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# **The Impact of Board Characteristics on Classification Shifting: Evidence from Germany**

## **Abstract**

**Purpose** - This paper examines the relationship between Board Characteristics (BCs) on Classification Shifting (CS) among listed non-financial German firms.

**Design/methodology/approach** - Using 870 firm-year observations of German non-financial firms from 2010 to 2019 listed on DAX, MDAX, and SDAX index, we examine the relationship between BCs (board size, board meetings, board independence, and board gender diversity) and CS.

**Findings** - We found that managers of German firms use CS and move recurring expenses to non-recurring expenses to inflate their core earnings. Also, we found that board characteristics including board size, board independence, and board gender diversity have a mitigating effect on CS practices of German non-financial firms. However, the number of board meetings doesn't influence EM.

**Implications:** Our paper recommends that German firms' board must be constituted with more independent members and female representation since these board mechanisms help to curb CS.

**Originality/value** - The focus of this study is Germany, which is a bank-oriented economy with low transparency and investor protection. This paper provides new evidence on how BCs impact CS among German firms, whereas previous CS studies focused mainly on market-oriented economies like the US and the UK.

**Keywords:** Classification Shifting, Earnings Management Board Characteristics, Corporate Governance

**Paper Type** Research Paper

## 1. Introduction

Accounting earnings is a major performance statistic, which is of huge interest to companies' stakeholders (Abdou et al., 2021, Ball et al., 2021). Hence, Prior et al. (2008) highlighted that it empowers stakeholders to differentiate between high and low-performing firms, thereby enabling them to make financial decisions. However, it is argued that managers misreport earnings either for the company or to benefit themselves and mask the firm's economic condition (Schipper, 1989, McVay, 2006). Previous studies extensively used accrual and real earnings management to measure earnings manipulation (Cohen and Zarowin, 2008, Kothari et al., 2015, Gao et al., 2017). The method of classification shifting recently received considerable attention and it is seen as a viable tool to misreport earnings (McVay, 2006, Fan and Liu, 2017, Zalata et al., 2018, Seve et al., 2019). It allows managers to move items within the statement of profit and loss of the company without having an impact on its bottom-line earnings (McVay, 2006, Behn et al., 2013). The practice of classification shifting is considered a disclosure issue, which makes it generally difficult for outsiders to verify (Athanasakou et al., 2009).

Few studies have documented the impact of board characteristics on classification shifting practices of firms in the UK and US (Haw et al., 2011, Zalata and Roberts, 2016). However, not much is known about how corporate governance (CG) influences the classification shifting of German non-financial firms which operate within a stakeholder-oriented CG environment. The important question that needs to be answered is whether board characteristics influence the CS practices of German non-financial firms. This question is very relevant given the impact of firms' environment on various organisational outcomes (Levine, 2002, Ezeani et al., 2022, Ezeani et al., 2021). Our study, therefore, examines the impact of board characteristics (BCs) on the classification shifting (CS) of German non-financial firms.

This paper seeks to make the following contributions to the existing literature. First, the corporate governance environment of Germany is distinct from those of firms in the Anglo-Saxon environment. Unlike the Anglo-American one-tier board system, the German corporate board system formalised the distinction between the supervisory board (Aufsichtsrat) and the management board (Vorstand) (Mintz, 2006). Also, in line with the co-determination principle, employees are represented on the supervisory board, thereby influencing board monitoring (Cromme, 2005, Ezeani et al., 2021). Consequently, it is expected that the two-tier governance system and co-determination of employees may have a mitigating impact on CS. Given the number of employees on the board (Aufsichtsrat) and their material link with the company, managers' are unlikely to move items within the income statement to inflate the core earnings of the firm.

