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Abstract

The purpose of this study is to investigate if executive board compensation can be used as a tool in sustainable corporate governance to guide Austrian firms into sustainable corporate behavior. To investigate this relationship, two regression models (multiple linear regression and panel data regression) were calculated. As a sample, 23 companies in the Prime Market segment of the Vienna Stock Exchange were examined over a period from 2010 to 2019 (230 firm-year observations). A one year lagged ESG score of the Asset 4 Thomson Reuters DataStream database is used as a proxy for sustainable company performance. The analysis shows that the fixed salary of board members of Austrian companies on the prime market has a significant positive impact on the corporate sustainability, while short-term variable remuneration and long-term variable remuneration have a significant negative impact on the corporate sustainability. Contrary to expectations, no correlation was found between the use of non-financial indicators and the corporate sustainability. As the sample size of 23 companies was chosen small in this case and influences the relevance of the results, it is suggested that future studies choose a larger sample. According to present knowledge, this is the first study to examine the relationship between the individual components of executive remuneration and the corporate sustainability of Austrian companies over a longer period of ten years in the Austrian two-tier system.

Abstrakt

Ziel dieser Studie ist es, zu untersuchen, ob die Vorstandsvergütung als Instrument der nachhaltigen Unternehmensführung genutzt werden kann, um österreichische Unternehmen zu nachhaltigem Verhalten zu motivieren. Um diesen Zusammenhang zu untersuchen, wurden zwei Regressionsmodelle (multiple lineare Regression und Paneldatenregression) berechnet. Als Stichprobe wurden 23 Unternehmen im Prime Market Segment der Wiener Börse über einen Zeitraum von 2010 bis 2019 (230 Firmenjahresbeobachtungen) untersucht. Ein einjährig verzögerter ESG Score aus der Asset 4 Thomson Reuters DataStream Datenbank wird als Proxy für die nachhaltige Unternehmensperformance verwendet. Die Analyse zeigt, dass das Fixgehalt von Vorstandsmitgliedern einen signifikant positiven Einfluss auf die unternehmerische Nachhaltigkeit hat, während kurzfristige variable Vergütungen und langfristige variable Vergütungen einen signifikant negativen Einfluss ausüben. Entgegen den Erwartungen wurde kein Zusammenhang zwischen der Verwendung von nicht-finanziellen Indikatoren und unternehmerischer Nachhaltigkeit gefunden. Da die Stichprobengröße von 23 Unternehmen klein gewählt wurde und die Relevanz der Ergebnisse beeinflusst, wird für zukünftige Studien eine größere Stichprobe vorgeschlagen. Nach derzeitigem Kenntnisstand ist dies die erste Studie, die den Zusammenhang zwischen den einzelnen Komponenten der Vorstandsvergütung und der Nachhaltigkeit österreichischer Unternehmen über einen längeren Zeitraum von zehn Jahren im österreichischen dualen System untersucht.

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List of abbreviations

ACCG	*Austrian Codex of Corporate Governance*
BOD	*board of directors*
CS	*corporate sustainability*
CSP	*corporate social performance*
CSR	*corporate social responsibility*
EC	*European Commission*
ESG	*environment, social, governance*
EU	*European Union*
LTI	*long-term incentive*
NFI	*non-financial indicators*
SCG	*sustainable corporate governance*

1. Introduction

The consequences of the global financial crisis in 2008/2009 triggered a process of development in corporate governance. The focus in corporate management has shifted from shareholders to stakeholders. Companies are expected to function as corporate citizens that take responsibility towards their stakeholders and legitimize their business practices (Claassen & Ricci, 2015; Velte, 2016a). They are increasingly expected to no longer limit their activities to profit maximization, but also to make an active contribution to governance, social and environmental issues (Giannarakis et al., 2014; Nicolò et al., 2022).

The 2030 Agenda for Sustainable Development (UN SDG), in which it defines a further path towards a sustainable future was published by the UN in 2015. Corporations should adjust their investment decisions, business models and corporate strategies to a sustainable corporate governance (SCG) which supports the economic, environmental and social dimensions of Elkington's (2015) triple bottom line concept of sustainable development (Elkington, 1994; United Nations, 2015). Also, the European Commission (EC) passed various reforms with the intention to improve the standard of corporate governance and thus restore the relationship of trust between stakeholders and companies (Velte, 2016a). Furthermore, there were many attempts to influence the development of corporate governance in the individual countries. In 2008, for example, a passage was added to the Austrian Codex of Corporate Governance (ACCG) according to which the variable part of the executive board remuneration should be linked to long-term and sustainable performance criteria. However, this comply or explain rule only applied to companies that have committed themselves to the ACCG and was not even binding then, since a deviation from the rule only needs to be explained and justified (ÖCGK, 2009). In 2012, Austria adopted Section 78 (1) of the Stock Corporation Act, which requires companies to design the remuneration of the executive management board in such a way that long-term incentives for sustainable corporate development were set (78 (1) AktG, 2012/03.09.2022)

Due to these developments, corporate governance is changing more and more towards SCG, which influences the external and internal processes in the company (KPMG, 2021; Nicolò et al., 2022). Firms are expected to go beyond the financial aspect and to contribute to a value creation process, which includes also environmental, social and governance (ESG) issues. This can be seen both in the external company activities and in the internal business structure, for example in terms of remuneration or the annual reports (Tamimi & Sebastianelli, 2017).

However, the EC would like to initiate this process even more strongly. Therefore, it commissioned a study from EY in 2020, which was intended to find out why companies still hold on to short-termism and to develop mechanisms for corporations to achieve long-term economic, social, and environmental sustainability (European Commission & EY, 2020). The authors suggest various mechanisms, including the influencing factor of board compensation. Corporate sustainability (CS) should be strengthened through a change of structure in management remuneration. The compensation of the executive board should be long-term oriented and no longer solely depend on financially measurable goals, but also on non-financial indicators (NFI) which are directly linked to the ESG-Performance. The intention behind this proposal is to stop short-termism and to increase the SCG of a company (European Commission & EY, 2020).

This study aims to investigate whether executive board compensation can be used as a tool for SCG to guide Austrian firms in the Prime Market segment of the Vienna Stock Exchange into sustainable corporate behaviour. In addition, it will examine whether NFI in the determination of the structure of executive board remuneration have an influence on sustainable corporate performance and thus contribute to SCG.

First, it explains what SCG is, how sustainability influences companies, which role the board of directors (BOD) plays for corporate governance and how it is structured. Then the different laws and regulations in Austria are shown. Further, the theories standing behind remuneration as a tool in corporate governance are introduced. Afterwards, the different components of executive board compensation are explained, and the hypotheses are developed. The hypothesis that the different remuneration components, as well as the NFI, each have a different influence on the ESG score of the Austrian companies, is made. To evaluate this, a sample of 23 companies listed on the prime market of the Vienna Stock Exchange is analyzed for their ESG scores and the remuneration structure of their executive boards (obtained from corporate governance reports included in annual reports). With the data gained, the hypotheses are then assessed using two regression models (multiple linear regression and panel data regression). Afterwards, the results are shown and explained. In the last chapter, the results are discussed, and limitations of the study shown.

2. Sustainable Corporate Governance

Sustainable corporate governance is a type of corporate governance in which the focus is primarily on mechanisms that strengthen the sustainable development of the company, the CS. Since the concept is very new and has rarely been used or defined in the literature, this chapter first introduces CS by defining the concept of sustainability, then explains SCG and its possible measurability through environment, social and governance (ESG) scores, and finally distinguishes it from the conceptions of corporate social performance (CSP) and corporate social responsibility (CSR).

2.1. Corporate Sustainability - linking corporate governance and sustainability

The World Commission on Environment and Development defines sustainable development as "development that meets the need of the present without compromising the ability of future generations to meet their own need" (United Nations, 1987, p.41).

In view of various global crises, global warming and growing global poverty, sustainability is becoming increasingly important. In 2015 the United Nations agreed on 17 new global Sustainable Development Goals. Even though those goals are not legally binding, their implementation in the single countries is monitored on an ongoing basis. The individual states are required to create an environment where it is possible for the government, companies and individuals to achieve the goals (United Nations, 2015). While many of the goals are global in scope, some are also concerned with setting directions for the economy. For example, goal eight states: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all", while goal nine calls for: "Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation" (United Nations, 2015, p.14). In addition to states and individuals, companies are also called upon to promote sustainability in their processes (United Nations, 2015).

According to Lombardi et al. (2019) the maxim of sustainability is to bring a balance between the individual goals of politics, environment, territory, social and economy (Lombardi et al., 2019). In terms of CS, this means that companies strive to act sustainably (Krechovská & Procházková, 2014). A responsible company contributes to sustainability through its actions by

not only aiming at economic profit, but also contributing to the creation of environmental and social value.

This division is attributed to Elkington's (1994) triple bottom line concept, which seeks to balance social, economic and environmental goals (Elkington, 1994; Hart & Milstein, 2003).

Especially in large, polluting industries, one might think that sustainable action is not always in the mind of companies (Bansal & Clelland, 2004). However, this way of business leads to short-termism which refers to the orientation of a company's business activities towards short-term economic success. Through comparing the amount of dividends paid to shareholders with the amount of investment in the company's value chain, especially in research and development, short-termism can be measured (European Commission & EY, 2020). In the long run, short-termism can influence the company, as well as its field of operations, in a negative way. Various problems arise, including indifference to the environment, proliferation of social inequality, and a decrease of in-house profits (European Commission & EY, 2020). As a study, conducted by EY and the EC, shows, short-term oriented companies dare being less innovative and productive in the long run, while they risk their own, and the local and global economic sustainability (European Commission & EY, 2020).

To avoid these risks, it is recommended that companies act in a sustainable manner in their own interest and thus strive for a long-term orientation. This can be achieved through various corporate governance mechanisms (Krechovská & Procházková, 2014).

The extent of definitions for Corporate Governance in research ranges from narrow to broad views. In the narrow view, only the relationship between the shareholders of a company and the company itself is seen as corporate governance. This view is found in agency theory, which will be explained later (Solomon, 2013). Stakeholders are safeguarded through corporate governance mechanisms which are designed to ensure that investments in firms generate profits (Maassen, 1999).

Supporters of the broad definition, however, define corporate governance as a web of relationships. Here, company, shareholders, and various stakeholders such as customers, the environment in which the company operates, suppliers and many others are interconnected. This view can be found in the stakeholder theory, which will also be explained later (Solomon, 2013).

Defined by Cadbury, Corporate Governance is “the system by which companies are directed and controlled” (Cadbury, 1992, p. 15). It helps to ensure that the existing company capital is used reasonably and that the interests of various groups that make a stake in the company are safeguarded (OECD, 1999). In addition, good corporate governance ensures that the firm's management is accountable to the firm and its shareholders (OECD, 1999). Strategic decisions of a company, like the importance of sustainability or social responsibility, are influenced by corporate governance (Barnea & Rubin, 2010).

The EC states that “Sustainability in corporate governance encompasses encouraging businesses to consider environmental (including climate, biodiversity), social, human and economic impact in their business decisions, and to focus on long-term sustainable value creation rather than short-term financial value.” (European Commission, 2021).

Sustainable action is evaluated in the literature and in the private sector through ESG scores (cf. Claassen & Ricci, 2015; Velte, 2016a). ESG stands for Environmental, Social and Governance. To measure the ESG score, various criteria are included and analysed. There are several rating agencies that objectively evaluate the ESG performance of companies and place them in the context of the general market (Velte, 2016a). One of these ratings is the Asset 4 of the Thomson Reuters DataStream database, which is also used in this study (Thomson Reuters, 2017).

To avoid any confusion in this work, the terms SCG, CSR and CSP will be distinguished from each other. SCG, as already mentioned, is the way in which a company is managed, the mechanisms and composition of which are geared towards long-term and sustainable action.

In the literature, the attention that companies pay to environmental and social issues is called CSR (cf. Clarkson, 1995; Hillman & Keim, 2001; Mahoney & Thorne, 2005; Wood, 1991). According to Caroll, the CSR incorporates „the economic, legal, ethical, and discretionary expectations that society has of organizations at a given point in time “(Carroll, 1979, p. 500). Whereas CSP means that a company not only identifies its social responsibilities, but also solves issues arising from these responsibilities through adequate strategies (Wood, 1991).

Sustainable action, whether through CSR or CSP efforts or through CS, is increasingly a focus of research. Some scholars have investigated which determinants influence corporate sustainable development. Bansal found that the international experience of a company, mimicry and

media attention are positively related to CS development (Bansal, 2005). However, it can also happen that managers invest too many resources in CSR without considering the current company performance, just to present themselves as global citizens (Barnea & Rubin, 2010). However, internal forces such as inside directors have a positive impact on a company's sustainability, while large shareholders have a negative influence (Crifo et al., 2019). This negative influence is demonstrated by short-termism, which makes firms more risk-prone and influences the internal allocation of resources in favour of short-term financial goals (Brochet et al., 2015).

However, CS has a positive effect on the financial performance of companies (Maletič et al., 2014), as many researchers have found out when investigating the connection between sustainable action and company performance. Sustainable action thus becomes a competitive advantage (Maletič et al., 2014). This effect is even amplified when the industry in which the company is located grows (Russo & Fouts, 1997). Also, environmentally friendly action leads to legitimisation through the stakeholders and thus to risk avoidance. Companies with CS are less susceptible to stock market risks and enjoy greater trust among their stakeholders (Bansal & Clelland, 2004). Furthermore, a good CSP leads to a good company reputation and increased attractiveness as an employer (Turban & Greening, 1997). Moreover, proactive sustainability strategies are likely to satisfy a company's stakeholder concerns, especially if the sustainability activities are detached from political regulation (Buysse & Verbeke, 2003; Henriques & Sadorsky, 1999). Furthermore, shareholder value can be increased by good stakeholder management (Hillman & Keim, 2001). However, it should be noted that the previous company performance is more strongly related to the CSR of the company than the future performance (McGuire et al., 1988). Nevertheless, CSP is positively related to a company's previous and subsequent financial performance (Waddock & Graves, 1997).

2.2. Board of directors - what role does it play and how is it structured?

The quantity and quality of research conducted to date on the topic of executive compensation and sustainable corporate performance differs greatly between the Anglo-Saxon and German-speaking research areas. While there are more than a hundred studies on this topic in the Anglo-Saxon world, research in the German-speaking world is limited to a single-digit number. However, the results of one cultural area cannot simply be transferred to the other. This is partly due to the fact that an essential aspect of corporate governance, namely the structure of the BOD, differs in both research areas.

A good corporate governance structure is created through the appointment of a BOD and various other control bodies (Tricker, 1994). The role of the BOD is to set a strategic direction for the company and to execute it through good governance. It is determined by the company's shareholders, laws and corporate governance codes (Cadbury, 1992).

The BOD bridges between the managers of the company and the shareholders who own the company as investors (Cadbury, 1999). It represents the governing body of the company, which leads and guides the firm it in the right direction, concerning financial and legal issues (Anand, 2008). Research found out, that different aspects of the structure of the BOD have an influence on the relationship between CSR and CFP. The number of women in the BOD, as well as the size of the BOD, has a positive influence on the relationship, while a high ownership concentration has a negative influence (Pekovic & Vogt, 2021). Other studies have also found a positive correlation between the existence of women in the BOD and sustainability performance. Women thus improve both ESG disclosure and actual ESG performance (Nicolò et al., 2022; Velte, 2016b).

The BOD can be composed differently depending on the region and the rules and legislation that prevail there (Maassen, 1999). However, regarding the construction of the BOD, a distinction has to be made between two main types, the one-tier board and the two-tier board (Jungmann, 2006). While for example companies in the United States, United Kingdom and Canada have a one-tier board, countries such as Germany or Austria, the country of this research, have a two-tier board (Velte, 2016b). For both systems, strengths and weaknesses have been identified in research and practice, but no system outweighs the other (Jungmann, 2006).

2.2.1. One-tier system

In the one-tier model, which is predominant in the Anglo-American region, there is only one BOD (cf. Maassen, 1999; Solomon, 2013). All directors are appointed to the BOD by the company's shareholders and can also be removed from office by them in the case of severe misconduct. Apart from the appointment, the shareholders influence on individual directors, or the work of the board is little (Jungmann, 2006). The board's task is to decide on long-term strategies, guide the company's management and make appropriate decisions. In most companies, around fifty percent of the BOD is made up of non-executive directors and the other half of executive directors (Jungmann, 2006; Solomon, 2013). Non-executive directors sit on the board, however, they are not employed by the company. Their task is to assess the timely fulfilment of deadlines, the company strategy and the application of company codes. Furthermore, they contribute to good corporate governance through constructive criticism and a control function (Jungmann, 2006). Executive directors focus on managing the organization, while being supervised by non-executives. This supervision happens, among other things, through committees which deal with remuneration, nomination, audit and oversight (Maassen, 1999).

