's time horizon may be supported by pointing out that this form of communication is not fully managed. Whereas other forms of corporate communication, such as annual reports, press releases, website texts (e.g. announcements, blogs, etc.) and letters to the shareholders, may be used to manage the perceptions of stakeholders (Rhee and Fiss, 2014), this is less so for the information communicated during conference calls. The interactive nature of these calls results in more information being transmitted to the market as compared to using only quarterly reports. This particularly holds for the Q&A sessions, which

¹¹ See Krippendorff (2012) for an introduction on the use of content analysis in empirical research.

usually follow the presentation of management of the quarterly performance data and future plans. First of all, managers usually do not precisely know what type of information investors would like to receive when preparing quarterly reports and/or when using other channels to inform the market. During conference calls they may become aware of the demand for specific information from market participants and can react accordingly. Moreover, managers may not want to disclose specific information unless they are explicitly asked to do so (Hollander et al., 2010; Matsumoto et al., 2011). We therefore conclude that transcripts of conference calls provide a more accurate representation of management's cognition of the time compared to other channels of communication (Li, 2010; Larcker and Zakolyukina, 2012).

Brochet et al. (2015, pp.1128-1129) use a dictionary of words related to the short and long term, which has been constructed after having read a considerable amount of text excerpts from conference calls transcripts referring to the company's time horizon regarding its corporate and investment strategy. After reading these text excerpts they select ten words related to the short term and 11 words related to the long term. After selecting these words, the validity of the dictionary is tested by asking individuals to rank the words (using a five-point Likert scale) regarding the extent to which they link the words to the short or the long term.¹² A one (1) refers to extremely short-term horizons, whereas a five (5) is associated with extremely long-term horizons. Words with an average score of 2.7 and below are classified as short-term oriented; words with scores of 3.3 and above are classified as long-term oriented. Words with scores in the range between 2.7 and 3.3 are neither classified as short- nor as long-term oriented and are therefore left out of the dictionary. Following this procedure, Brochet et al. (2015) end up with a dictionary of six short-term and five long-term oriented words. We use the same dictionary when analyzing conference calls of Dutch companies and classifying them as having either a short or long time horizon. The exact list of words in the dictionary following Brochet et al. (2015) is presented in Appendix II of this research report.

Based on the data construction as described above, Brochet et al. (2015) measure management's time horizon as the total number of words related to the short term divided by the total number of words related to the long term as disclosed by management during a quarterly conference call, that is:

¹² Brochet et al. (2015, p.1129, fn. 3) report that they sent an electronic survey to 170 business undergraduate and graduate students and asked them to rate words in their dictionary based on whether these words "...refer to the short or long time horizons for decision makers." The response rate of the survey was 47 per cent.

$$TIME_HORIZON_B = \frac{\text{Number of shortterm horizon words}}{\text{Number of longterm horizon words}}$$

Values of this time horizon measure above one suggest that a company is relatively short-term oriented, whereas companies with a value below one may be classified as having a relatively long-term oriented time horizon when taking decisions.

DesJardine (2016) uses a similar approach. He first creates a list of words that may be linked to the time horizon of managers by reading several publications published by companies, such as annual reports, press releases, websites and conference calls. The list of words this generates is supplemented by words related to time from dictionaries available in linguistic analysis programs such as Wordstat, Diction and LIWC. Next, the list of words is grouped into three categories by three researchers (including the author of the paper). DesJardine (2016) classifies words as either referring to the short or long term, or the time horizon is unclear. Words for which all three researchers agree on the time horizon are used in the dictionary. He then uses the list of key words to analyze the transcripts and based on the initial results he makes some additional corrections, such as deleting words that turned out to have a different meaning in context (e.g. the word “now”), not counting words if in combination with financial terms such as assets, debt, interest, etc., not double-counting words whenever they appeared in close distance in the text (e.g. “quarter-over-quarter”) and not counting words when discussed in combination with words such as no, not, never, etc. (DesJardine, 2016, p.78). The final list of words in the dictionary based on the approach of DesJardine (2016) is presented in Appendix II of this research report.

Using this final list of words, DesJardine (2016) measures management’s time horizon as the total number of words related to the long term divided by the total number of words related to the short and long term as disclosed by management during a quarterly conference call, that is:¹³

$$TIME_HORIZON_D = \frac{\text{Number of longterm horizon words}}{\text{Number of longterm} + \text{shortterm horizon words}}$$

Higher values of this time horizon measure indicate that a company has a more long-term time horizon when taking decisions. This means that the interpretation of the metrics for

¹³ As a final step, DesJardine (2016) tests the validity of the dictionary of words by asking six raters to read 10 randomly selected transcripts and rate them as either short- or long-term oriented based on the measure of time horizon. In 54 of the 60 cases the raters rated the transcript in line with his measure of time horizon.

time horizon based on the measure developed by DesJardine (2016) is opposite to the interpretation when using the measure proposed by Brochet et al. (2015). In order to facilitate ease of interpretation of empirical outcomes when using both time horizon measures, we transform the measure based on DesJardine (2016) by subtracting it from 1 (one) in the following way:

$$TIME_HORIZON_D = 1 - \frac{\text{Number of longterm horizon words}}{\text{Number of longterm + shortterm horizon words}}$$

In line with the measure of Brochet et al. (2015), higher values of this time horizon measure indicate that a company has a more short-term time horizon when taking decisions. In particular, values of 0.5 or higher indicate that a company's short-term orientation dominates.

In our research, we separately apply both measures as discussed above. We run content analysis on transcripts of quarterly conference calls of Dutch listed companies using the dictionaries of both papers to obtain two alternative measures of time horizon. We take this approach to check the robustness of the results, as the list of words to measure the short-versus long-term orientation of company management remains arbitrary at least to some extent. We apply content analysis procedures to the transcripts as a whole, as well as to the presentation part and the Q&A session separately.

3.2 Measuring the causes and consequences of management's time horizon

As discussed in section 2 we are interested in explaining what determines management's time horizon, as well as what consequences time horizon may have in terms of management behavior and decision-making. With respect to the causes of time horizon, we follow the literature and focus on the following variables.

3.2.1 Causes

We start by analyzing to what extent *type of ownership* is related to whether management takes a short- or long-term orientation. Based on previous research (see section 2), it has been argued that having a relatively large share of owners who are focused on long-term value creation is associated with company management feeling less pressure to focus on short-term outcomes, that is, they may have a stronger long-term orientation. In research it is typically assumed that owners with a long-term value orientation hold larger stakes in a company, hold

their stocks for a longer term, and/or belong to the category of institutional owners, such as pension funds, insurance companies, sovereign welfare funds, etc. (Zahra, 1996; Tyhanyi et al., 2003; DesJardine, 2016).

We measure owners' time horizon in a number of ways. To begin with, we calculate the number of shares held by investors in a company for three or more years divided by the total number of shares outstanding (*OWNSH_TIME*). The fact that shareholders have held company shares for several years may be an indication that these shareholders have a long-term interest in the company. The higher the share of stocks held for a longer period of time in the total stocks outstanding, the less company management may be pressured to focus on the short term. Next, we calculate the ratio of the shareholders holding shares for three or more years divided by the shareholders holding shares for less than three years (*OWN_CONC*).

Second, we investigate the impact of *analyst coverage* on the time horizon of management. As discussed in section 2 of this report, financial analysts may set overly optimistic near-term earnings targets (Hong and Kubik, 2003). If this is the case, with more analysts covering the company the pressure to put more emphasis on short-term value creation is assumed to be higher. Alternatively, financial analysts may also help extending organizational time horizons by reducing information asymmetry between managers and investors (Brochet et al., 2012). In this case, a higher number of analysts covering the company may induce a focus on the longer instead of the short term. We measure analyst coverage by taking the logarithm of the number of analysts following the company in each quarter (*ANALYST_LOG*).

Third, we analyze whether company-level anti-takeover measures are associated with management's time horizon. In section 2 we discussed research suggesting that management feels protected by anti-takeover measures against outside involvement and pressure that pushes for certain (short-term oriented) decisions. These measures provide more discretionary power to the management to choose projects that have a longer-term value-creating impact. Thus, anti-takeover measures insulate managers from short-term pressures stimulating them to focus more on long-term value-creating projects. The anti-takeover measures for which data are available are preference shares used as an anti-takeover device, depositary receipts for shares (or share certificates), priority shares (that is, shares having more voting power than common shares), and voluntary adoption of the large company rules. We take the number of company-level anti-takeover measures as a variable in the model to investigate the association between these measures and the company's time horizon (*TAKEOVER_DEF*). The higher the number of these measures, the longer the time horizon of management.

Fourth, we take into account the structure of the *remuneration of the CEO* as one of the potential determinants of the time horizon of company management. As suggested in the literature, the structure of the remuneration plan may be associated with the short- or long-term orientation of the decisions CEOs take. To begin with, this depends on the extent to which the CEO receives a large part of his/her remuneration in terms of variable bonus and/or options and shares. Moreover, it depends on whether criteria based on which the bonus and/or option and shares are determined focus on the short or long term. We use two measures to analyze this relationship. We create a variable measuring the extent to which a company applies an incentive plan for its CEO. This measure is defined as follows:

$$INCENTIVE_PAY = 1 - \frac{\text{Total fixed salary}}{\text{Total compensation}}$$

Moreover, we create a dummy¹⁴ variable that is 1 if the company uses options to reward CEOs, and 0 otherwise (*OPTIONS*).¹⁵

Finally, we use a number of *board characteristics* to explain the extent to which company management is focused on the short or long term. In particular, we look at CEO and chairperson characteristics as they are generally seen as most important in making decisions, both internally (in the boardroom) as well as by outsiders (e.g. various stakeholders, media, the general public). We take the number of years the CEO has been in his/her role as a proxy of experience (*CEO_TENURE*). We hypothesize that the longer someone has been CEO of a company, the better he/she will be able to develop company strategy and carry out plans independently from outside pressure. Next, we take the number of years the chair has been in his/her role as a proxy of experience (*CHAIR_TENURE*). Again, we hypothesize that the longer someone has been chair of a company, the better he/she will be able to carry out his/her role as monitor of the management and act independently from outside pressure. Finally, we include a measure of the number of other board positions the chair holds

¹⁴ A dummy variable is a variable that takes the value 0 or 1 to indicate the absence (0) or presence (1) of a particular categorical effect on the dependent variable in a regression model. Dummy variables are used to allocate observations into mutually exclusive categories. In our case here, the data on companies are split into one category of companies using options (that is, the dummy variable gets the value 1) and one category of companies using no options (the value of the dummy variable is zero).

¹⁵ We would have liked to be able to add more detailed information with respect to the short- and long-term orientation of remuneration plans offered to top managers and use this in our empirical analysis. In the literature, several methods have been developed to measure the short- and long-term components of remuneration plans; see, e.g. Gopalan et al. (2014) for measuring the time horizon of options offered to executives. Unfortunately, however, data allowing us to clearly distinguish between the short- and long-term components of these plans are not available.

(*CHAIR_OTHER_BOARDS*), which is an alternative measure of experience of the chair. The more outside board positions the chair has, the more experienced he/she will be to act independently from outside pressure.

3.2.2 Consequences

Turning to the potential consequences of the time horizon taken by company management, we first focus on analyzing to what extent a short-term orientation is associated with higher levels of *earnings management*. Earnings management refers to using accounting techniques to produce financial reports that present an overly positive view of a company's financial performance. Many accounting rules and principles require company management to make judgments. Earnings management takes advantage of how accounting rules are applied and creates financial statements that inflate earnings, revenue or total assets. Company management may decide to use earnings management techniques to smooth fluctuations in annual earnings as (large) fluctuations in these earnings may trigger undesirable responses from investors. In the literature it has been suggested that a stronger pressure on showing short-term results in higher levels of earnings management. The idea is that this type of behavior allows management to show better short-term outcomes. This leads us to hypothesize that our time horizon measure is positively associated with higher levels of earnings management.

When measuring earnings management we follow the approach taken by Brochet et al. (2015). We use two different variables for earnings management. Our first variable is discretionary accruals (*DISC_ACC*). This variable is measured based on the DeFond and Park (2001) model, in which abnormal working capital accruals are estimated by using company-specific accounting information to measure the difference between reported working capital and the market's expectations of the normal working capital required to support current sales levels. The difference between the two is assumed to be a measure of earnings management.

The second variable is a measure of small positive earnings surprises measured as a dummy variable that takes the value one if a company reports one cent higher earnings per share than the financial analysts' consensus forecast of earnings per share, and zero otherwise (*EARN_SURP*). The rationale of using this measure of earnings management is based on the assumption that management wants to show earnings similar to, or slightly above, earnings forecasts. Having earnings (clearly) below forecasts may provide a negative signal to investors. In a similar vein, having earnings (clearly) above forecasts may create positive expectations for future performance, which management may not, or cannot, meet.

Second, we investigate whether the time horizon of management affects decisions regarding *investments in research and development* (R&D). According the literature, companies that focus on the short term spend less on long-term value creating projects such as R&D investments. We therefore expect to find a negative association between our measure of the time horizon of management and R&D expenses. We create a variable measuring the total discretionary expenses on R&D (*R&D_EXP*), which is measured as the difference between total R&D expenses to total assets in the previous year (t-1) and the normalized value of R&D expenses. This value is estimated based on the following regression model, using industry average annual data:

$$\frac{R\&D_EXP_t}{total\ assets_{t-1}} = \alpha + \beta_1 \frac{1}{total\ assets_{t-1}} + \beta_2 \frac{total\ sales_{t-1}}{total\ assets_{t-1}}$$

Third, we relate our time horizon measure to a general measure of *selling expenses*. An important part of selling expenses is costs of advertising and marketing campaigns. Companies focusing on the short term are expected to spend less on these types of activities, since they generate more sales in the longer run only. We thus expect a negative association between management's time horizon and our measure of selling expenses. We use a variable measuring total discretionary selling, general and administrative expenses (*SGA_EXP*), which is measured as the difference between total SGA expenses to total assets in the previous year (t-1) and the normalized value of SGA expenses. Similar to our calculation for discretionary R&D expenses, this value is estimated based on the annual industry-level average SGA expenses, total assets and sales data.