Second, unlike the USA, the German governance system relies on insider relationships and does not encourage external participation on the board (Cromme, 2005, Sudarsanam and Broadhurst, 2012). Therefore, the presence of powerful insiders (shareholders' representatives and employees) is likely to reduce managers' chance of inflating their core earnings. Third, the recent changes in the German corporate governance system, whereby firms are required to appoint 30% of women on the supervisory board (Terjesen and Sealy, 2016, Green and Homroy, 2018) are likely to strengthen board monitoring. Previous studies found that female board members mitigate earnings management (Arun et al., 2015, Liu et al., 2016, Pucheta-Martínez et al., 2016, Gull et al., 2018, Alqatan et al., 2019, Komal et al., 2021). Fourth, Leuz et al. (2003) argued that companies operating in code-law nations with lower investor protection rights manipulate earnings more than companies in common-law nations with higher rights of investor protection. La Porta et al. (2002) reported that Germany is a code-law country with lower investor protection rights. Furthermore, the International Financial Reporting System (IFRS) was implemented in Germany in 2005. Zalata and Roberts (2017) pointed out

that the greater flexibility of the International Accounting Standard (IAS 1) under IFRS allows managers to move recurring expenditures to non-recurring items to report suitable core earnings. Given this greater flexibility offered by IFRS, it is essential to examine the impact on CS practices of German firms. The majority of classification shifting studies are conducted in the UK and the USA, neglecting the importance of corporate governance structure in bank-based economies such as Germany. As a result, Germany provides an interesting environment for investigating the influence of BCs on CS.

Thus, using a sample of 87 German firms over 10 years (from 2010 to 2019), our paper investigates whether German firms engage in classification shifting or not. It also examines the impact of board characteristics on classification shifting. We show evidence of classification shifting among German firms. Furthermore, board characteristics have a mitigating impact on the classification shifting practices of German firms. We found a negative relationship between board size, board independence, and board gender diversity on CS. However, we found that board meeting has no impact on CS. This paper consists of the following sections: Section 2 covers the relevant literature and presents the research hypothesis. Section 3 explains the data collection, sample selection, methodology used for measurement of classification shifting, and the regression model. Section 4 presents regression results and section 5 provides the conclusion.

## **2.0 Literature Review and Hypothesis Development**

### **2.1 Theoretical Framework**

This study used agency theory to justify the association between corporate governance (CG) mechanisms and classification shifting (CS). The information asymmetry issue is associated with the agent-principle relationship which may provide an opportunity for managers (the agents) to serve their interests instead of the interests of their investors (the principals) (Jensen, 1986). Additionally, it has been argued that earnings manipulation conceals the reality of firms'

financial performance and has the potential to damage stakeholders' interests. Hence, the agency theory emphasises the importance of CG in facilitating compliance by limiting managers' self-serving motives to mitigate risk through opportunistic actions (Salem et al., 2020).

According to agency theorists, the role of corporate boards is to monitor the senior management staff's actions and to protect the interest of owners (Jensen and Meckling, 1976, Fama and Jensen, 1983, Alqatan et al., 2021b). Dalton et al. (2003) pointed out that inducements to monitor are the major drivers of a board's supervisory effectiveness. Thus, to the extent that board incentive and reward systems are aligned with shareholders' interests, directors will be more competent monitors of management, hence minimizing the opportunity for financial misreporting. Moreover, Demsetz and Lehn (1985) also stated that the primary aim of effective CG controls is not to enhance the corporate performance but to mitigate principal-agency problems by minimizing the opportunities for accounting malpractices as well as scrutinizing the behaviour of the parties involved in the financial reporting process of the company. In the context of Germany, the supervisory board is the main internal controlling mechanism (Ezeani et al., 2021). The supervisory board has a greater responsibility to monitor the performance of the firms and detect any earnings manipulations that will reduce agency costs.

## **2.2 Classification Shifting**

Healy and Wahlen (1999) claim that managers use their judgement when engaging in earnings management and mislead stakeholders about the firm financial performance to fulfilling market expectations, self-interest in compensation schemes, and job security. In this regard, Zalata et al. (2018) indicated that managers use CS to attempt to shift recurring expenditures to non-recurring expenditures to inflate their core earnings. Also, McVay (2006) stated that managers

engage in misclassification of revenue items to increase operational revenues, which does not influence the net income, and therefore, constrained auditors and regulators' monitoring.

Subsequent literature investigated the form of misclassification of core earnings concerning income-reducing special items (McVay, 2006, Fan et al., 2010, Poonawala and Nagar, 2019). In the context of the US market, McVay (2006) illustrated that managers of US firms divert firms' recurring expenses to special items to boost their core profitability. Likewise, Fan et al. (2010) reported that managers overstate core earnings in the fourth quarter rather than interim periods. Even though corporate governance is crucial in assuring the existence of control mechanisms in the absence of competition, it has occasionally failed to prevent financial misconduct (El Diri et al., 2020).