2.2.2. Two-tier system

In the two-tier model, used in German-speaking countries, there is a clear separation of tasks and responsibilities prescribed by law and governance codices, which leads to a subdivision of the BOD. In Austria the board consists of two different parts, the executive board and the supervisory board, which are strictly differentiated in their obligations (Jungmann, 2006; ÖCGK, 2021). The members of the supervisory board represent either employees or shareholders of the company (ÖCGK, 2021). They are elected by the general meeting of shareholders. Their responsibility lies in advising and supervising the executive board. Furthermore, they are responsible for the appointment and removal of executive board members (Jungmann, 2006). In addition, members of the supervisory board represent the company in legal matters against the members of the executive board. Moreover, they must discharge the executive board with regard to the accounting of the financial year or, in the worst case, intervene if members of this board do not safeguard the interests of the company. In addition, there are tasks such as determining the remuneration of the executive board, reporting to the general meeting, or connecting with shareholders (Jungmann, 2006; ÖCGK, 2021).

The members of the executive board usually come from the corporate context and are appointed by the supervisory board. The responsibility for the management of the company lies with them (Jungmann, 2006). The executive board itself is not dependent on instructions from the supervisory board or shareholders. However, it can be controlled by the supervisory board through counter order in the event of misconduct (AktG, 2019/03.09.2022; ÖCGK, 2021). In addition to management, the board is also responsible for long-term corporate strategy and direction. Members of one board may not sit on the other board (AktG, 2019/03.09.2022; ÖCGK, 2021). This separation can prevent abuse of power by the executive board (Jungmann, 2006).

2.2.3. Board Characteristics

Besides the basic difference of the applied system, the BODs can also be constructed differently. There is no one-fits-all solution for the composition of the BOD, which means that every company has a BOD individually tailored for it. However, certain characteristics exist on the basis of which the structure of the BODS can be explained. Those characteristics are the size of the board, i.e., the number of members, the diversity, i.e., the gender distribution within the board, the leadership of the board and the origin of the directors, i.e., whether they come from within the company or from outside and also the land of origin (Anand, 2008)

Board Size

The number of directors in the BOD is not legally defined in Austria and can vary (ÖCGK, 2021). However, a balanced number must be found, as a BOD can be impaired in its function if it is too small or too large (Anand, 2008). BODs that are too small run the risk of not being productive enough due to lack of expertise or capacity (Anand, 2008). BODs with a high number of directors provide this expertise and capacity. However, they are prone to inefficient decision-making. The high number and diversity of directors can create free-rider problems that limit the productivity of individual directors, as well as wasting resources (Anand, 2008; Tricker, 1994). It is therefore important to find the right balance in order to provide resources and information in a responsible way, while not losing efficiency (Anand, 2008; Boyd, 1990). Some scholars therefore suggest limiting the number of directors to a maximum count of 10 (cf. Cadbury, 1999; Lipton & Lorsch, 1992). This size allows individual directors to know each

other and their respective tasks good enough, to participate in discussions and to come to a common denominator that will keep the company going (Lipton & Lorsch, 1992).

Board diversity

A diverse selection of directors can improve the effectiveness of the BOD according to some scholars (Solomon, 2013). This diversity relates to different human characteristics such as gender, age, soft and hard skills, business background or personality of the individual (Anand, 2008; Solomon, 2013). Diversity in these characteristics can lead to different resources being brought into the BOD (Hillman et al., 2000). Furthermore, it can be argued that better efficiency is achieved through increased dialogue among actors (Carter et al., 2010). However, diversity in Austria is scares. Women were only represented in 28% of the boards in 2021 (Haider & Dorninger, 2022).

Leadership

Another characteristic is the type of BOD leadership. According to agency theory, the CEO and the chair of the BOD should not be one and the same person. This so-called CEO duality leads to greater dependency of the board and possible abuse of power by the CEO with regard to his own interests (cf. Anand, 2008; Cadbury, 1992; Jensen & Meckling, 1976; Solomon, 2013). In the Austrian two-tier system, however, this danger is limited, as the supervisory board supervises and controls the executive board (ÖCGK, 2021).

Inside vs Outside directors

Based on the agency theory, which will be explained later, the BOD should only consist of inside directors, i.e., directors who come from the company and have been involved in it before (Jensen & Meckling, 1976). With this practice, possible conflicts of interest between managers and shareholders, should be avoided (Levrau & van den Berghe, 2014). However, other scholars such as Solomon (2013) and Anand (2008) support the view that a healthy mix of inside and outside directors leads to a broad diversification of skills brought in and thus contributes to the company and its profit (Anand, 2008; Solomon, 2013).

2.2.4. Additional Committees

In Austria, prescribed by law, various professionally qualified committees must be formed within the supervisory board. This procedure is intended to make it easier to deal with complex issues and to increase the overall efficiency of the supervisory board. Each committee has a chairperson who informs the supervisory board about the work of the committee at regular intervals. Although the main purpose of the committees is to support the work of the supervisory board, they are authorized to make important decisions in urgent cases (78 (1) AktG, 2012/03.09.2022; ÖCGK, 2021).

While various committees are mandated by the Austrian Corporate Governance Code, companies with operations in Austria are required by law to establish an audit committee. This committee must include at least one financial expert and is responsible for monitoring all financial business of the company. This includes monitoring the accounting process, the work of the auditor, determining independence and observing if internal control and risk management systems work in the proper manner. The audit committee also determines whether the financial reports are accurate and representative (78 (1) AktG, 2012/03.09.2022; ÖCGK, 2021). Another requirement of the ACCG is to set up a nomination committee to deal with the filling of vacancies on the board. Its tasks include submitting proposals of suitable candidates for the board to the general meeting and succession planning. If the board consists of no more than 6 members, the nomination committee may be represented by the entire board (ÖCGK, 2021).

Furthermore, companies are obliged by the ACCG to set up a compensation committee to deal with executive board remuneration. It is in charge of the regular review of the compensation policy of the members of the BOD, but also ensures that the remuneration of the BOD contains fixed and variable components, in which the variable part also includes non-financial performance criteria and is aligned with a long-term and sustainable business policy. If the supervisory board does not consist of more than 6 members, the remuneration committee can be represented by the entire supervisory board (ÖCGK, 2021). In addition, companies can set up further committees on a voluntary basis to deal with different topics. For example, some companies have CSR committees that take care of CSR and CSP of the company. In addition, many companies also have corporate governance committees that work to ensure that the company's duties to its shareholders are met, and that the board's work is directed towards the best interests of the company (Anand, 2008).

2.3. Code and Legislation

Before explaining the structure of executive remuneration and deriving hypotheses in the previous chapter, this chapter provides a brief overview of the legal and regulatory situation of executive remuneration in Austria.

The implementation of corporate governance and thus also executive board remuneration is described in Austria by various regulations. These frameworks include, first and foremost, the law, the Corporate Governance Code and the requirements of the European Union (EU). The following sections will present the development of these three frameworks, as well as the detailed rules and laws.

The Austrian Codex of Corporate Governance was established in autumn 2002 by the Austrian Working Group for Corporate Governance (ÖCGK, 2002). It is primarily intended as a guide and set of rules for Austrian listed stock corporations or international companies listed on the Austrian stock exchange. The Corporate Governance Codex is based on the OECD Guidelines for Corporate Governance as well as the respective laws of the Austrian capital market, stock corporation and stock exchange law. In order to keep the Code up to date, it is evaluated once a year on the basis of national and international developments and adapted to new circumstances (ÖCGK, 2002). Originally, the obligation to adhere to the ACCG was voluntary for Austrian stock exchange companies. Companies that decided to do so had to make this known by means of a public declaration. Today, however, compliance with the Code is a mandatory admission requirement for companies wishing to be listed on the Prime Market of the Vienna Stock Exchange (wiener boerse, 2019). The basic idea of the Code is "to significantly promote shareholder confidence through even greater transparency, through an improvement in the quality of the interaction between the supervisory board, the executive board and the shareholders, and through a focus on long-term value creation" (ÖCGK, 2002, p. 6).

The Code comprises three different categories of rules: legal requirement, comply or explain, and recommendation. Legal requirements are based on legal provisions and must be complied. Comply or explain rules should be followed. However, if there is a deviation from the rules, it must be explained and justified. Recommendation rules are regarded as recommendations. In case of non-compliance, no disclosure or explanation is required (ÖCGK, 2021).

In addition to the requirements for transparency and auditing of corporate governance implementation in companies, the ACCG is primarily concerned with the individual tasks and interaction between the supervisory board and the executive board. A particularly important aspect for the present work is the rules concerning executive board remuneration. While the composition of executive board remuneration was defined by a set of rules in 2002 (ÖCGK, 2002), it was not until 2008 that the Comply or Explain Rule No 27 in the ACCG was amended to make the performance-related components of executive board remuneration dependent on long-term and sustainable performance indicators (ÖCGK, 2009). In April 2009, the EC published a recommendation regarding the remuneration of directors in listed companies. This publication stated that the remuneration practices of listed companies should be more transparent and promote a sustainable long-term performance of the company (European Union, 2009).

This EU remuneration recommendation resulted in a new Codex revision in 2010 where long-term variable remuneration and stock options has to be defined in more detail (rule 27 and 28), and the composition of executive board remuneration has to be explained in the corporate governance report (rule 30). Both implementations were added comply or explain rules (27 and 28) (ÖCGK, 2010).

In 2012 Section 78 (1) of the Austrian Stock Corporation Act stipulated that executive board remuneration must provide long-term incentives for sustainable company development (78 (1) AktG, 2012/03.09.2022). As a result, in July 2012, Law Rule 26a was incorporated into the ACCG, according to which the supervisory board of a company must ensure that the executive board's salary is not only commensurate with the activity in the company but also with the situation of the company and sets long-term incentives for a sustainable company development (ÖCGK, 2012).

In 2014, the EU directive (EUR-Lex 2014/95/EU) obliged listed public interest companies (with more than 500 employees) to publish non-financial reporting (European Union, 2014). Since then, these companies have to publish information that not only refers to the course of the last business year or the company's situation and business results, but also discloses aspects of the business activity's impact on the environment, social and employee concerns, the handling of corruption and the attitude towards respecting human rights. In addition, the most important non-financial performance indicators for the business activity must be published (European Union, 2014). It should be noted, however, that these do not have to be described in detail but can only be mentioned superficially. This directive was implemented in Austria in 2016 by

the Sustainability and Diversity Improvement Act (NaDiVeG, 2016/03.09.2022). In the course of this, paragraphs 243b and 267a were added to the Corporate Code, making the publication of a non-financial report obligatory for the companies concerned. However, this process did not result in a change in the Corporate Governance Code.

In 2017, another Directive of the European Parliament and of the Council came into force (EUR-Lex 2017/828) to reaffirm the promotion of long-term shareholder engagement (European Union, 2017).

In addition to other requirements, such as the identification of shareholders or the participation policy, it stipulates, among other things, the involvement of shareholders in the design of the firm's remuneration policy. This is done through the right to vote at the general meeting (9a). In addition, it is now specified how precisely and in detail the remuneration policy must be presented in the remuneration report to be published. This directive was implemented in Austria in 2019 by amending the Stock Corporation Act (AktG, 2019/03.09.2022). For this purpose, paragraphs 78 a to e were inserted after §78. This amendment was taken into account in the January 2020 version of the ACCG, which was supplemented by further law rules (26b, 29 and 29a) (ÖCGK, 2020). Especially 26b (after paragraphs 78a and 78b of the Austrian Stock Corporation Act) is interesting, as it now explicitly stipulates that companies must link the variable remuneration of their management board to non-financial performance criteria and must now explicitly specify these in detail (AktG, 2019/03.09.2022; ÖCGK, 2020). In addition, the companies must clarify how exactly the fulfilment of the non-financial criteria is to be evaluated and to what extent the companies contribute to the long-term promotion of society with the help of these criteria. In addition, 29a (after sections 78c, 78d and 78e AktG) stipulates that a comprehensible and clear remuneration report must be prepared and submitted annually to the general meeting for voting (AktG, 2019/03.09.2022; ÖCGK, 2020).

With the help of these new legal provisions, the previously roughly described remuneration report becomes a detailed, easily understandable illustration of the actual remuneration policy. Thus, it is hoped that the data will be more detailed and meaningful for future research.

3. Board remuneration

As the most important corporate governance body, the BOD is liable for the fundamental corporate strategy and thus also determines the importance attached to sustainability in the company. The more important sustainability is to the individual members, for whatever reason, the more likely the company will act in a social, environmental and long-term manner. Therefore, EC and EY suggest possible mechanisms to steer companies towards sustainability. One of these mechanisms is the remuneration of the BOD of European companies. For example, long-term variable remuneration, partly linked to non-financial performance indicators, should promote sustainable corporate practices.

These mechanisms can be based on various theories in corporate governance research. These are Agency Theory and the Stakeholder Theory and their hybrid form, the Stakeholder-Agent Theory, as well as the Institutional Theory. This chapter explains the different theories and relates them to each other in order to show how remuneration can affect boards of directors.

3.1. Why is compensation a useful tool? The theories behind the mechanism

3.1.1. Agency theory

The link between executive board members' remuneration and the achievement of corporate goals can be explained by the help of agency theory, among others. In Western companies, it is common that the owners of a company do not necessarily manage the company at the same time. As shareholders, they hand over the leadership to the management of the firm. This practice has been described by Berle and Means as separation of ownership and control (Berle & Means, 1933). However, this separation of the two constructs can lead to agency problems when one of the parties receives an advantage due to information differences and acts for its own benefit (Ross, 1973). The two scholars Jensen and Meckling took up the agency problem in 1976 and established the so-called agency theory. They describe the relationship between two parties linked by a contract (Jensen & Meckling, 1976). On the one side of the contract is the owner of a company, the so-called Principal, who owns the company. In the case of listed companies, this is the shareholder. On the other side of the contract is the manager who runs and manages the same company. He is called the agent. In the case of larger companies, not only one manager is responsible for the management of the company, but several, who are composed

in the BOD. The principal instructs the BOD to manage the organisation on his behalf, and to maximize the profits (Jensen & Meckling, 1976).

However, since no individual in the principal-agent relationship acts altruistically, all parties within the contract strive for their own utility maximisation and act out of pure self-interest (Jensen & Meckling, 1976).

The contrasting behavior of agent and principle can be traced back to different risk affinities (Shankman, 1999). Since the different contracting parties are willing to bear a different level of risk, their attitudes towards events and crisis and the resulting actions also differ. This problem was described by Shankmann (1999) as risk sharing.

While in financial theory it is assumed that profit maximization for shareholders is the primary goal of a company (O'Connell & Ward, 2020), the managers of the company primarily pursue their own interests (Heath, 2014). Agents, involved in the company as direct employees, are assumed to act primarily for their own goods and thus neglecting the interest of the shareholder. They tend to behave egoistically and place their own goals at the center (Heath, 2014). This is reflected, among other things, in a preference for projects and investments that promise a high profit that can be achieved quickly. Long-term projects are thus neglected, and the aforementioned problem of short termism arises, and shareholder welfare is reduced (European Commission & EY, 2020). In agency theory, this is referred to as residual loss (Hill & Jones, 1992).

In order to control the agents' business activities in a meaningful way and to ensure that they act in the principal's interest, various mechanisms have to be used. For the principal it is neither easy nor convenient to track the actions of the agent (Eisenhardt, 1989). Possible problems after contracting result from an unequal distribution of information, the information asymmetry (Jensen & Meckling, 1976). Two different types can occur, hidden information and hidden action (Arrow, 1984). In case of hidden information, the agent's level of information knowledge is greater than that of the principal. The agent exploits his knowledge advantage for his own benefit which leads to a risk called adverse selection (Arrow, 1984). In hidden action, the agent acts on the basis of alternative actions that are hidden from the principal. This situation is referred to as moral hazard (Arrow, 1984). In order to eliminate these agency problems, appropriate instruments have to be chosen. These attempts by the company owner to monitor management are very costly and lead to agency costs (Jensen & Meckling, 1976). Monitoring can be done directly by the shareholder, but this consumes important resources and wastes time. In

order to circumvent or minimize the agency problem, executive compensation is used as a mechanism (Göx, 2016). Performance-based incentive contracts are hereby used as motivation for the agent to act in the interest of the shareholder (Balsam, 2002). In theory, adequate financial incentives connected to a firm's financial performance can motivate agents to increase the wealth of their shareholders (Nigam et al., 2018). With the help of these contracts, the goals of the executive board are to be aligned with the interests of the shareholders.

