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# **The effect of executive compensation structure on CSR decoupling: The moderating effect of board functioning and analyst coverage**

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## **Abstract**

An increase in stakeholder pressure leads to firms increasingly investing in their corporate social responsibility (CSR) actions. Firms respond to these pressures by communicating their CSR-related actions with external parties. The opportunistic behaviour where a firm's CSR-related external actions (disclosures) are not aligned with their internal actions (performance), is referred to as CSR decoupling. This study examines whether an increase in the ratio of equity-based compensation of an executive can incentivize said executive to decrease CSR decoupling, and whether this relationship is moderated by board functioning and analyst coverage. An S&P 1500 sample including 484 executives of 209 firms over a period of 6 years (2014 – 2019) is used to test the existence of the relationships. The results show that an increase in the ratio of equity-based compensation significantly decreases CSR decoupling, whereas board functioning significantly increases CSR decoupling. The expected effect of analyst coverage on CSR decoupling finds no significant support in the used model and sample. Furthermore, board functioning is found to have a significant negative moderating effect on the main relationship, whereas analyst coverage shows no significant moderating effect. This paper provides insights in what factors either increase or decrease asymmetric information, in the form of CSR decoupling, when there is a separation of ownership and control. These insights can be of value for policymakers, stakeholders, board members and regulators.

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## 1 Introduction

Volkswagen's diesel emissions scandal highlights the phenomenon where firms positively report on corporate social responsibility (CSR) while their CSR performance is not aligned with the report (Bouzzine & Lueg, 2020). Evidence supports the existence of a 'gap' between a firms' CSR-related external actions (reports) and internal actions (performance). Existing literature refers to the misalignment between internal- and external actions often as CSR decoupling (Hooghiemstra, 2000; Tata & Prasad, 2014). The example provided by Bouzzine & Lueg (2020) illustrates the trend of firms increasingly investing more resources into corporate social responsibility related activities as response to the increasing urge of various stakeholders. Existing literature provides evidence that investing in said activities and practices yields benefits for the firm besides answering to the urge of stakeholders (Saeidi et al., 2015; Cho et al., 2019). The concept of CSR is defined as: *"a management concept whereby companies integrate social and environmental concerns in their business operations and interaction with their stakeholders"* (United nations, 2022). Stakeholder theory argues that the success of a firm is subject to satisfying all its stakeholders. Stakeholder theory illustrates why it is deemed imperative for firms to take the urge of stakeholders, for improved CSR actions, into account. The tendency for firms to increasingly attempt to satisfy their stakeholders by improving CSR-related actions, is supported by KPMG (2020). KPMG (2020) illustrates the growing trend of firms issuing CSR (related) reports to provide insight into the firms' CSR activities and practices, to signal their efforts to their stakeholders. Academics argue that firms portray positive CSR-related actions in their reports to be legitimized by their stakeholders, even though the portrayed actions are not aligned with actual performance. Motives for signalling good performance to stakeholder in order to prevent negative consequences finds its basis in legitimacy theory (Fernando & Lawrence, 2014; Hawn & Ioannou, 2016; Tashman et al., 2019). The occurrence of CSR decoupling can be rationalized by agency theory because CSR decoupling is a form of information asymmetry between the firms' executives and stakeholders. Information asymmetry exists because the executive (agent) enjoys more and comprehensive information about the firm, whereas the stakeholders (principal) only receives their information from the actual reports dictated by the executive. This difference in information availability exists due to the separation of ownership and control. The separation of

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ownership and control leads to sub-optimal decision-making processes as both parties have different goals and incentives. The existence of a difference between the goals and incentives of the principal and agent support the occurrence of CSR decoupling (Fosu et al., 2016; Hawn & Ioannou, 2016; Panda & Leepsa, 2017).

The implications of CSR decoupling causes a growing body of literature to focus on the dynamics of ‘the gap’. Crilly et al. (2012) find that managers intentionally engage in CSR decoupling when the opportunity exists, which adversely affects firm value (Fosu et al., 2016; Bouzzine & Lueg, 2020). Additional negative effects on the firm are demonstrated by García-Sánchez et al. (2021) who found CSR decoupling to cause an increased cost of capital, reduced access to finance, and higher analyst forecast errors. Sauerwald and Su (2019) find that overconfident CEO’s are more likely to engage in CSR decoupling, which is in line with the findings of Crilly et al. (2012). However, the likeliness of an overconfident CEO to engage in CSR decoupling is constrained by internal- and external monitoring entities (Sauerwald & Su, 2019). This study argues based on agency theory and the findings of Crilly et al. (2012), Jian and Lee (2015), Graafland and Smid (2019), and Sauerwald and Su (2019), that an executive can be incentivized to decrease CSR decoupling by their compensation structure. The executive is expected to be utility maximizing, which implies that the executive will attempt to maximize their wealth. A compensation structure can be constructed which positively affects the executives’ wealth when CSR decoupling decreases, as CSR decoupling is found to significantly influence a firms’ processes and performance indicators (Hong et al., 2016). The compensation structure thereby increases the executives’ utility when CSR decoupling decreases. Incentivizing executives through their compensation structure is supported by expectations described by related literature (Jian & Lee, 2015; Hong et al., 2016; MacDonald, 2016). Furthermore, Karim et al. (2018) find that the ratio of cash-based compensation is negatively related to CSR performance and equity-based compensation to be positively related to CSR performance (Jian & Lee, 2015; Hong et al., 2016; MacDonald, 2016). The findings of Karim et al. (2018) imply that the executives’ future wealth is affected more by equity-based compensation instead of cash-based compensation. Both firm value and long-term performance are expected to be captured by stock price development. Therefore, equity-based compensation is argued to incentivize an executive to decrease CSR

decoupling, as CSR decoupling is found to negatively affect firm value (Crilly et al., 2012; Fosu et al., 2016; Hawn & Ioannou, 2016; Bouzzine & Lueg, 2020). In contrast, cash-based compensation is often related to short-term financial performance (Gregg et al., 2010; Ozkan, 2011; Iatridis, 2018). Thus, equity-based compensation is expected to be affected more by CSR decoupling than cash-based compensation. Therefore, the wealth of executives is increasingly affected when the ratio of equity-based compensation increases. Hence, executives are expected to decrease CSR decoupling when the ratio of equity-based compensation increases within their compensation structure.

Prior literature highlights that contextual factors can have a significant effect on compensation structures and the dynamics of CSR decoupling (Ozkan, 2007; Crilly et al., 2012; Hawn & Ioannou, 2016; Martínez et al., 2016; Graafland & Smid, 2019; Sauerwald & Su, 2019; García-Sánchez et al., 2021). Graafland and Smid (2019) provide evidence that the board of directors, as internal monitoring entity, is able to mitigate the probability of firms engaging in CSR decoupling through compensation structures (Ozkan, 2007). Additionally, Sauerwald and Su (2019) illustrate that the board of directors mitigates the effect of CEO overconfidence on CSR decoupling when the board of directors functions well. These findings support the argument that board functioning, as internal contextual factor, can have a moderating effect on the relationship between the compensation structure of an executive and CSR decoupling. Likewise, the literature found that external monitoring entities have a significant influence on CSR-related activities and compensation structures. Hawn and Ioannou (2016) and García-Sánchez et al. (2021) found analyst coverage, as external contextual factor, to be negatively related to CSR decoupling (Manning et al., 2019). Furthermore, Shiah-Hou (2016) found analyst coverage to positively affect pay-for-performance and total compensation while controlling for internal governance. Existing evidence and theory provide a logical basis for this study to adopt moderating effects of contextual factors. Thus, board functioning is included as an internal contextual moderating factor and analyst coverage as an external contextual moderating factor on the relationship between executives' compensation structures and CSR decoupling.

The implications of CSR decoupling illustrates the necessity of conducting more research on the topic. There is currently little literature which provides evidence on what factors decrease

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CSR decoupling. Based on this gap in the literature and all theoretical and empirical evidence of prior literature this paper adopts the following research question: *To what extent can an increase in the ratio of equity-based compensation decrease CSR decoupling?* Part of this question is the effectiveness of an increase in the ratio of equity-based compensation within a given context. Therefore, the following research question is additionally adopted: *To what extent do board functioning and analyst coverage have a moderating effect on the relationship between the increase in the ratio of equity-based compensation and CSR decoupling.*

The contributions of this study to the literature are threefold. First, the recent study of Karim et al. (2018) found a positive association between a firms' CSR performance and the ratio of equity-based compensation. Furthermore, Karim et al. (2018) found a negative association between a firms' CSR performance and the ratio of cash-based compensation. Similar dynamics are expected to be applicable to CSR decoupling. The ratio of equity-based compensation is expected to negatively affect CSR decoupling, whereas the ratio of cash-based compensation is expected to positively affect CSR decoupling. However, the results of Karim et al. (2018) might be biased as the effect of the used CSR performance variable might be inflated due to CSR decoupling (Hooghiemstra, 2000; Tata & Prasad, 2014). This paper substitutes CSR performance by CSR decoupling in studying the relationship between executives compensation structures and CSR-related activities to prevent a bias in the model. The model used in this study provides evidence on whether information asymmetry and agency problems are decreased by increasing the alignment of both the reported and real CSR performance. Second, this paper provides empirical evidence and insight into the factors which incentivize executives to decrease CSR decoupling. The main focus of prior literature was to provide evidence on what the drivers of CSR decoupling and motives of executives to engage in CSR decoupling are. Third, this paper expands on the notion of Sauerwald & Su (2019) who examine whether board effectiveness can constrain CSR decoupling as an internal monitoring entity, by incorporating analyst coverage as an additional external moderating contextual factor. Hence, this study utilizes a broader model to measure the effect of executive compensation structure characteristics on CSR decoupling by controlling for several moderating factors, in contrast to existing literature. These insights can be of practical value for policymakers, shareholders and other stakeholders, board of directors and regulators.