Previous literature focused on the Anglo-American context which is characterised by a one-tier CG framework with strong investor protection and greater external engagement on the board. Zalata and Roberts (2016) found that high-quality corporate governance characteristics tend to serve as a replacement for tight accounting requirements and constrain earnings management practices through non-recurring items. Similarly, Zalata and Roberts (2017) found a positive link between unexpected core earnings and non-recurring costs, indicating that CS is a feasible manipulation tool used by managers of UK firms. In addition, Malikov et al. (2018) found evidence of classification shifting in UK companies that misclassify revenues from non-operating activities as operating revenue. Using a sample of East Asian nations, Haw et al. (2011) concluded that the degree of classification shifting is lower in countries with better investor protection compared with countries with weaker investor protection. Although board characteristics were neglected in their study, they found that Big-4 as a proxy of audit quality has an ineffective role in mitigating CS.

It has been argued that companies that operate in market-oriented economies such as the UK and US have better levels of investor protection and transparency compared with those of bank-

oriented economies like Germany. Antoniou et al. (2008) indicated that companies listed in bank-oriented economies have a low level of transparency and investor protection. Nevertheless, firms in stakeholder-oriented economies such as Germany do not consider the stock market as their essential source of funds because financial institutions play a critical role in supplying external funds (Ezeani et al., 2021, Ezeani et al., 2022). Therefore, it is expected that debtholders' role in the monitoring process may reduce the likelihood of classification shifting. In stakeholder-oriented economies, companies address agency disputes by incorporating a diverse range of stakeholders in the monitoring process. In addition, Germany has a two-tier board system, which means that management is subjected to more scrutiny and supervision (Tran, 2014). Hence, we propose the following hypothesis:

***H<sub>1</sub>: Ceteris paribus, Managers of German firms engage in CS.***

Another factor that influences a board's capacity and effectiveness to monitor management activities is board size. A considerable literature largely agreed that having a larger board enhances reporting quality and scrutiny, which decreases the possibility of management engaging in earnings management (Xie et al., 2003, Peasnell et al., 2005, González and García-Meca, 2014, Elmagrhi et al., 2017). Large and small boards have shortcomings and benefits. For instance, smaller boards are easier to organise, and directors are likely to know each other well, making dialogues more productive and allowing them to establish effective consensus. In this regard, Jensen, (1993) indicated that due to coordination and communication issues, boards of directors may become less effective in regulating management as board size grows.

On the other hand, Xie et al. (2003) argue that larger boards include more independent directors with diverse expertise who can demand private information to be disclosed by inside members which in turn improves the control mechanisms and mitigates earnings manipulation. Although Abbott et al. (2004) documented a significant and positive relationship between board size and earnings management, Xie et al. (2003), Peasnell et al. (2005) found a negative and significant



association between board size and earnings manipulation, and an insignificant correlation is found by Bradbury et al. (2006) and Zalata and Roberts (2016). In line with agency theory, larger boards will improve the monitoring due to diverse skills and experience that restrain managers to engage in earnings manipulations. Firms in Germany have a larger number of board members compared to those of UK firms. Consequently, we anticipate that higher board sizes will assist companies in restraining classification shifting and suggest the following hypothesis:

***H<sub>2</sub>: Ceteris paribus, there is a statistically significant and negative relationship between board size and classification shifting.***

The number of board meetings is an important corporate governance mechanism since it is suggested that boards that hold frequent board meetings fulfill their task efficiently and address concerns such as earnings manipulation (Karim et al., 2013, Qu et al., 2015, Alotaibi and Hussainey, 2016, Albitar, 2015). Prior studies have found that board meeting frequency has a significant and negative relationship with earnings manipulation (Xie et al., 2003, Anglin et al., 2013). This is consistent with the notion that frequent board meetings allow directors to resolve significant concerns that the company may face (Basiruddin, 2011). Furthermore, Salem et al, (2020) suggested that proactive boards raise the amount of monitoring, resulting in higher-quality financial reporting. In line with agency theory, board meetings frequency signifies effective monitoring through adequate preparation pre and post meetings allowing the board to exert control over conflicts of interest, reduce earnings management and improve the financial reporting's integrity (Sun et al., 2010; Qu et al., 2015). Following prior studies, we investigate the impact of board meetings by taking into account the overall number of board meetings held during the financial period (Anglin et al., 2013, Obigbemi et al., 2016). This discussion leads to the following hypothesis:

***H<sub>3</sub>: Ceteris paribus, there is a statistically significant and negative relationship between the frequency of board meetings and classification shifting.***

Previous literature documented that the board of directors is considered one of the most essential corporate governance structures which strengthen the monitoring mechanisms of management actions (Fama and Jensen, 1983, Peasnell et al., 2005, Samaha et al., 2012). The independence of board members is a vital characteristic for the board to perform its oversight duty, which includes monitoring the internal control system and financial statements (Patrick et al, 2015). In this regard, Bhagat and Black (2002) illustrated that the participation of non-executive board members who evaluate management performance makes it more attentive to any agency problems. In line with the agency theory, the board's capacity to function as an effective monitoring mechanism relies on its independence from management (Beasley, 1999).

Germany's CG structure supports employee co-determination by incorporating their views into its supervisory process (Ezeani et al., 2021). Several studies documented that the existence of independent members on the board ensures a better quality of reported earnings by restricting opportunistic earnings management (Abbott et al., 2004, Osma, 2008). In addition, Beasley (1996) reported that companies with a smaller percentage of non-executive directors on their boards are more inclined to commit fraud. We define board independence as the proportion of non-executive directors to the total number of board members, in line with prior literature and the German two-tier structure. As a result, the following hypothesis is formulated;

***H<sub>4</sub>: Ceteris paribus, there is a statistically significant and negative relationship between board Independence and classification shifting.***

Gender diversity on the board is seen as a critical attribute that influences the board's performance (Liao et al., 2015). In line with corporate governance literature, Ntim, (2015) claimed that having a female on the board improves managerial scrutiny and increases the

board's independence, resulting in a lower degree of earnings management. According to previous research, the existence of female members on the board strengthens the board's efficiency and effectiveness (Carter et al., 2003, Carter et al., 2010, Alqatan, 2019). In the USA, the NACD<sup>1</sup> and Blue-Ribbon Commission proposed that age, gender, race, and nationality diversity should be considered when recruiting directors. Gender diversity on the board might provide several benefits to the firm by minimising the conflict of interest among shareholders and managers which is in line with the perspective of agency theory (Zalata et al., 2021, Alqatan et al., 2021a, Usman et al., 2022). In this regard, Jamali et al. (2007) found that the existence of females on the board helps the firm's governance by introducing fresher dynamics to the board debate and an infusion of abilities and skills. In addition, Yu et al. (2010) and Zahra et al. (2007) documented that female board member is unlikely to tolerate unethical behaviour such as manipulating financial earnings compared with their male counterparts. Likewise, Na and Hong (2017) revealed that the presence of a female on the board increases financial reporting quality. Furthermore, gender socialization theory suggests that female board member is less likely to involve in unethical practices such as earnings management due to female natural risk aversion compared with a male board member (Harris et al., 2019). Based on the above-discussed literature, we propose the following hypothesis:

***H<sub>5</sub>: Ceteris paribus, there is a statistically significant and negative relationship between the presence of female directors and classification shifting.***

### **3.0 Methodology**

#### **Sample Size**

We selected Germany to investigate the impact of board characteristics on CS and used Deutscher Aktienindex, Mid Cap Dax, and Small-Cap index to collect the data for German

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<sup>1</sup> National Association of Corporate Directors and Blue-Ribbon Commission

firms. The indexes present the largest 130 German companies (Gamerschlag et al., 2011, Böcking et al., 2015), and it is selected to ensure that the sample size is large enough to run the statistical procedures. This study used Germany because the majority of the previous studies on CS are conducted in market-based economies such as the UK and USA, where the CG structure is different (McVay, 2006, Zalata and Roberts, 2017, Zalata and Abdelfattah, 2021). Due to a lack of data availability before 2010, the period used in this study is from 2010 to 2019. We collected firm-level and board-level data from DataStream. The total firm-year observation is 1300. Following previous studies, we excluded financial and utility firms due to their unique regulations related to their financial reporting (McVay, 2006, Campa, 2019). The reason behind the exclusion is that the leverage of financial firms such as banks is explicitly or implicitly impacted by the insurance schemes and investors. Therefore, it is not possible to compare the debt of financial firms to the debt-like liabilities of financial firms. To avoid outliers, German firms whose sales are less than 500,000 euros are eliminated since sales are used as a deflator for most of the variables (McVay, 2006, Zalata and Roberts, 2016, Usman et al., 2022). The final sample consists of 870 firm-year observations due to missing data and firms established after 2010.