In summary, according to the agency theory, contracts and a predefined remuneration structure are a suitable tool to get the agent to fulfil the obligations towards the principal. In this way, the agents can be made to act in the interests of the shareholders. Besides the costs incurred, the contracts based on agency theory will not necessarily lead to sustainable behavior.

3.1.2. Stakeholder theory

Another theory of corporate governance research is the stakeholder theory, which was presented by Freeman in 1984 and has been further developed since (Donaldson & Preston, 1995; Freeman, 1984; Friedman & Miles, 2002). In this concept the commitment of firms does not only apply to their shareholders, but also to their stakeholders (Freeman, 1984).

Corporations play an increasingly important role in today's world. They influence and shape society and the environment in which they operate (European Commission & EY, 2020). The original relationship between shareholder and company, and the former objective of wealth creation, has now become much broader, affecting workers, regional communities, nature and many more (Solomon, 2013). Today, various lobbyists represent social and environmental interests and expose corporate misconduct (Solomon, 2013).

The definitions of stakeholders are just as diverse as the disciplines in which stakeholder theory is situated (Freeman, 1984). However, one characteristic is common to all of them. All actors in stakeholder theory participate in a reciprocal relationship in which they are influenced by the company but also have the potential to influence it (Donaldson & Preston, 1995; Freeman, 1984; Hill & Jones, 1992).

Stakeholders include countless individuals and groups that can be distinguished by their affiliation to the company and the type of influence they exert on the company. Internal, primary

stakeholders include, for example, managers, shareholders, employees and workers. External, primary stakeholders include suppliers, customers, lenders. Secondary stakeholders include society as a whole, communities affected by company activities, nature and future generations (Clarkson, 1995; Freeman, 1984; Jones, 1995). According to stakeholder theory, all stakeholders should be compensated in a way by the company (Freeman & Velamuri, 2008), as they can influence the company both directly and indirectly (Rowley, 1997). For example, workers can paralyze production operations through strikes, or suppliers can use their bargaining power to reduce the company's profits (Clarkson, 1995). But also, society influences companies more strongly today than in the past. For example, media shitstorms and product boycotts can be seen as a potential threat to a company (Svendsen et al., 2001). In general, the public expectation is that companies behave as good corporate citizens and improve the quality of life of their stakeholders (Hill & Jones, 1992). They should create value for the society in hindsight of economic, ecologic and social issues (van Marrewijk, 2003). The growing call for CS can also be seen from this perspective. As postulated by the pure ethics view, managers of a company would behave ethically and morally correctly in a non-company context (Solomon, 2013). Simply losing their ethical and moral compass in a business context is to be doubted. Therefore, the executive board fulfils their stakeholders' interests by acting in a socially responsible manner (Quinn & Jones, 1995). Quinn and Jones (1995) refer to this as agent morality. However, since corporate legislation requires that the first corporate objective be to increase shareholder wealth, in practice it is almost impossible for managers and the board to run the company completely ethically, taking into account all stakeholders.

Nevertheless, executive board remuneration can also play a helping role here. Since, according to stakeholder theory, executives take the concerns of stakeholders into account (Driver & Thompson, 2002), it can be concluded that they put aside their desire for short-term profit in favor of long-term benefits (Bruce et al., 2005). This behavior leads to self-regulation, which is also evident in salary negotiations (Cadbury, 1992; Greenbury, 1995). Moreover, the achievement of collective goals is more important than the interests of individual board members (Driver & Thompson, 2002). Thus, the remuneration committee of a company also links the board salary to sustainable parameters.

3.1.3. Stakeholder-agent theory

The EC states that "Sustainability in corporate governance encompasses encouraging businesses to consider environmental (including climate, biodiversity), social, human and economic impact in their business decisions, and to focus on long-term sustainable value creation rather than short-term financial value." (European Commission, 2021). To get to such a point of sustainable management, this means that the two theories presented would have to coexist.

It should therefore be possible for companies to seek both to maximize shareholder profits and to take care of stakeholder concerns. This position should unite both theories discussed so far. In fact, there are new approaches in the academic literature that link the sustainable organization and its relationship with stakeholders to an increase in shareholder profit. Some studies on this topic even show that companies improve shareholder value through good stakeholder management (Hillman & Keim, 2001). However, this raises the question of how the two theories can be sensibly applied to each other. Shankmann contrasted and compared both theories in 1999 (Shankman, 1999). He comes to the conclusion that the two theories support and require each other. According to him, the stakeholder theory is normative and is the only logical consequence of the application of the agency theory (Shankman, 1999). Moreover, he sees agency theory as a narrowly defined form of stakeholder theory, in which instead of the network of relationships between many actors, only the dual relationship between agent and principal is addressed (Shankman, 1999). Furthermore, he points out a contradiction between the postulations about motivation and human behavior that are presupposed in agency theory (Shankman, 1999). Finally, Shankmann says that in all existing firm theories there must be an implicit moral minimum that presupposes ethically correct behavior on the part of actors and that old, traditional theories must therefore be changed or reconsidered (Shankman, 1999).

Based on these assumptions, the position of the board in the company's network of relationships can be redefined. As an agent, the BOD is still obliged to the shareholder as principal. However, it is now also seen as a stakeholder, and thus as part of the company, which must act responsibly towards other stakeholders in addition to the company owners (Shankman, 1999). It can fulfil this responsibility through its decision-making power and the appropriate use of company resources and now fulfil the expectations of the other stakeholders and align his own interests with the interests of the others (Hill & Jones, 1992; Shankman, 1999; Solomon, 2013).

Hill and Jones took up this assumption in 1992 and developed the stakeholder agent theory. They argue that the principal-agent relationship is only one of many stakeholder-agent relationships. Quinn and Jones, on the other hand, criticize this assumption because the importance of morality differs greatly in the individual theories (Quinn & Jones, 1995). Whereas from the perspective of agency theory the board acts primarily driven by self-interest, from the perspective of stakeholder theory action should be arise of a sense of duty and social responsibility (Quinn & Jones, 1995). According to Quinn and Jones (1995), it will never be possible to fully reconcile morality and the pursuit of profit (Quinn & Jones, 1995). Therefore, the only realistic way to look at it is not from a completely ethical point of view, but from a day-to-day business scenario. Here in the business world, it becomes apparent that ethical behavior is used by managers mainly when it helps to increase the value of a company. Quinn and Jones call this instrumental ethics, as the board chooses to implement CSR measures to increase shareholder wealth (Quinn & Jones, 1995). Responding to the needs of stakeholders brings many benefits to the company (P. Bansal & Clelland, 2004). However, neglecting the same needs can drive a company into economic ruin. Studies show that financial performance deteriorates when the needs of stakeholders are ignored (Hillman & Keim, 2001). The implementation of CSR measures, on the other hand, leads to an increase in financial performance (Russo & Fouts, 1997). Thus, a company that is also stakeholder-oriented in its behavior will be well positioned and less likely to disregard potential threats through dialogue (Bansal & Clelland, 2004; Hillman & Keim, 2001)

But also, in the stakeholder-agency theory, incentives must be created for the board to take care of the concerns of other stakeholders and the maximization of profits. An optimal incentive system must be created that leads to a reduction of information asymmetries and conflicts of interest (Shankman, 1999). However, adverse selection and moral hazard cannot be ruled out in this relationship between stakeholders and agents, and incentives, including financial incentives, must be created to reduce the risks (Hill & Jones, 1992). These financial incentives will encourage the board to lead the company as a corporate citizen in a sustainable manner if remuneration is linked to long-term performance rather than the achievement of short-term financial performance indicators (Hill & Jones, 1992). Furthermore, it helps to reduce information asymmetries if information about sustainable corporate practices is published in such a way that it is freely accessible to all stakeholders (Shankman, 1999).

In order to preserve the stakeholder concerns and sustainability orientation aspect, non-financial and sustainable/long-term performance indicators in remuneration need to create incentives to meet stakeholder interests and thus enhance ESG performance (Paetzmann, 2016; Velte, Weber, & Lentfer, 2018).

3.1.4. Institutional Theory

Another theory on which this work is based is Scott's Institutional Theory (Scott, 1995). According to this theory, a company tries to legitimize itself before its stakeholders and institutions (Scott, 1995). This legitimacy is achieved or strengthened when the company's actions are perceived by others as appropriate or even desirable and create social value (Bansal & Clelland, 2004). Stakeholders decide whether companies are in line with social and corporate values on the basis of their own norms, preferences or cognitive maps, which are derived, among other things, from the institutional sphere in which they operate (Bansal & Clelland, 2004; DiMaggio & Powell, 1983; Scott, 2005). However, these value systems may differ among stakeholders (Bansal & Clelland, 2004). For example, a specific education program for the community in which a company produces provides educational opportunities for youth, while the same program for shareholders of the company represents an investment in well-educated professionals.

Shareholders assess the legitimacy of the company on the basis of freely accessible information, for example through media coverage or company reports. Another source of information, however, is the observation of other stakeholder groups, whose behavior provides conclusions about the company's practices (Bansal & Clelland, 2004).

Since shareholders contribute to the unsystematic risk through their capital investment (Bansal & Clelland, 2004), it is again particularly important for companies to approach the expectations of shareholders with their activities. In doing so, however, they do not try to exceed these expectations, but only to meet them (DiMaggio & Powell, 1983), which in turn leads to risk-reducing behavior in the long run (Suchman, 1995; Zucker, 1977) and thus brings with it a lower unsystematic risk (Suchman, 1995).

Legitimate firms are less likely to face high fines or legal sanctions because, for example, corporate accidents happen less frequently (Sharma & Vredenburg, 1998; Shrivastava, 1995a). But

also, social sanctions, such as calls for boycotts or shitstorms, are avoided through high legitimacy and sustainable action (Oliver, 1991).

In addition, higher corporate legitimacy leads to better access to valuable resources (Shrivastava, 1995b). This comes about, among other things, through better conditions with corporate partners, or through the increased interest of experts in wanting to work in this company (Bansal & Clelland, 2004; DiMaggio & Powell, 1983; Turban & Greening, 1997). These resources in turn help to strengthen sustainability in the company, which then leads to increased legitimacy (Bansal, 2005; Bansal & Clelland, 2004).

In summary, highly legitimate, sustainable companies on the one hand reduce the risk of organizational failure through their actions, while on the other hand they improve their financial performance (Sharma & Vredenburg, 1998; Shrivastava, 1995a, 1995b). Thus, managers of a company should be motivated to act sustainably. However, according to Bansal or Sharma, this motivation does not necessarily exist (Bansal & Clelland, 2004). A sustainable business orientation entails risks for management in that, for example, new technologies could ultimately fail or lead to higher costs (Russo & Fouts, 1997). In addition, sustainable action cannot simply be implemented quickly, but takes a certain amount of time and the necessary equipment. However, it is not clear from the outset whether the various strategies will work, which leads to uncertainties (Aragón-Correa & Sharma, 2003; Hart, 1995). In order to motivate the board to implement sustainable strategies in the company, a suitable reward system must be implemented in the company.

3.2. The different components of executive board remuneration

As explained in the previous chapter, executive remuneration can theoretically be used as a tool for CS, as proposed by the EC and EY. However, it is important to note that the remuneration structure is specific, and the individual components have different effects. This is explained in the following chapter and supported by previous research results. In addition, the hypotheses for this work are derived from this.

According to Lazar, pay can be used as a steering tool for sustainable action (Lazar, 2007). Adequate, attractive remuneration ensures that vacancies in the company can be filled with

suitable, qualified and experienced personnel (Balsam, 2002; Lazar, 2007). The design of appropriate remuneration reflects the difficulty of balancing concerns of the owners and demands of stakeholders for sustainable behaviour. Short-term financial goals and long-term sustainable strategies must be appropriately considered (Balsam, 2002; Lazar, 2007). Legal regulations shall ensure in Austria that executive board remuneration is linked to a long-term, sustainable corporate policy (AktG, 2019/03.09.2022).

When it comes to the appropriate remuneration of directors, the "pay-for-performance" assumption is supported by many researchers. Pay-performance sensitivity shows that there is a relationship between changes in executive wealth and changes in shareholder wealth (Jensen & Murphy, 1990). This pay for performance hypothesis was confirmed in 2003 based on the principal-agent model (Aggarwal & Samwick, 2003). Furthermore, principal-agent conflicts can be reduced if executive compensation is designed with both fixed and variable elements (Gray & Cannella, 1997).

Compared to regular employees, the salaries paid to executive board members are usually much higher (Göx, 2016). The corresponding remuneration is intended to motivate executives to achieve corporate goals on the one hand and to bind them to the company on the other (Eckardstein, 2001; Lazar, 2007). In order to determine the remuneration appropriately, their performance as well as various company parameters are taken into account (Lazar, 2007; Murphy, 1999).

As already described in chapter 2.2.4, the remuneration of the management board in Austrian listed companies is determined by the supervisory board. This is supposed to lead to the inclusion of employee representatives so that board salaries are set in relation to the average worker (Abeln, 2019). In reality, however, executive salaries are determined by the remuneration committees, in which workers are not necessarily represented (ÖCGK, 2021).

In principle, executive remuneration can be described as total compensation, which in turn can be divided into three main components: the fixed basic remuneration, the variable, performance-related component and fringe benefits (Balsam, 2002; Lazar, 2007). Financial and, since recently, also NFI are used to determine variable compensation (Haager & Wieser, 2021; ÖCGK, 2021; Velte, Weber, & Lentfer, 2018).

Research has already been conducted in the literature on the relationship between top management and compensation. Bebchuck et al. (2002) found that the top management's position of power has a significant influence on the amount and composition of their own compensation (Bebchuk et al., 2002). In addition, stakeholder management has a negative impact on the level of CEO compensation (Coombs & Gilley, 2005). Furthermore, the cash compensation of CEOs in widely held firms is not as strongly dependent on firm performance as in closely held firms (Craighead et al., 2004). In addition to individual factors, CEO compensation also depends on the size of the firm and the financial performance of the company (Gök, 2016; Stanwick & Stanwick, 2001). Over the course of time, the executive compensation of German (Gök, 2016) and Austrian companies (Haager & Wieser, 2021) has increased.

However, efforts to improve ESG performance also have a positive impact on firm performance. Friede, Busch and Bassen (2015) compared results of 2200 research works and showed the majority of the examined studies found positive significant relationships between ESG and financial performance, which usually remains stable over time (Friede et al., 2015). Callan and Thomas (2011) also find a positive influence of CSP on the company's financial performance (Callan & Thomas, 2011).

The relationship between compensation and sustainable corporate aspects has also been studied (cf. Cai et al., 2011; Callan & Thomas, 2011; Claassen & Ricci, 2015; Coombs & Gilley, 2005; Deckop et al., 2006; Mahoney & Thorne, 2005, 2006; J. McGuire et al., 2003; Stanwick & Stanwick, 2001). Stanwick and Stanwick (2001) found on the one hand that the level of CEO compensation is negatively related to the environmental reputation of the company (Stanwick & Stanwick, 2001). On the other hand, Berrone and Gomez-Mejia (2009) and Callan and Thomas (2011) show that a company's environmental performance has a positive impact on CEO pay (Berrone & Gomez-Mejia, 2009; Callan & Thomas, 2011). Cai et al. (2011) found that good CSR policies had a significant negative impact on CEO compensation (Cai et al., 2011).

In the following subsections, the individual components and the research results so far are explained, and the various indicators are discussed.

3.2.1. Fixed Compensation

The remuneration is structured as followed: Fixed remuneration, short-term variable remuneration, long-term variable remuneration, pension payments and one-off payments (Lazar, 2007). However, pension payments and one-off payments play a subordinate role and are not described in detail.