Finally, we evaluate the relationship between a focus on the short term and the tendency of companies to invest in *CSR projects*. In particular, spending money on projects that: (1) improve the company's energy use, waste, pollution, natural resource conservation and animal treatment; (2) reduce environmental risks they may run related to their activities and processes; and (3) improve the company's business relationships in terms of investing in sharing similar values with its suppliers and customers, donating to the community, improving working conditions and employees' health and safety, may be reduced once the time horizon is more short-term oriented. Thus, we expect a negative association between our time horizon measure and measures of CSR projects. To measure the latter, we use so-called ESG (Environmental, Social and Governance) ratings (*ESG_RATE*) that have been used elsewhere in the literature to measure the extent to which a company is investing in CSR

projects. In the analysis in section 4 we also split the ratings into a rating for environmentally (*ENV_RATE*) and socially responsible (*SOC_RATE*) investments.

3.3 Control variables

In the multivariate analysis we control for a number of factors that may influence both the time horizon, as well as the consequences of the time horizon. These variables are included to reduce the effect of confounding variables on the dependent variables (that is, our time horizon variables as well as variables measuring the consequences of the time horizon) in the analysis. In particular, this allows for analyzing the relationship between a variable of interest (for example variables measuring the type of ownership) and the dependent variable (time horizon), while at the same time holding constant all other variables that may also influence the dependent variable.

The selection of control variables we use is based on previous research that is related to ours. In particular, we control for the profitability of the company by using two measures, that is, total net income divided by total book value of equity (*ROE*) and the market price of the company (i.e. the market price per share times number of shares outstanding) divided by the book value of shares outstanding (*MTB*). We also control for the leverage of the company, measured as the total value of outstanding debt divided by total assets of the company (*LEVERAGE*). In addition, we include a measure of the size of the company, measured as the logarithm of the value of its total assets (*SIZE*). Finally, we control for the impact of different years on our results by including year dummy variables. In particular, we create two time dummies, one that gets the value 1 for all years before 2007 and zero otherwise (*PRE_CRISIS*) and a second one that gets the value 1 for all years after 2009 and zero otherwise (*POST_CRISIS*).¹⁶

3.4 Model specification and estimation approach

We analyze the causes and consequences of management's time horizon using two separate multivariate regression models. In the first model we analyze whether the time horizon may be explained by the type of shareholders, the extent to which the company is being covered by analysts, the presence of anti-takeover measures, the use of incentive-based remuneration and

¹⁶ Several other variables used in related studies have not been used in our analysis due to lack of data. These variables are, among other things, measures of cash flow availability, operating risks and liquidity (Brochet et al., 2015).

a number of CEO and board characteristics. We use an ordinary least square (OLS) model where the dependent variable is our measure of time horizon.

We transform our time horizon measure by calculating for each company-year observation the difference between the value for the time horizon variable at the company level and the mean value for this variable for the industry to which the company belongs. By applying this transformation we control for the fact that the time horizon taken by management may be industry-specific. Some industries are inherently more short-term oriented than other industries depending on the type of activities carried out. For example, oil and mining companies by the nature of their activities have a longer time horizon than companies in the retail industry (DesJardine, 2016, p.73; Souder et al., 2016). Our approach allows what is generally felt as short-term or long-term oriented to vary across industries and time. This means that companies identified as being short-term oriented according to this measure are focused more on events that occur closer in the future than the mean company in the same industry during a specific year. Moreover, companies classified as having a long-term time horizon focus more on events further into the future than the mean company in the same industry during a specific year.

We use a number of different specifications of the time horizon variable. In particular, we apply: (1) a variable based on the dictionary and measurement proposed by Brochet et al. (2015); (2) a variable based on the dictionary and measurement proposed by DesJardine (2016); (3) a variable based on the dictionary of DesJardine (2016) but using the measurement proposed by Brochet et al. (2015); and (4) a variable based on the dictionary of Brochet et al. (2015) but using the measurement proposed by DesJardine (2016). We use these different variations of the dependent variable to check the robustness of our results. In the main results we only use the first and third of these four alternative measures of time horizon.¹⁷

We denote these two variables as $TIME_HORIZON_{BB}$ and $TIME_HORIZON_{BD}$, respectively. We run separate regressions for each of our measures of potential causes and consequences of short-term time horizons and add the set of control as discussed in section 3.3 to each of the regression models. We use OLS regression models controlling with Huber-White corrected standard errors.¹⁸ The models we use in the regression analysis may be specified as follows:

¹⁷ The results for the regressions based on one of the other two alternative measures are available on request from the authors of this report.

¹⁸ The inclusion of time and company fixed effects would result in a loss of a too large number of degrees of freedom.

$$TIME_HORIZON_{i,j,t} = \alpha + \beta\Pi_{j,t-1} + \gamma X_{j,t-1} + \varepsilon_{j,t-1} \quad (1)$$

$$\Psi_{j,t} = \alpha + \beta TIME_HORIZON_{i,j,t-1} + \gamma X_{j,t-1} + \varepsilon_{j,t-1} \quad (2)$$

The notations in equation (1) can be explained as follows: Π is a vector of variables that explain the time horizon measure in our model (e.g. measures of type of ownership, analyst coverage, the presence of anti-takeover measures, CEO remuneration and board (member) characteristics); X is a vector of control variables (e.g. company size, profitability and leverage); subscript i refers to one of the four alternative measures of time horizon; subscript j refers to a specific company; subscript t refers to a specific year; ε is the error term; α is the constant term; and β and γ are the estimated coefficients. All explanatory variables, except for the two crisis dummies, are lagged by one year to take into account the possibility of reverse causality.

In equation (2) Ψ is a vector of dependent variables measuring possible outcomes due to management's orientation towards the short or long term (e.g. earnings management, R&D expenses, sales expenses, and CSR investments); X is a vector of control variables (e.g. company size, profitability and leverage); subscript i refers to one of the four alternative measures of time horizon; subscript j refers to a specific company; subscript t refers to a specific year; ε is the error term; α is the constant term; and β and γ are the estimated coefficients. Again, all explanatory variables, except for the two crisis dummies, are lagged by one year to take into account the possibility of reverse causality.

Table 1 provides an overview of all explanatory variables included in equations (1) and (2), and the signs of the coefficients we expect to find based on our interpretation of the theories and variables used in the analysis.

Table 1: Overview of the variables used in the empirical analysis

Variable name	Explanation	Expected relationship with the dependent variable
<i>TIME_HORIZON_{BB}</i>	Time horizon variable based on Brochet et al. (2015), using the dictionary of words created by Brochet et al. (2015)	– with <i>R&D_EXP</i> , <i>SGA_EXP</i> , <i>ESG_RATE</i> , <i>ENV_RATE</i> , <i>SOC_RATE</i> + with <i>DISC_ACC</i> , <i>EARN_SURP</i>
<i>TIME_HORIZON_{BD}</i>	Time horizon variable based on DesJardine et al. (2015) using the dictionary of words created by DesJardine (2016)	– with <i>R&D_EXP</i> , <i>SGA_EXP</i> , <i>ESG_RATE</i> , <i>ENV_RATE</i> , <i>SOC_RATE</i> + with <i>DISC_ACC</i> , <i>EARN_SURP</i>
<i>OWNSH_TIME</i>	Number of shares held by investors in a company for three or more years divided by the total amount of shares outstanding	– with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>OWN_CONC</i>	Ratio of the shareholders holding shares for three or more years divided by the shareholders holding shares for less than three years	– with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>ANALYST_LOG</i>	Logarithm of the number of analysts following the company in each quarter	+/- with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>TAKEOVER_DEF</i>	Number of anti-takeover measures used by the company	– with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>INCENTIVE_PAY</i>	1 minus total fixed pay divided by total compensation	+/- with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>OPTIONS</i>	Dummy variable that is 1 if the company uses options to reward CEOs, and 0 otherwise	+/- with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>CEO_TENURE</i>	Number of years the CEO has been in his/her role	– with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>CHAIR_TENURE</i>	Number of years the chair has been in his/her	– with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>CHAIR_OTHER_BOARDS</i>	Number of other board positions held by the chair	– with <i>TIME_HORIZON_{BB}</i> and <i>TIME_HORIZON_{BD}</i>
<i>LEVERAGE</i>	Total value of outstanding debt divided by total assets	Control variable
<i>ROE</i>	Total net income divided by total book value of equity	Control variable
<i>MTB</i>	Market price per share times number of shares outstanding divided by the book value of shares outstanding	Control variable
<i>SIZE</i>	Logarithm of the value of its total assets	Control variable
<i>PRE_CRISIS</i>	Dummy variable that gets the value 1 for all years before 2007 and zero otherwise	Control variable
<i>POST_CRISIS</i>	Dummy variable that gets the value 1 for all years after 2009 and zero otherwise	Control variable
<i>DISC_ACC</i>	Discretionary accruals measured based on the DeFond and Park (2001) model	Dependent variable
<i>EARN_SURP</i>	Dummy variable that takes the value one if a company reports one cent higher earnings per share than the financial analysts' consensus forecast of earnings per share, and zero otherwise	Dependent variable
<i>R&D_EXP</i>	Total discretionary expenses on R&D measured as the difference between total R&D expenses to total assets in the previous year (t-1) and the normalized value of R&D expenses	Dependent variable
<i>SGA_EXP</i>	Total discretionary selling, general and administrative expenses measured as the difference between total SGA expenses to total assets in the previous year (t-1) and the normalized value of SGA expenses	Dependent variable
<i>ESG_RATE</i>	Environmental, Social and Governance ratings score based on information from ASSET4	Dependent variable
<i>ENV_RATE</i>	Environmental ratings score based on information from ASSET4	Dependent variable
<i>SOC_RATE</i>	Social ratings score based on information from ASSET4	Dependent variable

3.5 Data sources

Our initial sample includes all Dutch listed companies that appear on the AEX, AMX and ASX indices of the Amsterdam Stock Exchange. For these companies we collect all available quarterly conference calls for the period 2002-2016. Our data source for these conference calls is Factiva, a data provider that offers access to transcripts of conference calls of listed companies around the world. We delete transcripts in case company ticker information and/or dates of calls are missing. Moreover, we only select transcripts in the English language. In our final sample we have 1,444 transcripts of quarterly conference calls for a maximum number of 60 Dutch companies. This results in a maximum number of 481 company-year observations for our measure of company management's time horizon.

Table 2 presents summary statistics with respect to the conference calls. First, it shows that the number of observations for the conference calls is relatively low for the years 2002-2003 and 2016. Second, the table highlights that 62 per cent of the observations are from companies listed on the AEX. Third, the average length of conference calls over the sample period is relatively constant and fluctuates around 10,000 words; only in 2008 the average length of the calls is significantly longer (with 10,700 words). As expected, calls of AEX companies are significantly longer than those of AMX companies, except for the years 2004-2006. Finally, the table reveals that the Q&A sessions are on average almost 1.75 times longer than the presentation parts of the conference calls. Consequently, the content of these Q&A sessions may play a relatively more important role in the measurement of the time horizon variables we use in the analysis.

We match the data for the transcripts with company financial data from Datastream. We collect data from I/B/E/S with respect to the number of analysts covering the listed companies in our sample. Data on CSR are obtained from ASSET4, which is a module focusing on CSR activities provided by Datastream. Ownership data are obtained from the Thomson Eikon database. The data with respect to anti-takeover measures are provided by Eumedion, covering the period 2006-2016. Finally, information with respect to boards, board demographics and executive remuneration are taken from BoardEx. This is an extensive data source for research providing board-level information for a global set of companies. When matching the data from all these different sources and deleting companies for which insufficient data are available for the period 2002-2016, the final sample contains between 132 and 336 company-year observations, depending on the model specification. We would like to note that especially for the earlier years of the sample period (e.g. 2002-2004) data availability is relatively limited. Moreover, the number of observations also drops

significantly for some of the variables measuring the causes and consequences of short-termism due to the lack of information for these variables.

Table 2: Descriptive statistics of quarterly conference calls (CCs) of Dutch listed companies, 2002-2016

<i>Year</i>	<i>Number of quarterly CCs</i>	<i>CCs AEX companies</i>	<i>CCs AMX companies</i>	<i>Average number of words (all companies)</i>	<i>Average number of words (AEX)</i>	<i>Average number of words (AMX)</i>	<i>Average number of words (PRS)</i>	<i>Average number of words (Q&A)</i>
2002	17	13	4	8,512	8,982	5,598	2,723	5,789
2003	56	39	17	9,914	10,313	8,272	3,434	6,480
2004	91	60	31	10,335	9,920	11,737	3,642	6,693
2005	102	61	41	10,383	10,011	11,458	4,091	6,291
2006	104	61	43	10,014	9,933	10,386	3,804	6,210
2007	107	64	43	10,288	10,348	9,646	4,037	6,251
2008	112	64	48	10,747	11,137	9,904	4,021	6,727
2009	86	53	31	10,480	11,357	8,367	3,662	6,817
2010	106	69	37	10,095	10,274	9,433	3,575	6,520
2011	135	68	67	9,860	10,623	9,315	3,747	6,113
2012	122	72	50	9,528	10,336	8,206	3,525	6,003
2013	116	71	45	9,761	10,368	8,727	3,653	6,107
2014	118	75	43	9,526	10,290	8,457	3,472	6,054
2015	114	76	38	9,461	10,074	8,235	3,231	6,230
2016	58	36	22	9,365	9,992	8,339	3,025	6,340
<i>Total</i>	1,444	882	562					
<i>Average</i>				9,964	10,336	9,167	3,651	6,313

Source: Transcripts from conference calls of Dutch listed companies, obtained from Factiva.

