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Women on management board and ESG performance

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Abstract

Purpose – The purpose of this paper is to analyse women on management board and their impact on environmental, social and governance (ESG) performance in two European two-tier countries.

Design/methodology/approach – The empirical quantitative paper covers a sample of German and Austrian companies which are listed at the Prime Standard of the Frankfurt and Vienna Stock Exchange for the business years 2010-2014 (1,019 firm-year observations). A correlation and regression analysis is conducted to measure a possible link between gender diversity and ESG performance in these European countries.

Findings – Multiple regressions state that female members in the management board do have a positive impact on ESG performance, measured by the AssetFour database by Thomson Reuters. Surprisingly, CSR expertise does not have a significant impact on ESG performance, whether the implementation of a CSR committee has a positive and significant link with ESG performance.

Originality/value – The analysis is the first empirical study that has a focus on Germany and Austria as the main representatives of the European two-tier system. Findings have implications for both users and public policy and suggest that current national and European regulations on corporate governance and CSR could have a great impact on future CSR performance and market reactions.

Keywords ESG performance, Gender diversity, Corporate governance, CSR expertise, CSR management, Management board

Paper type Research paper

Introduction

The European Commission (EC) has initiated several reform activities to increase the quality of corporate governance as a reaction to the capital markets' reduced reliance in the quality of corporate governance after the financial crisis 2008/2009. This strategy goes hand in hand with a profound change in business reporting of capital market-oriented firms, which can no longer only focus shareholders, but must also attract other stakeholders as well. In this context, a sustainability management in general and a sustainability reporting in particular are main elements of "good" corporate governance. The current relevance of possible links between board composition and environmental, social and governance (ESG) performance is also established from a research perspective. Some studies have made a statistical examination of the impact of management board compensation on ESG performance (Mahoney and Thorn, 2006; Claassen and Ricci, 2015). No empirical studies have been conducted up until now that concentrate on the two-tier system and the impact of women on management boards on ESG performance.

This paper decreases this research gap by analyzing the link between management board gender diversity and ESG performance in Germany and Austria as two main

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representatives of the European two-tier system. In total, I concentrate on 1,019 firm-years observations for the business years 2010-2014. I provide information on management board composition by firms' CSR reporting, which I hand-collected from sustainability reports, integrated reports, status reports and annual reports. The firms in the sample represent the Prime standard of the Frankfurt and Vienna Stock Exchange. I control for other board and firm variables (e.g. CSR expertise, CSR committees, board size, appointment of a Big Four audit firm, firm size). Multiple regressions state that female management board members have a positive impact on ESG performance. The analysis will be interesting and relevant for both users and public policy to calculate the possible impacts of current regulations (e.g. implementation of a fixed gender diversity quota in Germany since 2016).

The paper is structured as follows. First, I present the main theoretical explanatory approaches to the economic relevance of sustainability management and reporting and how far it is potentially influenced by corporate governance. In this context, a state of the art analysis of empirical studies will be another goal to deduct the hypothesis. Then, the data and methodology of the empirical analysis will follow, wherein the sample selection, the main variables and the regression model are presented. The research results of the correlation, regression and sensitivity analysis are given focus. The summary and the limitations of the study will complement the following analysis.

Background and hypothesis development

Theoretical foundation

The empirical corporate governance research is dominant on the one-tier systems (board systems) on the US-American capital market. In contrast to the one-tier system, the German and the Austrian legislators stipulated a two-tier system, the management board ("Vorstand") and the supervisory board ("Aufsichtsrat"). Insofar, a clear organizational separation between management and supervision has been implemented in these two countries for corporations. The function of the management board is the leading of the firm under its own responsibility, while the supervisory board must appoint, monitor and advise the members of the management board.

Supervisory boards in a two-tier system are more independent compared to one-tier systems but by tendency also less effective in supervising and advising the management board. Furthermore, the US corporate governance system is an outsider system with a strong focus on the supervision by the equity market, whereas the German and Austrian corporate governance system can be described as insider systems. Insider systems imply a lower degree of investor protection, while internal corporate governance like the monitoring activities of supervisory boards play a key role in these corporate governance systems.

The differences between the US board system and the German and Austrian two-tier system lead to the research gap to gain new and relevant insights about the impact of management board composition on ESG performance which was not under research considerations. It can be expected that the impact of management board composition variables on ESG performance is different in one- and two-tier systems because the decision-making process of board members could be different. ESG performance and the need for professionalization of management and supervisory board are two central aspects of modern corporate governance in Germany and Austria and are both addressed in this study.

