

Cooperatives' 'one-shareholder-one-vote' principle and financial reporting quality

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Unlike corporations, cooperatives are typically governed by the democratic principle of 'one shareholder, one vote', ensuring that every member has an equal say, regardless of the amount of capital they contribute. However, some cooperatives allow members to have multiple voting rights. Our study, based on a sample from Germany, reveals that cooperatives that allow multiple voting rights tend to exhibit significantly lower financial reporting quality, as indicated by higher discretionary accruals, compared to those that adhere to the 'one-shareholder-one-vote' principle. These results remain robust after applying propensity score matching, using different measures of financial reporting quality, and considering the endogenous choice to allow multiple voting rights. This study adds to the emerging literature on cooperatives' financial reporting practices and explores the relationship between owners' voting power and financial reporting quality.

Keywords: cooperatives; financial reporting quality; one-shareholder-one-vote principle; democratic member control; agency theory

JEL: L31; M41; G32

1. Introduction

A cooperative is an association of individuals or entities who voluntarily come together to meet common economic, social, or cultural needs through a jointly owned enterprise (Adams and Deakin 2017, López-Espinosa et al. 2012). The individuals or entities within this association are referred to as members and act as shareholders, enjoying certain 'special benefits' (Adams and Deakin 2017). For example, consumer cooperative members can purchase goods and services from the cooperative often at lower prices than market rates. A housing cooperative is a specific type of consumer cooperative in which members benefit from relatively low rent. Producer cooperatives, such as agricultural cooperatives, buy their members' goods and services at favourable prices or quantities.

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Cooperatives play a significant economic role and have a unique corporate governance structure that differs from that of corporations.¹ Unlike corporations, in which decisions are typically made based on a ‘one-share-one-vote’ rule, cooperatives operate under the principle of ‘one-shareholder-one-vote’ (Toms 2001). Therefore, even with hundreds or thousands of members, each one has an equal say in the decision-making process. Although this governance model can cause potential conflicts of interest between members (shareholders) and management (Type I agency problems), all members having equal voting power prevents conflicts between members with larger shareholdings and ‘minority’ members (Type II agency problem). However, some cooperatives permit members to hold multiple voting rights, potentially creating power disparities.

Furthermore, some cooperatives are managed by ‘honorary’ executives who perform their roles without receiving a salary (*Ehrenamt*). These individuals may be strongly intrinsically motivated (Adams and Deakin 2017, Bastida et al. 2022, Haunert and Hanisch 2019) and have no incentive to manipulate earnings to increase their bonus compensation. Consequently, the presence of honorary executives may significantly reduce Type I agency problems between cooperative members and management.

In this study, we first investigate whether financial reporting quality differs between cooperatives that adhere to the ‘one-shareholder-one-vote’ principle and those that do not. Second, we analyse the marginal impact of the option to hire honorary executives on financial reporting quality.

Thus, we investigate four scenarios with different expectations regarding the prominence of agency problems. First, with cooperatives that follow the ‘one-shareholder-one-vote’ principle and permit honorary executives, conflicts of interest between the members and the executives as well as among members themselves may be negligible. Second, if professional executives manage ‘one-shareholder-one-vote’ cooperatives, only Type I agency problems may be relevant. Third, when cooperatives allow multiple voting rights and honorary executives, conflicts of interest among members (Type II) may be important, probably to a larger extent than those between members and executives (Type I). Fourth, both types of agency problems are likely to occur when multiple voting rights and professional executives come together. Our setting is unique because it allows us to isolate the effects of different agency problems on financial reporting quality relatively well. Incidentally, this type of analysis would be more challenging to conduct with publicly listed and large private corporations, in which Type I and Type II agency problems are typically intertwined.

Following Hutton et al. (2009), we primarily assess financial reporting quality through absolute discretionary accruals. Our analysis focuses on a set of German cooperatives that are generally required to disclose audited financial statements. The cooperatives’ statutes are obtained from the local court (*Amtsgericht*) in Hagen, North Rhine-Westphalia, and contain provisions on whether multiple voting rights and honorary executives are permitted.