Note: The data on conference calls of AMX companies presented in column [4] include observations from companies in our sample that were listed at the ASX. Because of the low number of observations of calls for these companies, we do not present them in a separate column.

4. Empirical results

4.1 Descriptive analysis

Table 3 shows the descriptive statistics of the variables used in the analysis. From these descriptive statistics it is first of all clear that most company-level observations are lost when we estimate models including variables measuring the *consequences* of the time horizon of management. Data availability for this type of variables is limited. This particularly holds for variables measuring R&D expenses (*R&D_EXP*) and selling, general and administrative expenses (*SGA_EXP*).

The table also shows that the sample average of the time horizon measure based on Brochet et al. (2015) (i.e. *TIME_HORIZON_{BB}*) is (slightly) below one. As explained earlier in section 3.1, values of this time horizon measure above one suggest that a company is relatively more short-term oriented, whereas companies with a value below one may be classified as having a relatively more long-term oriented time horizon when taking decisions. Our data therefore indicate that Dutch companies on average are focused slightly more on the long rather than on the short term. This result is corroborated by the sample average of the measure based on DesJardine (2016) (i.e. *TIME_HORIZON_{BD}*), which is just above 0.5. As was mentioned in section 3.1, values of 0.5 or higher indicate that a company's long-term orientation dominates. If we compare our results with those reported in Brochet et al. (2015) it is clear that Dutch companies are much less short-term oriented than US-based companies. In Brochet et al. (2015) the sample average of their time horizon variable is 1.48, whereas in our sample it is 0.98.

Table 4, panel A, first of all contains information about the number of companies for which we have data in each year. The number of companies per year varies from 9 (in 2002) to 42 (in 2011). As mentioned earlier, especially for the earliest year in the sample period (i.e. 2002-2004), transcripts of conference calls are not available. Moreover, the table provides descriptive statistics of both time horizon variables over the sample period. The highest value of our variable using *TIME_HORIZON_{BB}* is 1.265 (2002); the lowest value reported in the table is 0.853 (2011). The statistics in the table show that there is no clear trend with respect to the time horizon of Dutch companies. Whereas the time horizon (again using *TIME_HORIZON_{BB}*) appears to be relatively more short-term oriented for the years 2002-2003, 2005, 2008-2009, 2013 and 2016, the opposite is true for the remaining years. Yet the time horizon seems to be relatively more long-term oriented for the majority of the years in our sample period.

Table 3: Descriptive statistics
Full sample

<i>Variable</i>	<i>Observations</i>	<i>Mean</i>	<i>Standard deviation</i>	<i>Minimum value</i>	<i>Maximum value</i>
<i>TIME_HORIZON_{BB}</i>	481	0.980	0.739	0.056	9.500
<i>TIME_HORIZON_{BD}</i>	481	0.555	0.157	0.095	0.947
<i>OWN_EUMEDION</i>	319	0.105	0.107	0.000	0.729
<i>OWNSH_TIME</i>	354	0.397	0.247	0.000	1.390
<i>OWN_CONC</i>	354	0.723	0.270	0.000	1.000
<i>ANALYST_LOG</i>	426	3.082	0.548	0.693	3.970
<i>TAKEOVER_DEF</i>	286	1.591	0.861	0	4
<i>INCENTIVE_PAY</i>	402	0.544	0.216	-0.625	0.942
<i>OPTIONS</i>	406	0.623	0.485	0.000	1.000
<i>CEO_TENURE</i>	407	4.927	5.288	0.000	39.800
<i>CHAIR_TENURE</i>	411	4.515	4.443	0.000	29.300
<i>CHAIR_OTHER_BOARDS</i>	410	3.029	1.677	1.000	9.000
<i>LEVERAGE</i>	399	0.259	0.148	0.000	0.741
<i>ROE</i>	400	0.090	0.324	-3.532	1.158
<i>MTB</i>	398	2.381	2.508	-22.936	13.706
<i>SIZE</i>	400	16.082	1.911	11.976	20.999
<i>PRE_CRISIS</i>	481	0.266	0.442	0.000	1.000
<i>POST_CRISIS</i>	481	0.522	0.500	0.000	1.000
<i>DISC_ACC (*1,000)</i>	287	-72,848	1544,177	-1360,000	6987,959
<i>EARN_SURP</i>	425	0.066	0.248	0.000	1.000
<i>R&D_EXP</i>	159	0.037	0.579	-2.110	3.884
<i>SGA_EXP</i>	159	-0.012	0.065	-0.491	0.160
<i>ESG_RATE</i>	301	81.310	20.454	3.450	98.140
<i>ENV_RATE</i>	301	74.218	23.261	10.290	97.460
<i>SOC_RATE</i>	301	80.206	18.657	5.580	98.170

Note: for explanations of the abbreviations used, see the main text and the content of table 1.

Table 4 – Panel A: Descriptive statistics of the time horizon variable per year

Number of companies	Year	<i>TIME_HORIZON_{BB}</i>		<i>TIME_HORIZON_{BD}</i>	
		Mean	Standard deviation	Mean	Standard deviation
9	2002	1.265	0.573	0.464	0.103
24	2003	1.187	0.984	0.525	0.173
27	2004	0.916	0.587	0.564	0.151
35	2005	1.004	0.728	0.560	0.183
33	2006	0.997	0.700	0.559	0.184
38	2007	0.863	0.520	0.577	0.157
34	2008	1.008	0.673	0.550	0.169
30	2009	1.023	0.684	0.547	0.171
33	2010	0.919	0.651	0.572	0.167
42	2011	0.853	0.630	0.589	0.158
41	2012	0.935	0.502	0.549	0.133
36	2013	1.106	1.534	0.561	0.161
34	2014	0.975	0.537	0.540	0.133
31	2015	0.885	0.410	0.556	0.124
34	2016	1.068	0.666	0.526	0.146

The descriptive statistics for the variable *TIME_HORIZON_{BD}* provide a stronger support for the fact that Dutch companies have a relatively more long-term orientation. In all years, except for 2002, the value for this variable is above 0.50, indicating that companies are more long-term than short-term oriented. Fluctuations of the values for this variable are also more limited, ranging between 0.525 (in 2003) and 0.589 (in 2011).

Table 4, panel B, provides descriptive statistics of the two time horizon variables per industry/sector. The classification of companies into sectors is based on the Fama-French 17-sector classification.¹⁹ The table shows that the short-term orientation of management is strongest for companies in the steel and processing steel industry, and the machinery and business equipment industries: the average value of the time horizon variable (based on *TIME_HORIZON_{BB}*) is 2.111 and 1.453, respectively. Companies in these sectors are on

¹⁹ For some of these 17 industries we have no or only a few observations in the data set, which is why we present detailed information on only 11 industries.

average rather strongly focused on the short term compared to companies in the other industries for which the value of the time horizon varies between 0.6 and 1.1. Note that comparing our sector averages with those presented in Brochet et al. (2015) is very difficult, because they apply an industry classification using Fama-French 48 industries.²⁰

Table 4 – Panel B: Descriptive statistics of the time horizon variable per sector

<i>Number of observations</i>	<i>Sector</i>	<i>TIME_HORIZON_{BB}</i>		<i>TIME_HORIZON_{BD}</i>	
		<i>Mean</i>	<i>Standard deviation</i>	<i>Mean</i>	<i>Standard deviation</i>
50	Food	0.676	0.448	0.631	0.138
24	Oil and petroleum products	0.762	0.342	0.588	0.110
2	Textiles, apparel and footwear	1.069	0.361	0.491	0.086
13	Chemicals	1.147	0.353	0.476	0.066
20	Drugs, soap, perfumes, tobacco	0.820	0.237	0.558	0.069
28	Construction and construction materials	0.582	0.338	0.662	0.145
21	Steel, processing steel and other	2.111	0.998	0.369	0.169
57	Machinery and business equipment	1.453	0.674	0.439	0.122
39	Transportation	0.699	0.324	0.611	0.126
18	Retail stores	1.061	0.244	0.492	0.065
45	Banks and insurance companies	1.344	0.444	0.556	0.096
32	Other financials	0.678	0.660	0.643	0.131
132	Other	0.864	0.903	0.593	0.162

Table 5 provides further information about the time trend of the time horizon variable over the sample period. The data presented in table 4, panel A, are somewhat difficult to interpret as they are based on all data we have collected regarding the time horizon variable. Yet, for some years and/or companies the data are limited. We therefore use alternative ways to present our data. In particular, in table 5 we present data on the time variable using only observations from companies for which we have data for at least three consecutive years in the data set (panel A). Moreover, we show how the time horizon variable for this sub-sample

²⁰ The analysis in Brochet et al. (2015) is based on 17,783 company-year observations. Our sample is more than ten times smaller. Because of the large size of their data base, Brochet et al. (2015) are able to apply a much more fine-grained industry classification than the one we use.

of companies changes over time at the company-level by setting the value of the variable in 2003 at 100 (panel B).

Table 5 – Panel A: Descriptive statistics of the time horizon variable per year using companies with data for at least three consecutive years for *TIME_HORIZON*

<i>Number of companies</i>	<i>Year</i>	<i>TIME_HORIZON_{BB}</i>		<i>TIME_HORIZON_{BD}</i>	
		<i>Mean</i>	<i>Standard deviation</i>	<i>Mean</i>	<i>Standard deviation</i>
7	2002	1.197	0.503	0.473	0.095
21	2003	1.135	0.961	0.533	0.168
24	2004	0.984	0.587	0.543	0.147
31	2005	1.060	0.729	0.541	0.174
30	2006	0.944	0.608	0.563	0.171
36	2007	0.887	0.523	0.570	0.158
34	2008	1.008	0.673	0.550	0.169
30	2009	1.023	0.684	0.547	0.171
33	2010	0.919	0.651	0.572	0.167
36	2011	0.808	0.543	0.597	0.157
36	2012	0.912	0.452	0.551	0.123
34	2013	0.880	0.542	0.570	0.142
33	2014	0.991	0.537	0.536	0.133
29	2015	0.889	0.424	0.556	0.128
27	2016	1.002	0.603	0.539	0.146

As can be seen from the table, the values for both time horizon variables show (much) less fluctuations over the sample period compared to the information in table 4, which is based on the full sample of conference calls. In table 5, panel A, the highest value of *TIME_HORIZON_{BB}* is 1.197 (2002); the lowest value reported in the table is 0.808 (2011). Yet, similar to the data provided in table 4, the statistics in this table show that there is no clear trend with respect to the time horizon of Dutch companies. Whereas the time horizon (again using *TIME_HORIZON_{BB}*) appears to be relatively more short-term oriented for the years 2002-2003, 2005, 2008-2009, and 2016, the opposite is true for the remaining years.

Overall, the time horizon using $TIME_HORIZON_{BB}$ seems to be relatively more long-term oriented for the majority of the years in our sample period. The descriptive statistics for the variable $TIME_HORIZON_{BD}$ corroborate this conclusion. Again, in all years, except for 2002, the value for this variable is above 0.50, indicating that companies are more long-term than short-term oriented. The values for this variable are between 0.533 (in 2003) and 0.597 (in 2011).

Table 5 – Panel B: Descriptive statistics of an indexed time horizon variable per year (with $TIME_HORIZON$ in 2003=100) using companies with data for at least three consecutive years for $TIME_HORIZON$

<i>Number of companies</i>	<i>Year</i>	<i>TIME_HORIZON_{BB}</i>		<i>TIME_HORIZON_{BD}</i>	
		<i>Mean</i>	<i>Standard deviation</i>	<i>Mean</i>	<i>Standard deviation</i>
7	2002	114.394	49.981	101.414	24.397
21	2003	100.000	0.000	100.000	0.000
21	2004	112.327	44.124	102.041	19.547
21	2005	120.424	44.909	97.061	18.469
19	2006	107.668	37.218	102.972	22.588
22	2007	111.046	50.380	105.644	29.950
20	2008	133.404	91.740	97.967	23.414
17	2009	138.980	106.841	99.626	28.018
19	2010	127.864	115.069	104.900	32.320
18	2011	121.062	87.247	104.641	26.768
18	2012	130.254	105.220	107.974	39.836
16	2013	143.060	138.308	106.101	38.317
15	2014	119.953	65.737	108.228	44.379
14	2015	105.450	63.440	117.080	46.451
14	2016	103.951	67.460	115.386	42.491

Note: The number of companies included in this table is lower than in table 5 – panel A, because not all companies included in calculating the statistics presented in panel A had data for 2003, which is the base year for the calculations in this table.

Table 5 – panel B shows the time trend of our time horizon variables for companies for which we have data for at least three consecutive years in the data set by setting the value of the variable in 2003 at 100. Again, a clear time pattern is difficult to observe. Yet, using the

data for $TIME_HORIZON_{BB}$ we observe that especially during the crisis years and the first few years following the crisis, companies showed signs of a preference for the short term as indicated by the higher values on the indexed $TIME_HORIZON_{BB}$. To a certain extent, a similar pattern (in particular with respect to the crisis years) can be observed when looking at the data for $TIME_HORIZON_{BD}$ as indicated by the lower values for the index variable in these years.