The fixed salary accounted in Austria in 2020 for 42,7% of the total compensation of the executive board (Haager & Wieser, 2021) and it includes a basic salary and benefits, which are paid regardless of the actual economic performance (Lazar, 2007). The fixed salary is not intended to function as an incentive for the managers (Kluckow, 2014). Its intent is rather to reward managers for their experience, previous qualifications and high level of responsibility. In addition to the task of securing the standard of living, the basic salary is also intended to protect them from risks that cannot be influenced by the market or external circumstances (Gray & Cannella, 1997; Lazar, 2007). The fixed remuneration must be adjusted annually, as the parameters and thus also the risk accepted by the managers are constantly changing (Murphy, 1999; ÖCGK, 2021).

According to research, pure fixed compensation does not seem to have a positive impact on firm performance. Hayward and Hambrick show that fixed pay increases managerial hubris (Hayward & Hambrick, 1997). Moreover, interest in stakeholder issues decreases when the fixed component increases (Berman, 1998). Opposite this, Gray and Canella (1997) show that a high fixed component binds the executive to his company. In order to increase his reputation towards shareholders the executive is motivated to increase efforts in CSR which leads to a positive relationship between fixed compensation and CS (Gray & Cannella, 1997). However, in an analysis of 77 Canadian companies, Mahoney and Thorne (2006) found a positive correlation between fixed compensation and poor CSR exists (Mahoney & Thorne, 2006). Moreover, Claassen and Ricci (2015) found no significant correlation between CEO compensation and CSP in German companies (Claassen & Ricci, 2015).

For this reason, the first hypothesis of this study is stated as a null hypothesis. It reads:

H1: Fixed Executive board compensation is not related to the firm's ESG score.

3.2.2. Variable Compensation

In order not to be dependent on the fixed salary alone and to have leeway in the remuneration structure, there is also a variable remuneration component. Variable pay links the achievement of company goals to compensation and appeals mainly to risk-averse managers (Gray & Cannella, 1997). Variable pay can be further divided into short-term variable pay and long-term variable pay (Kluckow, 2014; Lazar, 2007). It includes all benefits paid out by the company to managers at regular intervals as a reward for individual performance. The payment can be made in cash, cash equivalents, or company shares (Eckardstein, 2001). The variable remuneration leads to the managers participating financially in the company's success. In this way, the goal of increasing value is to be made the personal interest of the individual actors (Eckardstein, 2001). Variable remuneration is further divided into short-term variable remuneration and long-term variable remuneration.

Short-term variable remuneration or short-term incentives are usually linked to performance-related targets and are paid out once a year in the form of year-end bonuses or profit-sharing payments after the achievement of predefined key figures (usually EBIT or ROCE) or individually agreed targets (Balsam, 2002). Short-term incentives fulfil two functions: on the one hand, they are intended to demonstrate the operational value creation that the board has achieved in a financial year (Abeln, 2019). Secondly, the board should be motivated to increase shareholder value (Abeln, 2019).

There is also some research in the area of variable short-term remuneration. For example, McGuire et al (2003) have shown that short-term variable compensation favors short termism and thus shifts the focus away from CSR (McGuire et al., 2003). Since one of the main characteristics of sustainability is long-termism, the resulting positive effects can only be detected after some time. Investing in sustainability therefore entails risks for the management, as short-term performance could suffer or opportunity costs could arise, for example if resources could be distributed differently (Deckop et al., 2006; Hart, 1995). Generally, short term compensation is mainly linked to short term financial goals and therefore draws attention away from CS (McGuire et al., 2003). On the other hand, Claassen and Ricci (2015) found a positive relationship between CFO variable short-term compensation and CSP (Claassen & Ricci, 2015), and Mahoney and Thorne (2006) found that a high proportion of short-term variable CEO compensation leads to an increase in CSR efforts (Mahoney & Thorne, 2006).

However, since the majority of studies on this topic have found a negative relationship between short term variable compensation and a company's sustainability performance, hypothesis 2 is:

H2: Variable short-term executive board compensation is negatively related to the firm's ESG score.

Long-term variable remuneration/incentive (LTI) is related to long-term performance. This form of remuneration has been used by listed companies in German-speaking countries since 1995 (Kluckow, 2014). The reference period is usually two to five years (Balsam, 2002). LTIs are intended to serve two factors. To retain board members for a longer period of time (Kole, 1997), and to encourage investments that will secure a future competitive advantage (Gray & Cannella, 1997). The intention is to coordinate board interests with the interests of the company owners (Becker & Kramarsch, 2006). The composition of LTIs can vary depending on the company and industry and can range from long-term cash bonuses to shares and stock options (Balsam, 2002). Shares tie board members directly to the company's performance. Long-term bonuses are linked to the achievement of financial or non-financial performance indicators, with the assessment period usually ranging from five to seven years (Lazar, 2007). Stock options give board members the opportunity to purchase a predetermined number of shares at a predetermined exercise price within a specified time frame or at a specified date (Abeln, 2019; Lazar, 2007).

Research shows that LTI leads to increased sustainable behavior, which in turn favors an improvement in long-term company performance (Hart, 1995). For example, stock options are positively associated with CS as they lead to long-term investments, such as in research and development, by the company (Profitlich et al., 2021). Since the criteria for long-term variable compensation are usually linked to long-term goals, top management is encouraged to strive for CS (Claassen & Ricci, 2015). Berrone and Gomez-Mejia (2009) also found a positive effect of LTI on sustainable environmental behavior (Berrone & Gomez-Mejia, 2009). Deckop et al. (2006) found this effect on CSP (Deckop et al., 2006). Profitlich et al. (2021) found the same effect between stock options and CS (Profitlich et al., 2021). Mahoney and Thorne (2005) found that long-term remuneration has a positive impact on CSR (Mahoney & Thorne, 2005). This contrasts with the findings of McGuire et al (2003), who found that LTIs have a positive relationship with weak CSP (McGuire et al., 2003).

However, since the vast majority of research has found a positive relationship between long-term variable remuneration and sustainable behavior, Hypothesis 3 is formulated as follows:

H3: Variable long-term executive board compensation is positively related to the firm's ESG score

Previous research on executive compensation has been predominantly in the Anglo-Saxon field of single-tier research. Since there are differences between German-speaking and Anglo-American companies, the results cannot simply be transferred one-to-one. For example, executive compensation in US companies tends to be structured more strongly by long-term compensation components than in Germany or Austria, where fixed salaries and annual bonuses make up the bulk of pay (Haager & Wieser, 2021; Mishel & Kandra, 2021; PWC, 2020).

3.2.3. Assessment basis - Financial and non-financial indicators

Variable remuneration, regardless of whether it is long-term or short-term, is determined on the basis of performance indicators (Kluckow, 2014). Finding the right performance indicator is the main component of designing appropriate and effective remuneration systems (Berthel & Becker, 2013). Indicators, which are transparent and promote long-term value creation of the company are used (Murphy, 1999). Through the use of different indicators, the variable salary can reflect both strategic performance as well as operational and innovative performance of the executive board (Velte, Müller, et al., 2018).

Depending on the indicators used, the variable remuneration of managers can be divided into success-oriented and performance-oriented remuneration systems (Becker & Kramarsch, 2006). As the hierarchy level rises, the assessment basis shifts more and more in the direction of success and the performance-related remuneration system with its indicators is taken more to hand. Thus, top management and the executive board are remunerated primarily on the basis of performance-related indicators (Becker & Kramarsch, 2006). These performance-related indicators often consist of key figures that measure the company's success or failure, such as firm size, return on assets, or corporate debt (McGuire et al., 1988; Mishra & Modi, 2013; Murphy, 1999; Stanwick & Stanwick, 2001).

Special attention must also be paid to the so-called non-financial indicators. These indicators measure the efforts of the management to bring the company into a more sustainable direction. In Austria, the use of such NFIs has been mandatory for joint-stock companies since 2019 (AktG, 2019/03.09.2022). By using these, the efforts of the management of caretaking of the stakeholders interests of a company are to be quantified in the variable salary (European Commission & EY, 2020; Velte, Weber, & Lentfer, 2018). As criteria, NFIs like customer and employee satisfaction, provision of education and training, commitment to and compliance with environmental protection or social responsibility towards the inhabitants of the communities of the locations are used by some Austrian companies (Haager & Wieser, 2021). In a 2016 study, Velte included NFIs in an analysis for the first time in the German-speaking world. The NFIs he examined are reduction of CO2 emissions, employee satisfaction and meeting deadlines (Velte, 2016a).

Although many companies in Austria now use NFI, they are underrepresented compared to financial indicators (Haager & Wieser, 2021). On the one hand, financial indicators are used more frequently and account for the lion's share of variable remuneration; on the other hand, financial indicators are also described and disclosed in greater detail than NFI. These are usually only mentioned in the remuneration report as a catalogue of criteria without weighting (Haager & Wieser, 2021). In addition, there are no uniform key figures, such as turnover or return on as-sets, by which the companies can be compared with each other, but rather very heterogeneous key figures that are formulated differently depending on the company (Haager & Wieser, 2021).

NFI are a new topic so far and have not been the subject of much research. In the German-speaking research area, Evers and Sure found that only 16 of the 30 companies use NFIs and that the share of NFI-related compensation is less than 10 per cent of variable compensation (Evers & Sure, 2015). This result is mirrored by Behrman and Sassen (2016) (Behrmann & Sassen, 2016). They also found that the most common indicators are those oriented towards internal stakeholders, such as employee satisfaction or diversity. However, sustainability-specific indicators are only used by 3 companies (Behrmann & Sassen, 2016). Velte investigated the relationship between compensation for sustainable management, measured by the number of NFI, and the ESG performance of German companies in the dual system. He shows that non-financial KPIs in management remuneration have a positive influence on ESG performance (Velte, 2016a).

A positive relationship between NFI and CS is also expected in this study. Hypothesis 4 is therefore:

H4: Sustainable executive board compensation, indicated by the use of non-financial indicators, is positively related to the firm's ESG score.

4. Empirical Analysis

Even though all the research papers mentioned so far contribute a valuable part to the investigation of the research object, there is no study that shows the influence of the single components in the executive board compensation on the ESG performance of companies over a longer period in the Austrian two-tier system. This research gap will be closed with the help of this study.

In this part of the study, the hypotheses will be empirically examined. For this purpose, first the chosen methods of analysis will be described. Then the chosen sample will be explained. Finally, the individual variables will be described and shown how they were determined.

4.1. Method

This work aims to use quantitative research to investigate whether executive board compensation can be used as a tool for SCG to guide Austrian firms in the Prime Market segment of the Vienna Stock Exchange into corporate sustainable behaviour. In addition, examines whether NFI in the determination of the structure of executive board remuneration have an influence on sustainable corporate performance and thus contribute to SCG.

In order to answer these questions, quantitative statistical methods are used to analyse the data. First, a multiple linear regression is used to investigate whether the ESG performance of the companies can be influenced by the different compensation components or by control variables. After this analysis, a fixed effects panel data model is formulated. With the help of this panel data model, the developments regarding the relationship between management compensation and ESG within the different companies can be observed and explicitly examined over a longer period of time.

4.2. Sample Selection

Research in the German-speaking two-tier system has so far only examined a period of less than five years. Hence, a new approach was chosen for this study. The period under investigation is ten years in total, from 2010 to 2019. This timeframe was chosen deliberately, as on the one hand awareness of sustainability in companies has been raised during this period by the ACCG, the law, the EU and social discussions. On the other hand, a focus was placed on board remuneration, among other things with regulations describing the composition or through the explicit disclosure of the remuneration structure in corporate governance reports. 2019 was chosen as the final observation year, as this was the last year without the external, uncontrollable influence of the Covid 19 pandemic. Thus, losses due to the crisis are avoided in the analysis.

Austrian companies were chosen as the sample for the empirical statistical analysis. These were deliberately selected on the basis of decisive criteria. The companies in the sample are all in the "prime market" segment of the Vienna Stock Exchange. Companies in this segment have to fulfil special requirements (wiener boerse, 2019). These are, on the one hand, that the free float of the shares must be 25 % and the capitalisation of the free float must be at least 20 million euros. In addition, the companies must publish issuing prospectuses, half-yearly financial reports and annual financial reports, as well as a company calendar (wiener boerse, 2019). Another additional requirement, which is particularly important for this study, is that the companies on the prime market comply with the Austrian Corporate Governance Code on a mandatory basis. They demonstrate this, on the one hand, through a declaration of commitment within their corporate governance report and, on the other hand, by stating the commitment on the company website. The companies must disclose once a year whether the Corporate Governance Code has been complied with and, in the case of a deviation, explain it (ÖCGK, 2021; wiener boerse, 2019). Another criterion chosen by the author for the selection of the companies was that they were consistently listed in the prime market segment in the period from 2010 to 2019. This is to prevent individual companies from distorting the observations due to their poor business policy and subsequent exit from the segment, or other companies that would have joined as lateral entrants two years before the end of the observation period. In addition, this requirement is intended to ensure that the development of executive remuneration and ESG performance of the companies studied can be very well understood.

The corresponding companies were identified with the help of the public statistics of the Vienna Stock Exchange. For this purpose, the respective monthly statistics for the month of December were examined for the years 2010 to 2019. All companies that remained in the prime market for the entire year are listed under the "prime market" statistics at the end of each year. The December prime market statistics of the individual years were then compared with each other. In total, 71 different companies were on the prime market from 2010 to 2019. However, only 26 companies were consistently represented in the prime market segment from 2010 to 2019. From these 26 companies, a further three companies were excluded. These three companies were ERSTE GROUP BANK AG, RAIFFEISEN INT. BANK-HLDG AG/RAIFFEISEN BANK INTERNAT. AG and UNIQA VERSICHERUNGEN AG/UNIQA INSURANCE GROUP AG. The three companies have in common that they are financial companies. They have different legal requirements with regard to corporate governance and accounting. As a result, financial ratios of financial companies cannot be compared with those of non-financial companies (cf. Banking Act). In addition, other guidelines such as Basel III have an additional influence on the actions of financial companies, which makes a comparison obsolete (BIS, 2011). Thus, after applying all criteria, 23 companies that were consistently represented in the prime market segment from 2010 to 2019 emerge for the sample (cf. table 1). In total, there are 230 firm/year observations.

Sampled companies	
Agrana Beteiligungs-AG	Palfinger AG
Andritz AG	Polytec Holding AG
AT&S Austria Tech. & Systemtech.	Rosenbauer International AG
CA Immobilien Anlagen AG	Schoeller-Bleckmann AG
DO&CO Restaurants & Catering AG	Semperit AG Holding
EVN AG	Strabag SE
Vienna Airport AG	Telekom Austria AG
Immofinanz AG	Verbundgesellschaft AG KAT. A
Kapsch Trafficcom AG	Voestalpine AG
Mayr-Melnhof Karton AG	Wienerberger AG
Oesterreichische. Post AG	Zumtobel Group AG
OMV AG	

Table 1 Sample companies represented in the prime market from 2010 to 2019

4.3. Variables

Three types of variables were included in the statistical empirical analysis: dependent, independent and control variables.

The independent variables are divided into the different compensation components: fixed compensation, short-term variable remuneration, and long-term variable compensation, further subdivided into stock options and long-term incentives cash (LTIC), and NFI. These variables were hand-collected from the corporate governance reports included in annual reports. The description of executive remuneration has changed considerably over time. While in the first two years of observation it was still common to only state the sum of the total remuneration of the entire executive board, the individual components of the remuneration must now be presented in detail for each member of the executive board. Furthermore, it must be disclosed which financial key figures are used and whether non-financial key figures are also used (however, these do not have to be explicitly named). In addition, in the case of long-term variable remuneration, the LTI plans, and stock options must be explained in detail. As independent variables, derived according to chapter 4 were chosen:

- Fixed component: fixed part of the executive board's remuneration, which is paid out annually at a certain pre-determined amount, irrespective of the executive board member's performance (Abeln, 2019; Balsam, 2002; Lazar, 2007).
- Short-term variable remuneration: this is paid annually, the amount is dependent on the achievement of predefined (non-) financial indicators and key figures, in contrast to fixed remuneration (Abeln, 2019; Balsam, 2002; Lazar, 2007).
- Long-term variable compensation: Sum of stock options and LTIC. The long-term variable remuneration is usually fixed for a period of three to seven years and is only paid out or redeemed at the end of this period. The performance of the executive board is defined on the basis of set key figures. These can be both financial and non-financial. Companies included in this sample use LTIC and stock options as variable long-term remuneration (Abeln, 2019; Balsam, 2002; Lazar, 2007)
- Stock options: Share options that allow board members to buy a fixed number of shares at a fixed exercise price at a specific time or during a specific period (Kluckow, 2014; Lazar, 2007).
- LTIC: long-term remuneration, which is paid out in cash to the executive board member after a long-term period following the successful achievement of predefined key figures

(Kluckow, 2014; Lazar, 2007).