Our study has several noteworthy findings. First, we report that cooperatives that adhere to the ‘one-shareholder-one-vote’ principle generally demonstrate higher-quality financial reporting as the cooperative size (as measured by total assets) and number of members increase. This outcome aligns with the evidence found in publicly listed corporations because company size and number of shareholders reflect the degree of information asymmetries and extent of agency problems. These findings suggest the presence of agency problems and indicate that the demand for higher financial reporting quality increases when information asymmetries are more pronounced (Beyer et al. 2010).

¹The European Union (EU) has approximately 250,000 cooperatives, with approximately 163 million members – equivalent to one-third of the EU population – and 5.4 million employees (see https://ec.europa.eu/growth/sectors/social-economy/cooperatives_en). According to the United Nations (2014), 2.6 million cooperatives exist worldwide, encompassing 1 billion members and 100 million employees.

Second, we find that cooperatives that permit members with multiple voting rights exhibit significantly lower financial reporting quality than those that follow the ‘one-shareholder-one-vote’ principle, even after applying propensity score matching (PSM). This finding indicates that granting multiple voting rights introduces Type II agency problems, in which more powerful members may exploit their influence to obscure true performance, potentially hiding the extraction of private benefits (Leuz et al. 2003).

Third, we find ambiguous evidence regarding the role of honorary executives. Financial reporting quality *improves* in ‘one-shareholder-one-vote’ cooperatives with statutes that permit honorary executives, likely because of reduced Type I agency problems. However, this positive effect diminishes in cooperatives with multiple voting rights, suggesting that Type II agency problems prevail in those situations, and honorary executives may lack the ability or willingness to counteract powerful members’ self-serving behaviour.

This study contributes to the emerging literature on cooperatives’ financial reporting choices. Although cooperatives are common and their unique corporate governance arrangements allow researchers to disentangle Type I and Type II agency problems, their financial reporting has not been thoroughly investigated. Previous research has analysed the earnings responsiveness of stock prices by comparing publicly listed cooperative cotton mills in Lancashire during the nineteenth century with stock corporations contemporarily listed on the NYSE (Toms 1998, 2001). Other studies have utilised more recent data to explore the factors influencing cooperatives’ tendencies to avoid reporting small losses (Almutairi 2021, Bigus and Grahn 2022, Piccoli et al. 2007). However, to our knowledge, no study has examined the influence of multiple voting rights and honorary executives on cooperatives’ financial reporting quality.

Furthermore, our study contributes to the financial accounting literature on private firms by examining the relationship between ownership structure and financial reporting quality. Private firms are generally not required to disclose information about their ownership structure, limiting the evidence available (e.g. see surveys by Bar-Yosef et al. 2019, Beuselinck et al. 2021, Minnis and Shroff 2017). According to Hope et al. (2017), the quality of accruals in private corporations improves with increased monitoring from shareholders, lenders, and suppliers. Beuselinck et al. (2009) report that private firms improve their financial reporting quality upon receiving funding from private equity investors.

In this study, we focus on members of *cooperatives* who serve a dual role as both shareholders and non-financial beneficiaries and typically do not aim to maximise profits. We investigate whether the findings commonly observed in publicly listed and larger privately held corporations also apply to cooperatives, specifically, whether greater information asymmetries are associated with higher-quality financial reporting. Furthermore, we explore how the specific characteristics of cooperatives, such as the ‘one-shareholder-one-vote’ principle and the option to hire honorary executives, are related to financial reporting quality.

Moreover, we respond to Beuselinck et al.’s (2021) call to explore privately held firms in greater depth. We do not observe the ‘one-shareholder-one-vote’ principle or honorary executives with publicly listed companies.² Therefore, our setting allows us to model varying degrees of agency problems and examine their implications for financial reporting quality.

²Our study is also partially linked to the literature examining the relationship between dual-class structures and earnings management (e.g. Lobanova et al. 2020, Nguyen and Xu 2010). In dual-class share structures of publicly listed companies, control rights and cash-flow rights are often separated. This is typically not the case for the cooperatives in our sample. However, in some cooperatives, the statutes indicate that control rights may not be proportionate to cash-flow rights. Unfortunately, we were unable to measure the distribution of cash-flow rights and control rights among members, as cooperatives are not required to disclose this information. Moreover, cooperative members enjoy additional (non-financial) benefits, which complicates the comparison of our findings with those in the accounting literature on dual-class structures.