Figures 1 to 3 plot the values of time horizon over time, using data from companies for which we have information for at least three consecutive years. These plots show how much our time horizon variable varies over time and how variation differs between companies and over time. We only show figures using the variable $TIME_HORIZON_{BB}$.²¹ Figure 1 provides information with respect to the evolution of the time horizon variable over the sample period. As already discussed, the value of this time horizon measure fluctuates over time. However, the overall trend seems to be that the value of the time horizon measure goes down, albeit only marginally. This suggests that, generally speaking, between 2003 and 2016 Dutch companies have become more focused on the long term. The figure also shows the value for this measure for the presentation and the Q&A session separately. The results seem to be largely similar to those of the overall measure.²²

²¹ Figures based on the alternative measures of time horizon ($TIME_HORIZON_{BD}$) are available on request from the authors.

²² Please note that the values for time horizon variable for the years 2003 and 2016 may be influenced by outliers, because of the relatively low number of observations (56 and 58, respectively; see also table 2) compared to the number of observations for the years 2004-2015.

Figure 1: Company management's time horizon measure 2003-2016 using information from companies with data for at least three consecutive years
(Measure: $TIME_HORIZON_{BB}$)

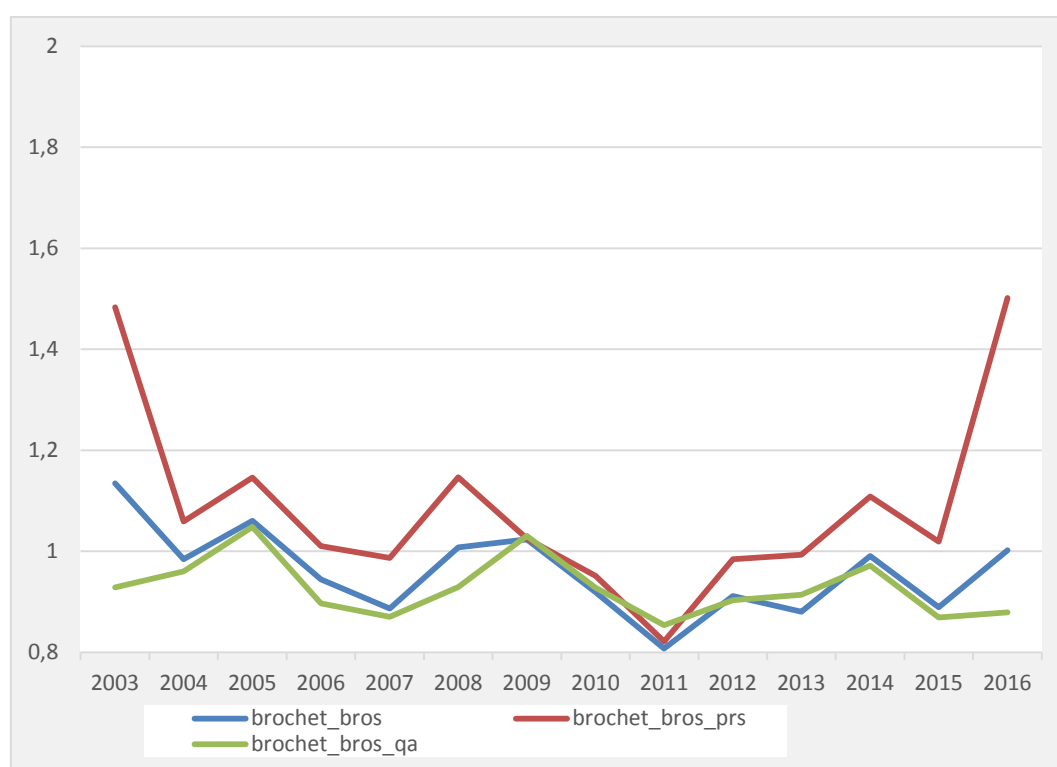


Figure 2, panels A and B, provide information on the evolution of the time horizon measure per industry.^{23,24} The figure shows there is quite some variation with respect to the value of this measure between different industries. At the same time, however, the figures do not show a clear pattern with respect to changes of the time horizon measure over time. Panel A of figure 2 shows data for the food, oil and petroleum, drugs, soap, perfumes and tobacco, and construction and construction materials industries. For companies in these industries the values of the time horizon measure are relatively low, that is, their short-term orientation is relatively low. Moreover, the figure suggests that the time horizon measure fluctuates rather strongly over time. It should be noted, however, that these fluctuations are actually relatively small, especially compared to the fluctuations of the time horizon variables for three of the five industries shown in panel B, as the scaling of the y-axis in the two panels differ

²³ We do not show data for companies in the textiles, apparel and footwear, chemicals, and retail industries because of the low number of observations. For these three industries we have less than 20 observations over the whole sample period. Moreover, we also do not show data for companies in the category of other industries due to the very diverse nature of companies in this category.

²⁴ We would like to emphasize that the number of companies representing each industry is generally rather small. As mentioned in section 3.5 we have data on quarterly conference calls for a maximum number of 60 Dutch companies only. Therefore, conclusions based on interpretations of the industry-level data should be taken cautiously.

considerably. The time horizon measure for the industries shown in panel A varies between 0.4 and 1.2; in panel B this is between 0.3 and 4.0.

As is shown in panel B of figure 2, for companies in the processing steel and the machinery and business equipment industries the values of the time horizon measure show relatively high levels of the time horizon measure, that is, their short-term orientation is relatively high. For companies belonging to the machinery and business equipment industry, the value of the time horizon goes down quite considerably over the sample period, meaning that their short-term orientation decreases over the sample period. The short-term orientation also goes down for the companies in the processing steel industry over the entire period of 2003-2016. However, during 2007-2011, which coincides with the global financial crisis and its aftermath, there is a clear upswing in the value of the time horizon measure. This suggests that companies in the steel industry changed their time horizon and became more short-term oriented due to the crisis.

Companies in the banking and insurance industry show an increase in the value of the time horizon measure between 2003 and 2008, indicating an increased short-term orientation leading up to the global financial crisis, but between 2009 until 2011 values drop to levels similar to the beginning of the sample period (that is, companies become less short-term oriented). From 2012 the values of the time horizon measure go up again. One potential explanation for this increased short-term orientation of banks and insurance companies during recent years may be the changing regulatory environment (such as the new proposals on international banking regulation, which have been dubbed Basle IV²⁵) and the uncertainty about the consequences this may have for their operations.

For other financial companies²⁶ and companies in the transportation industry the values of the time horizon measure are the lowest of all industries in our sample, that is, they have a relatively strong focus on the long term. Moreover, the values of the time horizon measure of these two industries remain relatively stable over the entire sample period.

²⁵ See KPMG (2016), available at <https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2016/12/world-awaits-basel-4-nears-completion.pdf>, accessed July 12, 2017.

²⁶ The group of other financial companies consists of real estate and equity and flow trading companies.

Figure 2 – Panel A: Company management’s time horizon measure 2003-2016 per industry using information from companies with data for at least three consecutive years
 (Measure: $TIME_HORIZON_{BB}$)

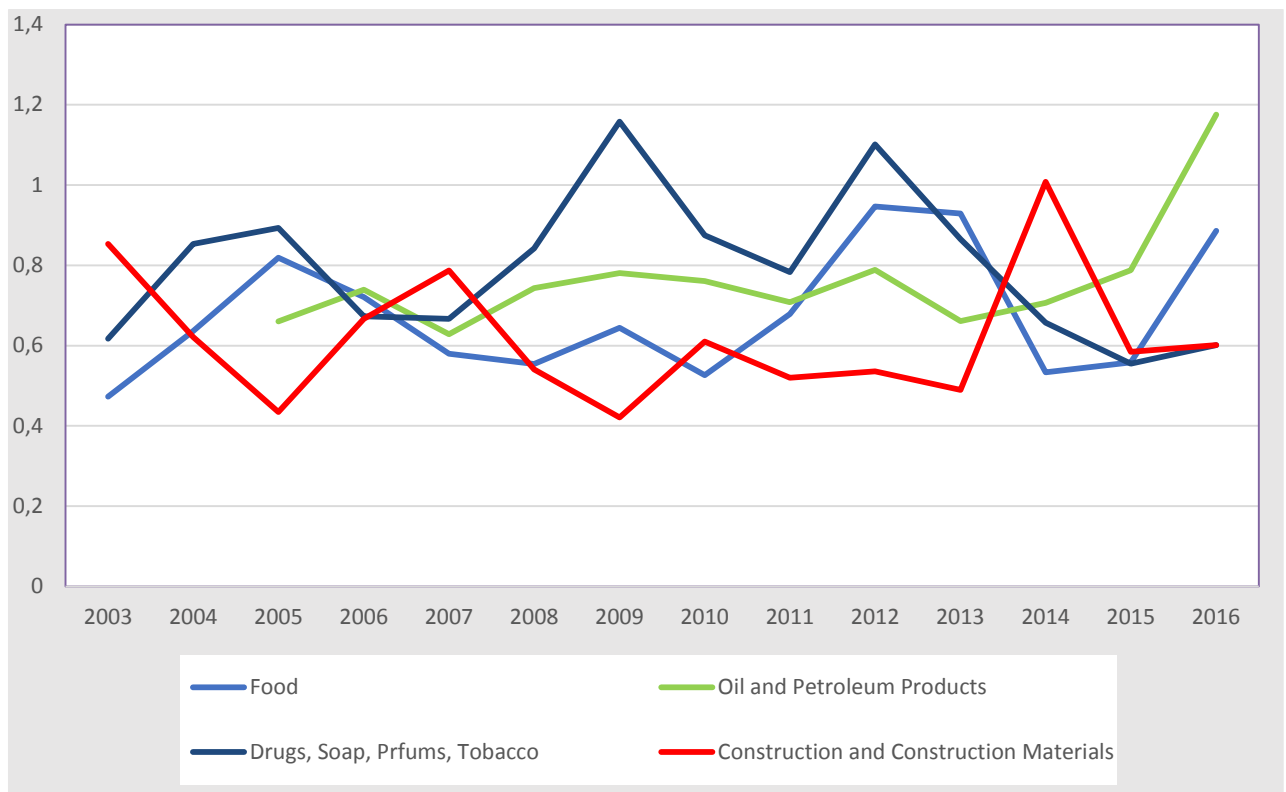


Figure 2 – Panel B: Company management’s time horizon measure 2003-2016 per industry using information from companies with data for at least three consecutive years
 (Measure: $TIME_HORIZON_{BB}$)

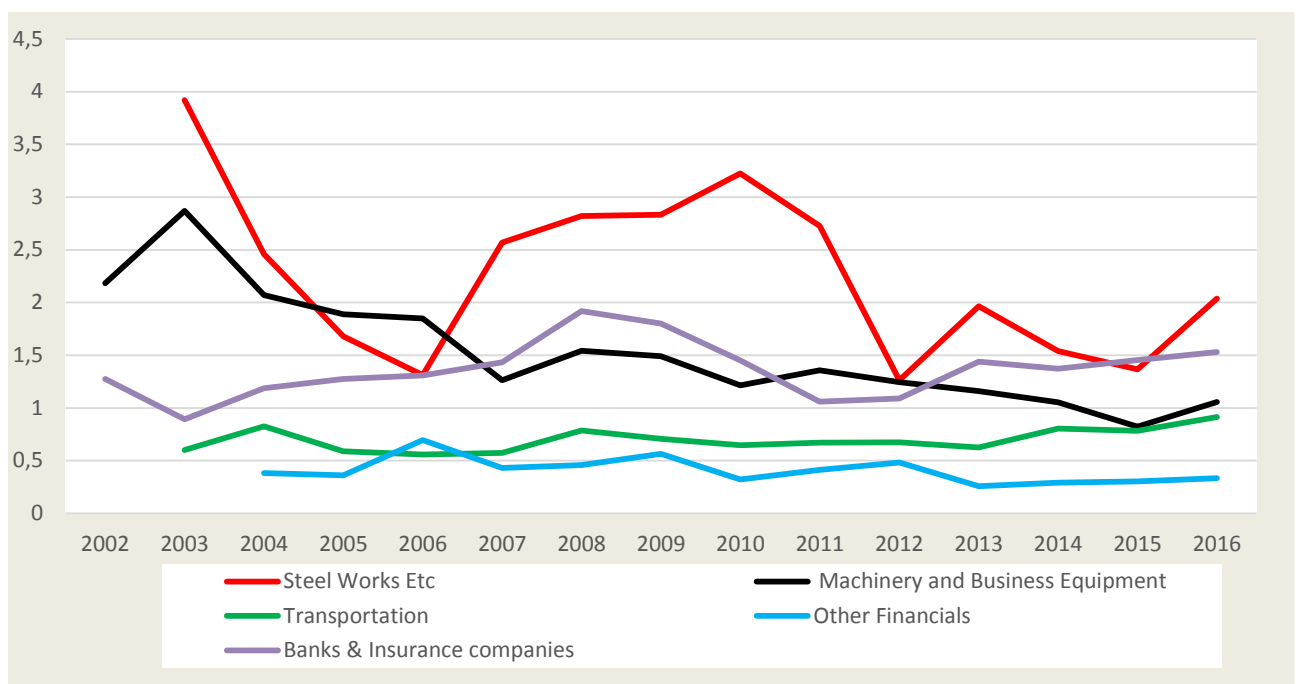
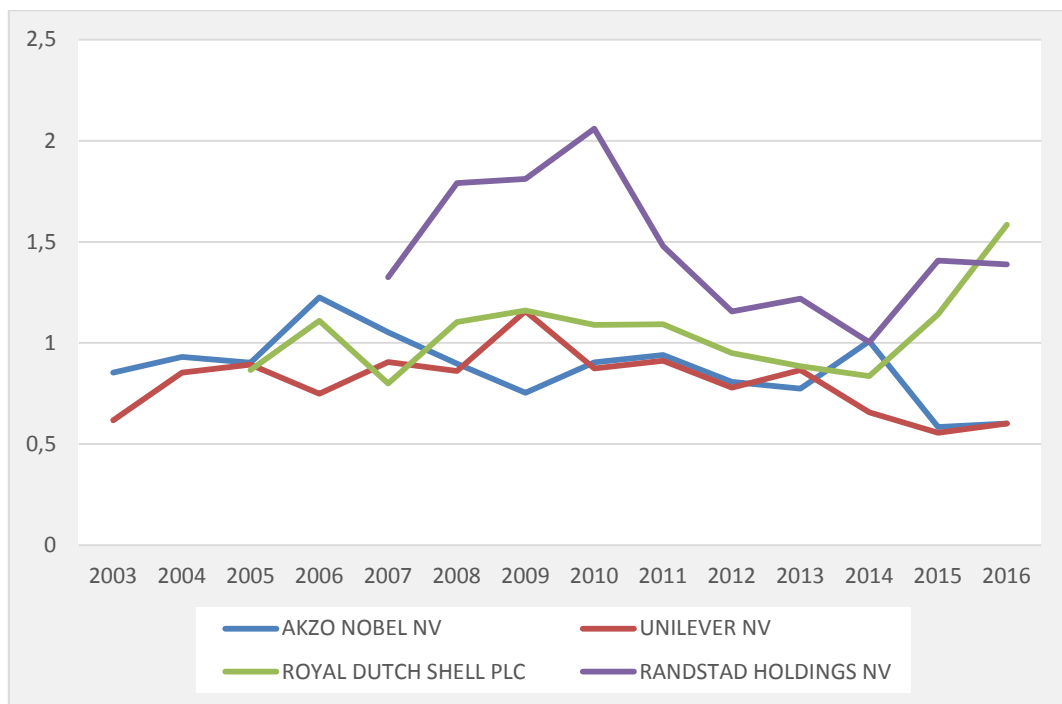