### **Classification Shifting (Dependent Variable)**

To find evidence of CS among German firms, we investigated the association between abnormal core earnings i.e., unexpected core earnings and non-recurring items. Hence, the core earnings of the firm are expected to be overstated when there is misclassification of non-recurring items. In line with McVay (2006), Zalata and Roberts (2017), and Usman et al. (2022), the following model is used to estimate normal core earnings:

$$CES_{i,n} = \alpha_0 + \alpha_1 CES_{i,n-1} + \alpha_2 AT_{i,n} + \alpha_3 ACCS_{i,n-1} + \alpha_4 ACCS_{i,n} + \alpha_5 \Delta SALES_{i,n} + \alpha_6 N\Delta SALES_{i,n} + \mu_{i,n} \quad (1)$$

Where CEs stand for core earnings, and it is measured as core earnings scaled by sales. We calculated core earnings as sales less cost of goods sold less selling, general and administrative expenses, scaled by sales. We used sales as a scaler as McVay (2006) pointed out that the company's total assets are likely to be misstated systematically with the non-recurring items. Also, the core earnings are usually persistent which is the reason for the inclusion of lagged core earnings ( $CEs_{i,n-1}$ ). The asset turnover (AT) is estimated as sales scaled by average net operating assets. We measured net operating assets as operating assets less operating liabilities. Also, operating assets are calculated as total assets less cash and cash equivalent. Operating liabilities are measured as total assets less total debt less book value of common equity less preferred equity less minority interests. To control the inverse association between asset turnover and profit margin, we included asset turnover (AT). The AT is an important variable since it is likely for firms to modify their operating strategies if they have large income-increasing non-recurring items (Zalata and Roberts, 2016).

The accruals (ACCs) are calculated as the difference between cash flow from operating activities and earnings before extraordinary items, scaled by sales. The lagged accruals ( $ACCs_{i,t-1}$ ) capture the information of the accruals related to the last period for the earnings of the current period as Zalata and Roberts (2017) pointed out that there is a connection between past accruals and future performance. Also, the accruals of the current period ( $ACCs_t$ ) curbs the extreme performance of the firm that arises due to accruals management. The  $\Delta SALES$  presents the percentage change in sales and is estimated as the difference between sales and lag of sales, scaled by the lag of sales. It controls the impact of sales growth on fixed costs as Zalata and Roberts (2016) pointed out that sales increase lead to the reduction of fixed costs per unit. The  $NEG\Delta SALES$  is  $\Delta SALES$ , if the value is less than zero, otherwise zero. It is included to allow for different slopes related to sales increase and decrease (McVay, 2006, Fan et al., 2010, Zalata et al., 2019).

We estimated the model (1) cross-sectionally to obtain the coefficients and then employed them in the model (1) to calculate expected core earnings. In line with Zalata and Roberts (2016) and Zalata and Roberts (2017), we used the following model to estimate whether German companies manipulate their earnings using CS:

$$UCEs = \alpha_0 + \alpha_1 NRIs_n + \alpha_2 FS_n + \alpha_3 CF_n + \alpha_4 LEV_n + \alpha_5 RA_n + \alpha_6 BMV_n \quad (b)$$

We measure unexpected core earnings (UCEs) as reporting core earnings (CEs) less expected core earnings (ECEs), scaled by sales. In line with Athanasakou et al. (2009) and Zalata and Roberts (2017), non-recurring items (NRIs) are estimated as the difference between core earnings and bottom-line earnings, scaled by sales. The UCEs and NRIs are expected to be positively linked with each other when companies use CS to manipulate earnings. We used firm size (FS), operating cash flows (CF), leverage (LEV), return on assets (RA), and book-to-market value (BMV) as control variables (Barua et al., 2010, Zalata and Roberts, 2017). The definition of the variables is presented in appendix 1.