The remainder of this paper is organised as follows. Section 2 provides institutional information on German cooperatives, discusses the motives for earnings management in cooperatives, and develops the hypotheses. Section 3 describes the research design and data selection process. Section 4 presents the results on how multiple voting rights and the option to hire honorary executives are associated with cooperatives' financial reporting quality. Finally, Section 5 concludes the paper.

2. Institutional background and hypothesis development

2.1. Development, characteristics, and types of cooperatives in Germany

Since 1847, various types of organisations such as 'raw material associations', 'food associations', and 'lending societies' have been established in Germany to support craftspeople, consumers, and others facing difficult times (DGRV 2015). As it became increasingly clear that cooperatives enhanced their members' social and economic conditions, their numbers grew rapidly, especially after the passage of the Cooperative Societies Act (GenG) in 1889.

Despite their diverse objectives, cooperatives share five common principles (López-Espinosa et al. 2012). First, they aim to meet their members' economic, social, and cultural needs by creating a jointly owned enterprise (Section 1 GenG). In addition to being shareholders, members typically benefit from various long-term, often non-financial, advantages, such as employment opportunities, consumer and supplier benefits, and access to housing at reduced prices (*fostering principle*; Reifschneider and Doluschitz 2016). Second, cooperative members take on a dual role in which they are not only investors but also consumers, suppliers, or employees of the cooperative (*principle of identity*).

Third, members are expected to support each other in enhancing the overall social and economic well-being of the group (*principle of self-help and self-administration*). Consequently, a cooperative must be governed by its members (owners; Section 9 II GenG). Cooperatives may have executives who work unpaid (*Ehrenamt*, honorary executives) or part-time (*Nebenanmt*); however, we could not obtain data on executive compensation because privately held firms, including cooperatives, are not required to disclose this information (Section 338 III of the Commercial Code, HGB).

Fourth, each member has the freedom to decide how much they wish to cooperate (*principle of voluntariness*). Members also have the option to redeem their shares at face value (Section 65 I GenG), usually equivalent to the purchase price, which is similar to a debt instrument.³

The fifth principle, the *principle of democracy*, is central to this study. Decisions are made based on members' votes, with each member having equal voting rights, regardless of how much capital they have contributed. This follows the 'one-shareholder-one-vote' principle (Toms 2001) outlined in Section 43 III 1 of the GenG. However, the statutes of cooperatives may permit members to have multiple votes, as stated in Section 43 III 2 of the GenG.

Our sample has three important institutional characteristics related to cooperatives' financial reporting choices. First, all cooperative financial accounts must undergo audits, as mandated in Sections 53 I and II of the GenG. These audits are conducted by the Audit Association for Cooperatives (*Genossenschaftlicher Prüfungsverband*). Second, German cooperatives are subject to federal and local corporate income taxes (*Körperschaftsteuer* and *Gewerbesteuer*). However, housing cooperatives are exempt from corporate income tax under Section 5 I No. 10 of the Federal Corporate Income Tax Code (KStG). Finally, all cooperatives must have a supervisory

³For a long time, members' cooperative shares were consistently classified as a debt instrument under IFRS (López-Espinosa et al. 2012).

board composed of independent directors, as outlined in Sections 9 and 38 I of the GenG. This supervisory board operates independently of the executive board and is responsible for monitoring its activities.

2.2. *Monitoring and incentives for earnings management in cooperatives*

Before formulating our hypotheses, we discuss why earnings management may be a relevant concern for cooperatives despite, or precisely because of, their unique corporate governance system. Cooperatives often comprise hundreds, and sometimes thousands, of members. For example, in the full sample analysed in this study, the median cooperative has 1779 members. In such settings, individual members may lack insight into the cooperative's overall well-being. This is partly because monitoring costs are borne individually, whereas the benefits are shared collectively. Consequently, no member has a strong incentive to monitor the cooperative. The 'one-shareholder-one-vote' principle exacerbates this problem, which can lead to a phenomenon known as rational apathy, similar to that observed in publicly listed firms (Hansmann 1996).

According to agency theory, limited monitoring may allow executives to extract private benefits (Gopalan and Jayaraman 2012). Examples include the misuse of cooperative resources for personal gain (Hodder and Hopkins 2014, Jensen and Meckling 1976) or hiring underqualified relatives for certain positions. Furthermore, executives might disproportionately benefit from the cooperative compared to other members, such as by selling significantly more agricultural products to the cooperative at favourable prices. Alternatively, they may exert insufficient effort in running the cooperative.