Figure 3 provides data on our measure of the time horizon of management for individual companies. In particular, we show the results for AkzoNobel, Unilever, Shell and Randstad. Unilever is selected because in 2010 its management announced it would change its time horizon by focusing more on long-term value creation. Figure 3 seems to provide some support for this change as the value of the time horizon decreases significantly from 2009 to 2016. AkzoNobel and Shell, two companies representing the chemical and the oil and gas industry, respectively, show strongly fluctuating values of the time horizon measure over the entire 2002-2016 period. This corroborates the findings shown for the industries they represent as a whole (see table 3). Finally, Randstad is a representative of the business services industry. As indicated in Brochet et al. (2015), companies in this industry typically show a (strong) short-term orientation. For Randstad this seems to be the case as well, although after 2010 its management significantly reduced its focus on short-term results.

Figure 3: Time horizon measure 2003-2016 for four companies
(Measure: $TIME_HORIZON_{BB}$)



Finally, table 6 shows the correlation matrix of the variables in our analysis. In panel A of this table we show the correlation of the variables we use to analyze the causes of time horizon. Panel B provides the correlations between variables used in the analyses of the consequences of management's time horizon.

Table 6, panel A, shows that the two measures of time horizon are highly correlated (0.78), which may be expected as they both measure the same phenomenon. Moreover, the ownership variables do not show strong correlation, which means they measure different dimensions of ownership. This supports our choice to look at these various ownership dimensions separately. The same holds for the variables measuring incentive-based pay. Correlation between measures of different causes of the time horizon appears to be low as well, allowing us to look at their joint contribution (that is, entering them jointly in our regression model specification) in explaining the time horizon of management. Finally, correlations between the control variables and the measures of ownership, anti-takeover measures, incentive-based pay and analyst following remain low as well, which means that multicollinearity in our empirical models does not seem to be problematic.

Table 6, panel B, shows the correlations for the measures of the consequences of the time horizon, the time horizon variables and the control variables used in the models. Correlations between the variables measuring the consequences are low, except for the different measures of CSR, which may be expected. Moreover, the measures of CSR show relatively high correlations with the size of the companies. Again, this may be expected, as the literature on CSR has shown that large companies on average are associated with higher efforts regarding CSR investments. All in all, however, the correlations shown in tables 6, panel A and B, do not give seem to give rise to problems of multi-collinearity.

Table 6 – Panel A: Correlation matrix of variables measuring the causes of the time horizon

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1 <i>TIME_HORIZON_{BB}</i>	1															
2 (<i>1-TIME_HORIZON_{BD}</i>)	0.962	1														
3 <i>OWNSH_TIME</i>	-0.237	-0.279	1													
4 <i>OWN_CONC</i>	-0.020	-0.055	0.558	1												
5 <i>TAKEOVER_DEF</i>	0.095	0.097	0.061	0.248	1											
6 <i>ANALYST_LOG</i>	0.149	0.200	-0.131	0.237	-0.106	1										
7 <i>INCENTIVE_PAY</i>	-0.209	-0.173	0.219	0.156	-0.084	0.245	1									
8 <i>OPTIONS</i>	0.247	0.246	-0.071	-0.159	0.079	-0.221	-0.070	1								
9 <i>CEO_TENURE</i>	0.030	0.022	0.318	0.254	-0.063	-0.018	0.147	0.203	1							
10 <i>CHAIR_TENURE</i>	-0.033	-0.060	0.051	0.211	0.043	0.044	0.136	0.039	0.093	1						
11 <i>CHAIR_OTHER_BOARDS</i>	0.111	0.092	0.142	0.088	-0.099	0.151	0.033	-0.003	0.270	-0.113	1					
12 <i>LEVERAGE</i>	-0.417	-0.389	0.111	-0.099	-0.196	-0.030	0.072	-0.274	-0.064	0.136	0.014	1				
13 <i>ROE</i>	-0.108	-0.103	0.127	0.149	0.004	0.068	0.377	0.074	0.072	0.152	0.025	0.060	1			
14 <i>MTN</i>	-0.175	-0.180	0.105	0.019	-0.154	0.078	0.402	-0.062	0.118	0.137	0.082	0.228	0.503	1		
15 <i>SIZE</i>	0.249	0.275	-0.305	0.068	0.004	0.665	0.053	-0.123	-0.155	-0.102	0.182	-0.145	0.098	-0.032	1	
16 <i>PRE_CRISIS</i>	0.126	0.135	-0.169	-0.172	-0.016	0.091	-0.041	0.134	0.047	-0.041	0.116	-0.035	0.070	0.022	0.105	1
17 <i>POST_CRISIS</i>	-0.066	-0.020	0.161	0.320	0.151	0.037	0.108	-0.257	0.010	-0.073	-0.057	-0.032	-0.004	0.004	0.051	-0.243

Note: Correlations equal to or greater than |0.10| are statistically significant at the 5 per cent level. N=193

Table 6 – Panel B: Correlation matrix of variables measuring the consequences of the time horizon

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1 <i>DISC_ACC</i>	1													
2 <i>EARN_SURP</i>	0.031	1												
3 <i>R&D_EXP</i>	-0.053	-0.011	1											
4 <i>SGA_EXP</i>	0.072	0.106	0.233	1										
5 <i>ESG_RATE</i>	0.001	-0.299	0.026	0.133	1									
6 <i>ENV_RATE</i>	0.013	-0.287	0.106	0.149	0.793	1								
7 <i>SOC_RATE</i>	0.073	-0.240	0.070	0.121	0.851	0.574	1							
8 <i>TIME_HORIZON_{BB}</i>	0.021	-0.119	0.162	0.142	0.196	0.254	0.118	1						
9 <i>1-TIME_HORIZON_{BD}</i>	-0.006	-0.131	0.182	0.128	0.231	0.312	0.117	0.956	1					
10 <i>LEVERAGE</i>	0.012	-0.054	-0.122	-0.343	-0.003	-0.049	0.137	-0.140	-0.141	1				
11 <i>ROE</i>	0.001	-0.024	0.041	0.112	0.288	0.187	0.179	0.146	0.095	-0.029	1			
12 <i>MTB</i>	0.037	-0.061	0.195	0.137	0.146	0.087	0.290	0.049	-0.035	0.156	0.474	1		
13 <i>SIZE</i>	-0.128	-0.201	0.092	0.064	0.568	0.499	0.468	0.403	0.489	0.057	0.141	-0.051	1	
14 <i>PRE_CRISIS</i>	0.065	-0.076	0.106	0.210	0.110	0.173	0.081	0.297	0.282	0.008	0.133	0.204	0.106	1
15 <i>POST_CRISIS</i>	-0.025	0.149	0.009	-0.104	0.044	-0.010	0.010	-0.134	-0.145	-0.016	-0.077	-0.197	-0.050	-0.508

Note: Correlations equal to or greater than |0.19| are statistically significant at the 5 per cent level. Please note that we use (1-*TIME_HORIZON_{BD}*) to facilitate better comparison with *TIME_HORIZON_{BB}* (both proxy for the degree of short-term orientation). Please also note that the correlation matrix in panel B is based on a smaller number of observations than the correlation matrix in panel A, because the number of observations for some of the variables measuring the consequences of the time horizon is considerably smaller; see table 3 with the descriptive statistics of the variables in this matrix.

4.2 Empirical results

4.2.1 Results for the causes of short-termism

We present the estimations of the models described in equation (1) using two specifications of the time horizon. In one specification we use the time horizon measure as developed by Brochet et al. (2015). We denote this measure as $TIME_HORIZON_{BB}$. In the other specification we use the time horizon variable specified as in DesJardine (2016). We call this measure $TIME_HORIZON_{BD}$. In both cases, we use the dictionary of short- and long-term words as suggested by Brochet et al. (2015).²⁷ As discussed in section 3.1, to facilitate ease of interpreting the results from the analysis, we transform the measure based on DesJardine (2016) in the following way:

$$TIME_HORIZON_{BD} = 1 - \frac{\text{Number of longterm horizon words}}{\text{Number of longterm} + \text{shortterm horizon words}}$$

In line with the measure of Brochet et al. (2015), higher values of this time horizon measure indicate that a company has a more short-term oriented time horizon when taking decisions. In particular, values of 0.5 or higher indicate that a company's short-term orientation dominates.

As was discussed in section 3.4, we transform our time horizon measure by calculating for each company-year observation the difference between the value for the time horizon variable at the company level and the mean value for this variable for the industry to which the company belongs. By applying this transformation we control for the fact that the time horizon taken by management may be industry-specific.

Table 7 shows the results of the models analyzing the *causes* of the time horizon of company's management. Panel A shows the results using $TIME_HORIZON_{BB}$ as our measure of time horizon. Panel B presents the results using $TIME_HORIZON_{BD}$ as our measure of time horizon. The estimation results in both panels show a number of interesting outcomes.

First, as is shown in panel A, we find a negative sign for the coefficient of the two *ownership* variables (see columns [1]-[2]), that is, our ownership variables and the time horizon measure as defined by Brochet et al. (2015) are associated negatively. For both

²⁷ We also run the models using the dictionary of words developed by DesJardine (2016). The estimation results of these analyses are available on request from the authors.

variables the coefficient is also statistically significant.²⁸ This finding is in line with our expectations, because it suggests that when long-term ownership is more prevalent, company management has a longer-term orientation.

Second, we find a negative (but statistically insignificant) association between the extent to which *financial analysts* are covering a company and produce forecasts about its profitability (see column [3]). Studies on the relationship between the time horizon of company management and analyst coverage usually stress that, as companies are followed more closely by market participants, this may pressure management to take actions that increase the probability that it meets or beats market expectations, that is, it may tend to focus more on the short term. In most cases, these studies use data from US-based companies. In the US context such a result may perhaps be expected. In the Netherlands, however, financial analyst coverage on average does not seem to be associated with the company's time horizon. Third, we find supportive evidence for the hypothesis that *incentive pay* provided to the CEO may affect the time horizon of management. In particular, we find a negative association between incentive pay for the CEO and our measure of management's time horizon (see column [4]). This result suggests that the more the CEO is paid in terms of variable bonus, options and/or shares, the more the management's focus will be on the longer-term. As suggested in the literature, the structure of the remuneration plan may be associated with the short- or long-term orientation of the decisions CEOs take. This depends on whether criteria based on which the bonus and/or option and shares are determined focus on the short or long term. Although we do not have detailed information about the criteria based on which variable remuneration is paid to CEOs of Dutch companies, our results suggest that criteria focusing on the long term are predominant. For our second measure of incentive-based pay, *OPTIONS*, a dummy variable indicating whether or not a company provides options to its CEO, we find no statistically significant results (again see column [4]).

²⁸ In the tables with results, statistical significance is indicated with *, ** or ***, showing whether an outcome is statistically significant at the 10, 5 or 1 per cent level; the lower the percentage, the stronger the support for a positive (negative) association between the dependent and independent variable.