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The next chapter discusses the theoretical framework and hypothesis development. Chapter 3 describes the research methodology, variables and measurement. Chapter 4 provides descriptive statistics and empirical results of this paper, followed by the conclusion and discussion in Chapter 5.

## **2 Theoretical framework and hypotheses**

### **2.1 Agency theory and compensation structures**

This study examines what components of an executives' compensation structure incentivizes behaviour of executives which lead to a decrease in CSR decoupling and consequently asymmetric information. Agency theory describes the presence of information asymmetry due to the separation of ownership (principal) and control (agent) in a firm. The principals are the shareholders of the firm who delegate control and decision-making rights to the CEO and other executive management, referred to as the agents. By delegating control and decision-making rights, the executives are expected to behave in line with the principals' interests, as they are employed and compensated by the principal. Hence, the principal expects that the executives adopt optimal decision-making processes and execute control to maximize shareholder wealth, create value for stakeholders and maintain firm growth (Panda & Leepsa, 2017). Jensen and Meckling (1976) describe why this is not the case in reality as both parties in the agent-principal relationship have different interests and are both utility maximizing. The agent behaves in the interest of themselves by maximizing their own utility which is often based on financial factors. This behaviour is in conflict with the interests of the principals' which are commonly based on long-term firm performance, business conduct and shareholder wealth (Baker et al., 1988; Hong et al., 2016). The separation of ownership and control causes that the agent has more comprehensive insight into the firms processes, whereas the principal has less insight into said processes causing information asymmetry and agency costs (Jensen & Meckling, 1976; Hong et al., 2016). The misalignment between the agent and principals' interests requires the implementation of corporate governance mechanisms and policies to mitigate information asymmetry and agency costs. Corporate governance mechanisms are designed, implemented and

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monitored by the board of directors who represent the principal as intermediary in the principal-agent relationship. All costs incurred by the principal to constrain the agency problems caused by the separation of ownership and control are referred to as agency costs. The agency costs includes (inefficiency off) compensation structures, monitoring costs and all residual losses caused by activities which do not maximize the principals' wealth and welfare (Jensen & Meckling, 1976; Shapiro, 2005).

The interests of the principal differ over time as the firms' environment and society are likewise changing over time. Shareholders and other stakeholder are increasingly urging firms to take their CSR activities into account. Stakeholder theory provides theoretical reasoning illustrating that entities, which are affected by a firm, can have a significant effect on the firm (Jamali, 2008; Lopatta et al., 2017; García-Sánchez et al., 2021). Therefore, it is in the interest of the firm to meet stakeholders' expectations in order to achieve its organizational goals, as stakeholders have the ability to influence a firms' performance and long-term business conduct (Clarkson, 1995; Peloza & Papania, 2008; Deng et al., 2013; Fernando & Lawrence, 2014). Furthermore, prior literature provides evidence that increased CSR activities can have a significant, often positive, impact on various performance indicators. Increased CSR-related activities are found to cause reduced cost of equity capital (Dhaliwal et al., 2014), lower borrowing costs (Gianfrate et al., 2021), reduced earnings management behaviour (Kim et al., 2021), increased firm profitability (Oeyono et al., 2011) and corporate financial performance (Beurden and Gössling, 2008; Orlitzky et al., 2003). The implications of increased CSR performance highlight the necessity to align the agent and principals' interests to enhance long-term firm- performance and value. Furthermore, legitimacy theory provides an additional theoretical basis for firms to adopt CSR practices. (Fernando & Lawrence, 2014). Legitimacy theory argues that the firm and society have a 'social contract'. The firm is 'cleared' to have continued existence if society finds the benefits of the firm to outweigh the costs (Fernando & Lawrence, 2014). As described by Gray et al. (2010): "*organisations can only continue to exist if the society in which they are based perceives the organisation to be operating to a value system that is commensurate with the society's own value system*" (Gray et al., 2010, p. 28). Thus, the firm has to adhere to the urge of

stakeholders for increased CSR performance and decreased CSR decoupling in order to be 'cleared' for continued existence by society.

A common strategy used by firms for society to legitimize them, is to change the perceptions of stakeholders and society about certain issues within the firm, without actually changing their behaviour. For example, Volkswagen's diesel emissions scandal illustrates how firms attempt to have stakeholders positively associate them with environmental performance, while in reality their environmental performance was poor. Volkswagen's diesel emissions scandal illustrates possible negative consequences for the firm, when the reported- and real performance of the firm diverge (Lindblom, 1994). Existing literature supports the occurrence of corporate scandals such as Volkswagen's 'dieseltgate', where firms actively distort CSR information provided to stakeholders (Lindblom, 1994; Hooghiemstra, 2000; Tata & Prasad, 2014). The distortion of CSR information and CSR decoupling, is argued to increase information asymmetry and consequently agency costs. CSR decoupling is defined as: *"the gap between how firms communicate about CSR and what firms do in terms of CSR"* (Sauerwald & Su, 2019, p. 283).

The occurrence of CSR decoupling is partly explained by legitimacy theory and the research of Lindblom (1994) and Villiers & van Staden (2006) who argue that: *"corporations will do whatever they regard as necessary in order to preserve their image of legitimate business with legitimate aims and methods of achieving it"* (de Villiers & van Staden, 2006, p. 763). CSR decoupling exists due to executives' opportunistic behaviour and the possibility to manipulate CSR reports. CSR reports can be manipulated by implementing symbolic CSR activities and policies to conceal noncompliance, as CSR reporting is not regulated and often on voluntary basis (Hawn & Ioannou, 2016; García-Sánchez et al., 2021). Symbolic CSR activities are similar to the phenomenon of firms' greenwashing practices, where firms actively convey false impressions or provide misleading information to appear environmentally responsible (Delmas & Burbano, 2011; Walker & Wan, 2012). Hence, from a shareholder, societal and other stakeholders' perspective, it is desired to minimize CSR decoupling because existing literature has found it to be negatively related to financial performance and firm value. Furthermore, existing literature found CSR decoupling to be positively related to information asymmetry, CEO overconfidence, weak internal corporate governance mechanisms, weak monitoring, analyst forecast error, greater cost of

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capital and reduced access to finance (Hawn & Ioannou, 2015; Graafland & Smid 2016; Sauerwald & Su, 2019; García-Sánchez et al., 2021).

Prior literature found that compensation structures are effective corporate governance mechanisms to incentivize executives to enhance CSR performance, as it becomes in the interest of the executive to enhance these factors with certain compensation structures (Jian & Lee, 2015; Hong et al., 2016). The compensation structure as designed, implemented and monitored by the board of directors can consist of several factors which are divided into cash-based compensation, equity-based compensation and other additional compensation plans. Equity-based compensation exposes the executive to long-term performance and firm value through stock-price performance. Hence, an increase in the ratio of equity-based compensation is expected to incentivize the executive, as it becomes in their interest to focus on enhancing long-term performance and firm value (Callan & Thomas, 2014). When increasing long-term performance and firm value, the executives' wealth will be positively affected. Thus, when the ratio of equity-based compensation increases, the executive is incentivized to focus on long-term business conduct and thereby decrease CSR decoupling. The latter mentioned exposure is supported by Karim et al. (2018) who find empirical evidence that equity-based compensation successfully incentivizes executives to focus on long-term firm objectives, increase CSR performance and CSR activities. Furthermore, Hawn and Ioannou (2016) find CSR decoupling to be negatively related to firm value.