These agency problems may extend to financial reporting behaviour. Fudenberg and Tirole (1995) argue that earnings smoothing may facilitate the extraction of private benefits because lower earnings variability reduces shareholder interference. This argument can also be applied to cooperatives because the disclosure of excessive profits or reported losses could create concern among members. Whereas reported losses indicate financial distress (Bigus et al. 2016, Burgstahler and Dichev 1997, Jostarndt and Sautner 2008), excessive profits suggest that members have not received adequate benefits. For example, members might infer that agricultural products could have been sold at higher prices or that apartments could have been rented at lower rates.

In contrast, consistently modest and stable profits can promote trust in executives and reduce scrutiny by the board of independent directors, providing more leeway for executives to enjoy private benefits. Moreover, executives may be interested in reporting stable earnings because this tends to increase the likelihood of bonus payments or contract renewals (Suk et al. 2021).

2.3. *Hypotheses*

Overall, we anticipate observing earnings-smoothing behaviour in this study's sample (Filip et al. 2025, Tucker and Zarowin 2006). Earnings smoothing involves the use of discretionary accruals over a longer period, which is the focus of the following analysis.

First, we analyse cooperatives that operate under the 'one-member-one-vote principle'. We draw on two competing theoretical perspectives as described below.

According to the *opportunism hypothesis*, executives may conceal a firm's true performance to extract private benefits (Leuz et al. 2003). Jensen and Meckling (1976) argue that (Type I) agency problems between executives and shareholders become more severe in decentralised organisations and larger firms, in which ownership and control are more clearly separated. Larger firms also face greater information asymmetries, thus providing executives with more

discretion and chances to act opportunistically. This asymmetry becomes particularly relevant when shareholders have little incentive to monitor. Free-riding behaviour exacerbates this situation (Jensen and Meckling 1976), as members bear the full cost of monitoring while any benefits are shared by all. As ownership becomes more dispersed, this incentive to free-ride increases, potentially reducing financial reporting quality.

In contrast, the *demand hypothesis* (Beyer et al. 2010) posits that financial reporting quality improves in response to Type I agency problems. If monitoring is weak and information asymmetries are pronounced, members may demand higher-quality financial reporting. In addition, disclosure theory predicts that larger firms will be better able to bear the fixed costs associated with disclosure, which can also lead to higher reporting quality (Verrecchia 1983).⁴

Given these opposing predictions, we present Hypothesis 1 without a specific direction:

Hypothesis 1: In the absence of multiple voting rights, both a cooperative's ownership dispersion and size are associated with its financial reporting quality.

Second, we explore whether financial reporting quality differs between cooperatives that permit multiple voting rights and those that do not. Members with multiple votes have greater power than those with one vote. Generally, voting rights are coupled with cash-flow rights, providing members with multiple voting rights with stronger incentives to monitor because the marginal benefits increase with shareholding size. Monitoring shareholders can intervene directly (referred to as 'voice' by Shleifer and Vishny 1997) or threaten executives with exit. Members of German cooperatives have the option to redeem their shares.

Having powerful members voice their opinions may mitigate selfish behaviour among executives, potentially reducing all members' demand for high-quality financial reporting. However, these powerful members may have personal incentives to conceal the cooperative's true performance to gain private benefits, leading to Type II agency problems. This could occur through activities such as self-dealing or trying to secure an (overpaid) position within the cooperative for themselves or their relatives (Janakiraman et al. 2010, Jensen and Meckling 1976, Nagar et al. 2011). Both arguments assume that either the executives or powerful members are driven by self-interest. Thus, we propose Hypothesis 2 without specifying a direction:

Hypothesis 2: Cooperatives that permit multiple votes demonstrate different financial reporting qualities from those that adhere to the 'one-shareholder-one-vote' principle.