Table 7 – Panel A: Determinants of management’s time horizon
***TIME_HORIZON_{BB}* as dependent variable**

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>LEVERAGE</i>	-1.097 [0.272]***	-1.154 [0.271]***	-1.145 [0.250]***	-1.18 [0.256]***	-1.031 [0.244]***	-1.077 [0.239]***	-0.996 [0.242]***	-0.842 [0.297]***	-0.889 [0.300]***	-1.624 [0.305]***	-1.434 [0.334]***
<i>ROE</i>	0.026 [0.144]	0.034 [0.147]	-0.088 [0.146]	0.099 [0.176]	-0.046 [0.139]	-0.015 [0.141]	-0.024 [0.142]	0.012 [0.164]	0.008 [0.166]	0.032 [0.174]	0.135 [0.191]
<i>MTB</i>	-0.013 [0.021]	-0.023 [0.020]	-0.002 [0.019]	0.009 [0.022]	-0.011 [0.020]	-0.026 [0.022]	-0.024 [0.022]	-0.03 [0.025]	-0.031 [0.025]	-0.044 [0.023]*	-0.04 [0.027]
<i>SIZE</i>	0.056 [0.020]***	0.081 [0.018]***	0.104 [0.027]***	0.079 [0.017]***	0.086 [0.018]***	0.078 [0.016]***	0.087 [0.018]***	0.095 [0.028]***	0.102 [0.027]***	0.074 [0.023]***	0.065 [0.030]**
<i>PRE_CRISIS</i>	-0.451 [0.161]***	-0.423 [0.143]***	0.042 [0.124]	0.037 [0.126]	0.042 [0.121]	0.003 [0.123]	0.016 [0.123]	-0.439 [0.222]**	-0.411 [0.211]*		
<i>POST_CRISIS</i>	-0.092 [0.098]	-0.039 [0.107]	-0.115 [0.086]	-0.132 [0.088]	-0.07 [0.086]	-0.054 [0.087]	-0.071 [0.086]	-0.089 [0.101]	-0.079 [0.118]	-0.114 [0.098]	-0.069 [0.105]
<i>OWNSH_TIME</i>	-0.496 [0.175]***							-0.198 [0.185]			
<i>OWN_CONC</i>		-0.433 [0.187]**							-0.118 [0.194]		
<i>ANALYST_LOG</i>			-0.202 [0.127]					-0.001 [0.106]	0.013 [0.105]		0.067 [0.181]
<i>INCENTIVE_PAY</i>				-0.654 [0.198]***				-0.44 [0.232]*	-0.475 [0.224]**		-0.455 [0.250]*
<i>OPTIONS</i>				0.114 [0.078]				0.121 [0.095]	0.122 [0.095]		0.097 [0.096]

Table continues on the next page

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>CEO_TENURE</i>					0.062		0.063	0.055	0.054		0.052
					[0.054]		[0.054]	[0.060]	[0.060]		[0.073]
<i>CHAIR_TENURE</i>						0.021	0.007	0.02	0.028		-0.023
						[0.055]	[0.055]	[0.062]	[0.064]		[0.061]
<i>CHAIR_OTHER_BOARDS</i>						0.137	0.076	0.098	0.084		0.171
						[0.094]	[0.093]	[0.116]	[0.113]		[0.112]
<i>TAKEOVER_DEF</i>										0.001	-0.022
										[0.070]	[0.082]
<i>CONSTANT</i>	-0.344	-0.634	-0.67	-0.616	-1.113	-1.04	-1.222	-1.129	-1.242	-0.6	-0.786
	[0.406]	[0.363]*	[0.314]**	[0.344]*	[0.373]***	[0.335]***	[0.393]***	[0.512]**	[0.468]***	[0.494]	[0.688]
<i>R</i> ²	0.19	0.18	0.15	0.21	0.15	0.16	0.16	0.25	0.25	0.3	0.33
<i>N</i>	242	242	300	280	286	287	282	208	208	180	169

Notes: The dependent variable is measured using content analysis of the quarterly conference calls of each company for each year based on the dictionary of words developed by Brochet et al. (2015). The specification of the time horizon measure is:

$$TIME_HORIZON = \frac{\text{Number of shortterm horizon words}}{\text{Number of longterm}}$$

The time horizon measure is transformed by calculating for each company-year observation the difference between the value for the time horizon variable at the company level and the mean value for this variable for the industry to which the company belongs, controlling for the fact that the time horizon taken by management may be industry-specific. This allows for what is generally felt as short-term or long-oriented to vary across industries and time. All explanatory variables (except for pre-crisis and post-crisis) are lagged by one year.

Numbers between brackets denote Huber-White standard errors. The significance levels are defined as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Fourth, we analyze the relationship between a number of *board characteristics* and the time horizon of company management. The results of these analyses are presented in columns [5]-[7]. We find no evidence of a positive or negative association between our measures of CEO and chair characteristics on the one hand and our measure of time horizon on the other hand. This suggests that these characteristics are less important in influencing the time horizon of the management of Dutch companies.

In columns [8] and [9] the impact of variables measuring ownership, financial analysts, incentive pay and CEO/chair characteristics as determinants of management's time horizon are jointly estimated. When measures of incentive-based pay are included in the models the results for ownership turn insignificant (the result for financial analysts and CEO/chair characteristics were already insignificant in columns [3] and [5]-[7], respectively), whereas the results for our measures of incentive-based pay are negative and significant. This suggests that of the determinants of time horizon we focus on in this report, incentive pay appears to be the most important. In other words, the tendency to focus on long-term results may be driven by long-term oriented investors, as well as by incentives provided to the CEO. Yet, the latter appears to be the more important determinant of the two.

In columns [10] and [11] we investigate the association between the time horizon and the presence of anti-takeover measures. As discussed in section 2 of the report, management may feel protected by anti-takeover measures against outside involvement and pressure that pushes for certain (short-term oriented) decisions. These measures may provide more discretionary power to the management to choose projects that have a longer-term value-creating impact. Thus, anti-takeover measures may insulate managers from short-term pressures stimulating them to focus more on long-term value-creating projects. We only have data on the presence of such measures at Dutch listed companies for the period 2006-2016, which means that our analysis is based on a smaller sample than most of the other regressions presented in table 7. The anti-takeover measures for which data are available are preference shares used as an anti-takeover device, depositary receipts for shares (or share certificates), priority shares (that is, shares having more voting power than common shares), and voluntary adoption of the large company rules. The results of the regression analysis shown in columns [10] and [11] do not show any association between the presence of anti-takeover measures and our measures of the time horizon of company management.

With respect to the control variables, we observe that *LEVERAGE* and *SIZE* are always (highly) significant as determinants of time horizon. Measures of company performance do not seem to affect the dependent variable in our models. Finally, also the

global financial crisis does not seem to have affected the time horizon of companies, as our results for both crisis dummies are insignificant in most specifications presented in table 7, panel A.

The results shown in panel B of table 7, in which we use the time horizon variable specified as in DesJardine (2016), largely support the main outcomes discussed for the models presented in panel A. So, again we generally find that longer-term ownership is associated with lower levels of short-term orientation of management. Moreover, higher incentive-based pay is associated with less orientation on short-term results. In other words, the tendency to focus on long-term results may be driven by long-term oriented investors, as well as by incentives provided to the CEO; yet, in line with what we found when using the time horizon measure suggested by Brochet et al. (2015), the latter appears to be the more important determinant of the two.²⁹

²⁹ In additional robustness checks we also estimate the models presented in table 7 using the unadjusted data for the time horizon, that is, we do not correct for industry average. The results of these robustness checks are qualitatively similar and are available on request from the authors. In addition, we run separate models for the presentation part and the Q&A session with the investors and analysts. Again, results are qualitatively similar to the ones presented in table 5 and are available on request from the authors.

Table 7 – Panel B: Determinants of management’s time horizon

1-TIME_HORIZON_{BD} as dependent variable

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>LEVERAGE</i>	-0.292 [0.072]***	-0.311 [0.071]***	-0.33 [0.066]***	-0.325 [0.067]***	-0.284 [0.063]***	-0.301 [0.063]***	-0.283 [0.065]***	-0.218 [0.080]***	-0.237 [0.079]***	-0.416 [0.085]***	-0.335 [0.094]***
<i>ROE</i>	-0.013 [0.038]	-0.013 [0.039]	-0.047 [0.040]	-0.001 [0.041]	-0.036 [0.034]	-0.027 [0.035]	-0.031 [0.035]	-0.013 [0.042]	-0.012 [0.044]	-0.005 [0.051]	0.014 [0.053]
<i>MTB</i>	-0.008 [0.005]	-0.01 [0.005]**	-0.005 [0.005]	-0.001 [0.006]	-0.007 [0.005]	-0.01 [0.006]*	-0.01 [0.006]*	-0.012 [0.006]*	-0.013 [0.007]*	-0.015 [0.006]**	-0.015 [0.008]**
<i>SIZE</i>	0.019 [0.005]***	0.026 [0.004]***	0.029 [0.007]***	0.025 [0.004]***	0.027 [0.004]***	0.025 [0.004]***	0.028 [0.005]***	0.025 [0.007]***	0.028 [0.007]***	0.025 [0.005]***	0.017 [0.008]**
<i>PRE_CRISIS</i>	-0.135 [0.051]***	-0.127 [0.050]**	0.009 [0.038]	0.015 [0.036]	0.01 [0.035]	0.002 [0.036]	0.006 [0.036]	-0.085 [0.062]	-0.071 [0.053]		
<i>POST_CRISIS</i>	-0.018 [0.027]	-0.003 [0.028]	-0.024 [0.025]	-0.021 [0.026]	-0.01 [0.025]	-0.008 [0.026]	-0.01 [0.025]	-0.009 [0.030]	0.001 [0.033]	-0.013 [0.030]	0.006 [0.031]
<i>OWNSH_TIME</i>	-0.152 [0.046]***							-0.09 [0.057]			
<i>OWN_CONC</i>		-0.123 [0.045]***							-0.075 [0.051]		
<i>ANALYST_LOG</i>			-0.031 [0.031]					0.004 [0.026]	0.013 [0.027]		0.058 [0.047]
<i>INCENTIVE_PAY</i>				-0.158 [0.051]***				-0.078 [0.059]	-0.093 [0.056]*		-0.089 [0.059]
<i>OPTIONS</i>				0.046 [0.021]**				0.039 [0.025]	0.039 [0.025]		0.054 [0.027]**

Table continues on the next page

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
<i>CEO_TENURE</i>					0.021		0.022	0.016	0.017		0.012
					[0.014]		[0.015]	[0.016]	[0.016]		[0.020]
<i>CHAIR_TENURE</i>						0.006	0.003	0.007	0.013		-0.009
						[0.015]	[0.015]	[0.017]	[0.017]		[0.017]
<i>CHAIR_OTHER_BOARDS</i>						0.028	0.013	0.027	0.022		0.048
						[0.025]	[0.026]	[0.033]	[0.032]		[0.033]
<i>TAKEOVER_DEF</i>										0.002	-0.001
										[0.017]	[0.021]
<i>CONSTANT</i>	-0.133	-0.223	-0.245	-0.238	-0.359	-0.32	-0.379	-0.324	-0.379	-0.25	-0.383
	[0.097]	[0.087]**	[0.079]***	[0.085]***	[0.099]***	[0.085]***	[0.101]***	[0.129]**	[0.119]***	[0.120]**	[0.177]**
<i>R</i> ²	0.24	0.23	0.18	0.23	0.18	0.19	0.19	0.27	0.27	0.3	0.34
<i>N</i>	242	242	300	280	286	287	282	208	208	180	169

Notes: The dependent variable is measured using content analysis of the quarterly conference calls of each company for each year based on the dictionary of words developed by Brochet et al. (2015). The specification of the time horizon measure is:

$$TIME_HORIZON = \frac{\text{Number of longterm horizon words}}{\text{Number of longterm} + \text{shortterm horizon words}}$$

The time horizon measure is transformed by calculating for each company-year observation the difference between the value for the time horizon variable at the company level and the mean value for this variable for the industry to which the company belongs, controlling for the fact that the time horizon taken by management may be industry-specific. This allows for what is generally felt as short-term or long-oriented to vary across industries and time. All explanatory variables (except for pre-crisis and post-crisis) are lagged by one year.

Numbers between brackets denote Huber-White standard errors. The significance levels are defined as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

4.2.2 Results for the consequences of short-termism

Next, we analyze the consequences of the time horizon of management. We use the model specification as described in equation (2). Again, we use two different measures, one as developed by Brochet et al. (2015), and one as specified in DesJardine (2016). As above we call these measures $TIME_HORIZON_{BB}$ and $TIME_HORIZON_{BD}$, respectively. In both cases, we use the dictionary of short- and long-term words as suggested by Brochet et al. (2015).³⁰

Table 8 shows the results of the models analyzing the consequences of the time horizon of company's management. Panel A shows the results using $TIME_HORIZON_{BB}$ as our measure of time horizon. Panel B presents the results using $TIME_HORIZON_{BD}$ as our measure of time horizon.

As is clear from the results in both panels, the time horizon of company management does not seem to affect the various outcomes and decisions of the companies. In (almost) none of the regression outcomes reported in the tables our measures of the time horizon is statistically significant. This suggests that company decisions related to earnings management, investments in R&D, sales related investments (among which are also investments in marketing campaigns) and CSR investments are not driven by the time horizon of management. This conclusion does not corroborate the results found by Brochet et al. (2015). In that paper, evidence is found for the fact that a stronger focus on the short term is associated with higher levels of earnings management, lower R&D investment and lower investment in marketing campaigns.