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The link between corporate governance and sustainability management can be explained by a variety of theories, while most papers concentrate on stakeholder theory. This view which can be traced back to coalition theory (Cyert and March, 1963), which aims at satisfying the interests of the different coalition partners with which the company is tied up through a network of various joint ventures and which ultimately determine the sale of products and services (Freeman, 1984). Isolated business practices which do not take into consideration societal values and requirements are non-conducive in a long-term perspective. A company is, therefore, considered a subset of society which means that generating value is in principle measured by the fulfillment of specific societal expectations. While primary stakeholders immediately exercise influence on the fate of the company – that is, the production of products and services – the claims of secondary stakeholders affect the entrepreneurial activities more likely indirectly as the impact of the practices on people, society or the environment (Svendsen *et al.*, 2001). Therefore, it is not only imperative that management succeeds in reconciling a multitude of interests but beyond that the corporate goals of stakeholders with regard to their (partly) conflicting demands have to be prioritized. To constantly fulfill stakeholders' expectations, the CSR management and its reporting is a necessary goal. Sustainable management activities represent an effective tool of stakeholder communication, and this suggests accordingly a positive connection between stakeholder power and sustainable achievement, as well as sustainability reporting (Roberts, 1992).

To realize an adequate quality of CSR management, which could lead to positive market reactions, corporate governance mechanisms are of key importance. Stakeholders expect a certain measure of specialist expertise in the management board, whereby the issue of gender diversity gains in importance during the past years. A great controversial discussion has been started also on an European level to introduce a fixed gender quota on boards. The new European directive which implies a fixed gender quota (40 per cent) on the supervisory board or on non-executive directors was not accepted by the European Council by the end of 2015. In Germany, a fixed quota (30 per cent) starting by 2016 has been regulated for the supervisory board but only for some capital market companies with full co-determination. Furthermore, all capital market-oriented companies or with co-determination rules must publish their diversity aims and strategies. The German legislators have the opinion that gender diverse boards will have a positive impact on long-term strategies and increase stakeholder reputation.

As an interaction between the classic principal agent theory and stakeholder theory, the stakeholder agent theory (Hill and Jones, 1992) also plays a central role. Sustainability information is supposed to contribute to a reduction of information asymmetries and transaction costs from the agency relationships between stakeholders and companies (Shankmann, 1999). Management sees an increased necessity here, given an undervaluation of the capital markets. At best, such an adequate CSR management can lead to a lower systematic business risk (Botosan, 1997). Ideally, such strategy would always be beneficial so that in this case, a higher degree of precision in sustainability reporting would be positively correlated to the use for stakeholder decision-making and their abilities to influence the firm performance positively. Aside from information asymmetries, conflicts of interest between stakeholders and agents are to be reduced. Management is to consider such strategy as tools for bonding with the

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increased interests for information of the external addressees a tool that is expressed inter alia through the implementation of sustainable success-orientated compensation systems. To keep conflicts of interest low, an appropriate gender diversity of the management board is essential to lower the "old boys network" and social ties.

Gender diversity, firm performance and environmental, social and governance performance

The composition of the management board will be seen in the following as the essential factor related to corporate governance that influences CSR performance. Because the influence of corporate governance on CSR performance was so far not in focus of German research, this analysis includes common and objective variables which were found in a previous systematic literature review to analyze the German two-tier system in particular. The relating corporate governance factor that influence CSR performance will, therefore, concentrate on gender diversity. After the recent financial market crisis, traditional firm performance indicators (e.g. Return on Assets) which can be measured by financial accounting (e.g. balance sheet, statement of income) are extended by ESG performance. To compare the ESG performance of corporations, a credible rating is necessary. Currently, there is a variety of different ESG indexes, for example, the Dow Jones Sustainability Index, the FTSE4Good Index (which is co-owned by Financial Times (FT) and the London Stock Exchange (SE)) and the Morgan Stanley Capital International (MSCI) ESG Indices. Professional analysts of (non-)financial data support ESG performance like Thomson Reuters Asset4. This database is commonly used in empirical corporate governance and CSR research. In this study, I also concentrate on this measurement.