Cash-based compensation is often used to expose executives to short-term financial targets and is found to negatively affect firm value (Iatridis, 2018). The often short-term nature of cash-based compensation is supported by Leone et al. (2006), who find that executives' cash-based compensation is more sensitive to short-term negative stock returns than to positive stock returns. Cash-based compensation is often related to accounting-based indicators which implies that cash-based compensation focuses on short-term firm performance, as the accounting-based indicators are re-evaluated each year (Core et al., 1999; Leone et al., 2006; Jeppson et al., 2009). Furthermore, investments in CSR activities are argued to require a 'ripening period' before they generate a positive financial return (Moneva & Ortas, 2009; Martínez et al., 2016). This lag leads to a short-term decrease in financial performance which thereby causes the cash-based

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compensation to decrease subsequently. The decrease in cash-based compensation consequently discourages executives to invest in CSR-related activities because it is not in their interest to do so. Based on the latter mentioned arguments on the characteristics and implications of cash- and equity-based compensation, the following hypothesis is derived:

*H1: The ratio of equity-based compensation is negatively associated with CSR decoupling.*

## **2.2 The moderating effect of board functioning and analyst coverage**

Existing literature emphasizes the moderating effect of various contextual factors on the strength of compensation policies used as corporate governance mechanisms (Balkin & Gomez-Mejia, 1987). Balkin and Gomez-Mejia (1987) argue that compensation policies have to be aligned with firm objectives (internal context) and the environment of the firm (external context) for the policies to be effective. Martínez et al. (2016) argue for a similar moderating effect of internal- and external contextual factors on CSR activities and performance. The notions of Balkin and Gomez-Mejia (1987) and Martínez et al. (2016) are supported and incorporated by Manning et al. (2019). Manning et al. (2019) construct a variable to measure the effect of a board monitoring effectiveness as internal contextual factor and stakeholder engagement as external contextual factor on CSR activities. Manning et al. (2019) find that the internal contextual factor of board monitoring effectiveness and external contextual factor of stakeholder engagement, are significantly positively related to sustainability reporting quality and sustainability reporting compliance in their main analysis.

The board of directors representing the principal as intermediary in the principal-agent relationship aims to *“ensure the company’s prosperity by collectively directing the company’s affairs, whilst meeting the appropriate interests of its shareholders and relevant stakeholders”* (Jackson et al., 2003, p. 193). The effectiveness of the board of directors in designing, implementing and monitoring corporate governance mechanisms affects other processes within the firm (Core et al., 1999; Manning et al., 2019). Core et al. (1999) note that firms with weaker corporate governance have greater agency problems. Therefore, CSR decoupling is expected to increase when board functioning decreases and consequently leads to weaker corporate governance mechanisms and greater agency problems. Furthermore, the effect of board

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functioning on corporate governance mechanisms is illustrated by Jian and Lee (2015) who find the positive association between CEO compensation and CSR performance, to be stronger in firms with better board functioning. Sauerwald and Su (2019) likewise find that board functioning mitigates the negative effect of CEO overconfidence on CSR decoupling. Thus, the literature provides evidence highlighting that the board of directors requires sufficient competencies to effectively execute their function. The literature emphasizes the significant effect of board functioning on corporate governance mechanisms which subsequently have effects on other processes within the firm. Thus, corporate governance mechanisms are expected to be more effective when board functioning increases. Additionally, enhanced board functioning is expected to decrease asymmetric information and agency problems, which directly negatively affects CSR decoupling. Hence, the following hypotheses are derived:

*H2a: Board functioning is negatively related to CSR decoupling.*

*H2b: Board functioning strengthens the negative effect of the ratio of equity-based compensation on CSR decoupling.*

Stakeholder theory and legitimacy theory highlight the effect of stakeholders on a firms' processes, whereas agency theory specifically emphasizes that the agent has the tendency to behave in line with expectations when monitoring increases (Peloza & Papania, 2008; Manetti, 2011; Deng et al., 2013). García-Sánchez et al. (2021) incorporated the moderating effect of an external monitoring entity in the form of analyst coverage, where they found that analyst coverage reduces CSR decoupling. Analyst coverage acts as intermediary for shareholders and other stakeholders in monitoring the firm and gauging the firms' performance (Hu et al. 2021; Naqvi et al., 2021). Therefore, the agent is expected to behave in line with expectations when the external monitoring entity, in the form of analyst coverage, increases. Thus, compensation policy effectiveness is expected to increase when analyst coverage increases due to their monitoring role (Martínez et al., 2016). Hence, increased analyst coverage is expected to strengthening the relationship between compensation structures and CSR decoupling. Furthermore, Naqvi et al. (2021) have found analyst coverage to reduce the level of information asymmetry. Likewise, Hu et al. (2021) argue that financial analysts play a critical role as external monitoring entity. These findings provide a basis arguing that the information asymmetry caused by the separation of

ownership and control is mitigated by analyst coverage (Hong et al., 2000; Ayers & Freeman, 2003). Thus, increased analyst coverage is expected to decrease CSR decoupling and strengthen the negative relationship between the ratio of equity-based compensation and CSR decoupling. Therefore, the following hypotheses are derived:

*H3a: Analyst coverage is negatively related to CSR decoupling.*

*H3b: Analyst coverage strengthens the negative effect of the ratio of equity-based compensation on CSR decoupling.*

All hypothesized relationships are graphically displayed below (Figure 1).

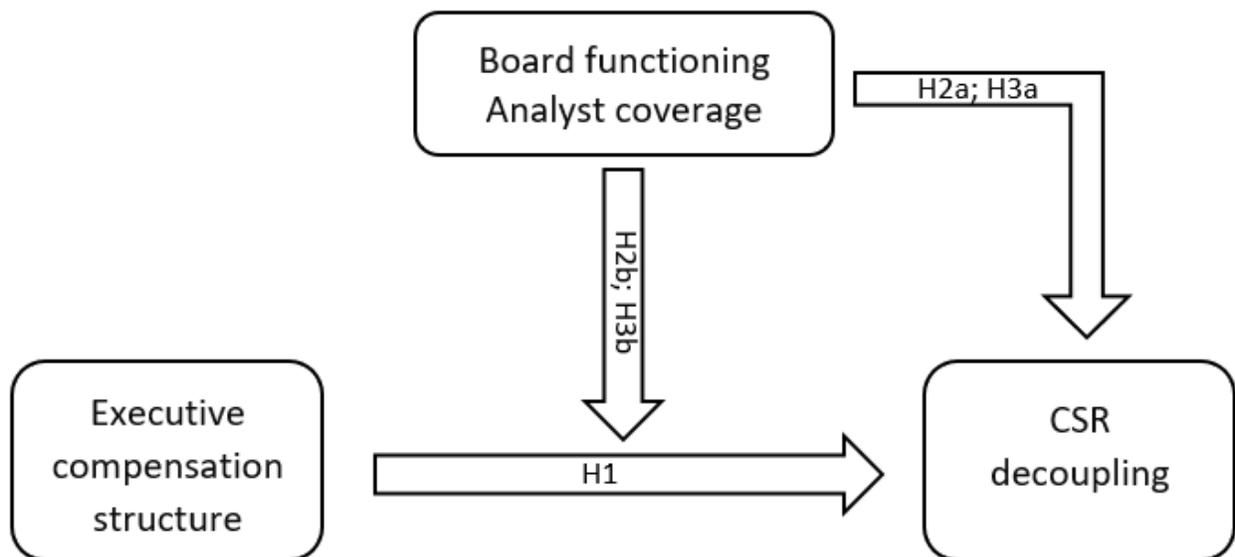


FIGURE 1: GRAPHICAL OVERVIEW OF HYPOTHESES.

### 3 Research method

#### 3.1 Sample description

This study obtained a balanced panel dataset consisting of 611 executives of 263 different firms from the S&P 1500. The sample is based on the S&P 1500, as the Sarbanes-Oxley Act mandates firms to disclose executive compensation information. This leads to a larger, more extensive sample, in contrast to using a European sample which has limited executive compensation information. The sample covers a period of 6 years (2014-2019), allowing variation in executive performance and firm policies captured within the CSR decoupling related internal- and external actions. Omitting executives and firms with missing observations results in a final sample of 484 executives of 209 firms with a total of 2904 executive-year observations. The distribution of the executives and firms illustrates that 96% of the firms is US based, 2% Ireland based, 1% Bermuda based and less than 1% Canada, Great-Britain and Puerto Rico based. Rounding of the percentages yields a similar distribution for the executives. The distribution of industries is based on the Standard Industrial Classification (SIC) (Table 1).

TABLE 1: SAMPLE INDUSTRY DISTRIBUTION

SIC code	SIC category	Executives		Firms	
		No.	%	No.	%
1000 - 1499	Mining	23	4.8	10	4.8
1500 - 1799	Construction	9	1.9	3	1.4
2000 – 3999	Manufacturing	202	41.7	96	45.9
4000 – 4999	Transportation, communications, electric, gas and sanitary service	83	17.1	30	14.4
5000 – 5199	Wholesale trade	12	2.5	6	2.9
5200 – 5999	Retail trade	21	4.3	10	4.8
6000 – 6799	Finance, insurance and real estate	84	17.4	32	15.3
7000 – 8999	Services	48	9.9	20	9.6
9900 – 9999	Non-classifiable	2	0.4	2	1.0
<b>Total</b>	<b>10</b>	<b>484</b>	<b>100</b>	<b>209</b>	<b>100</b>

Notes: The table depicts the absolute and relative sample distribution of the primary business activity of the included companies and executives. The distribution is based on the Standard Industrial Classification of the firms which were retrieved from Execucomp database.