The question is how the empirical results presented in table 8 should be interpreted. One interpretation is that, although company management may feel the pressure to respond to calls to focus more on the short term (which is the outcome of the first step of our analysis), in practice it does not really influence decision-making with respect to activities with a longer-term time horizon. So, while they may respond to the pressure for creating short-term value in their communication during conference calls, it does not significantly change their strategic plans, at least not in areas we have been able to analyze given the availability of data (that is, earnings management, R&D expenditures, expenditures on marketing and branding campaigns and CSR investments).

³⁰ As for the determinants of the time horizon (see table 5, panels A and B), we also run the models with respect to the consequences of management's time horizon using the dictionary of words developed by DesJardine (2016). The estimation results of these analyses are available on request from the authors.

Table 8 – Panel A: Consequences of management’s time horizon
TIME_HORIZON_{BB} as independent variable

	<i>DISC_ACC</i> ($\times 10^6$)	<i>EARN_SURP</i>	<i>R&D_EXP</i>	<i>SGA_EXP</i>	<i>ESG_RATE</i>	<i>ENV_RATE</i>	<i>SOC_RATE</i>
<i>TIME_HORIZON_{BB}</i>	0.021 [0.184]	-1.231 [0.528]**	0.056 [0.047]	0.005 [0.006]	-0.641 [2.506]	-0.165 [2.785]	-0.817 [2.297]
<i>LEVERAGE</i>	0.581 [1.086]	4.482 [2.034]**	-0.754 [0.238]***	-0.175 [0.040]***	12.986 [9.938]	11.479 [9.400]	16.666 [8.986]*
<i>ROE</i>	-0.328 [0.344]	1.102 [0.897]	-0.026 [0.169]	-0.034 [0.023]	9.438 [6.244]	6.775 [5.000]	5.644 [5.422]
<i>MTB</i>	0.074 [0.065]	-0.027 [0.202]	0.068 [0.025]***	0.01 [0.005]**	-0.042 [1.226]	-1.312 [0.916]	0.585 [1.221]
<i>SIZE</i>	-0.125 [0.145]	-0.532 [0.226]**	0.012 [0.022]	-0.003 [0.003]	5.179 [0.737]***	4.701 [0.772]***	4.787 [0.690]***
<i>PRE_CRISIS</i>	0.343 [0.356]	-0.955 [1.206]	0.159 [0.178]	0.034 [0.015]**	-4.011 [4.428]	-5.516 [4.581]	-3.059 [3.829]
<i>POST_CRISIS</i>	0.345 [0.340]	1.096 [0.774]	0.032 [0.090]	0 [0.011]	3.946 [2.625]	4.439 [3.070]	1.104 [2.411]
<i>EARN_SURP</i>			0.426 [0.448]	-0.021 [0.035]			
<i>CONSTANT</i>	1.292 1.750	3.357 [2.871]	-0.243 [0.321]	0.051 [0.045]	-9.65 [14.912]	-5.825 [14.275]	-4.726 [13.288]
<i>Ajd R² (or Pseudo R²)[#]</i>	0.01	0.18	0.05	0.15	0.22	0.18	0.2
<i>N</i>	237	275	116	116	227	227	227

Notes: The main independent variable (TIME_HORIZON_{BB}) is measured using content analysis of the quarterly conference calls of each company for each year based on the dictionary of words developed by Brochet et al. (2015). The specification of the time horizon measure is:

$$TIME_HORIZON = \frac{\text{Number of shortterm horizon words}}{\text{Number of longterm horizon words}}$$

The time horizon measure is transformed by calculating for each company-year observation the difference between the value for the time horizon variable at the company level and the mean value for this variable for the industry to which the company belongs, controlling for the fact that the time horizon taken by management may be industry-specific. This allows for what is generally felt as short-term or long-oriented to vary across industries and time.

Numbers between brackets denote Huber-White standard errors. The significance levels are defined as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

All explanatory variables (except for pre-crisis and post-crisis) are lagged by one year.

All regressions are based on OLS, except for the regressions in column [2], which is based on Logit regression.

Pseudo R² is presented for the regression results in column [2].

Table 8 – Panel B: Consequences of management’s time horizon
***TIME_HORIZON_{BD}* as independent variable**

	<i>DISC_ACC</i> ($\times 10^6$)	<i>EARN_SURP</i>	<i>R&D_EXP</i>	<i>SGA_EXP</i>	<i>ESG_RATE</i>	<i>ENV_RATE</i>	<i>SOC_RATE</i>
<i>1-TIME_HORIZON_{BD}</i>	0.035 [0.554]	-3.420 [1.385]**	0.351 [0.241]	0.035 [0.021]	3.906 [7.944]	9.474 [9.397]	1.970 [7.510]
<i>LEVERAGE</i>	0.574 [1.101]	4.215 [2.206]*	-0.710 [0.240]***	-0.171 [0.041]***	14.658 [10.034]	14.240 [9.550]	17.968 [9.033]**
<i>ROE</i>	-0.327 [0.342]	1.046 [0.887]	-0.018 [0.169]	-0.034 [0.023]	9.517 [6.209]	7.006 [4.900]	5.669 [5.362]
<i>MTB</i>	0.074 [0.065]	-0.015 [0.187]	0.067 [0.025]***	0.010 [0.005]**	0.015 [1.258]	-1.213 [0.958]	0.628 [1.249]
<i>SIZE</i>	-0.125 [0.146]	-0.491 [0.223]**	0.003 [0.023]	-0.004 [0.003]	4.974 [0.748]***	4.354 [0.805]***	4.630 [0.702]***
<i>PRE_CRISIS</i>	0.343 [0.356]	-0.899 [1.275]	0.158 [0.175]	0.034 [0.015]**	-3.982 [4.376]	-5.454 [4.464]	-3.042 [3.819]
<i>POST_CRISIS</i>	0.344 [0.340]	1.211 [0.788]	0.036 [0.091]	0.000 [0.012]	4.032 [2.617]	4.566 [3.052]	1.175 [2.392]
<i>EARN_SURP</i>			0.437 [0.444]	-0.020 [0.035]			
<i>CONSTANT</i>	1.287 [1.769]	2.794 [2.834]	-0.122 [0.338]	0.064 [0.045]	-6.911 [15.202]	-1.193 [14.866]	-2.631 [13.548]
<i>Ajd R² (or Pseudo R²)[#]</i>	0.00	0.17	0.06	0.16	0.22	0.18	0.20
<i>N</i>	237	275	116	116	227	227	227

Notes: The main independent variable (*1-TIME_HORIZON_{BD}*) is measured using content analysis of the quarterly conference calls of each company for each year based on the dictionary of words developed by Brochet et al. (2015). The specification of the time horizon measure is:

$$TIME_HORIZON = \frac{\text{Number of longterm horizon words}}{\text{Number of longterm} + \text{shortterm horizon words}}$$

The time horizon measure is transformed by calculating for each company-year observation the difference between the value for the time horizon variable at the company level and the mean value for this variable for the industry to which the company belongs, controlling for the fact that the time horizon taken by management may be industry-specific. This allows for what is generally felt as short-term or long-oriented to vary across industries and time.

Numbers between brackets denote Huber-White standard errors. The significance levels are defined as follows: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

All explanatory variables (except for pre-crisis and post-crisis) are lagged by one year.

All regressions are based on OLS, except for the regression in column [2], which are based on Logit regressions

Pseudo R² is presented for the regression results in column [2].

This interpretation seems to be in line with the Dutch corporate governance context. In the Dutch corporate governance system, the management board (i.e. the executives) decides on the strategy of the company. The supervisory board (i.e. non-executives) monitors the decision-making process. The management board needs to report to the shareholders about the strategy during the AGM. Shareholders have no legal right to directly interfere with the decision-making process. Shareholders only have the right to vote on a number of resolutions made by the board decisions that may lead to an important change regarding the identity of the company.³¹ In such a corporate governance context company management may have more discretionary power to make strategic decisions without being influenced by demands from shareholders.

At the same time, we do acknowledge that at this stage interpreting our results is difficult and we may require deeper investigation of the transmission channels through which the time horizon of company management may affect outcomes and decision-making processes. Unfortunately, with the current data set it is hard to carry out such a deeper analysis. One problem is the measurement of some of the outcome variables. For example, the measurement for earnings management could be improved, but with the fairly limited amount of observations we have, more sophisticated measures cannot be applied. Moreover, data on R&D expenditure is limited as well. As is known from the literature, information on this type of expenditures is notoriously restricted and our study obviously also suffers from this constraint. Finally, we do not have specific information on marketing and branding campaigns and so we have to rely on a much broader measure of selling expenditures. These measurement issues – in combination with the relatively small data set – may also, at least partly, explain the mixed results reported in table 8.

³¹ According to Dutch Civil Code (article 2:107a) this includes the transfer of the entire (or almost the entire) company to a third party, the start (or termination) of a joint venture, and the acquisition or disposal of a participating interest in another company to the value of at least one third of the total assets of the company.

5. Summary and conclusions

5.1 Summary of the main findings

In this report we have investigated whether and to what extent management of Dutch listed companies is focused on creating short-term value. In particular, we addressed the following three questions:

(1) To what extent does management of Dutch listed companies focus on creating short-term value; (2) what are the determinants of short-termism; and (3) what are the consequences for corporate decision-making, financial performance and long-term value creation?

Answering these questions is important, because investors, the media, policy makers, non-governmental organizations, as well as academics have recently debated the causes and consequences of a focus on short-term results. This so-called short-termism is generally seen as a potentially problematic consequence of being listed, as it may have unwanted externalities, both for the company as well as for society at large. Research on these questions has been scarce, however, and has focused mainly on the US situation. In this report we therefore focus on the Dutch situation. Are there signs of short-termism of listed companies also in the Dutch case? If yes, what are potential causes of this short-termism? And what are the potential consequences of a short-term focus?

There are several approaches to studying these questions, such as using measures that may reflect short- versus long-term company policies and activities. Yet, when following this approach actual behavior of management in terms of whether or not it has a short time horizon when making decisions cannot be observed. Another potentially interesting approach would be to analyze the content of formal company documents over time to see whether and to what extent these documents reflect short-termism. However, these formal documents are subject to an extensive editing process and do not necessarily reflect the time horizon of management when taking decisions.

In order to measure the time horizon company management more directly, we therefore use a novel research methodology, using information on how company managers communicate about the company in interactions with financial analysts and investors. In particular, we analyze the language these managers use when talking to analysts and investors during conference calls. Using content analysis of the transcripts we develop measures that reflect management's time horizon, that is, the extent to which it is more short- or long-term oriented when taking decisions. More specifically, we count the number of short-term

oriented words and divide this by the number of long-term oriented words used during conference calls as our main measure of the time horizon of a company. A value above 1 means a company can be characterized as being short-term oriented; the higher the value for this measure, the stronger the short-term orientation. Using this measure allows us to explicitly link potential determinants of the time horizon of management to actual corporate decision-making and outcomes. We use information from 1,444 quarterly conference calls for a maximum of 60 companies over the period 2003-2016.

Our analysis shows that the time horizon of Dutch companies significantly differs from US-based companies. According to a similar study using American data, the time horizon of companies in the US is clearly focused on the short term as the average value of our measure is 1.48. Instead, Dutch companies on average are focused somewhat more on the long term rather than on the short term, which is exemplified by the fact that the value of the time horizon measure we apply is 0.98. These results suggest that Dutch companies are much less focused on the short term relative to US companies. Moreover, while the values for our measure do seem to go up and down during the period of investigation, and while they are different depending on the industry to which a company belongs, the general trend seems to be of a weakly increasing focus on the long term.

With respect to the causes of management's time horizon we find supportive evidence that companies that (1) have relatively more long-term oriented owners; and (2) use more incentive-based remuneration policies, tend to have a stronger long-term focus. Our findings for ownership match earlier findings in the literature, indicating that when the interests of owners with a long-term horizon and company management are similar, this leads to a longer-term orientation of management. With respect to remuneration policies, our outcomes suggest that in the Dutch context remuneration contracts of CEOs provide incentives to focus more on the long rather than on the short term.

Regarding potential consequences, we do not find evidence for an association between the time horizon used by company management when making decisions related to either a short- versus long-term focus, and measures of these decisions. In particular, earnings management (which is often associated with a short-term focus), R&D expenditures, expenditures on marketing and branding campaigns and corporate social responsible (CSR) investments do not seem to be affected by the time horizon of management. This contradicts the findings of a recent study using US data.

One potentially important explanation for this result is that, although company management may feel the pressure to respond to calls to focus more on the short term (which

is the outcome of the first step of our analysis), in practice it does not really influence decision-making with respect to activities with a longer-term time horizon. So, while they may respond to the pressure for creating short-term value in their communication during conference calls, it does not significantly change their strategic plans.

This interpretation seems to be in line with the Dutch corporate governance context. In the Dutch corporate governance system, the management board (i.e. the executives) decides on the strategy of the company. The supervisory board (i.e. non-executives) monitors the decision-making process. The management board needs to report to the shareholders about the strategy during the AGM. Shareholders have no legal right to directly interfere with the decision-making process. Shareholders only have the right to vote on a number of resolutions made by the board decisions that may lead to an important change regarding the identity of the company. In such a corporate governance context company management may have more discretionary power to make strategic decisions without being influenced by demands from shareholders.

Summarizing our main findings, the time horizon of Dutch companies is clearly different from that of US-based companies, which have a relatively strong short-term orientation. Specifically, Dutch firms on average seem to focus on the long term as much as on the short term in their communication to investors during conference calls. The focus on the long term has become somewhat stronger over the past ten years. The time horizon of management differs between companies depending on the industry. The time horizon of Dutch companies is mainly determined by the type of owners of the company as well as by the use of incentive-based remuneration policies. At the same time, management's time horizon does not seem to influence decision making, which may indicate the importance of the Dutch corporate governance context, giving management discretionary power to make strategic decisions relatively independently from demands of shareholders.