- Non-financial indicators: measured as a binary variable (0 = not present; 1 = present). The purpose of this variable is to determine whether companies use NFI and whether the number of NFI has changed over time (cf. (Velte, 2016a)). It would have been nice to differentiate at this point which specific non-financial ratios the individual companies use. However, since it is not clearly defined how reporting on non-financial ratios must be structured, the individual companies differ greatly from each other (Haager & Wieser, 2021). While few companies list which NFIs are used, to what percentage they influence remuneration and how high their share of ratios in remuneration is, many companies simply disclose on the basis of a sentence whether NFIs are used or not (Haager & Wieser, 2021). Comparability is therefore not given, which is why the analysis falls back on the binary "not present/present" expression.

The independent variables (apart from the NFI) were calculated on the one hand, as monetary values in thousands of euros and, on the other hand, as normal logarithms in the sense of a statistically evaluable normal distribution (Finkelstein & Hambrick, 1989). They were determined in the period of November and December 2021. In January 2021, the stock options and LTIC were revised again because of inaccuracies due to an incorrect definition.

As a dependent variable, ESG performance was measured using the ESG score of Asset 4 from the Eikon Refinitiv Database. The Eikon Refinitiv Database is one of the databases that determines an ESG score as a value between zero and 100. For this purpose, the database collects all publicly available data of the companies, summarises them and updates them fortnightly. The data for the ESG score is provided by the companies themselves or by various rating agencies that produce CSP or CSR ratings, sustainability ratings and ESG ratings for the respective companies. The individual data are summarised in Asset 4 (Thomson Reuters, 2017).

Asset 4 provides three different scores for measuring ESG performance. The ESG score, the ESG controversies score, which ranks the number of ESG controversies, and the ESG combined score, which combines the results from the ESG score and the ESG controversies score. The ESG score is used for this thesis. It is composed of the Environmental-score, the Social-score and the Governance-score. Each individual score is determined on the basis of certain categories. For the E-score these are Resource use, emissions and innovation, for the S-score Workforce, Human Rights, Community and Product Responsibility and for the Governance score Management, Shareholders and CSR Strategy. These ten categories are in turn subdivided into

178 units of measurement and KPIs (Thomson Reuters, 2017). The companies' data is thus measured against the indicators, weighted, adjusted by z-scoring and then compared with all other companies in the database. This results in a value from 0 to1, for each of the individual scores, which provides information on the respective performance. In the official statistics of Asset 4, however, the value is published from 0 to 100. The higher the value, the better the company's performance in the respective area. The ESG score is then calculated as the combined value of the E, S and G scores (Thomson Reuters, 2017). The individual score ranges are also published in grades (cf. table 2).

Score Range	Grade
0.0 <= score <= 0.083333	D -
0.083333 < score <= 0.166666	D
0.166666 < score <= 0.250000	D +
0.250000 < score <= 0.333333	C -
0.333333 < score <= 0.416666	C
0.416666 < score <= 0.500000	C +
0.500000 < score <= 0.583333	B -
0.583333 < score <= 0.666666	B
0.666666 < score <= 0.750000	B +
0.750000 < score <= 0.833333	A -
0.833333 < score <= 0.916666	A
0.916666 < score <= 1	A +

Table 2 Scoring system in Asset 4 – Eikon Refinitiv Database

In addition, the environmental score, the governance score and the social score were also recorded as dependent variables. The ESG scores were determined in December 2021. The years 2010 to 2020 were chosen as the time period for the ESG scores. The year 2020 was included so that the influence of the remuneration from one year on the ESG score of the following year can be examined with the help of a one-year lagged calculation (cf. Claassen & Ricci, 2015).

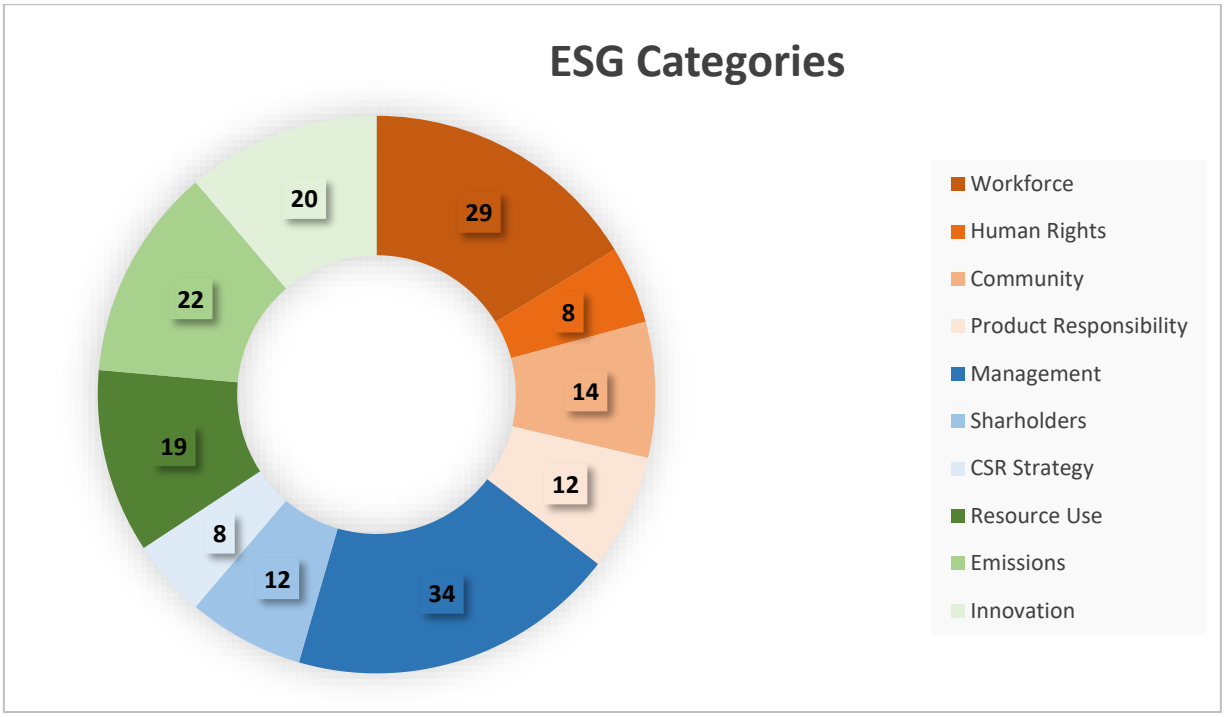

Figure 1 ESG Categories

The control variables in this analysis can be divided into two areas. First, there are three financial ratios: Firm Size (FSIZE), Return on Assets (ROA) and Leverage (LEV), and secondly, four corporate governance variables: Board Size (BSIZE), Female Directors (FEMALE), Compensation Committee (COMPC) and CSR activities (CSRA).

The financial ratios are common control variables in the literature. They provide an overview of firm size, firm performance and leverage. FSIZE is determined as the natural logarithm of total assets. Firm size can be determined by this variable. Authors found that firm size influences the social performance of a firm significantly in a positive way (Stanwick & Stanwick, 2001). Moreover, it has been shown that larger firms compensate their managers very well (Finkelstein & Hambrick, 1989). Since firm performance and executive compensation are positively related (Murphy, 1999) and firm profitability has a positive impact on a firm's CSR (McGuire et al., 1988; Waddock & Graves, 1997), another control variable for firm profitability is identified as ROA (Return on Assets). Last but not least, leverage is calculated as a proxy for corporate debt. This is calculated as the ratio of total debt divided by total assets. According to Mishra and Modi, leverage is negatively significantly related to CSP (Mishra & Modi, 2013).

The corporate governance control variables were chosen deliberately. According to previous research, the size of the BOD has an influence on both the remuneration and the ESG performance of a company (BSIZE) (cf. Claassen & Ricci, 2015; Velte, 2016a, 2016b). This influence should hereby be determined and, in case of need, interpreted in relation to the context under investigation. According to Velte, the existence of a compensation committee (COMPC) has a positive influence on ESG performance (Velte, 2016a). Therefore, the presence of the compensation committee, binary coded as a variable, was included in the analysis. According to Claassen and Ricci, the presence of women on the board can have an impact on firm performance (FEMALE) (cf. Claassen & Ricci, 2015; Nicolò et al., 2022; Velte, 2016b). This condition was accounted for by another binary-coded variable. In addition, the author of this work suspects that companies that make an extra effort in CSR matters (by supporting special projects, a strict company policy in this area or other commitment specifically named in the corporate governance report) continue to do so. This could lead to a correlation with ESG performance. If not, greenwashing might be happening here. This would be interesting to determine. This variable is also examined in a binary-coded manner.

With the help of the variables just listed, the correlation between executive remuneration and ESG performance will be examined. The evaluation of the variables, the correlation and the description of the statistical analysis together with the results are presented in the next chapter.

5. Results

In this chapter, the results of the empirical analysis are presented and processed in detail. First, the descriptive statistics of the sample are explained. After that, the various correlations are presented and explained with the help of a table. Finally, the results of both regression models, multiple linear regression and panel data regression, are discussed.

5.1. Descriptive Statistics

Table 3 shows the descriptive statistics for the dependent variable ESG, and the variables E, S and G. Out of 230 firm-year observations, values can be determined in Asset 4 for 149 firm-year observations. Only 11 of the 23 firms disclose the ESG score for each year in the observation period. For ten of the firms, disclosure of the ESG score only starts in 2017 or later. For two companies (Polytec Holding AG and Rosenbauer International AG), no ESG scores could be determined. The ESG score can reach a value from 0 to 100 with a mean value of 55.19, which indicates that the companies are overall in the B- range of the score. However, there is a wide range from 18.56 at the minimum to 81.48 at the maximum. Z-scoring the kurtosis (kurtosis/std. error) yields a value of -1.48. The acceptable limit here is +/- 1.96. Therefore, a normal distribution can be assumed. The same applies to the skewness, whose Z-score value is -1.39 and thus below the limit value.

Sustainable Performance (Descriptive Statistics)

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ESG	149	18,56	81,48	55,1894	14,28712	-,276	,199	-,584	,395
E	149	12,28	92,60	55,3023	19,94762	-,353	,199	-,756	,395
S	149	22,04	88,03	55,7211	17,48389	,053	,199	-1,142	,395
G	149	15,86	90,02	53,0995	19,54045	,037	,199	-,951	,395
Valid N (listwise)	149								

Table 3 Sustainable Performance (Descriptive Statistics)

Figure 2 shows the development of the mean ESG score over time. The graph shows that the ESG score has improved steadily from 2018 to 2019, with one exception. In addition, a clear increase can be observed in 2014. Since the ESG score must be viewed with a time lag to regulations, this could be interpreted as the companies' response to the new statutory section 78(1) enacted in 2012. According to this, executive board remuneration must provide long-term incentives for sustainable company development (78 (1) AktG, 2012/03.09.2022). Furthermore, an increase of 5 percentage points can be seen from 2016 to 2017. This could be related to the EU directive issued in 2014, according to which listed public interest companies (with more than 500 employees) must publish non-financial reporting (European Union, 2014).

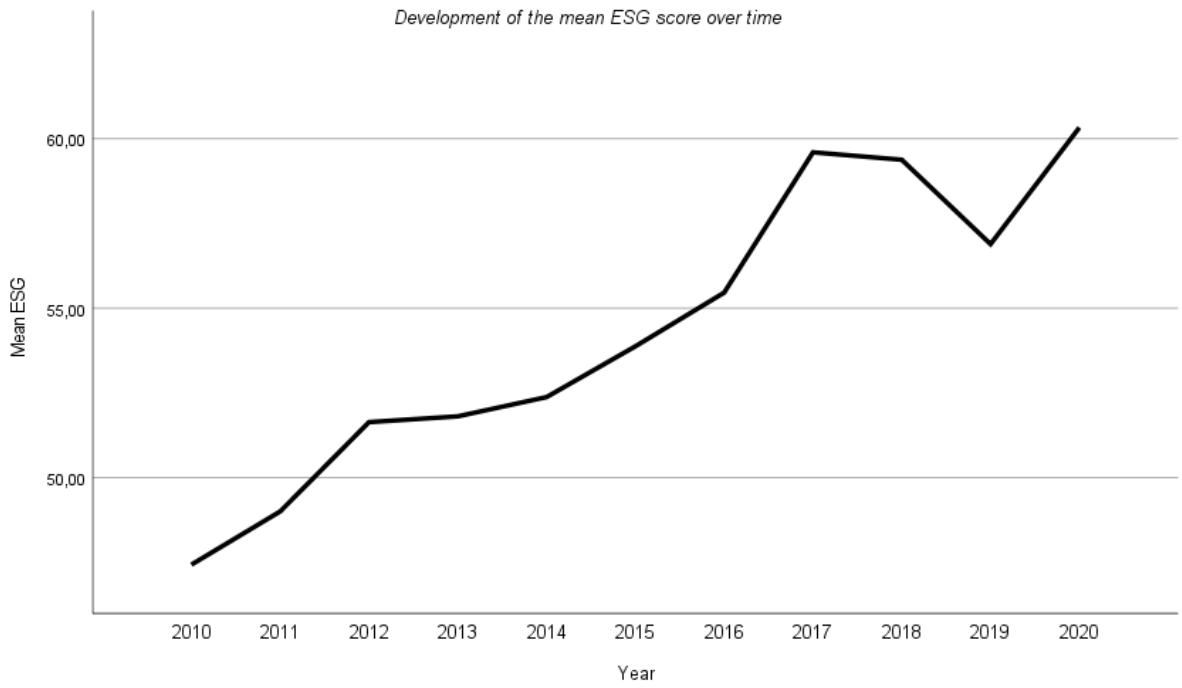

Figure 2 Development of the mean ESG score over time

Table 4 shows the descriptive statistics of the independent variables. To get an overview, the remuneration is first presented in thousands of euros (cf. table 4). On average, the entire BOD of the sample examined here earns 3.8 million euros as total remuneration. The absolute front-runner was Voestalpine, which paid total remuneration of 20 million euros in 2012. The minimum is 0.68 million euros. The average fixed salary is 1.7 million euros. A minimum of 0.46 million was paid during the observation period, and a maximum of 5.6 million. Since not all companies paid a variable remuneration from 2010 to 2019, the range for the short-term variable remuneration varies between 0 and 12.7 million euros with an average of 18.1 million euros, and for the long-term variable remuneration between 0 and 6.2 million euros with a mean of 0.36 million euros. Austrian companies are more likely to pay their board a short-term variable remuneration than LTI. However, since the monetary value cannot be used for calculations due to non-normal distribution, the independent variables were logarithmised normally (cf. Finkelstein & Hambrick, 1989). In the course of the study, only the logarithmised remuneration variables will be used.

Compensation (Descriptive Statistics)

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Comp ges in t€	227	682	20100	3824,78	2968,380	1,987	,162	5,291	,322
Comp F in t€	223	458	5550	1698,37	897,105	1,466	,163	2,619	,324
Comp V in t€	223	0	13931	2177,07	2323,717	1,936	,163	4,361	,324
Comp Vs in t€	223	0	12747	1808,65	2047,714	2,340	,163	6,402	,324
Comp VI in t€	227	0	6248	361,93	893,969	3,403	,162	13,704	,322
LTIC in t€	227	0	3290	215,38	659,071	3,430	,162	10,817	,322
SO in t€	227	0	5200	146,55	556,661	5,436	,162	36,955	,322
Non-financial Indicators	227	0	1	,33	,471	,726	,162	-1,486	,322
Valid N (listwise)	223								

Table 4 Compensation – Descriptive Statistics

An overview of the development of compensation variables over time is shown in figure 3. Here it can be seen that the mean value of executive board salaries fell somewhat after the financial crisis in 2012 but rose steadily again from 2013 onwards. Only the salary in 2019 has fallen again somewhat, which could possibly be linked to the Corona crisis. In addition, Figure 3 shows that the variable portion of the salary has exceeded the fixed portion in the companies surveyed since 2013. The long-term variable portion is increasing over time but is still relatively small in Austria.