Taking diversity into account the recruitment of boards can be supported by several possible theories. Accordingly, Hillman *et al.* (2000) among others interpret the resource-dependent approach as saying that diversity of gender, age structure, experience and professional background of the management provide divergent resources that the company will benefit from. Thus, higher efficiency of monitoring activities can be justified inter alia by better information processing and willingness to engage in dialogue on the supervisory committee (Carter *et al.*, 2010, p. 398). This could result in a higher degree of precision in sustainability reporting. Empirical research has in part confirmed a positive influence of gender diversity on the independence of the plenum which is attributed to an "old boys" phenomenon (Carter *et al.*, 2010, p. 399), where conflicts of interest come up more often among male board members, as up to now multiple memberships and cross-shareholding has been more frequent with men than women.

Over the past few years, gender diversity has been empirically examined in more depth in regard to firm performance and earnings quality. A current meta-analysis by Post and Byron (2015) contains 140 studies and found that female board representation ii positively related to accounting returns, and this relationship is more positive in countries with stronger shareholder protections. The predominance of this research can be attributed to the comparative ease of categorization, as well as to the political debate, which has been going on for many years about whether a quota of women on boards should be established by law. The literature on board diversity and firms' performance (Adams *et al.*, 2009; Campbell and Mínguez-Vera, 2008; Carter *et al.*, 2003; Erhardt *et al.*, 2003; Farrell and Hersch, 2005; Lückerath-Rovers, 2013) broadly supports the view that

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the presence of women representatives on the board enhances the firm's financial performance. But also, heterogeneous results occurred (Fauzi and Locke, 2012; Jhunjhunwala and Mishra, 2012). Also, the number of empirical studies with regard to the impact of women on board on earnings quality has risen during the past years. Abbott *et al.* (2012) found a significant association between the presence of at least one woman on the board and a lower likelihood of restatement. Francis *et al.* (2015) focus on the effects of CFO gender on accounting conservatism and state that there is a significant increase in accounting conservatism, after a female CFO has been hired to replace a male CFO. Insofar, both studies found a stronger earnings quality after women on board. In line with the empirical studies and the theoretical foundation female members in the management board have a positive impact on decision-making can lower stakeholder-agent-conflicts and may lead to more sustainable firm strategy and performance. Insofar, the following hypothesis was conducted:

H1. Female members in the management board increase ESG performance.

Data and methodology

Sample selection

The sample covers corporations being listed in the Prime Standard of the Frankfurt and Vienna Stock Exchange with regard to the business years 2010-2014. The intention was to analyze the reaction of the companies to the shrinking trust after the financial market crisis 2008/2009, which leads to a more sustainable management. These companies underlie the highest standards of transparency and disclosure within the Stock Exchange in Germany and Austria. Researching corporate governance mechanisms of these companies could have a signaling effect for other listed companies in Germany and Austria, as these companies are covered most intensely by investors. Therefore, analyzing these companies is very valuable from a researcher's, as well as from a practitioner's, perspective. I exclude financial institutions due to specific accounting regulations for the industry in comparison with other industries and companies. Table I gives an overview about the final sample of 1,019 firm years-observations.

Main variables

Data on corporate governance and sustainability reporting were hand-collected from sustainability reports, integrated reports, status reports and annual reports. The dependent variable *ESGP* is a proxy for ESG performance. ESG data are obtained from the Thomson Reuters Datastream database under the category ESG – Asset4 for the business years 2011, 2012 and 2013, 2014 and 2015 to allow for the possible lagged impact of gender diversity on *ESGP*. The ratings provided by the Asset4 ESG framework are updated on a bi-weekly basis. In the analysis, I used Datastream ESG data as retrieved in December, 2015. The overall ESG score is an aggregated measure of the firm's performance in several environmental, social and governmental categories for

Survey sample	2010	2011	2012	2013	2014
Listed companies	220	220	218	218	221
– Financial institutions	−16	−16	−15	−15	−16
Final sample	204	204	203	203	205

Table I.
Survey sample

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example, Employment Quality, Health & Safety, Training & Development, Human Rights, Community. Each category includes a set of key performance indicators (KPIs), for example, Work-Life Balance, Training Hours. The overall ESG score is calculated by equally weighting all underlying data points, *z*-scoring and comparing them with the data points of all other firms to obtain a relative measure of performance expressed as a percentage ranging from 0 to 100 per cent (a *z*-score is a relative measure that indicates the value in numbers of standard deviation of a given observation from the mean value of all other observations) (Asset4 ESG data glossary, 2015). In an attempt to capture the impact of gender diversity on ESG performance, I use the one-year lagged score, that is, gender diversity of the current year is compared with the ESG measure of the following year. As mentioned before, gender diversity is classified as the independent variable. The proxy *GEND* represents the percentage of female members in the management board. I include several control variables which are frequently used in empirical corporate governance and CSR research. *EXP* is measured as the percentage of sustainable expert members in the management board, as these members have special education or former experiences with social and/or environmental aspects. In line with former studies, I expect a positive sign. I also include the dummy variable *CSRC* whether the management or supervisory board has implemented a CSR committee. Again, I assume that the implementation of a CSR committee will have a positive impact on ESG performance. Empirical corporate governance research also takes into account the size of the management board (*SIZE*) as a control variable. SIZE is considered in relation to the index-related average. Former members of the management board in the supervisory board are included in the variable *FORM*. Former studies did not prove a clear connection between these two board characteristics and corporate governance quality, so that the expected sign is also not clear.