#### 3.2 Variables

##### 3.2.1 Dependent variable

This paper adopts a CSR decoupling (CSR<sub>D</sub>) dependent variable which is similar to the variable used by Hawn and Ioannou (2016). The variable incorporates quantitative data points which measure a firm's CSR-related actions (Graafland & Smid, 2016; Hawn & Ioannou, 2016; Sauerwald & Su, 2019). The data points are divided into internal- and external CSR-related actions in order to derive the CSR decoupling variable. Internal actions are actions which are internally oriented in terms of policies and are a proxy for real CSR performance. External actions are actions which are externally oriented to disclose CSR-related information and activities. The internal- and external actions, which the CSR decoupling variable consists of, are extensively tested for correlation and whether they measure the aimed actions (Hawn & Ioannou, 2016). A Cronbach's alpha test confirms that the internal- and external actions measure the underlying constructs which they are expected to measure. The Cronbach's alpha for the internal action variables is 0.86 with inter-item covariance of 0.032 and for the external action variables 0.83 with inter-item covariance of 0.031 (Appendix 7.1). The Cronbach's alpha's signal consistency within the variables and reliability of the measures, which is in line with the study of Hawn & Ioannou (2016). The original CSR decoupling variable, as used by Hawn and Ioannou (2016), is slightly adjusted due to changes in the database causing missing data. The final composition of the CSR decoupling variable consists of 22 internal data points and 22 external data points. The data points are normalized on a 0 – 1 scale to compare both variables and construct a decoupling variable. The CSR decoupling variable is calculated by the absolute difference between internal actions, lagged by 1 year, and external actions, which is subsequently divided by total assets of the firm in line with Hawn and Ioannou (2016). The data points are gathered from Thomson Reuters (ASSET4) database through Datastream. Table 2 presents a concise variable description and Table 3 presents descriptive statistics. Appendix 7.2 and 7.3 provide the extensive list and description of internal- and external actions which the variable CSR decoupling consists of.

### **3.2.2 Independent- and moderating variables**

This study uses a similar measurement of compensation ratio as the measurement of Karim et al. (2018). The total compensation of executive's (TCOMP) consists of salary, bonuses, restricted stock and stock awards, stock options, pensions and other forms of compensation. The total compensation is divided into cash-based compensation, equity-based compensation, and other

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forms of compensation. Cash-based compensation consists of salary, cash bonuses and long-term incentive pay-outs. Equity-based compensation consists of stock awards, restricted stock, stock options. The absolute value of the equity-based compensation is divided by the absolute value of cash- and equity-based compensation to construct a relative score. The score denotes the ratio of equity-based compensation (CE\_PROP). The data for executive compensation structure is retrieved from Execucomp database.

The board functioning (B\_FUNC) variable is a composite score in line with measurement by Manning et al. (2019) and Sauerwald and Su (2019). The variable incorporates board independence, board diversity and CEO duality, as they have a significant influence on information asymmetry and moral hazard within the board (Ozkan, 2011; Manning et al., 2019; Sauerwald & Su, 2019). Board independence is measured by the percentage of nonexecutive directors on the board, relative to total board size. Independent board members are expected to have less conflict of interest because they do not occupy an executive position within the firm (Sauerwald & Su, 2019). The variable is subsequently converted into a binary variable. A value of 1 is given when the percentage of board independence is above the median, and a value of 0 is given when the percentage of board independence is below the median. Board diversity is measured by the percentage of female board members on the board, relative to the total board size. Boards with increased diversity are expected to enhance the satisfaction of a broader group of stakeholders and decrease information asymmetry (Harjoto et al., 2015; Abad et al., 2017; Manning et al., 2019). Furthermore, board diversity is found to be positively related to CSR-related activities (Harjoto et al., 2015). Consistent with board independence, a value of 1 is given when the percentage of female board members is above the median of the variable and a value of 0 if below the median. CEO duality is incorporated as Ozkan (2011) and Sauerwald & Su (2019) find it to be significantly related to CEO compensation, firm performance and CSR decoupling. A CEO is enabled to exercise more power in the firms' decision-making processes when the CEO is both a CEO and chairman of the board. Therefore, CEO duality signals increased conflict of interest and information asymmetry. The variable is reverse-coded because board functioning is expected to decrease when a CEO is both the CEO and chairman of the board. Therefore, the variable is given a value of 0 when the CEO is both CEO and chairman of the board and 1 if otherwise. The

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board functioning variable is measured by the sum of the binary variables board independence, board diversity and CEO duality. Existing literature validates the variable as it is argued to be a proxy for asymmetric information, conflict of interests and other agency problems within the board. Data for board independence, board diversity and CEO duality is retrieved from Thomson Reuters (ASSET4) database through Datastream.

The variable analyst coverage (AN\_COV) is in line with measurement by Dhaliwal et al. (2012) and García-Sánchez et al. (2021). Analyst coverage is measured by the total number of analysts following a firm in a certain year, divided by the natural logarithm of total assets of the firm. Because firm size has a strong correlation with analyst coverage. The variable depicts the relative amount of analysts following the firm by dividing the variable with the natural logarithm of total assets. Data for analyst coverage is retrieved from Thomson Reuter's database through Datastream. Table 2 presents a concise variable description and Table 3 presents descriptive statistics.

### **3.2.3 Control variables**

A set of control variables is incorporated to prevent the variance inflation of other variables and omitted variable bias. The set of control variables consists of executive stock ownership, compensation -, board- and firm characteristics. The control variable executive stock ownership (EXEC\_OWN) is incorporated as Ozkan (2011) and Hong et al. (2016) argued that executives their compensation structures are significantly influenced by the wealth of the executives. Additionally, MacDonald (2016) and Karim et al. (2018) found executive stock ownership to have a significant direct and indirect influence on CSR-related activities and compensation structures. The findings of Ozkan (2011) are in line with agency theory as executives are increasingly exposed to long-term performance when they own more stock. Therefore, as an executive is assumed to be utility maximizing, the executive is incentivized to adhere to long-term performance objectives when their stock ownership increases. An increase in stock ownership directly influences their wealth, in contrast to the little exposure to long-term objectives when an executive owns less stock (Mishra & Suar, 2010). Therefore, it is expected that executive stock ownership has a direct negative effect on CSR decoupling as it is in the self-interest of the executive to enhance future firm value by decreasing CSR decoupling. On the contrary, existing literature subsequently argues

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that significant executive stock ownership can lead to managerial ‘entrenchment’. The increased power of the executive can become sub-optimal which increases agency costs at the expense of shareholders (Hong et al., 2016). Therefore, the variable is expected to be negatively related to CSR decoupling and is measured by the percentage of shares owned by the executive divided by the total amount of shares outstanding. The data is retrieved from Execucomp database.

The compensation related independent variables might show partial explanatory power which is in reality attributed to other factors. Therefore, a control variable for CSR-linked compensation (CSR\_COMP) incentives is included. The variable measures whether executives receive compensation which is based on CSR-related factors. Existing literature has found CSR-linked compensation incentives to be positively related to CSR-related activities (Baraibar-Diez et al., 2019). This variable is included as executives might be incentivized to decrease CSR decoupling due to CSR-linked compensation incentives instead of due to an increased in the ratio of equity-based compensation. The variable is given a value of 1 when a firm has an extra-financial performance-oriented compensation policy based on CSR-related factors for executives and 0 if not. Furthermore, the total compensation of executives (TCOMP) is included which incorporates salary, bonuses, restricted stock and stock awards, stock options, pensions and other forms of compensation. The variable is the sum of the total dollar value of all included compensation components. The total compensation variable is retrieved from Execucomp and the CSR-linked compensation variable from Thomson Reuters (ASSET4) database through Datastream.

The control variable board size (BSIZE) is included as Sauerwald & Su (2019) find it to be significantly related to CSR disclosure. Furthermore, Ozkan (2011) finds board size to be significantly related to CEO compensation. Prior literature argues that when boards become too big, the agency problems increase due to inefficient decision-making (Hermalin & Weisbach, 2003). Therefore, board size is expected to be positively related to CSR decoupling. The variable denotes the absolute value of the number of board members on the board of directors. To control for the profitability of a firm, an accounting-based and market-based measure in the form of return on assets (ROA) and Tobin’s Q (TOBQ) is included. Return on assets is measured by the percentage of return on total assets (Hong et al., 2016; Karim et al., 2018; García-Sánchez et al., 2021). Tobin’s Q is measured as the total market value of the firm divided by total asset value of

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the firm (Ozkan, 2011; Karim et al., 2018; Manning et al., 2019; Sauerwald & Su, 2019; García-Sánchez et al., 2021). The data for the board- and firm-specific characteristics is retrieved from Thomson Reuter's database through Datastream. Table 2 provides a concise variable description and Table 3 provides descriptive statistics.