We included four BCs: board size (BS), board meeting (BM), board independence (BI), and board gender diversity (BGD). The following regression model is used to examine the impact of BCs on CS:

$$UCEs = \alpha_0 + \alpha_1 NRIs_n + \alpha_2 BS_n + \alpha_3 BM_n + \alpha_4 BI_n + \alpha_5 BGD_n + \alpha_6 NRIs \times BS_n + \alpha_7 NRIs \times BM_n + \alpha_8 NREC \times BI_n + \alpha_9 NREC \times BGD_n + \alpha_{10} FS_n + \alpha_{11} CF_n + \alpha_{12} LEV_n + \alpha_{13} RA_n + \alpha_{14} BMV_n + \mu_{i,t} \quad (c)$$

Where UCEs are the unexpected core earnings, NRIs are non-recurring items, BS stands for board size, BM is the number of board meetings held in a year, BI presents the proportion of independent board directors and BGD stands for board diversity measured as the number the female members on the board. Following prior literature, we used the interaction terms to investigate where NRIs and BCs are associated with UCEs (Haw et al., 2011, Behn et al., 2013,

Zalata and Roberts, 2017). It is essential to use the interaction term since it identifies whether BCs influence the relation between NRIs and UCEs. We used firm size (FS), operating cash flow (CF), leverage (LEV), return on assets (RA), and book-to-market value (BMV) as control variables.

### **Descriptive Statistics:**

Table I presents the descriptive statistics for the main variables used in this study. In line with previous studies, the mean of UCEs is 0.00 % (McVay, 2006, Fan et al., 2010, Zalata and Roberts, 2017). Hence, it is expected since they are residuals from the expectation model. The mean of NRIs is 13%, whereas Zalata and Roberts (2016) and Zalata and Roberts (2017) reported 6% and 6.1% in the UK. The larger mean shows that the misclassification of recurring items among German firms is more intense compared to the UK. Also, it can be seen that German firms engage in CS after the implementation of International Financial Reporting Standards (IFRS) (Van Tendeloo and Vanstraelen, 2005).

In terms of BCs, the mean value of board size (BS) is 14.72 and is significantly larger than the mean value (8.47) reported by Zalata and Roberts (2016) in the UK. This result suggests that German firms have a large board size. Also, the mean value of board meetings (BM) is 5.68, which is lower than the 9.24 reported by Zalata and Roberts (2016), showing that German firms hold fewer board meetings compared to UK firms. The mean value of board independence and board gender diversity (BGD) is 19.84 and 18.92 respectively.

### **Insert table I**

Table II presents the correlation matrix among the main variables used in this study. To avoid multicollinearity, Gujarati (2009) pointed out that no Pearson correlation coefficients must be greater than 80 percent. The highest reported correlation is between RA and CF i.e., 0.63, confirming that there is no problem of multicollinearity.

## **Insert table II**

### **Evidence of Classification Shifting (CS)**

We examine whether German companies engage in CS to manipulate their earnings before investigating the impact of BCs on CS. Table III shows that there is a significant positive association between UCEs and NRIs, confirming that German firms inflate their core earnings. It is expected that not all the firms engage in CS. In line with Zalata and Roberts (2016), we conducted the analysis into two samples: a full sample of 870 firm-year observations and a sub-sample of 760 firm-year observations. For the second sample, we excluded the firms with non-recurring revenues as McVay (2006) pointed out that managers misclassify their recurring items in the year when non-recurring items are recognised. Also, Zalata and Roberts (2016) highlighted that it is likely for companies to engage in CS who have non-recurring expenses. The sample has not reduced significantly after excluding non-recurring revenue firms, which shows that most of the German firms engage in non-recurring decreasing items. Similarly, we found a positive and significant association between NRIs and UCEs as reported in Table IV.

## **Insert Table III**

## **Insert Table IV**

Regarding control variables, it is found that UCEs and FS are significantly positively linked with each other. This shows that large German firms are likely to use CS to misrepresent their earnings (Barua et al., 2010). It is argued that firms in bank-oriented economies such as Germany have less investor protection and a lower level of transparency (Ezeani et al., 2021). This low level of transparency allows them to manipulate their earnings using CS. In line with Zalata and Roberts (2016) and Zalata and Roberts (2017), we found a positive relationship between UCEs and RA, showing that large German firms who perform well engage in CS.