I hypothesize a positive impact of gender diversity in the management board on ESG performance. The prevailing opinion also assumes that the cooperation between supervisory board and annual auditor might have a positive influence on ESG performance, as the external auditor may be engaged in CSR assurance. Within this context, the research of DeAngelo (1981) is of particular interest, as it provides evidence for a positive relation between the size of the audit company and their independency and expertise. Therefore, the appointment of one of the four top-selling audit companies in Germany and Austria ("Big Four") has been added as another control variable (*BIG*) to expect a positive impact on audit quality. Furthermore, I use three financial variables as a proxy for additional control. The natural logarithm of total assets (*FSIZE*), the ratio of total debt divided by total assets (*LEV*) and the return on assets (*ROA*) are taken into account. The control variables were set into relation according to the respective industry branch. A summary is presented in Table II.

Regression model

The study evaluates whether gender diversity has an impact on ESG performance (*ESGP*). The assumptions of regression (linearity, homoscedasticity of residue, normal distribution of error term, multicollinearity) in accordance with the approach of Hair *et al.* (2009) were tested here as well. I apply regression statistics in STATA 13. The following regression equation is valid:

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Dependent variable	*Explanation*
ESGP	Sustainability reporting quality measured by a disclosure index according to the GRI guidelines
Independent variable	*Explanation*
GEND	Percentage of female members in the management board (as reported)
Control variables	*Explanation*
EXP	Percentage of sustainable expert members in the management board (as reported)
CSRC	Existence of a CSR committee (dummy variable; 1 = yes; 0 = no) (as reported)
SIZE	Size of the management board (as reported)
FORM	Percentage of former members of the management board in the supervisory board (as reported)
BIG	Appointment of one of the four top-selling companies in Germany and Austria ("Big Four"; Deloitte Touche Tohmatsu; EY; PricewaterhouseCoopers; KPMG) (dummy variable; yes = 1, no = 0) (as reported)
FSIZE	Natural logarithm of total assets
LEV	Ratio of total debt divided by total assets
ROA	Net income before extraordinary items/preferred dividends divided by total assets

Table II. Variables of the study

$$ESGP = \alpha + \beta_1 GEND + \beta_2 EXP + \beta_3 CSRC + \beta_4 SIZE + \beta_5 FORM + \beta_6 BIG + \beta_7 FSIZE + \beta_8 LEV + \beta_9 ROA + \varepsilon$$

Research results

Descriptive statistics

Tables III and IV give an overview of the descriptive statistics. The ESG performance score has a range from 0 to 1. If the mean value is larger than 0.7, then firms are generally achieving good results in terms of ESG. The median value is higher than the mean value, indicating that the distribution is skewed to the left. I can also measure some extreme values, varying from close to 0 to close to 1. The ESG performance is rather low in both countries (29.1 per cent).

Variables	Mean	SD	P25	Median	P75	Minimum	Maximum
ESGP	0.291	0.185	0.214	0.317	0.407	0.01	0.6
GEND	0.198	0.117	0	0.185	0.250	0	0.412
EXP	0.217	0.142	0	0.204	0.268	0	0.357
CSRC	0.155	0.124	0.1	0.2	0.3	0	1.0
SIZE	8.175	2.574	7.0	8.0	10	4.0	12.0
FORM	0.352	0.201	0.245	0.385	0.498	0	0.6
BIG	0.721	0.214	0.5	0.75	1.0	0	1.0
FSIZE	0.275	0.246	0.212	0.267	0.341	0.147	0.517
LEV	0.207	0.169	0.059	0.168	0.301	0	0.709
ROA	0.092	0.158	0.024	0.058	0.111	−0.048	1.278