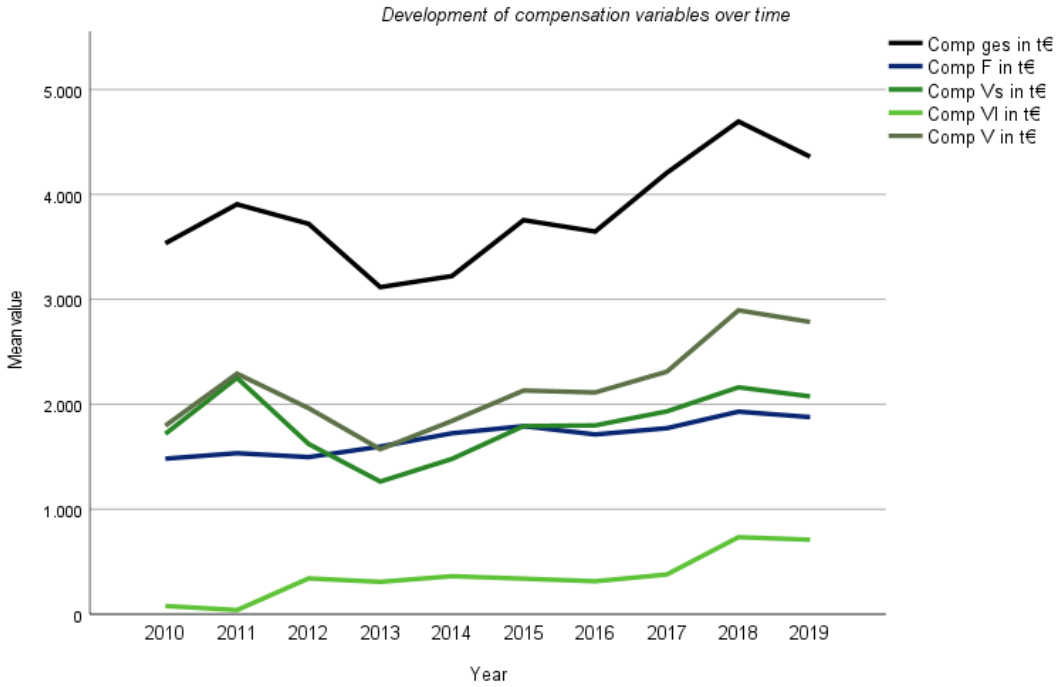

Figure 3 Development of compensation variables over time

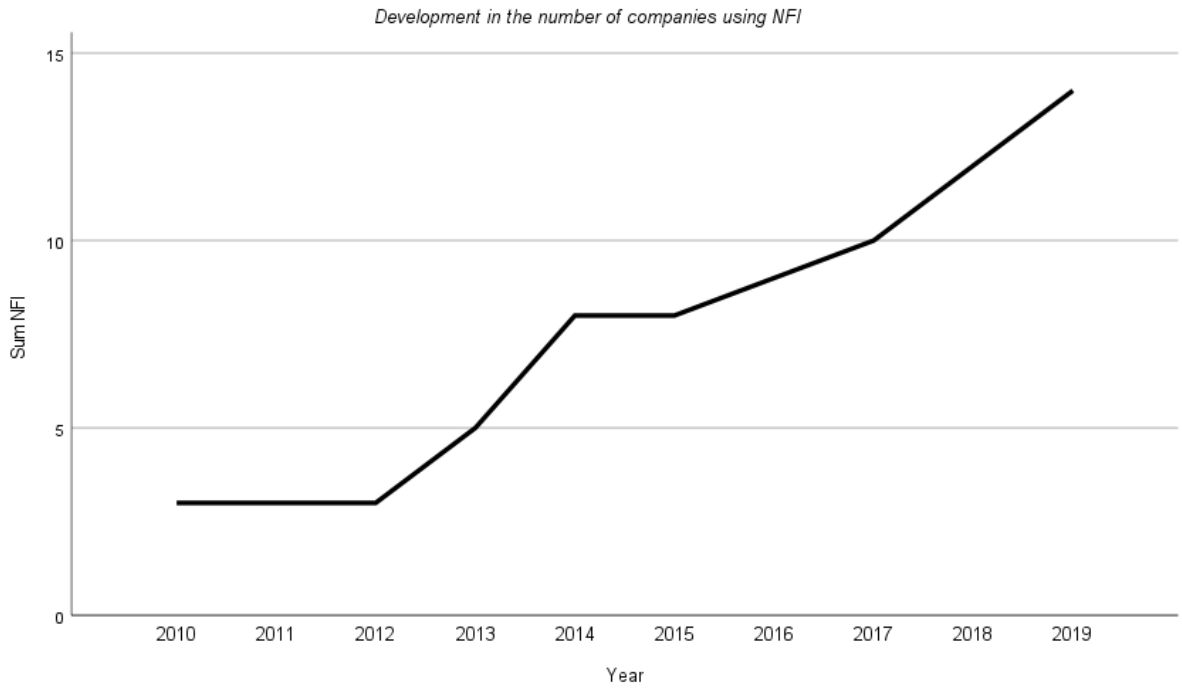

Figure 4 Development in the number of companies using NFI

Figure 4 shows the development in the number of companies using NFI. Here too, as with the ESG score, significant increases can be seen after 2012 and 2014, which could also be linked to the legislation and the EU directive (78 (1) AktG, 2012/03.09.2022; European Union, 2014).

Table 5 shows the descriptive statistics of the logarithmised compensation variables. The logarithmised versions of the independent variables are all normally distributed (cf. table 5). By excluding the value zero, it can be seen that out of 230 firm-year observations, stock options were used in just 33 firm-years and LTIC in 45 firm-years. In order to give a better representation of the influence of the long-term variable compensation on the ESG score, the following regressions do not include LTIC and SO individually due to the small number of cases, but the sum of both, the independent variable CVl. The NFI are binary scaled. For 227 firm-years, it was published whether NFI were used. This results in a mean value of 0.33. This shows that less than one-third of the companies used non-financial factors during the observation period.

Compensation (natural lorgarithm) - (Descriptive Statistics)

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
CGes in t€ log	227	6,53	9,91	8,0069	,68579	,261	,162	-,497	,322
CF in t€ log	223	6,13	8,62	7,3151	,49179	,130	,163	-,175	,324
CV in t€ log	215	3,26	9,54	7,2184	1,07673	-,352	,166	,049	,330
CVs in t€ log	215	3,26	9,45	7,0304	1,07425	-,419	,166	,484	,330
CVI in t€ log	76	,69	8,74	6,0384	1,68222	-,666	,276	,015	,545
SO in t€ log	33	,69	8,56	5,8386	1,96530	-,839	,409	-,214	,798
LTIC in t€ log	45	3,37	8,10	6,2322	1,39895	-,204	,354	-1,173	,695
Non-financial Indicators	227	0	1	,33	,471	,726	,162	-1,486	,322
Valid N (listwise)	223								

Table 5 Compensation (Natural Logarithm) – Descriptive Statistics

Table 6 shows the descriptive statistics of the control variables. With regard to the corporate governance control variables, it can be seen that a majority of the companies publish a special commitment in the CSR area in their corporate governance report (cf. table 6). With a mean value of 0.89 on a scale of 0 to 1, most companies have formed a remuneration committee from 2010 to 2019. The companies surveyed have an average of 3.54 board members. The smallest board consists of 2 persons, the largest of 6 persons. In only 6 of the 23 companies surveyed did a woman sit on the board for a certain period of time. The mean value here is 0.09 and is vanishingly small.

Control Variables (Descriptive Statistics)

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Total assets log	230	12,077	17,514	14,72863	1,271156	,148	,160	-1,003	,320
ROA	230	-,105	,134	,03823	,036783	-,806	,160	1,733	,320
Leverage	230	,000	,996	,57122	,118178	-,910	,160	2,494	,320
CSR activities	230	0	1	,73	,445	-1,045	,160	-,915	,320
Compensation Committee	230	0	1	,89	,317	-2,460	,160	4,088	,320
Board Size	230	2	6	3,54	1,096	,231	,160	-,599	,320
Female Directors	230	0	1	,09	,289	2,856	,160	6,213	,320
Valid N (listwise)	230								

Table 6 Control Variables – Descriptive Statistics

5.2. Correlation

The following table 7 shows the Pearson correlations between all examined dependent, independent and control variables of this thesis (cf. table 7).

Of the independent remuneration variables, fixed remuneration, short-term variable remuneration and LTIC correlate positively with ESG score. Stock options have a negative correlation with ESG. However, the correlation is only significant for fixed compensation at 0.296. The presence of NFI correlates significantly positively with the independent variable (0.289). Leverage (0.226) and Compensation Committee (0.182) also correlate significantly positively with ESG score. (Since the Compensation Committee is binary scaled, the analysis here is unsigned). The greatest significant correlation, however, is between FSIZE and ESG with 0.460.

However, it is also interesting to look at the correlations to the individual E, S and G scores. The fixed remuneration correlates positively with all three scores. However, the strongest and most significant correlation is only with the governance score (0.393). The NFI correlate significantly positively only with the Environmental Score (0.289) and the Social Score (0.236). It is also interesting that female directors only correlate significantly positively with the Social Score (0.265). (Again, the same evaluation applies as for the Remuneration Committee).

With regard to the control variables, FSIZE is found to be significantly positively correlated with all independent variables (from 0.340 to 0.498), except for LTIC (where no significance is found). ROA correlates significantly positively with CVs (0.204) and LTIC (0.517), but significantly negatively with SO (-0.363) and NFI (-0.195). Leverage only correlates significantly positively with CVs (0.135). Previous CSR activities correlate significantly with CF, CVs and stock options. The presence of a remuneration committee correlates significantly positively with CF and LTIC and NFI. Logically, there is a significantly strong positive correlation between board size and fixed compensation (0.732), and variable short-term compensation (0.605). However, the significant negative correlation with NFI (-0.172) is particularly striking. A woman on the board correlates significantly with variable short-term remuneration.

However, conclusions should not be drawn solely on the basis of univariate correlations. It is possible, that other variables also have an influence on ESG. This should be controlled in addition.

Table 7 Correlations

Correlations

		ESG	E	S	G	CF in t€ log	CVs in t€ log	CVI in t€ log	SO in t€ log	LTIC in t€ log	Non-financial Indicators	Total assets log	ROA	Leverage	CSR activities	Compensation Committee	Board Size	Female Directors
ESG	Pearson Correlation	--															
	N	149															
E	Pearson Correlation	,773**	--														
	Sig. (2-tailed)	,000															
	N	149	149														
S	Pearson Correlation	,780**	,393**	--													
	Sig. (2-tailed)	,000	,000														
	N	149	149	149													
G	Pearson Correlation	,671**	,256**	,350**	--												
	Sig. (2-tailed)	,000	,002	,000													
	N	149	149	149	149												
CF in t€ log	Pearson Correlation	,296**	,121	,162	,393**	--											
	Sig. (2-tailed)	,001	,179	,071	,000												
	N	125	125	125	125	223											
CVs in t€ log	Pearson Correlation	,091	,018	,101	,129	,611**	--										
	Sig. (2-tailed)	,323	,844	,270	,160	,000											
	N	121	121	121	121	215	215										
CVI in t€ log	Pearson Correlation	-,082	-,142	-,212	,124	,221	,266*	--									
	Sig. (2-tailed)	,590	,346	,158	,413	,055	,020										
	N	46	46	46	46	76	76	76									
SO in t€ log	Pearson Correlation	-,191	-,143	-,380	-,018	,184	,212	,998**	--								
	Sig. (2-tailed)	,435	,559	,108	,943	,304	,236	,000									
	N	19	19	19	19	33	33	33	33								
LTIC in t€ log	Pearson Correlation	,097	-,160	-,024	,273	,382**	,483**	,994**	1,000**	--							
	Sig. (2-tailed)	,618	,407	,902	,152	,010	,001	,000	,000								
	N	29	29	29	29	45	45	45	2	45							
Non-financial Indicators	Pearson Correlation	,289**	,289**	,236**	,072	,058	-,099	-,001	-,020	,067	--						
	Sig. (2-tailed)	,001	,001	,007	,419	,389	,150	,993	,913	,663							
	N	128	128	128	128	223	215	76	33	45	227						
Total assets log	Pearson Correlation	,460**	,447**	,249**	,323**	,498**	,403**	,241*	,483**	-,071	,340**	--					
	Sig. (2-tailed)	,000	,000	,005	,000	,000	,000	,036	,004	,645	,000						
	N	128	128	128	128	223	215	76	33	45	227	230					
ROA	Pearson Correlation	-,042	-,089	,033	,044	-,078	,204**	,118	-,363*	,517**	-,195**	-,361**	--				
	Sig. (2-tailed)	,641	,316	,709	,623	,247	,003	,308	,038	,000	,003	,000					
	N	128	128	128	128	223	215	76	33	45	227	230	230				
Leverage	Pearson Correlation	,226*	,212*	,302**	-,003	,010	-,078	,010	,313	-,012	-,055	-,033	-,042	--			
	Sig. (2-tailed)	,010	,016	,001	,977	,877	,255	,929	,076	,936	,412	,620	,523				
	N	128	128	128	128	223	215	76	33	45	227	230	230	230			
CSR activities	Pearson Correlation	,041	-,098	,060	,170	-,169*	-,286**	-,109	-,344*	,198	,075	,156*	-,264**	,030	--		
	Sig. (2-tailed)	,642	,272	,505	,055	,011	,000	,350	,050	,193	,263	,018	,000	,646			
	N	128	128	128	128	223	215	76	33	45	227	230	230	230	230		
Compensation Committee	Pearson Correlation	-,182*	-,205*	-,191*	-,028	,195**	,114	,276*	,223	,385**	,217**	,254**	-,139*	,007	,093	--	
	Sig. (2-tailed)	,040	,020	,031	,755	,003	,095	,016	,213	,009	,001	,000	,036	,919	,162		
	N	128	128	128	128	223	215	76	33	45	227	230	230	230	230	230	
Board Size	Pearson Correlation	,088	-,020	,108	,147	,732**	,605**	,070	,108	,239	-,172**	,301**	,069	-,013	-,310**	,151*	--
	Sig. (2-tailed)	,321	,823	,225	,098	,000	,000	,550	,550	,114	,009	,000	,300	,841	,000	,022	
	N	128	128	128	128	223	215	76	33	45	227	230	230	230	230	230	230
Female Directors	Pearson Correlation	-,165	-,154	-,265**	,007	,067	-,151*	,088	,276	-,113	-,030	,020	-,152*	-,015	,022	,113	,023	--
	Sig. (2-tailed)	,062	,083	,003	,937	,316	,027	,450	,120	,458	,649	,764	,021	,818	,735	,087	,727	
	N	128	128	128	128	223	215	76	33	45	227	230	230	230	230	230	230	230

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

5.3. Multiple linear regression

To test a possible influence of executive remuneration on ESG performance two different regression models are calculated. First, a multiple linear regression model is created which includes all independent variables in one equation. Second, a panel data regression model, the so-called fixed effects approach, is developed (cf. Claassen & Ricci, 2015). This allows the variation of firms over time to be included in the regression and possible time trends to be discovered.

The following variables were included in the analyses:

Dependent variable	
ESG	
Control variables	
FSIZE	Firm size
ROA	Return on assets
LEV	Leverage
BSIZE	Board size
COMPC	Compensation Committee
FEMALE	Female directors
Independent variables	
CF in t€ log	Fixed compensation
CVs in t€ log	Variable short-term compensation
CVl in t€ log	Variable long-term compensation
NFI	Non-financial Indicators

Table 8 Variables included in the analysis

Before running the regressions, certain requirements must be met for both of the regressions. First, the variables used must be scaled metrically (Tabachnick & Fidell, 2018). This is given insofar as the dummy variables can also be used metrically and must then be considered accordingly in the evaluation. A linear parameter model is used for the regression.

In order to determine linearity, a regression curve must be drawn in a scatterplot between the independent and the dependent variables (Tabachnick & Fidell, 2018). This is done directly in SPSS and shown in figure 5. The regression curve, drawn in red, should ideally show a slope or dip that fits the data cloud well. This is the case with the fixed compensation on ESG and the

NFI on ESG. Next, the Loes curve is drawn (blue curve) in the graph. The smaller the difference between the Loess curve and the regression curve, the more likely is a linear relationship. This is the case for fixed compensation. Since NFI is measured as binary variable, the Loess curve differs slightly from the regression curve. This finding is consistent with the results of the correlation table.