5.2 Strengths and limitations

One of the strengths of our analysis is the use of a novel approach to more directly measure the time horizon of managers. By using information on how company managers communicate about the company in interactions with financial analysts and investors during conference calls, we develop a better understanding of their temporal orientation. Another potential strength of the analysis is that we investigate both the causes and consequences of management's time horizon using an extensive list of variables and measures that goes beyond those analyzed in related studies, such as Brochet et al. (2015) and DesJardine (2016).

Compared to these two studies we add board characteristics and anti-takeover measures as potential causes and CSR investments as a consequence of the time horizon of management.

A third strength of this research is the focus on the Dutch context. Research on the causes and consequences of short-termism is almost exclusively based on data from companies in Anglo-Saxon countries. To the best of our knowledge, we are the first providing an analysis of these issues outside the Anglo-Saxon corporate governance context. The results of the analysis suggest that context matters with respect to the extent to which company management takes a short- or long-term orientation, as well as regarding the consequences such an orientation may have for decision-making.

The analysis also has a number of limitations, however. First, the focus on the Dutch situation is one of its assets, but at the same also a liability. The number of companies in our data set is relatively small, at least when we compare it to studies by, for example, Brochet et al. (2015), Flammer and Bansal (2017) and Kleinknecht and Muller (2017) who use an approach similar to ours, but use data from US-based companies. The size of the data set puts a limit to the statistical power of the analyses. We therefore cannot exclude the possibility that relationships between variables using our data set show up differently when we have information for a larger set of companies and/or years.

Second, although the set of causes and consequences we have analyzed is already quite long, it is still not completely exhaustive. In other words, there may still be variables we have omitted in our analysis, but that may at least potentially be important as causes or consequences of the time horizon of management, such as measures of board effectiveness, laying-off workers, mergers and acquisitions, etc.

Third, as already mentioned, some of the variables reflecting the causes and consequences of the time horizon are based on indirect and/or incomplete measures. One example is the data on CEO remuneration. In the analysis we use the share of incentive-based remuneration to total remuneration. We acknowledge that more detailed information on the precise nature of the remuneration contract, indicating more precisely which part can be considered to be linked to the short or long term could potentially improve on the interpretation of our results. However, detailed data allowing for such a more precise measurement of the time dimension in remuneration contracts is in most cases hardly available and/or very difficult to collect.

5.3 Further research

Further research could focus on a number of issues. Some extensions of the research could look into improving on the data we have used for the current version of the report. First of all, detailed data on remuneration could be collected for a subset of the companies in our data set. We do expect, however, that it will be very difficult, if not impossible, to collect this type of data for all remuneration components for the entire set of Dutch companies we use for this version of the report. Extending the research in this direction may therefore not be the first-best option.

Second, the measurement of the time horizon variable can be further improved. As mentioned, our measure is a clear step forward since it allows for more directly measuring the time horizon of management. Extensions with respect to measuring the time horizon could look into the characteristics of analysts and investors participating in the calls. Moreover, text analysis could focus on the time horizon of the interventions made by analysts and investors during these calls.

Third, the research could be extended by focusing on a broader set of (direct and indirect) measures describing the decision-making process within boards. Board effectiveness (or board quality) may be an important factor in determining the time horizon of management. The research in this report has dealt with this only to some extent.

Fourth, we may look at the consequences of the time horizon of managers for creating long-term value. In the current version of the report we have only focused on intermediary outcomes, such as R&D expenditures and CSR investments. Yet, the impact of the time horizon of management on company value may be mediated through these intermediary outcome variables. So, a study investigating the relationship between management's time horizon and value would be welcome.

Finally, our research is the first that applies text analysis of conference calls as a measure of the time horizon of management in a setting outside the US. Our results suggest that the country context matters when it comes to measuring the time horizon, as well as its causes and consequences. This begs for additional work on this issue in different contexts. That is, further comparative research may help in better understanding how the time horizon of managers differs and how the time horizon may affect company decisions in different contexts.

5.4 Policy recommendations

The debate on the time horizon company management and how this affects long-term value creation is not likely to wane in the coming years. To the contrary, discussions in the media, the policy arena, but certainly also in the boardroom about the long-term sustainability of business activities, are expected to become more pressing during the coming decades. It therefore seems likely that managerial time horizon, and its possible causes and consequences, will be an increasingly salient topic on the agenda of researchers, managers, and policy makers.

With this in mind, and based on the research in this report, we put forward the following suggestions that help creating a long-term oriented time horizon of management.³² First, companies may seek to develop stronger relationships with shareholders having a long-term time horizon. Our research showed that having a larger investor base consisting of shareholders with a long-term interest in the company is associated with a stronger long-term orientation. Increased shareholder engagement may be important in developing stronger relationships between management and shareholders. Second, remuneration policies matter. In particular, developing remuneration contracts focusing more on long-term value creation may help shaping management's long-term orientation.

Finally, it may be important to further develop an institutional context that legitimizes and stimulates management practices emphasizing long-term value creation. One recent example of this is the new Dutch Corporate Governance Code of 2016. In the revised code more attention is paid to corporate sustainability policies. It includes best practices regarding the role of management and supervisory board in developing and communicating about an explicit strategy with respect to how the company is expecting to create long-term value. This includes a discussion of the implementation of the strategy and its feasibility, its risks and opportunities and an explanation of how the interests of the company's stakeholders have been considered when developing the strategy.

³²See Barton (2011), Bolton and Samama (2013) and Mercer et al. (2013) for suggestions of how to deal with short-termism.

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Appendix I: Examples of studies on the causes and consequences of short-termism

Only very few studies have followed the research strategy as described in figure 1 in section 2.5 in the main text of this report. In this appendix we briefly discuss three recent examples of empirical studies on short-termism that show close resemblance to the approach we take in this report. These studies can be viewed as reference points for the analysis in our research report.

The first one is by *Brunzell et al. (2015)* who focus on short-termism and the role of different types of owners. They use a survey among 440 CEOs, CFOs and Chairs of Nordic listed companies. They ask to what extent these executives and non-executives felt short-term pressure, i.e. the extent to which long-term company goals were in conflict with short-term external expectations. They also ask questions about specific decisions and how external short-term pressures influenced these decisions. They show that on average executives and non-executives do not feel strong pressure from shareholders (average rating is 2.72 on a scale from 0 to 5). Moreover, they show that CEOs feel the strongest pressure (average rating 2.91). Finally, the analysis shows that executives and non-executives moderately change their actions to accommodate short-term pressure. In particular, they adjust their actions with respect to financial reporting, corporate governance and long-term investments (see tables from the article; put them in the report). Based on the analysis, *Brunzell et al. (2015)* conclude that CEOs, CFOs and chairmen of Nordic listed companies feel that external pressure for a good short-term result generates conflict with the company's long-term goals at least to some extent. This pressure is lower in companies with large and long-term institutional owners. In companies with a large owner there is a lower propensity to engage in actions to accommodate the pressure for good short-term results (e.g. lowering R&D expenses, adjusting investments, changing hiring/layoff policies, etc.).

Brochet et al. (2015) analyze whether or not managers focus on the short term by analyzing the content of conference calls and the extent to which these voluntary disclosures of information reveal their short- or long-term focus. In their analysis, *Brochet et al. (2015)* categorize companies as short- or long-term oriented based on content analysis of conference calls. In particular, they count the number of short-term words relative to the number of long-term words and take the ratio as their measure of short (i.e. the ratio is above 1) or long (the ratio is below 1) time horizon of management. Their analysis is based on information from over 70,000 earnings conference calls covering more than 3,600 unique U.S. based companies

during 2002-2008, generating close to 18,000 company-year observations. They find evidence that the short-term orientation of companies is positively associated with capital market pressures (i.e. more analyst following, a lower share of long-term focused investors³³) and the structure of CEO compensation (i.e. more focus on incentive-based pay). Moreover, they find short-term orientation is positively associated with earnings management, and negatively associated with investments in R&D and long-term branding and marketing policies. This supports the hypothesis that managers take decisions to accommodate calls from (what they perceive as) short-term focused investors. Finally, they show that short-term oriented companies have more volatile stock returns and that they have higher cost of capital (i.e. they are seen as creating less value and as a greater risk by the market). Based on their research Brochet et al. (2015) conclude that management should be aware that focus on the short term is associated with short-term investors and that communicating a long-term vision may help building a long-term oriented investor base.

Our third reference study is carried out by *DesJardine (2016)*. In this study the focus is on the expectations of financial markets regarding the performance of a company and how these expectations affect management's time horizon. The underlying theoretical framework in this research is the behavioral theory of the firm. Using this theory, *DesJardine (2016)* hypothesizes that if financial analysts decide to downgrade a company (i.e. they advise to move from hold to sell or from buy to hold) this will lead to an increased orientation of management towards the short term. Since downgrades by analysts increase the probability of share price falls and reduced pay and/or even increased risk of getting fired, managers take actions focusing on the short term to meet market expectations (and obtain an upgrade). In contrast, if financial analysts' decide to upgrade a company (i.e. they advise to move from sell to hold or from hold to buy) this will lead to a decreased orientation of management towards the short term. Moreover, based on prospect theory *DesJardine (2016)* hypothesizes that analyst downgrades have a stronger effect on affecting management's time horizon than upgrades have.³⁴ Using data from over 3,100 conference call transcripts of 98 U.S. based companies in the oil and mining industry he measures management's time horizon by analyzing the language these managers use during these conference calls. The methodology used to analyze these transcripts shows resemblance to the approach applied by Brochet et al.

³³ Long-term investors are defined as the total number of shares held by dedicated and quasi-index investors minus transient investors' holdings based on Bushee's (1998) classification of institutional investors.

³⁴ According to this theory, individuals value losses and gains differently. In particular, the theory stresses that individuals dislike losses more than they like (equally valued) gains (Kahnemann and Tversky, 1979).

(2015).³⁵ Desjardine (2016) finds strong evidence for his hypotheses, that is, analyst up- and downgrades are indeed important determinants of the time horizon company management apply when taking decisions. He therefore finds strong support for the fact that corporate short-termism prevails, at least in the oil and mining industry.

³⁵ See section 3 for a more elaborate discussion of the methodology used in both studies.

Appendix II: Dictionaries of short- and long-term words

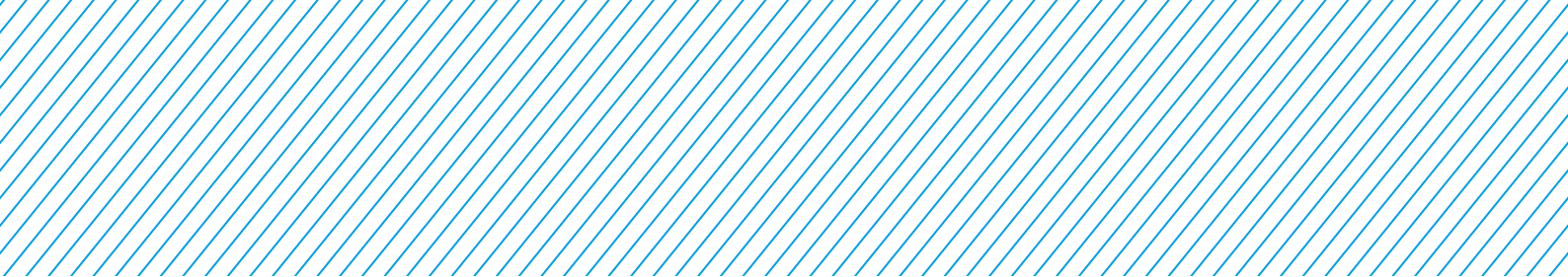
This appendix provides an overview of the wordlists used to construct the measures of short-termism is depicted. Table A.1 presents the lists used in Brochet et al. (2015), whereas table A.2 presents the lists developed by DesJardine (2016).

Table A.1: List of words measuring time horizon based on Brochet et al. (2015)

<i>Words referring to a short-term horizon</i>	<i>Words referring to a long-term horizon</i>
Daily	Annual
Day	Annually
Days	Look ahead
Month	Looking ahead
Months	Long-term
Monthly	Long term
Quarter	Long-run
Quarterly	Outlook
Quarters	Year
Short-run	Yearly
Short run	Years
Short-term	
Short term	
Week	
Weeks	
Weekly	

Table A.2: List of words measuring time horizon based on DesJardine (2016)

<i>Words referring to a short-term horizon</i>		<i>Words referring to a long-term horizon</i>	
Current	Short run	And beyond	Long life
Currently	Short term	Centuries	Long period
Daily	Short time	Century	Long run
Day	Temporary	Commit	Long term
Days	Temporarily	Commits	Long time
Immediate future	Today	Committed	Maintain
Instant	Week	Committing	Maintained
Instantaneous	Weekly	Commitment	Maintains
Instantly	Weeks	Commitments	Maintaining
Mid-year	Year	Decade	Outlook
Midyear		Decades	Over time
Moment		Distant future	Remain
Moments		Enduring	Remains
Momentarily		Eternal	Remained
Month		Eternally	Remaining
Monthly		Endless	Permanent
Months		Endlessly	Permanently
Near-term		Endlessness	Perpetual
Quarter		Forever	Perpetually
Quarterly		History	Perpetuity
		Lasting	Preserve
		Lifespan	Preserved
		Lifetime	Preserves
		Longer life	Preservation
		Longer period	Preserving
		Longer run	Unending
		Longer term	Years
		Longer time	



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