TABLE 2: VARIABLE DESCRIPTION

Variable	Description	Measurement
CSRD	Corporate Social Responsibility Decoupling (CSRD) is the 'gap' between a firms' CSR-related internal actions and external actions. Measured as the absolute difference of the sum of internal actions lagged by 1 year and external actions divided by the natural logarithm of total assets of a firm.	Score
CE_PROP	Equity-based compensation variable measuring the ratio of equity-based compensation in contrast to cash-based compensation which an executive receives. Measured as absolute value of equity-based compensation divided by absolute value of cash- and equity-based compensation.	Percentage
B_FUNC	Board functioning is a composite score measured as the sum of the scores of dummy variables board independence, board diversity and CEO duality.	Score 0 - 3
AN_COV	Analyst coverage depicts the absolute amount of analyst which cover a firms' financial statements. The absolute amount is divided by the natural logarithm of the firms' assets.	Score
EXEC_OWN	Executive ownership is the percentage of stock which an executive owns of the firm in which the executive is active.	Percentage
CSR_COMP	CSR-linked compensation is a dummy variable indicating whether a firm has an extra-financial performance-oriented compensation policy.	Yes (1) / No (0)
TCOMP	Total compensation is the absolute value of total compensation which an executive receives which consists of salary, bonuses, restricted stock and stock awards, stock options, pensions and other forms of compensation.	Dollars
BSIZE	Board size is the absolute number of board members at the end of the fiscal year.	Number
ROA	Return on assets (ROA) depicts profitability relative to a firms assets and is measured by operating income divided by total assets.	Percentage
TOBQ	Tobin's Q depicts profitability relative to a firm's equity and is calculated as market value of equity and liabilities divided by their book value.	Percentage

### 3.3 Model specifications

A fixed-effects model is used to empirically test the hypotheses. Outcomes of a Breusch and Pagan Lagrange multiplier test and Hausman test provide statistical basis to use a fixed-effects model instead of a random-effects or pooled OLS model. Outcomes of both tests are illustrated in Appendix 7.4 and 7.5. In line with existing literature, the non-random parameters of year-, firm-, industry-, and country are fixed (Jian & Lee, 2015; Hawn & Ioannou, 2016; MacDonald, 2016;

Karim et al., 2018; García-Sánchez et al., 2021). Such as economic ‘black swans’, firm-specific policies and tendencies, industry specific regulations and legal, political, and cultural effect are fixed to prevent distorted results. The model controls effects of unmeasured variables and systematic differences which are correlated with the independent variable. The used model further mitigates potential endogeneity issues (Hawn & Ioannou, 2016; Tashman et al., 2019). Additionally, all variables used in the regressions are winsorized at the 1% and 99% level in order to prevent significant effects of outliers.

Additional tests are run to further enhance the validity and reliability of the model. The regressions to test the hypotheses are in line with Hawn and Ioannou (2016). Hawn and Ioannou (2016) estimated separate additional analyses with internal actions, external actions and the sum of internal- and external actions. This study adopts similar additional analyses to gain more insight into the effect of the independent variables on the dynamics of internal-, external actions and the sum of internal- and external actions. To further enhance the reliability and validity a modified Wald test for heteroscedasticity was run and presented in Appendix 7.7. Additionally a Wooldridge test for autocorrelation was run and presented in Appendix 7.8. The modified Wald- and Wooldridge test found the presence of heteroscedasticity and autocorrelation in the model. Hence, the regressions are run using Driscoll-Kraay standard errors to correct for the presence of heteroscedasticity and autocorrelation (García Martín and Herrero, 2020).

Equation 1 below is used to test hypothesis H1, H2a and H3a, as it explores the effect of the ratio increase of equity-based executive compensation on CSR decoupling, internal actions, external actions and the sum of internal- and external actions, while controlling for board functioning and analyst coverage. Equation 2 is used to test hypothesis H2b and H3b, as it explores the effect of the ratio increase of equity-based compensation on CSR decoupling and estimates the moderating effect of board functioning and analyst coverage on the relationship of the ratio of equity-based compensation with CSR decoupling. All regressions include fixed effects ( $\theta_{eft}$ ) and an error-term  $\varepsilon_{eft}$ .

$$(1) \text{ CSR}_D; \text{ IA}; \text{ EA}; \text{ SUM}_{eft} = \alpha + \beta_1 \text{CE\_PROP}_{eft} + \beta_2 \text{B\_FUNC}_{eft} + \beta_3 \text{AN\_COV}_{eft} + \beta_4 \text{EXEC\_OWN}_{eft} + \beta_5 \text{BOARD}_{CONTROL, eft} + \beta_6 \text{COMPENSATION}_{CONTROL, eft} + \beta_7 \text{FIRM}_{CONTROL, eft} + \theta_{eft} + \varepsilon_{eft}$$

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$$(2) \text{ CSRDI; IA; EA}_{eft} = \alpha + \beta_1 \text{CE\_PROP}_{eft} + \beta_2 \text{CE\_PROP} * \text{B\_FUNC}_{eft} + \beta_3 \text{CE\_PROP} * \text{AN\_COV}_{eft} + \beta_4 \text{B\_FUNC}_{eft} + \beta_5 \text{AN\_COV}_{eft} + \beta_6 \text{EXEC\_OWN}_{eft} + \beta_7 \text{BOARD}_{\text{CONTROL},eft} + \beta_8 \text{COMPENSATION}_{\text{CONTROL},eft} + \beta_9 \text{FIRM}_{\text{CONTROL},eft} + \theta_{eft} + \varepsilon_{eft}$$

## 4 Results

### 4.1 Descriptive results

Table 3 and 4 present descriptive statistics and a Pearson correlation matrix of all variables incorporated in the model of this study. Table 3 shows that the mean of internal actions is larger than the mean of external actions. Thus, firms in general adopt more internal actions than external actions, which is contrary to expectations based on legitimacy theory, but is in line with findings of Hawn & Ioannou (2016). The descriptive statistics of other incorporated variables present no unexpected results. Furthermore, the Pearson correlation matrix in Table 4 presents no unexpected results which could indicate multicollinearity. Variance inflation factors were estimated to validate the expectation of no multicollinearity in the model. The variance inflation factors presented in Appendix 7.6 present no value higher than the threshold of 10, indicating no suspicions for multicollinearity (Kennedy, 2008).

TABLE 3: DESCRIPTIVE STATISTICS

Variable	Mean	Std. Dev.	Min	Max
CSRD	0.437575	0.158825	0.053743	0.8241352
IA	15.62707	4.2495	2	22
EA	8.052342	4.198323	0	19
CE_PROP	0.897309	0.15173	0.253271	0.9999636
B_FUNC	0.951102	0.76323	0	2
AN_COV	0.947876	0.472212	0.067583	2.146576
EXEC_OWN	0.296245	1.073129	0	8.485
CSR_COMP	0.40427	0.490835	0	1
TCOMP	6824359	6480469	288313	32200000
BSIZE	10.83781	2.169577	6	16
ROA	6.279342	5.830474	-14.96	22.9
TOBQ	21.78905	40.39672	-75.11	298.25

TABLE 4: PEARSON CORRELATION MATRIX

No.	Variables:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	CSR_D	1,00														
2	IA	0,12	1,00													
3	EA	-0,35	0,84	1,00												
4	SUM	-0,12	0,96	0,96	1,00											
5	CE_PROP	-0,07	0,05	0,06	0,06	1,00										
6	B_FUNC	-0,02	0,23	0,22	0,23	0,04	1,00									
7	AN_COV	-0,06	0,49	0,49	0,51	0,02	0,12	1,00								
8	MODB	-0,04	0,23	0,22	0,23	0,25	0,96	0,12	1,00							
9	MODA	-0,07	0,48	0,48	0,50	0,35	0,12	0,93	0,19	1,00						
10	CSR_COMP	-0,08	0,27	0,31	0,31	-0,03	0,02	0,15	0,01	0,14	1,00					
11	TCOMP	-0,08	0,36	0,38	0,39	0,24	0,08	0,35	0,13	0,42	0,06	1,00				
12	BSIZE	-0,16	0,35	0,39	0,38	0,04	0,09	0,24	0,09	0,23	0,19	0,14	1,00			
13	ROA	0,06	0,00	-0,01	0,00	-0,07	-0,01	0,03	-0,02	0,01	-0,20	0,04	-0,18	1,00		
14	TOBQ	-0,07	0,07	0,11	0,09	-0,06	0,09	0,12	0,07	0,09	-0,10	0,07	0,07	0,49	1,00	
15	EXEC_OWN	0,01	-0,16	-0,15	-0,16	0,03	-0,13	-0,12	-0,13	-0,10	-0,07	0,04	-0,07	0,00	-0,04	1,00

Notes: MODB depicts the moderator variable between the ratio of equity-based compensation and MODA of the moderator variable between the ratio of equity-based compensation and analyst coverage.