Third, we highlight that some cooperative statutes allow 'honorary' executives to be hired who do not receive a formal salary but are instead provided with a small expense allowance (Hauert and Hanisch 2019). Generally, *volunteers* are considered more independent and intrinsically motivated than paid employees, especially when they share the organisation's core values (Farmer and Fedor 2001). Their engagement is often driven by altruistic motives or a desire to contribute to the organisation or profession (Weil and Kimball 2010). Similarly, *honorary executives* of cooperatives are expected to be highly intrinsically motivated, with a genuine interest in shaping the cooperative and enhancing its economic performance (Hauert and Hanisch 2019). They may also be concerned about their fellow members and value social relationships supported by the norms of reciprocity and trust (Adams and Deakin 2017, Bastida et al. 2022).

⁴Note that the basic assumptions of disclosure theory do not apply to cooperatives, as they typically do not aim to maximise shareholder value or have observable market values.

Honorary executives' intrinsic motivation typically reduces conflicts of interest among all members and executives, thereby decreasing Type I agency problems. As a result, these executives have less incentive to manipulate reported performance. In contrast, *professional* executives may have additional motives driven by their compensation contracts. Evidence suggests that bonus contracts can incentivise earnings management, even in non-profit organisations (Eldenburg et al. 2011). Honorary executives do not receive a salary; therefore, they lack an incentive to increase bonus compensation through earnings management. If we assume that Type I problems are negligible for honorary executives, we can focus primarily on Type II agency problems in cooperatives with multiple voting rights.

However, we cannot dismiss the possibility that honorary executives engage in earnings management for reasons related to their reputations or to secure their positions. Therefore, we propose Hypothesis 3 without a specific direction:

Hypothesis 3: Financial reporting quality differs between cooperatives that allow honorary (unpaid) executives and those that employ professional executives.

3. Research design and data

3.1. Data selection

We utilise the Bureau van Dijk's Dafne database to analyse all German cooperatives (eG) from 2008 to 2017, with 2017 being the last year for which complete financial reports were available at the time of data collection (22 July 2019). The Dafne database contains financial accounting data and basic corporate governance information. We exclude bankrupt and credit cooperatives from our analysis. Additionally, we only include cooperatives that provide basic financial data, including sales, total assets, net earnings, and debt. Thus, we require unabbreviated financial statements. The German Commercial Code (HGB) requires only large cooperatives to disclose unabbreviated financial statements (Sections 267, 274a, and 276). Consequently, we lose some observations because not all cooperatives provide the necessary data on financial reporting quality measures and control variables. Ultimately, our total sample size, without applying PSM, comprises 4203 observations (see Table 1).

We collect data on the existence of multiple voting rights and other corporate governance aspects from the statutes of cooperatives in our initial sample. Most of these statutes are from the local court in Hagen, Westphalia, whereas some cooperatives provide them via email or post. In total, we obtain statutes from approximately 95% of the cooperatives in our sample.

Table 1. Sample selection.

Selection criteria for the Dafne database	Number of cooperatives	Firm-year observations 2008–17
Number of solvent, unconsolidated, non-listed cooperatives in Dafne (Bureau van Dijk) with basic financial information (sales, total assets, net earnings, debt), excluding credit cooperatives	3029	15,622
Minus observations with missing data for required dependent and control variables (especially on <i>RISKSALES</i> and <i>GROWTH</i>)	(2264)	(11,419)
Final sample (without PSM)	765	4203

Notes: This table provides information about the sample selection process. For a definition of *RISKSALES* and *GROWTH*, see Table A1 in the Appendix. PSM: propensity score matching.

Therefore, we do not expect significant self-selection issues, particularly because most statutes are sourced from the court.

3.2. Measures of financial reporting quality

The main dependent variable is absolute discretionary accruals. Higher levels of absolute discretionary accruals indicate a greater likelihood that reported earnings will diverge from actual performance, suggesting increased earnings management and diminished financial reporting quality (Van der Bauwhede et al. 2015). According to the Modified Jones Model (Dechow et al. 1995, Jones 1991), discretionary accruals are represented by the error term in the equation below, which is based on cross-sectional regressions requiring a minimum of 15 observations per industry and year cluster:⁵

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_1 \cdot \frac{1}{A_{i,t-1}} + \beta_2 \cdot \frac{(\Delta REV_{i,t} - \Delta REC_{i,t})}{A_{i,t-1}} + \beta_3 \cdot \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad (1)$$

where TA is total accruals,⁶ A is total assets, ΔREV the change in revenue, ΔREC the change in receivables, and PPE is property, plant, and equipment.