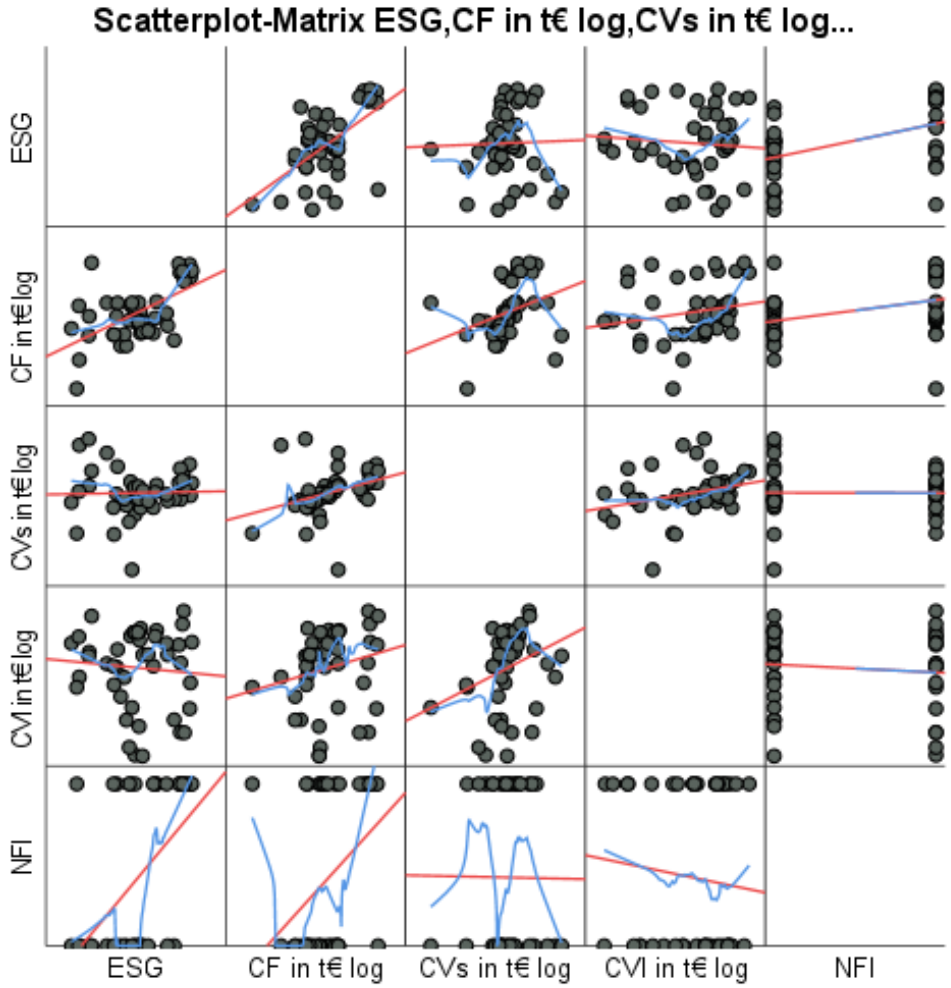

Figure 5 Scatterplot-Matrix ESG, CF in t€ log, CVs in t€ log, CVl in t€ log, NFI

Table 9 shows the model summary of the multiple linear regression analysis. The test of independence is carried out using the value of the Durbin-Watson statistic, which should be between 1 and 3 (Field, 2013). With the given data, this corresponds to 1.07, which means that an autocorrelation is unlikely, and independence is given (cf. table 9).

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,717[a]	,514	,357	11,45337	1,132

a. Dependent Variable: ESG

b. Dependent Variable: ESG

Table 9 Model Summary

Whether the residuals assume the expected value zero is checked graphically (cf. figure 3) (Field, 2013). The black line corresponds to the value zero as an auxiliary line. The prerequisite can be seen as given.

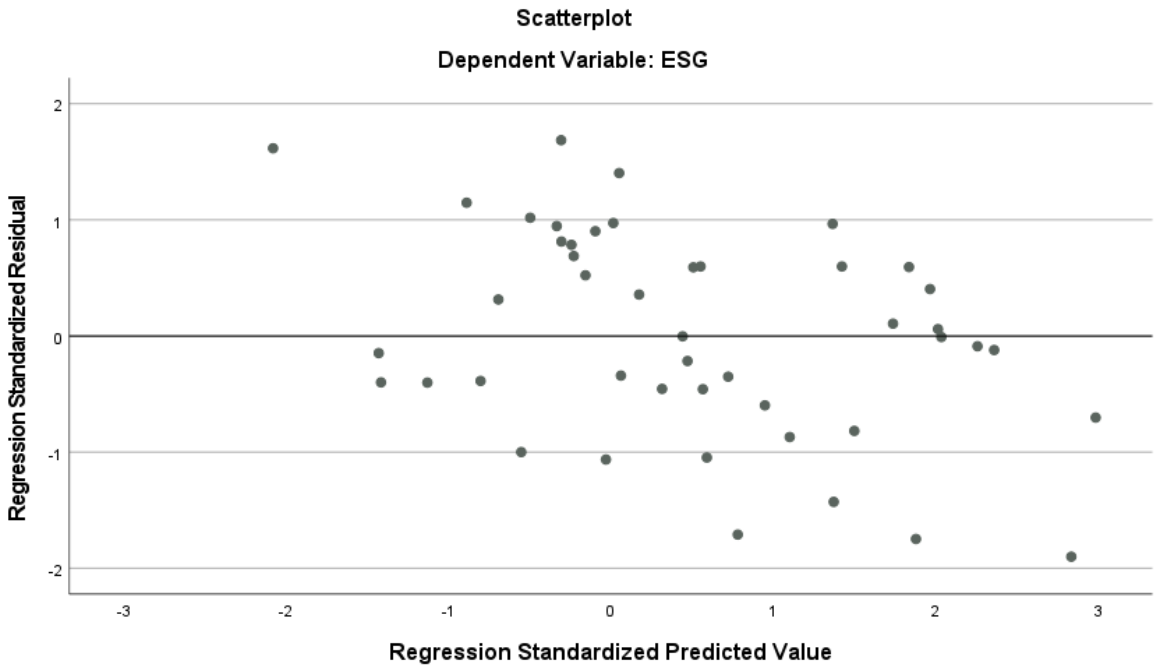

Figure 6 Scatterplot standardized residuals

Homoscedasticity in the data is also given (cf. figure 6). This is the case when the values in the scatter plot are distributed purely randomly and do not form funnel patterns or pronounced voids and condensations (Tabachnick & Fidell, 2018).

In addition, it is checked whether the residuals are normally distributed. That this is the case is shown graphically with the help of a histogram (cf. figure 7) (Field, 2013).

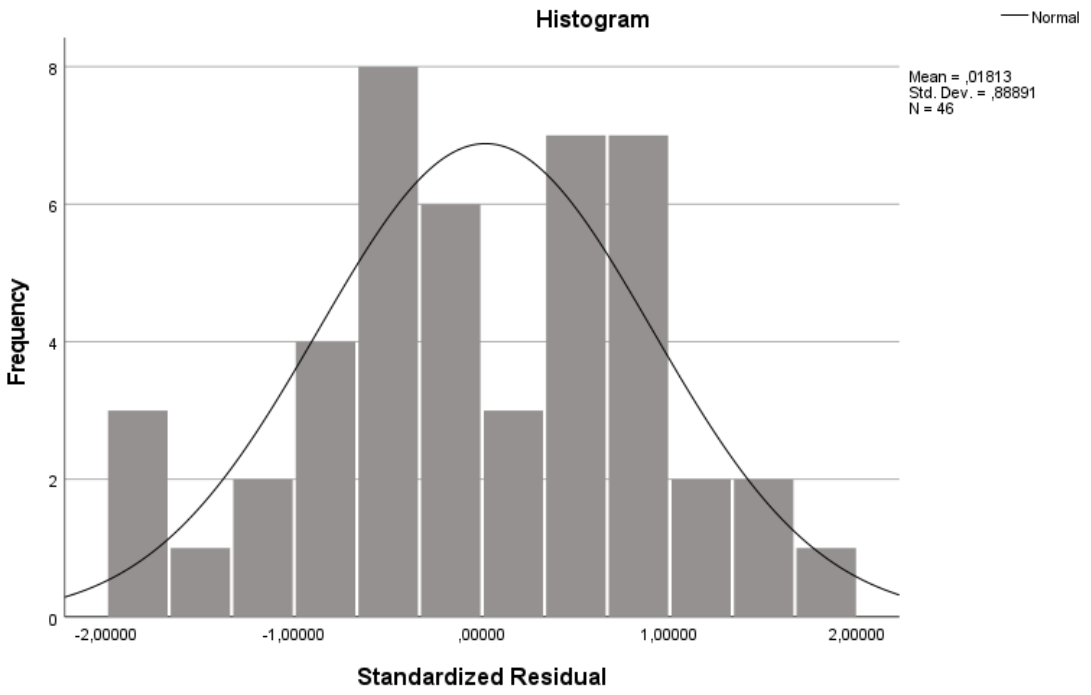

Figure 7 Histogram residuals

The last step is to check whether the data contain outliers that would distort the analysis. For this purpose, the Cook distances are checked. As can be seen in figure 8, there is one outlier in the data set that far exceeds the threshold value of 1. This value was determined in the data set and excluded from the analysis. The new data set with the excluded value also meets all the requirements for a regression.

Table 12 shows the results of the multiple linear regression analysis, which is used to examine the relationship between executive remuneration and the lagged ESG score. The ANOVA table shows that the regression model makes a significant contribution to the explanation. This is the case when the significance (here 0.003) is less than 0.05 (cf. table 10) (Field, 2013).

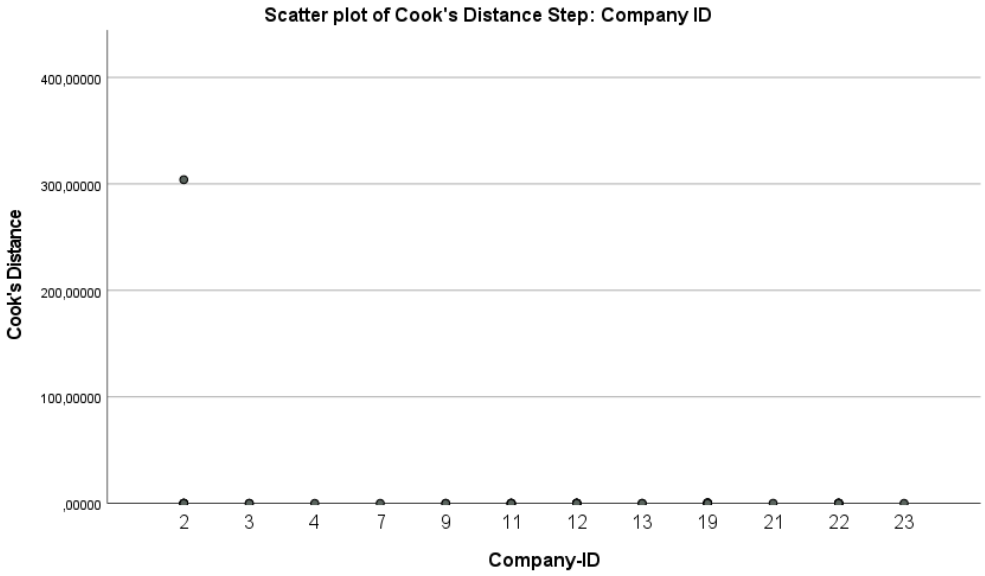

Figure 8 Scatterplot of Cook's Distance Step

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4809,883	11	437,262	3,411	,003[b]
	Residual	4230,233	33	128,189		
	Total	9040,117	44			

a. Dependent Variable: ESG

b. Predictors: (Constant), FEMALE, CSRA, NFI, CVI in t€ log, LEV, CF in t€ log, COMPC, ROA, FSIZE, CVs in t€ log, BSIZE

Table 10 ANOVA

Table 11 shows a model summary for the multiple linear regression analysis. The quality of the regression analysis carried out can be determined with the help of the coefficient of determination R-squared. It is defined in the literature between 0 and 1 and shows how many percent of the variance of the dependent variable can be explained (Devore, 2012). The higher the value, the better. In the present analysis, the model explains 53.2% of the variance (cf. table 11).

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,729[a]	,532	,376	11,32205

a. Predictors: (Constant), FEMALE, CSRA, NFI, CVI in t€ log, LEV, CF in t€ log, COMPC, ROA, FSIZE, CVs in t€ log, BSIZE

b. Dependent Variable: ESG

Table 11 Model Summary adjusted Cook's distance

Variables	**Expected sign**	**Regression coefficient** (standardized)	**Standardized error**	**p-value**
CF in t€ log	H1	0,600	6,792	0.014**
CVs in t€ log	H2: -	-0,346	2,504	0.073*
CVI in t€ log	H3: +	-0,259	1,213	0.080*
NFI	H4: +	0,106	4,332	0.464
FSIZE		0,564	2,014	0.003**
ROA		0,365	60,532	0.025**
LEV		0,271	17,552	0.068*
BSIZE		-0,364	2,924	0.112
COMPC		-0,168	6,479	0.251
CSRA		-0,028	4,473	0.843
FEMALE		-0,178	6,243	0.166
R^2 (adj.)		0,376		
F stat.		3,411		
	** Correlation is significant at the 0.05 level (2-tailed) * Correlation is significant at the 0.1 level (2-tailed)			

Table 12 Results of the multiple linear regression analysis

Table 12 shows an overview of the results. Hypothesis 1, which was formulated as a null hypothesis, postulated that the fixed executive board compensation is not related to the firm's ESG score. The regression analysis shows a significant positive coefficient for this data. This suggests that fixed executive board compensation in Austrian prime market companies has a significant positive impact on the ESG score. This result contradicts the research findings of previous studies. However, if we look at the work of Gray and Canella, who found that a CEO puts more effort into CSR activities in order to improve his reputation towards shareholders (Gray

& Cannella, 1997), then the positive correlation found here could be argued with the help of institutional theory, in that the board tries to legitimize its behavior through its reputation (P. Bansal & Clelland, 2004).

Hypothesis 2 suggested that variable short-term executive board compensation is negatively related to the firm's ESG score. The linear multiple regression shows a negative regression coefficient with the value -0.346 at an extended significance level. Hypothesis 2 is thus confirmed. This is in line with the research work done so far (Deckop et al., 2006; Hart, 1995; McGuire et al., 2003)

Hypothesis 3 postulates that variable long-term executive board compensation is positively related to the firm's ESG score. However, the regression analysis results in a negative regression coefficient with a regression coefficient of -0.259 at an extended significance level. This means that in Austrian prime market companies, the variable long-term compensation of the board has a negative relationship with the ESG score. This result shows that the long-term remuneration component of board compensation in Austria is not suitable for making corporate practices sustainable.

Hypothesis 4 claims that sustainable executive board compensation, indicated by the use of NFI, is positively related to the firm's ESG score. Although the correlation table shows a positive correlation between NFI and ESG score with a correlation coefficient of 0.106, the linear multiple regression analysis does not yield a significant result with a p-value of 0.464. Thus, the NFIs have no effect on the sustainable behavior of the executive management of Austrian companies and are not suitable to encourage companies to do so. This contradicts the work of Velte, who, however, examined a shorter period of only four years from 2010 (Velte, 2016a).

Interestingly, three of the control variables affect the companies' ESG score in a significant manner. FSIZE and ROA are both positively correlated with the ESG score, which is in line with previous literature. Excitingly, however, LEV is also positively correlated with ESG.

It could therefore be possible that the variables moderate each other. In addition, it must be taken into account in the linear regression that the effects of the companies on each other, as well as the long-time span and the different years, cannot be examined.

5.4. Panel Model - fixed effects approach

In the second model, the panel model, the fixed effects approach is used. To investigate the hypotheses on a further path, a fixed effects linear regression for longitudinal data (LSDV approach with time-varying predictors and time dummies included as predictors) has been calculated. The fixed-effects linear regression analysis was based on the article by Claassen and Ricci (2015), and it controls for all parameters affecting firm ESG that over time will not change (Claassen & Ricci, 2015).