## 4.2 Empirical results

Table 5 presents the results of the fixed-effects regression model, as written down in Equation 1, run with Driscoll-Kraay standard errors. Equation 1 predicts the effect of the ratio of equity-based compensation, board functioning and analyst coverage on CSR decoupling. Additional regressions are estimated to gain more insight into the effect of the independent variables on the dynamics of CSR decoupling and its three components: internal actions, external actions and the sum of internal- and external actions. Results in column 1 of Table 5 provide empirical evidence which support hypothesis 1. The results indicate that a ratio increase of equity-based compensation is significantly negatively related to CSR decoupling. This relationship suggests that executives are incentivized to decrease CSR decoupling when the ratio of equity-based compensation increases. The increased ratio negatively affects the executive due to the negative impact of CSR decoupling on stock-price performance through firm value. Based on agency theory, the utility of the executive is increased when the executive achieves to decrease CSR decoupling, because it positively affects their equity-based compensation through stock-price performance. The positive effect on total compensation is expected to be caused because equity-based compensation is negatively related to CSR decoupling. Additionally, the estimations in column 2, 3 and 4 indicate that a ratio increase of equity-based compensation positively affects internal-, external actions and the sum of internal- and external actions. The additional regressions support the findings besides decreasing the gap between internal- and external actions, leading to an increase in overall CSR-related activity.

The results in Table 5 provide no support for hypotheses H2a. Board functioning presents a significant positive relationship with CSR decoupling, instead of the expected negative relationship. It was expected that a better functioning board with less conflict of interest, information asymmetry, and potential moral hazard, would decrease CSR decoupling. Even though it is a potential threat to future business conduct, the relationship does not appear to be significant. The positive significant relationship between board functioning and CSR decoupling could be explained by two reasons. First, the methodological construction of the variable might cause the results to be contrary to the expectations. The CSR decoupling variable denotes higher values for internal actions than external actions as illustrated in Table 4 and 6. The mean of the

internal actions variable is 15.6 and is 8.1 for the external actions variable. The difference in mean value of 5.81 in 2014 increases to 7.92 in 2019 as illustrated in Table 6. Furthermore, although insignificant, column 2 and 3 in Table 5 show board functioning to increase internal actions and decrease external actions. Thus, a better functioning board might emphasize increasing internal actions instead of external actions. This study expected that boards of directors would emphasize increasing external actions rather than internal actions. However, the emphasis could be contrary to expectations and thereby causing the positive relationship. Second, the board of directors might be conservative with regard to CSR-related activity, which is in line with the latter mentioned arguments. The board of directors might emphasize to increase internal actions instead of external actions to prevent potential backlash. The board of directors might emphasize preventing negative consequences due to stakeholders perceiving the firm as green-washing (Delmas & Burbano, 2011; Walker & Wan, 2012). The board of directors could be conservative in communicating their internal actions through external actions with their stakeholders. Thus, the board might put emphasis on preventing negative consequences instead of reaping the benefits from aligning the firms' internal- and external actions.

The results in Table 5 provide no support for hypotheses H3a. The analyst coverage variable indicates no significant relationship with CSR decoupling. Analyst coverage does significantly increase internal-, external actions and the sum of internal- and external actions as presented in column 2, 3 and 4. Hence, the results imply that an external monitoring entity, in the form of analyst coverage, increases overall CSR-related activity but does not decrease CSR decoupling.

The results in Table 5 show that CSR-linked compensation significantly incentivizes executives to decrease CSR decoupling and increase external actions. These findings are in line with agency theory and are expected to have similar dynamics as the relationship between equity-based compensation and CSR decoupling. Furthermore, board size is found to be negatively related to CSR decoupling and positively related to external actions and the sum of internal- and external actions. Existing literature argues that larger boards are perceived to be less efficient as the board becomes more symbolic in execution of management (Hermalin & Weisbach, 2003). However, more diverse boards are expected to be positively related to CSR-

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related activity, which is in line with the rationale of the board functioning variable (Sauerwald & Su, 2019). The diversity in directors' expertise's and background increases with the number of directors on the board and is therefore argued to explain the relationship presented in Table 5. Additionally, return on assets is found to be significantly positively related to CSR decoupling and negatively related to external actions and the sum of internal- and external actions. These results confirm the arguments of Moneva and Ortas (2009) and Martínez et al. (2016) that CSR-related investments are negatively related to financial performance and require a 'ripening period' before they generate a positive return. Lastly, Tobin's Q denotes a significantly negative effect on CSR decoupling, indicating that shareholders and other stakeholders value CSR-related activities and a decrease in CSR decoupling.

TABLE 5: FIXED-EFFECTS REGRESSION RESULTS

Variable:	CSR decoupling (1)	Internal actions (2)	External actions (3)	Sum (4)
Ratio of equity-based compensation	-0.018* (-2.28)	0.370** (6.39)	0.268** (3.12)	0.638*** (4.55)
Board functioning	0.010*** (4.84)	0.058 (0.46)	-0.055 (-1.20)	0.003 (0.02)
Analyst coverage	0.026 (1.68)	0.501* (2.18)	0.501* (2.06)	1.003* (2.22)
CSR-linked compensation	-0.042** (-3.41)	0.165 (0.68)	0.441** (2.71)	0.606 (1.51)
Total compensation	7.751 (0.29)	-1.05 (-1.33)	-1.86 (-0.07)	-1.07 (-1.07)
Board size	-0.007*** (-6.58)	0.02 (1.56)	0.081*** (5.53)	0.101*** (4.13)
Return on assets	0.001* (2.14)	0.002 (0.15)	-0.028*** (-12.50)	-0.026** (-2.59)
Tobin's Q	-0.000** (-2.92)	-0.00 (-0.10)	0.001 (1.48)	0.001 (0.67)
Executive ownership	-0.005 (-0.74)	0.001 (0.02)	0.028 (0.38)	0.029 (0.23)
Observations	2420	2904	2904	2904
F-value	2776***	26.17***	98.98***	31.13***
Year fixed-effects	Y	Y	Y	Y
Firm fixed-effects	Y	Y	Y	Y
Industry fixed-effects	Y	Y	Y	Y
Country fixed-effects	Y	Y	Y	Y

Notes: \*, \*\*, \*\*\* indicate that the estimated coefficients are significant at 10%, 5% and 1% levels. The figures in parentheses are the estimated t-values based on Driscoll-Kraay robust standard errors to correct for heteroscedasticity and autocorrelation. Variable descriptions are defined in Table 2 and descriptive statistics in Table 3. This table denotes results from estimating equation 1 to test Hypotheses 1, 2a and 3a.

TABLE 6: PARTIAL DESCRIPTIVE STATISTICS OF 2014 AND 2019

Panel A: 2014 Variable:	Mean	Std. Dev.	Min	Max
Sum	21.5062	8.301386	2	39
Internal actions	14.27273	4.359136	2	21
External actions	7.233471	4.299506	0	19
CSR decoupling	7.039256	2.462242	1	13
Panel B: 2019				
Sum	26.77479	6.801299	8	39
Internal actions	17.34917	3.405631	6	22
External actions	9.42562	3.841131	2	18
CSR decoupling	7.923554	2.539205	2	14

Notes: The CSR decoupling variable in this Table is calculated as internal actions minus external actions to construct an absolute CSR decoupling variable.

Table 7 presents the results of the fixed-effect regression model as written down in Equation 2 and run with Driscoll-Kraay standard errors. Equation 2 is used to test hypotheses H2b and H3b by predicting a moderating effect of board functioning and analyst coverage on the relationship between the ratio of equity-based compensation and CSR decoupling. To provide more insight into the dynamics of CSR decoupling, additional regressions are run to estimate the effect of the independent variables on internal- and external actions. Results in column 1 of Table 7 provide supporting empirical evidence for hypothesis H2b. Board functioning shows a significant positive relationship with CSR decoupling, which is in line with results in Table 5. For the moderating effect, board functioning is found to strengthen the negative effect of the ratio of equity-based compensation on CSR decoupling. Thus, the ratio of equity-based compensation decreases CSR decoupling more, when an effective board is present. Therefore, supporting evidence is found for hypothesis H2b. However, the ratio of equity-based compensation is not significant in the regression presented in Table 7. This insignificant result for the ratio of equity-based compensation could indicate that board functioning and the ratio of equity-based compensation are substitutes of each other instead of mutually reinforcing. Thus, board functioning and the ratio of equity-based compensation separately are significantly affecting CSR decoupling as presented in Table 5. However, when equity-based compensation and board functioning are interacted with one another, the effect of the ratio of equity-based compensation becomes obsolete. Furthermore, results in column 1 of Table 7 provide no supporting empirical

evidence for hypothesis H3b. The moderating effect of analyst coverage solely finds a significant positive effect on internal actions. However, the regression in column 2 denotes an insignificant f-value and is therefore not suitable for interpreting its results.