Table III. Descriptive statistics

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Variables	ESGP	GEND	EXP	CSRC	SIZE	FORM	BIG	FSIZE	LEV	ROA
ESGP	1									
GEND	0.215	1								
EXP	0.012	0.212	1							
CSRC	0.026	−0.062	−0.128	1						
SIZE	0.240	0.275	−0.093	0.142	1					
FORM	0.230	0.253	0.174	0.184	0.231	1				
BIG	0.552**	0.233	0.302	−0.124	0.124	0.412*	1			
FSIZE	0.081	0.415**	0.323*	−0.129	0.320*	0.467**	0.521**	1		
LEV	0.121	−0.071	−0.121	0.219	−0.263	−0.122	0.013	−0.174	1	
ROA	0.125**	0.336	0.133	0.013	0.254	0.153	0.280	0.155	0.299	1

Notes: *ESGP* is the dependent variable measuring the ESG performance by the AssetFour database by Thomson Reuters, *GEND*: percentage of women on the management board, *EXP*: dummy variable equal to 1 if the management board contains members with CSR expertise, *CSRC*: dummy variable equal to 1 if the company has implemented a CSR committee on the management or supervisory board, *SIZE*: total number of members on the management board at the end of the fiscal year, *FORM*: dummy variable equal to 1 if a member of the supervisory board is a former member of the management board, *BIG:* dummy variable equal to 1 if the company engaged one of the "Big Four" audit firms, *FSIZE*: firm size measured by natural logarithm of total assets, *LEV*: leverage measured by ratio of book value of total debt and total assets, *ROA*: profitability measured by natural log of Return on Assets, *correlation is significant at the 0.05 level (two-tailed); **correlation is significant at the 0.01 level (two-tailed)

Table IV. Pearson correlation matrix

Only about a quarter of the whole members are female (19.8 per cent) and sustainable experts (21.7 per cent). The majority of the analyzed companies did not implement CSR committees (15.5 per cent). There are no legal requirements for formation of CSR committees both in Germany and in Austria. On average, approximately eight members serve on the management board. Former members of the management board are not that dominant in the supervisory board (Germany: 35.2 per cent). The appointment of a Big Four audit firm is relatively high (72.1 per cent), suggesting a higher audit market concentration at the German and Austrian prime standard.

Correlation results

Table IV presents the Pearson correlation matrix for the dependent and independent, as well as control, variables. All board composition variables correlate positively but non-significantly with *ESGP*. Thus, I did not find a correlation between the independent variable and *ESGP* that could support my study's hypothesis. Consistent with prior research, *ESGP* correlates positively with profitability at the 1 per cent significance level. In addition to this, the appointment of a Big four audit company (*BIG*) correlated positively with *ESGP*.

Regression results

Table V shows the results of the multivariate regression analysis. The coefficients of *GEND* are positive and significant at the 1 per cent-level, suggesting that the presence of women in the management board has a positive impact on ESG performance in Germany and Austria. Hence, the results do support the hypothesis. Recall that the

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Variables	Expected sign	German and Austrian prime standard (2010-2014) Regression coefficient	*p*-value (two-sided)
GEND	+	0.254	0.002**
EXP	+	0.149	0.118
CSRC	+	0.281	0.003*
SIZE	+/−	−0.129	0.144
FORM	+/−	−0.189	0.121
BIG	+	0.299	0.002*
FSIZE	+	0.271	0.002*
LEV	−	−0.262	0.003**
ROA	+	0.131	0.112
R^2 (adjust)		0.312	
F statistics		2.135*	

Notes: ESGP is the dependent variable; GEND is the independent variable; EXP, CSRC, SIZE, FORM, BIG, FSIZE, LEV and ROA are the control variables. The two-tailed significance level is indicated as follows: * = significance on the 0.05 level; ** = significance on the 0.01 level

Table V.
Regression analysis

average number of members on management board is about eight and female members account for about 20 per cent, so the management boards are highly skewed male in this study. Hence, this raises the question whether the female members of the management board in Germany and Austria only play a "token" role. The previous studies argue that gender diversity appears to have minimal impact unless a critical mass of at least three women is present on the board (Post *et al.*, 2011; Liao *et al.*, 2015). However, the results suggest that the small number of female members in the management board at the Frankfurt and Vienna Stock Exchange makes a difference in ESGG performance.