Three different models were calculated. Model 1 with company variation, model 2 with control variables and model 3 with independent variables. Table 13 shows the ANOVA results for the fixed effects linear regression for longitudinal data.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5906,009	11	536,910	18,066	0,000[b]
	Residual	1010,456	34	29,719		
	Total	6916,465	45			
2	Regression	6400,921	26	246,189	9,073	0,000[c]
	Residual	515,545	19	27,134		
	Total	6916,465	45			
3	Regression	6485,806	30	216,194	7,530	0,000[d]
	Residual	430,659	15	28,711		
	Total	6916,465	45			

a. Dependent Variable: ESG

b. Predictors: (Constant), FirmenID=23.0, FirmenID=21.0, FirmenID=7.0, FirmenID=4.0, FirmenID=13.0, FirmenID=9.0, FirmenID=3.0, FirmenID=2.0, FirmenID=22.0, FirmenID=19.0, FirmenID=11.0

c. Predictors: (Constant), FirmenID=23.0, FirmenID=21.0, FirmenID=7.0, FirmenID=4.0, FirmenID=13.0, FirmenID=9.0, FirmenID=3.0, FirmenID=2.0, FirmenID=22.0, FirmenID=19.0, FirmenID=11.0, Jahr=2014.0, Jahr=2013.0, Jahr=2017.0, Jahr=2011.0, Jahr=2016.0, Jahr=2019.0, Jahr=2015.0, Jahr=2012.0, COMPC, ROA, FEMALE, LEV, Jahr=2018.0, BSIZE, FSIZE

d. Predictors: (Constant), FirmenID=23.0, FirmenID=21.0, FirmenID=7.0, FirmenID=4.0, FirmenID=13.0, FirmenID=9.0, FirmenID=3.0, FirmenID=2.0, FirmenID=22.0, FirmenID=19.0, FirmenID=11.0, Jahr=2014.0, Jahr=2013.0, Jahr=2017.0, Jahr=2011.0, Jahr=2016.0, Jahr=2019.0, Jahr=2015.0, Jahr=2012.0, COMPC, ROA, FEMALE, LEV, Jahr=2018.0, BSIZE, FSIZE, NFI, CVI in t€ log, CF in t€ log, CVs in t€ log

Table 13 ANOVA fixed effects linear regression for longitudinal data

Model 1 with company variation includes company dummy variables to model between-company variation in ESG. This model is designed to capture all time-invariant factors (both measured and unmeasured) associated with companies that might account for at least part of the association between the time-varying predictors and the outcome. As a set, the company dummies account for 85.4% of the total variation in ESG, which is statistically significant, F (11,34) =18.066, p<.001) (cf. table 13 and 14).

Model 2 includes the model 1 dummy variables and adds in the time-varying control variables (FSIZE, ROA, LEV, BSIZE, COMPC, FEMALE) of ESG. Also included are dummy variables representing measurement occasion or time. As a set, all these variables account for 92.5% of the variation in ESG, which is statistically significant, F (26,19) =9.073, p<.001 (cf. table 13 and 14). This indicates that model 2 fits the data better than the first model.

Model 3 includes the model 1 dummy variables and adds in the time-varying control variables (FSIZE, ROA, LEV, BSIZE, COMPC, FEMALE) of ESG. Also included are dummy variables representing measurement occasion, or time as in model 2 and the independent variables (CF in t€ log, CVs in t€ log, CVl in t€ log, NFI). As a set, all variables account for 93.8% of the variation in ESG, which is statistically significant, F (30,15) =7.530, p<.001 (cf. table 13 and 14). This shows that model three fits better to the data than the first model and slightly better than the second model.

Model Summary

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	0,924[a]	0,854	0,807	5,45154	0,854	18,066	11	34	0,000
2	0,962[b]	0,925	0,823	5,20902	0,072	1,216	15	19	0,339
3	0,968[c]	0,938	0,813	5,35823	0,012	0,739	4	15	0,580

a. Predictors: (Constant), FirmenID=23.0, FirmenID=21.0, FirmenID=7.0, FirmenID=4.0, FirmenID=13.0, FirmenID=9.0, FirmenID=3.0, FirmenID=2.0, FirmenID=22.0, FirmenID=19.0, FirmenID=11.0

b. Predictors: (Constant), FirmenID=23.0, FirmenID=21.0, FirmenID=7.0, FirmenID=4.0, FirmenID=13.0, FirmenID=9.0, FirmenID=3.0, FirmenID=2.0, FirmenID=22.0, FirmenID=19.0, FirmenID=11.0, Jahr=2014.0, Jahr=2013.0, Jahr=2017.0, Jahr=2011.0, Jahr=2016.0, Jahr=2019.0, Jahr=2015.0, Jahr=2012.0, COMPC, ROA, FEMALE, LEV, Jahr=2018.0, BSIZE, FSIZE

c. Predictors: (Constant), FirmenID=23.0, FirmenID=21.0, FirmenID=7.0, FirmenID=4.0, FirmenID=13.0, FirmenID=9.0, FirmenID=3.0, FirmenID=2.0, FirmenID=22.0, FirmenID=19.0, FirmenID=11.0, Jahr=2014.0, Jahr=2013.0, Jahr=2017.0, Jahr=2011.0, Jahr=2016.0, Jahr=2019.0, Jahr=2015.0, Jahr=2012.0, COMPC, ROA, FEMALE, LEV, Jahr=2018.0, BSIZE, FSIZE, NFI, CVl in t€ log, CF in t€ log, CVs in t€ log

Table 14 Model summary fixed effects linear regression for longitudinal data

Table 14 shows the model summary for the fixed effects linear regression for longitudinal data. The R-square change represents the increment in variance accounted for by adding in the time-varying control variables and time, represented by the dummy variables. The R-square increase is .072, meaning that by adding in the control variables in the second model, we are accounting for an additional 7.2% of the variation in ESG. The F-test indicates that this change is statistically not significant (cf. table 14). Adding the predictors in Model 3, we have an addition of .012. This is an additional 1.2% of the variation in ESG. The F-test indicates that this change is statistically not significant (cf. table 14).

In summary, it can be concluded for the calculated fixed effects linear regression for longitudinal data that although correlations were found that also exist in previous research, they do not exert any significance for this model (cf. table 15).

Variables	**Model 2 - Control**			**Model 3 - Predictors**		
	Regression coefficient (standardized)	**Standardized error**	**p-value**	**Regression coefficient** (standardized)	**Standardized error**	**p-value**
FSIZE	- 2,928	28,387	0.283	-1,990	37,743	.581
ROA	0,110	43,450	0.336	0,102	59,669	0.516
LEV	0,013	16,892	0.939	-0,012	21,780	0.956
BSIZE	0,085	3,105	0.763	0,225	3,836	0.522
COMPC	-0,348	5,830	0.018**	-0,247	5,596	0.124
FEMALE	0,058	7,520	0.708	0,029	7,910	0.860
CF in t€ log	–	–	–	-0,120	6,174	0.614
CVs in t€ log	–	–	–	0,359	5,470	0.359
CVl in t€ log	–	–	–	-0,302	1,730	0.156
NFI	–	–	–	0,040	3,941	0.803
Company fixed effects Years fixed effects						
** Correlation is significant at the 0.05 level (2-tailed) * Correlation is significant at the 0.1 level (2-tailed)						

Table 15 Fixed effects model results sorted by variables

For example, a negative correlation between fixed compensation and ESG score was found, but with a p-value of 0.614 it is far from significant. The short-term variable remuneration has a slightly positive influence on the ESG score, but here too, with a p-value of 0.359, there is no significance, and no statement can be made on hypothesis 2. Hypothesis 3 would be refuted with regard to the regression coefficient, as it is negative, which suggests a negative influence

of the variable long-term remuneration. However, the significance is also lacking here (p-value = 0.156). Hypothesis 4 would be confirmed with a very weak positive influence on the ESG score, but unfortunately the significance is not given here either with a p-value of 0.803. Tabel 15 shows an overview of the results.

The only significant correlation found in the fixed effects linear regression for longitudinal data is a negative influence of the compensation committee on the ESG score with a significance of 0.018. This correlation can, however, be explained by the other controls. However, this correlation may be moderated by the other control variables or the independent variables and should therefore not be used for interpretations. The dummy coding approach used in this study resulted in Year 2010 being treated as the baseline time point. The regression slopes for the remaining time dummy variables indicate the expected change in the dependent variable (ESG) from the baseline to time k (Year 2019) after controlling for the remaining time-varying predictors (cf. table 16). Table 16 shows an overview of the results depending on the year.

Variables	**Model 2 - Control**			**Model 3 - Predictors**		
	Regression coefficient (standardized)	**Standardized error**	**p-value**	**Regression coefficient** (standardized)	**Standardized error**	**p-value**
2010	*Baseline*					
2011	-0,095	6,005	.353	-0,125	6,403	.257
2012	-0,036	8,700	.806	-0,037	10,453	.834
2013	0,164	9,125	.488	0,364	10,655	.198
2014	0,170	9,691	.499	0,337	11,459	.265
2015	0,211	8,549	.380	0,376	10,054	.193
2016	0,070	7,974	.708	0,231	9,487	.306
2017	0,162	7,983	.388	0,278	8,829	.191
2018	0,385	9,425	.202	0,608	11,365	.104
2019	0,426	2,891	.299	0,597	15,152	.221
Company fixed effects Years fixed effects						
** Correlation is significant at the 0.05 level (2-tailed) * Correlation is significant at the 0.1 level (2-tailed)						

Table 16 Fixed effects model results sorted by years

We see no significant changes in ESG from 2010 to 2019 - even after controlling for the time-varying control variables and predictors (cf. table 16).

6. Discussion and conclusion

The purpose of this work was to investigate whether executive board compensation can be used as a tool for SCG to guide Austrian firms in the Prime Market segment of the Vienna Stock Exchange into sustainable corporate behavior. In addition, it was examined whether NFI in the determination of the structure of executive board remuneration have an influence on sustainable corporate performance and thus contribute to SCG. The background to this work is "Study on directors' duties and sustainable corporate governance" by the EC and EY, which investigated the reasons for a focus of European companies on short-term financial targets in corporate governance, also known as short termism, and proposed possible solutions for overcoming this problem (European Commission & EY, 2020). One of the approaches of the authors is to turn corporate governance into SCG by linking the remuneration of the BOD to long-term and sustainable goals in the future.

As an explanatory approach for this mechanism of action, this study draws on four theories, some of which build on each other and others of which differ greatly. First, the agency theory is used, according to which the BOD, as an agent, is responsible for maximizing the profits of the principal (in this case the shareholders). Since CS also improves company performance, the agent should be driven to act sustainably. Adequate financial incentives can motivate the board to do so (Göx, 2016; Jensen & Meckling, 1976). In stakeholder theory, the board is expected to consider not only the interests of shareholders, but also those of stakeholders. As the board acts ethically, it will want to increase sustainability. Here, remuneration can be linked to sustainable targets (Freeman, 1984; Freeman & Velamuri, 2008; Solomon, 2013). In the stakeholder-agent theory, the two aforementioned theories are merged. The BOD now acts as an agent for the principal stakeholder and can thus be guided towards sustainability by adequate financial incentives (Hill & Jones, 1992; Shankman, 1999). In the institutional theory, the BOD tries to legitimize itself socially towards shareholders and stakeholders so that this brings advantages for the company. Appropriate compensation can motivate the board to invest in sustainability (Scott, 1995; Solomon, 2013).

In previous research, there have been a number of studies examining the interrelationships between top management compensation, corporate financial performance and CS, mostly measured by the ESG score of Asset 4. These have found that BOD compensation depends on both individual manager characteristics and external factors such as company size or turnover (cf. Bebchuk et al., 2002; Stanwick & Stanwick, 2001). In addition, efforts towards sustainability

have so far tended to have a negative impact on pay (Coombs & Gilley, 2005). This is interesting as far as CS influences the financial performance of companies in a significant positive way. Further research show that the individual components of top management compensation have different effects on CS. For example, fixed compensation has no impact on the ESG score (Claassen & Ricci, 2015), while short-term variable compensation has a negative impact (cf. Hart, 1995; J. McGuire et al., 2003) and long-term compensation has a positive impact on the ESG score (cf. Mahoney & Thorne, 2005; Profitlich et al., 2021). It should be noted, however, that the vast majority of research on this topic has been conducted in the Anglo-American one-tier system. In addition, the focus of the studies so far has only ever been on individuals in the BOD, such as the CEO or CFO, or the BOD as a whole. However, it is possible that the mechanisms of impact of compensation differ greatly once the focus is no longer on a single person at the top of the company, but on a group of individuals with different priorities. In addition, the companies were only studied for a short period of time. This study therefore focused on the remuneration of the board in the Austrian two-tier system and chose a study period of ten years. It was hypothesized that the different remuneration components, as well as the NFI, each have a different influence on the ESG score of the Austrian companies. To test this, a sample of 23 companies listed on the prime market of the Vienna Stock Exchange was analyzed for their ESG scores (published in Asset 4) and the remuneration structure of their boards (obtained from corporate governance reports included in annual reports). With the data found, the hypotheses were then assessed using two regression models (multiple linear regression and panel data regression).

The multiple linear regression confirmed hypothesis 2, according to which variable short-term executive board compensation is negatively related to the firm's ESG score. Hypothesis 1, according to which the fixed executive board compensation is not related to the firm's ESG score, was refuted, as a significant positive correlation between the fixed compensation and the ESG score was found. Hypothesis 3, according to which variable long-term executive board compensation is positively related to the firm's ESG score, was also refuted, as for our data there is an extended significant negative relationship with the ESG score. Hypothesis 4, which states that sustainable executive board compensation, indicated by the use of NFI, is positively related to the firm's ESG score, could not be confirmed or rejected on the basis of the data, as there is no significance.

The second model, panel data regression, in which the course of time was included in the analysis, did not show a significant relationship for any of the hypotheses.

Looking at the multiple linear regression alone, it can be deduced on the basis of the given data that, in contrast to previous research, fixed remuneration has a positive influence on CS in Austrian companies operating on the prime market and thus acts as an instrument in the SCG. Short-term variable pay, on the other hand, should not be used as an incentive for CS. This is probably due to the fact that short-term remuneration is usually linked to financial ratios, which further encourage short-termism. Long-term variable pay also has a negative impact on the ESG score in this data set. However, it is possible that the low use of long-term variable pay in the companies studied and the resulting scarcity of data distort the results.

While compensation as part of SCG has not necessarily shown the hoped-for results in this analysis, it is important to look again at figures 2 and 4. The graphs there show that both the ESG score and the use of NFIs increase in connection with legislative changes and EU directives. This effect could be used by the EC in its efforts to reduce short-termism in the EU. For example, the EC and EY themselves are proposing to use legislative, tough approaches to influence EU countries and thus their companies (European Commission & EY, 2020). Future research could explore this as a research topic.

Although this study was able to fill a part of the research gap with relevant results, it must be pointed out again that some of the results contradict the previous research literature. However, it is important to note that this work is the first in the German-speaking two-tier system to examine not only the impact of CEO compensation, but also the impact of executive board compensation on the ESG score. Moreover, this is the first study to examine Austrian companies in the prime market.

Moreover, the results already differ between the two regression models used. The reason for this is probably that the period of 10 years has a strong influence as a moderator variable in the panel model.

Furthermore, the sample size of only 23 companies is relatively small and limited to the Austrian region, where research in this area is generally rarely conducted. The results are therefore not generalizable and should not be transferred to firms in other German-speaking countries or firms that do not trade on the stock exchange. For future research, it should be considered

whether, due to the comparability, a country that is popular in terms of knowledge, such as Germany, should be chosen in order to enable better comparability of the results later on. In addition, the small sample size reduces the significance of the results. This can be improved in future studies on the topic through a larger sample size and consequently a larger dataset.

It should also be mentioned that one of the main characteristics of sustainability is its long-term nature. It takes time to implement sustainable strategies and even longer to see results. Although the 1-year lagged ESG score was used in this study, it may be that some of the developments or changes could not be captured because they have a longer duration than just one year. To avoid this risk, future work should consider using a larger time lag, possibly over several years.

In addition, SCG was presented in this work on the basis of the actual impact on CS measured by asset 4. However, even this database and the ranking of the companies is created by individual people and is therefore subjectively influenced.

Finally, it must be mentioned once again that many correlations could not be evaluated as results due to statistical insignificance and thus do not provide any explanatory content. This is probably due, among other things, to the fact that many of the companies only provide insufficient information on data such as the exact long-term remuneration or the use of NFI and the ESG score was only calculated very late in Asset 4 for many companies. This was especially the case in the first two-thirds of the period studied. Future research should therefore consider limiting the research period to recent years, when companies were required by law to provide better information. In addition, the sample size could be increased by including more listed companies.

7. References

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