The control variables show similar results as in Table 5. CSR-linked compensation is found to be significantly negatively related to CSR decoupling and external actions. Board size is found to be significantly negatively related to CSR decoupling and positively related to external actions. Furthermore, return on assets is found to be significantly positively related to CSR decoupling and negatively related to external actions and Tobin's Q is found to be significantly negatively related to CSR decoupling.

TABLE 7: FIXED-EFFECTS REGRESSION RESULTS

Variable:	CSR decoupling (1)	Internal actions (2)	External actions (3)
Ratio of equity-based compensation	0.017 (0.77)	-0.207 (-0.56)	-0.017 (-0.04)
Board functioning	0.031** (3.97)	-0.039 (-0.15)	-0.016 (-0.10)
Analyst coverage	0.035 (1.44)	0.094 (0.26)	0.212 (0.80)
Ratio of equity-based compensation * board functioning	-0.024* (-2.69)	0.111 (0.27)	-0.043 (-0.19)
Ratio of equity-based compensation * analyst coverage	-0.012 (-0.85)	0.473* (2.24)	0.326 (1.85)
CSR-linked compensation	-0.042** (-3.39)	0.163 (0.69)	0.442** (2.73)
Total compensation	8.61 (0.31)	-1.10 (-1.36)	-6.00 (-0.22)
Board size	-0.007*** (-6.37)	0.02 (1.66)	0.082*** (5.46)
Return on assets	0.001* (2.24)	0.001 (0.13)	-0.028*** (-12.94)
Tobin's Q	-0.000** (-2.91)	-0.00 (-0.08)	0.001 (1.49)
Executive ownership	-0.005 (-0.74)	0.002 (0.03)	0.028 (0.38)
Observations	2420	2904	2904
F-value	4470***	2.96	82.98***
Year fixed-effects	Y	Y	Y
Firm fixed-effects	Y	Y	Y
Industry fixed-effects	Y	Y	Y
Country fixed-effects	Y	Y	Y

Notes: \*, \*\*, \*\*\* indicate that the estimated coefficients are significant at 10%, 5% and 1% levels. The figures in parentheses are the estimated t-values based on Driscoll-Kraay robust standard errors to correct for heteroscedasticity and autocorrelation. Variable descriptions are defined in Table 2 and descriptive statistics in Table 3. This table denotes results from estimating equation 2 to test Hypotheses 2b and 3b.

## 5 Conclusion and discussion

This study examined to what extent the ratio of equity-based compensation, through stock-price performance, significantly incentivizes executives to decrease CSR decoupling. Furthermore, this study examined to what extent board functioning and analyst coverage have a direct effect on CSR decoupling. Additionally, this study examined to what extent board functioning and analyst coverage moderate the relationship between the ratio of equity-based compensation and CSR decoupling. An S&P 1500 sample of 484 executives and 209 firms was used over a period of 6 years (2014-2019). The results indicate that a ratio increase of equity-based compensation successfully decreases CSR decoupling. These results are consistent with the expectation that executives can be nudged by compensation structures, which is in line with agency theory. The utility of the executive is negatively affected by CSR decoupling due to an increase in the ratio of equity-based compensation, as existing literature found that CSR decoupling is negatively related to firm value. Thus, an increase in the ratio of equity-based compensation negatively affects the executives' utility because firm value is argued to be captured in stock-price performance. Cash-based compensation incentives are often based on financial accounting indicators which are focused on a short-term horizon. Therefore, a ratio increase of cash-based compensation is argued to increase CSR decoupling as the focus on short-term financial performance indicators negatively affect CSR decoupling. The effect of cash-based compensation is in line with the results, which indicate that the variable return on assets is positively related to CSR decoupling and negatively to the sum of internal- and external actions. Additionally, the results show that Tobin's Q is negatively related to CSR decoupling.

Furthermore, board functioning is found to significantly increase CSR decoupling, contrary to expectations. This result might be caused because the variables incorporated in board functioning are closely related to the variables incorporated in internal actions, which are used to construct the CSR decoupling variable. Internal actions present a larger mean and larger increasing mean over-time than external actions. Likewise the results illustrate that board functioning increases internal actions and decreases external actions, even though these results are insignificant. Thus, the board of directors is expected to be conservative and focus on increasing internal actions instead of external actions. A firm can be perceived as actively

greenwashing, when stakeholders perceive the firms' external actions to be larger than their internal actions. Hence, the board of directors conservatively increases internal actions instead of external actions in order to prevent negative outcomes rather than gain positive outcomes by aligning internal- and external actions.

Analyst coverage is not significantly related to CSR decoupling based on the estimated results. However, results do illustrate that analyst coverage significantly positively affects internal-, external actions and the sum of internal and external actions. These relationships signal that increased external monitoring in the form of analyst coverage causes an increase in CSR-related activities. However, no evidence is found that analyst coverage decreases CSR decoupling.

The results further indicate that board functioning, as moderating variable, strengthens the negative effect of the ratio of equity-based compensation on CSR decoupling. However, the ratio of equity-based compensation is insignificant in the regression where the moderator is found to be significant. Hence, the ratio of equity-based compensation and board functioning are expected to be substitutes instead of mutually reinforcing. Thus, the interaction between the two variables decreases CSR decoupling but it is argued to cause the main effect of the ratio of equity-based compensation on CSR decoupling to be obsolete. Furthermore, no significant moderating effect is found of analyst coverage on the relationship between the ratio of equity-based compensation and CSR decoupling.

To interpret the findings of this study some limitations have to be taken into account. First, this study is affected by a possible sample selection bias as CSR-related information is often of voluntary nature (Hawn & Ioannou, 2019; Manning et al., 2019; García-Sánchez et al., 2021). Furthermore, 56 variables different variables over a 6 year period are used to construct the composite scores used in this study. Especially the variables used to construct the CSR decoupling variable are quite specific and in-depth. Hence, a small amount of firms consistently report on all necessary variables. In general, only large firms who attempt to adhere to stakeholder pressures report consistently over time. This study attempts to prevent this bias by scaling certain variables with firm size. This provides reason for possible causality and endogeneity issues as reliable literature similarly noted when measuring performance, policies within the firm, corporate governance mechanisms and CSR-related activities (Hawn & Ioannou, 2019; Sauerwald & Su,

2019). Thus, future research could take this into account by using different samples or conduct their studies in different cultural, institutional and geographical settings.

Second, Graafland and Smid (2019) find that quality of CSR policies significantly influences several CSR-related measures. The construction of the CSR decoupling variable as used by Hawn and Ioannou (2019) and in this study often consists of binary variables. Examples of these binary variable are *“Has the company set targets or objectives to be achieved on emission reduction?”* and *“Does the company have a policy to improve employee health & safety in its supply chain?”*. To what extent these policies have a significant effect might be very limited. The variable does not differentiate when a firm reduces their emission by 1% or 99% of CO<sub>2</sub> emitted. A firm might still actively engage in CSR decoupling, even though the CSR decoupling variable in this study would not note that the firm engages in CSR decoupling. Thus, a firm might engage in ‘mean-ends’ decoupling in which policies and implementation generate zero or little impact (Graafland and Smid, 2019). This can also be noted in the data as no firm-year observation finds an absolute negative CSR decoupling value. Thus, no firm-year observation finds the amount of external actions to be higher than the internal actions in the previous year. Similar issues exist with board functioning, which is a proxy of other variables which are closely related to variables included in the CSR decoupling variable. Thus, future research can address this limitation by using different measures of CSR decoupling and board functioning.

Lastly, this study models the behaviour of executives based on the assumption that their utility is maximized by the maximum amount of financial gain. However, executives might also have other motives and can be incentivized by ethical or personal values and interests (Karim et al., 2018). Thus, additional qualitative research could be conducted besides a quantitative one to gain more insight into the motives of executives.

This study provides insight into the effect of various corporate governance mechanisms on CSR decoupling. The results and insights provide a basis for future research and are of value for policymakers, stakeholders, board members and regulators.