Hence, the control variables exhibit a similar association reported by prior CS studies (Barua et al., 2010, Zalata et al., 2019).

### **Board Characteristics and Classification Shifting**

After finding the evidence of CS among German firms, we examine the impact of board characteristics on classification shifting. As expected, we found a positive association between NRIs and UCEs. Table V presents the regression results of this study. We used the interaction terms to examine whether BCs and NRIs are linked with UCEs. In terms of board size (BS), we found that it is negatively and significantly related to UCEs. In line with the agency theory perspective, this result shows that larger boards help firms to mitigate CS since they have diverse experience and expertise that leads to synergetic and effective monitoring (Xie et al., 2003, Brick et al., 2006). In line with Zalata and Roberts (2016), the interaction term (NRIs x BM) is negative but insignificantly related to UCEs. The result shows that the number of board meetings is ineffective to mitigate CS.

### **Insert Table V**

In terms of board independence (BI), the interaction term (NRIs x BI) is significantly and negatively associated with UCEs, confirming that independent directors enable German firms to reduce the extent of earnings management using CS. In line with previous literature, the result indicates that a higher proportion of independent directors challenge the aggressive manipulation of recurring items (Zalata and Roberts, 2016, Zalata and Abdelfattah, 2021). Hence, our results show that more independent directors improve the overall monitoring process of German non-financial firms. Regarding board gender diversity (BGD), we found that the interaction term (NRIs x BGD) is negatively significantly associated with UCEs which is in line with the hypothesis. The result confirms that female directors are more likely to reduce CS compared to male counterparts (Arun et al., 2015, Zalata et al., 2019). Similarly, the presence of female directors on the board encourages openness and improves the overall

information flow, hence restraining managers' ability to engage in earnings management and exploit the information gap for their advantage (Gul et al., 2011, Ezeani et al., 2021). Overall, the results are in line with the notion that BCs encourage more transparency and improve the financial reporting quality. Table VI presents the regression results of the second sample after the exclusion of non-recurring revenues. We found similar results in both samples, confirming that BCs are an effective monitoring mechanism to curb CS.

#### **Insert Table VI**

#### **Robustness:**

For robustness, we employed a two-step generalised method of moments (GMM) regression method. The purpose of using this method is to ensure consistent estimation and improve the efficiency of the estimates by eliminating any issues arising from weaker instruments (Salem et al., 2021). Furthermore, the GMM method also resolves any issues related to endogeneity. Table VII presents the results of the GMM regression, and the results are in line with the main findings of the study, confirming the validity of the main results. Hence, we conclude that the main finding of this study is not likely to be driven by endogeneity issues. The results also confirm that BCs including board size, board independence, and board gender diversity provide effective monitoring and restrain German firms to engage in CS.

#### **Insert table VII**

#### **Conclusion**

This paper examines whether managers of German firms use CS to manipulate their earnings. We also investigate the association between BCs and CS among non-financial German firms from 2010 to 2019. We used two samples: a full sample of 870 firm-years observations and a small sample of 760 firm-year observations after excluding the non-recurring revenue items.

The result shows that managers use CS as a method to inflate their core earnings in both samples. In terms of BCs, we used board size, number of board meetings, board independence, and board gender diversity. We found that board size is negatively and significantly associated with CS, and confirmed that larger boards curb CS due to wider experiences and skillsets. However, board meetings have no significant impact on CS.

Furthermore, we found a negative and significant relationship between board independence and CS, which implies that independent directors provide effective monitoring to reduce the extent of CS and agency costs. Also, we found that female directors are more effective to reduce CS compared to male directors since they tend to be more ethical and risk-averse. We found similar results in the second sample. For robustness, we used a two-step generalised method of moments (GMM) regression method and found a similar result. One of the limitations of this study is that we have only used Germany to examine the impact of BCs on CS due to a lack of data availability. Hence, future research can use cross-country data to make a comparison between the bank and market-based economics. This study provides implications for the German CG system that there is a need to improve the financial reporting process and highlights the importance of BCs.

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