Interestingly, the existence of sustainability experts in the management board (*EXP*) does not have a positive significant impact on reporting quality in both countries. Furthermore, I find positive significant results for the variables *CSRC*, *BIG* and *SIZE* and a negative significance for *LEV*. Insofar, the implementation of a CSR committee, the appointment of a Big Four audit firm and management board size contribute to the sustainability management practice in a positive way and a leverage situation in a negative way. The coefficients of determination appear to be satisfactory (0.312). The *F*-statistics show a significance at the 5 per cent level.

Sensitivity analysis

To assess whether results of my main analysis are robust, I conduct sensitivity analysis on the measurement of the impact of supervisory board composition on CSR reporting quality by the sub-samples Germany and Austria. Furthermore, I modified *GEND* by a dummy variable that equal 1 if at least one woman joins the management board. The regression results are shown in Table VI. Again, *GEND* has a positive significance on ESG performance in both sub-samples.

In addition to the use of other variables, I examined collinearity problems through the correlation matrix. The correlation coefficient is thought to be problematic if it exceeds 0.8. The correlation coefficients found in my study are below the stated value. A more indicative and accurate technique that is commonly used is the variance inflation factor (VIF) for each of the independent variables. If the VIF exceeds 10, then collinearity is

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Variables	Expected sign	Germany Regression coefficient	Germany p-value (two-sided)	Austria Regression coefficient	Austria p-value (two-sided)
GEND	+	0.299	0.003**	0.271	0.001**
EXP	+	0.162	0.252	0.151	0.682
CSRC	+	0.232	0.002**	0.251	0.003**
SIZE	+/−	−0.161	0.223	−0.188	0.211
FORM	+/−	−0.154	0.212	−0.061	0.621
BIG	+	0.259	0.003**	0.289	0.001**
FSIZE	+	0.184	0.212	0.177	0.229
LEV	−	−0.211	0.002**	−0.211	0.001*
ROA	+	0.233	0.265	0.201	0.272
R^2 (adjust)		0.401		0.351	
F statistics		2.361**		2.221**	

Notes: ESGP is the dependent variable; GEND is the independent variable as a dummy variable equal to 1 if at least one woman joins the management board; EXP, CSRC, SIZE, FORM, BIG, FSIZE, LEV and ROA are the control variables. The two-tailed significance level is indicated as follows: * = significance on the 0.05 level; ** = significance on the 0.01 level

Table VI. Sensitivity analysis

considered to be a problem. The VIF (not tabulated) for this study for the model is 3.98. Thus, according to the correlation matrix and VIF of the variables of the study, it is unlikely that multicollinearity manipulates the regression results, as the maximum VIF is less than the threshold of 10.

Summary and limitations

This paper represents the first empirical study on the impact of gender diversity in the management board on ESG performance for the German and Austrian Prime Standard as two central EU member states with a two-tier system. The study covers 1,019 firm-years observations during the business years 2010-2014 and states that gender diversity in the management board has a positive impact on ESG performance, which was measured by Thomson Reuters in their AssetFour database (EU, 2014). Surprisingly, the existence of sustainable experts in the supervisory board shows a positive but insignificant impact on CSR reporting quality. Furthermore, the implementation of a CSR committee as part of the management board or supervisory board leads to a significant increase in ESG performance. These effects are robust to the sub-samples (Germany and Austria) and to a modified variable for gender diversity.

In the coming years, further increases in research activity from a continental European perspective can be expected because the research gap of empirical corporate governance studies concerning the two-tier system in Europe is not suitable in view of current regulations in terms of gender diversity. A need has also been shown for multi-period observations and transnational examinations. In this context, limitations of the study must be mentioned. The analysis only covers a restricted reporting period and, therefore, offer only limited insights that changes in the manner of reporting because of legislative reforms tend to become visible only in longitudinal studies. Further, the study is restricted to the analysis of the ESG performance of AssetFour. It must be noted that the measurement is not free of subjective influences, which again

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reduces the validity of the results. The comparability of other studies is compromised in addition by the heterogeneity of the samples, because although they are all concerned with the board system, there are different forms of corporate governance specific to the individual countries. Moreover, sample size is not that high, presumably on account of the time investment required for data analysis. These reduce the significance of the research results and indicate a considerable potential for improvement in the development of future empirical study designs.

Finally, with a view to the usefulness of future decisions on sustainability reporting and the quality of corporate governance, recent regulatory reform initiatives must be mentioned. The EU and other bodies have published a range of statements in response to the past financial crisis which will have a material impact on corporate governance arrangements (especially CSR reporting) in the future. Furthermore, the new specifications of the IIRC for an integrated reporting framework show a new impetus for the further development of business reporting, although in company practice, this will require several years of adjustment.

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