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## 7 Appendix

### 7.1 Cronbach's alpha of internal- and external actions

TABLE 8:  
CRONBACH'S ALPHA

	Internal actions	External actions
Inter-item covariance	0.0322814	0.0305513
Reliability coefficient	0.8635	0.8326
Number of items	22	22

### 7.2 CSR decoupling variable internal actions

TABLE 9: INTERNAL ACTION VARIABLE COMPARISON

	Datapoints of Hawn & Ioannou (2016)	Operationalization	Description
1	Board gender diversity	Not used due to the use of this data in the board functioning variable.	N.A.
2	Non-executive board members on the audit committee	Data used in construction of CSR decoupling variable.	Percentage of non-executive board members on the audit committee as stipulated by the company.
3	Non-executive board members on the nomination committee	Deleted due to too much missing values.	
4	Independent board members on the board of directors	Not used due to the use of this data in the board functioning variable.	N.A.
5	Policy skills training	Data used in construction of CSR decoupling variable.	Does the company have a policy to support the skills training of its employees?
6	Policy career development	Data used in construction of CSR decoupling variable.	Does the company have a policy to support the career development of its employees?
7	Policy employee health & safety	Data used in construction of CSR decoupling variable.	Does the company have a policy to improve employee health & safety within the company?
8	Policy supply chain health & safety	Data used in construction of CSR decoupling variable.	Does the company have a policy to improve employee health & safety in its supply chain?
9	Policy environmental supply chain management	Data used in construction of CSR decoupling variable.	Does the company use environmental criteria (ISO 14000, energy consumption, etc.) in the selection process of its supplies or sourcing partners?
10	Renewable energy use	Data used in construction of CSR decoupling variable.	Does the company make use of renewable energy?
11	Policy energy efficiency	Data used in construction of CSR decoupling variable.	Does the company have a policy to improve its energy efficiency?
12	Policy water efficiency	Data used in construction of CSR decoupling variable.	Does the company have a policy to improve its water efficiency?

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13	Policy water technology	Data used in construction of CSR decoupling variable.	Does the company develop products or technologies that are used for water treatment, purification, or that improve water-use efficiency?
14	Policy emissions	Data used in construction of CSR decoupling variable.	Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement, or limiting the use of anti-takeover devices?
15	Shareholder rights policy	Data used in construction of CSR decoupling variable.	Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement, or limiting the use of anti-takeover devices?
16	Stock option grant by shareholder vote	Not available in the database. Replaced by shareholder approval prior to stock-based compensation plans adoption.	Does the company require that shareholder approval is obtained prior to the adoption of any stock-based compensation plans?
17	Executive compensation policy	Data used in construction of CSR decoupling variable.	Does the company have a policy for performance-oriented compensation that attracts and retains the senior executives and board members?
18	Board structure policy	Data used in construction of CSR decoupling variable.	Does the company have a policy for maintaining a well-balanced membership of the board?
19	Audit committee expertise	Data used in construction of CSR decoupling variable.	Does the company have an audit committee with at least three members and at least one 'financial expert' within the meaning of Sarbanes-Oxley?
20	CSR sustainability committee	Data used in construction of CSR decoupling variable.	Does the company have a CSR committee or team?
21	Policy freedom of association	Data used in construction of CSR decoupling variable.	Does the company have a policy to guarantee the freedom of association universally applied independent of local laws?
22	Human rights policy	Data used in construction of CSR decoupling variable.	Does the company have a policy for the exclusion of child, forced, or compulsory labor?
23	Competitive employee benefit policy	Not available in the database. Replaced by presence of environmental management team.	Does the company have an environmental management team?
24	Policy work-life balance	Not available in the database. Replaced by presence of corporate governance board committee.	Does the company have a corporate governance board committee?
25	Policy diversity and opportunity	Data used in construction of CSR decoupling variable.	Does the company have a policy to drive diversity and equal opportunity?

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### 7.3 CSR decoupling variable external actions

TABLE 10: EXTERNAL ACTION VARIABLE COMPARISON

	<b>Datapoints of Hawn &amp; Ioannou (2016)</b>	<b>Operationalization</b>	<b>Description</b>
1	Organic products initiatives	Data used in construction of CSR decoupling variable.	Does the company reportedly develop or market products and services that foster specific health and safety benefits for the consumers (healthy, organic or nutritional food, safe cars, etc.)?
2	Internal promotion	Data used in construction of CSR decoupling variable.	Does the company claim to favor promotion from within?
3	HIV-AIDS program	Data used in construction of CSR decoupling variable.	Does the company report on policies or programs on HIV/AIDS for the workplace or beyond?
4	Crisis management systems	Data used in construction of CSR decoupling variable.	Does the company report on crisis management systems or reputation disaster recovery plans to reduce or minimize the effects of reputation disasters?
5	Green buildings	Data used in construction of CSR decoupling variable.	Does the company report about environmentally friendly or green sites or offices?
6	Toxic chemicals reduction	Data used in construction of CSR decoupling variable.	Does the company report on initiatives to reduce, reuse, substitute, or phase out toxic chemicals or substances?
7	Staff transportation impact reduction	Data used in construction of CSR decoupling variable.	Does the company report on initiatives to reduce the environmental impact of transportation of its staff?
8	CO2 emission reduction in production process	Not available in the database. Replaced by reduction of e-waste.	Does the company report on initiatives to recycle, reduce, reuse, substitute, treat or phase out e-waste?
9	Waste reduction initiatives	Data used in construction of CSR decoupling variable.	Does the company report on initiatives to recycle, reduce, reuse, substitute, treat, or phase out total waste?
10	VOC emission reduction	Data used in construction of CSR decoupling variable.	Does the company report on initiatives to reduce, substitute, or phase out volatile organic compounds (VOC)?
11	NOx and SOx emissions reduction	Data used in construction of CSR decoupling variable.	Does the company report on initiatives to reduce, reuse, recycle, substitute, or phase out SOx (sulphur oxides) or NOx (nitrogen oxides) emissions?

12	Other emissions reduction	Not available in the database. Replaced by partnerships with party non-profit organizations focused on improving the environment.	Does the company report on partnerships or initiatives with specialized NGOs, industry organizations, governmental or supragovernmental organizations, which are focused on improving environmental issues?
13	GRI Report guidelines	Deleted due to too much missing values.	N.A.
14	Reporting in opportunities, challenges and dilemmas	Not available in the database. Replaced by targets for emission reduction.	Has the company set targets or objectives to be achieved on emission reduction?
15	CSR sustainability report global activities	Deleted due to too much missing values.	N.A.
16	Human rights breaches contractor	Data used in construction of CSR decoupling variable.	Does the company report or show to be ready to end a partnership with a sourcing partner if human rights criteria are not met?
17	Human rights contractor	Data used in construction of CSR decoupling variable.	Does the company report or show to use human rights criteria in the selection or monitoring process of its suppliers or sourcing partners?
18	Provide employees with insurance	Not available in the database. No suitable replacement available.	N.A.
19	Provide bonus to employees	Not available in the database. No suitable replacement available.	N.A.
20	Day care services	Data used in construction of CSR decoupling variable.	Does the company claim to provide daycare services for its employees?
21	Policy community involvement	Data used in construction of CSR decoupling variable.	Does the company have a policy to strive to be a good corporate citizen?
22	Policy Business Ethics	Data used in construction of CSR decoupling variable.	Does the company have a policy to respect business ethics?
23	Global compact signatory	Data used in construction of CSR decoupling variable.	Has the company signed the UN Global Compact?
24	OECD guidelines for multinational enterprises	Data used in construction of CSR decoupling variable.	Does the company follow the OECD guidelines?
25	CSR sustainability external audit	Deleted due to too much missing values.	N.A.
26	Flexible working hours	Data used in construction of CSR decoupling variable.	Does the company claim to provide flexible working hours or working hours that promote a work-life balance?
27	Management training	Data used in construction of CSR decoupling variable.	Does the company claim to provide regular staff and business management training for its managers?

## 7.4 Breusch and Pagan Lagrange multiplier test

TABLE 11 : BREUSCH-PAGAN  
LAGRANGE MULTIPLIER TEST

	CSRD
Chibar2	2071.08
Probability	0.0000

## 7.5 Hausman test

TABLE 12 : HAUSMAN TEST

	CSRD
Chibar2	20.85
Probability	0.0076

## 7.6 Variance inflation factors

TABLE 13:  
VARIANCE INFLATION FACTORS

Variables	VIF	1/VIF
CE_PROP	1.08	0.928046
B_FUNC	1.04	0.957658
AN_COV	1.25	0.797329
CSR_COMP	1.09	0.914689
TCOMP	1.24	0.809164
BSIZE	1.16	0.861367
ROA	1.43	0.697385
TOBQ	1.38	0.723663
EXEC_OWN	1.04	0.958870
<b>Mean</b>	<b>1.19</b>	<b>n/a</b>

## 7.7 Modified Wald test

TABLE 14: MODIFIED WALD TEST

	CSRD
Chibar2	53.005
Probability	0.0000

## 7.8 Wooldridge test

TABLE 15: WOOLDRIDGE TEST

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	CSRD
Chibar2	40.179
Probability	0.0000

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