Absolute discretionary accruals reflect the degree of discretion used in earnings management, potentially decreasing transparency (Hutton et al. 2009). We use a proxy to indicate persistent earnings management because executives have an incentive to manage earnings over a longer period. We achieve this following Hutton et al.'s (2009) approach and use a three-year moving sum of absolute discretionary accruals (ABSDACC_3yr). This method allows us to capture high accruals during the year of overstatement and the subsequent reversal of prior accrual manipulations (Kim and Zhang 2014).

In Section 4.5, we utilise one-year accrual-based measures of financial reporting quality, earnings smoothing (SMTH), and whether financial statements have been restated or some information has been added (RESTATE).

3.3. Independent variables

We test Hypothesis 1 by measuring cooperative size using the natural logarithm of total assets (SIZE). In some regressions, we also use the natural logarithm of the number of members (lnMEMB), which is highly correlated with SIZE (correlation coefficient: +0.77). For Hypothesis 2, we define the independent variable MULTVOTE, assigning a value of 1 if the cooperative's statutes allow members to have multiple voting rights and a value of 0 if the principle of 'one-shareholder-one-vote' applies. For Hypothesis 3, we use the dummy variable HONOR, which is assigned a value of 1 if the statutes permit the hiring of honorary executives and 0 otherwise.

⁵The clusters comprise solvent cooperatives with unconsolidated and unabbreviated financial statements in the Dafne database as of 22 July 2019. We exclude cooperatives from the financial sector.

⁶Total accruals = net earnings – cash flow from operations. Cash flow from operations is determined using the balance sheet approach, as cash-flow statements in the US format are not available for our sample of German private firms. In line with the methodology proposed by Dechow et al. (1995), we calculate the accrual component of earnings as follows: $(\Delta CA_{i,t} - \Delta Cash_{i,t}) - (\Delta CL_{i,t} - \Delta STD_{i,t}) - DEP_{i,t}$, where CA = current assets, CL = current liabilities, STD = short-term debt, and DEP = depreciation. Δ indicates the change from the previous fiscal year. If a cooperative did not provide any information regarding cash or short-term debt, the changes in both variables are assumed to be zero.

We control for various firm characteristics known to be associated with financial reporting quality. According to disclosure theory (Beyer et al. 2010), agency problems related to debt can influence financial reporting choices (Kim and Yasuda 2019, Van der Bauwhede et al. 2015). Therefore, we include the ratio of financial debt to total assets (DEBT) in our analysis.

We also account for operational risk (RISKSALLES) because sales volatility is linked to financial reporting quality (Demerjian et al. 2013, Dou et al. 2018). The occurrence of losses in at least one of the two preceding years (LOSS) may reduce the motivation to engage in earnings management because the disclosure of losses is likely to have already damaged the firm's reputation (Bigus et al. 2016).

Furthermore, given that private German firms were subject to book-tax conformity, tax incentives are expected to influence financial reporting quality. We account for this by including the local corporate income tax rate (LOCAL_TAXRATE) in our analysis. We interact the local income tax rate with NON_HOUSING because housing cooperatives are exempt from corporate income tax. We did not consider federal corporate income tax, because the same rate applies to all cooperatives.

Additionally, we control for the proprietary costs of disclosure (Bernard et al. 2018). This is important because competitors can access financial statements and may act to diminish the reporting entity's competitive advantage, such as by mimicking entries in highly profitable market segments. Although this concern is likely more relevant for corporations than cooperatives, we measure proprietary costs by the competition level in the relevant industry using the Hirschman–Herfindahl Index (HHI). We expect to find lower financial reporting quality in more competitive industries. Furthermore, we account for profitability as measured by return on assets (ROA). High profitability may reduce owners' demand for high-quality financial reporting. In addition, greater sales growth (GROWTH) can provide more opportunities for earnings management. We also control for factors such as industry, year, and regional affiliation, which may influence financial reporting choices.

Furthermore, we include variables related to cooperatives' corporate governance. The data on these variables come from cooperatives' statutes and are time-invariant.⁷ HIGH_MEMB_LIAB is a binary variable that takes the value of 1 if personal liability exceeds the third quartile⁸ of the sample of cooperatives with member liability and 0 otherwise. We anticipate that cooperatives with high member liability will make greater efforts to alleviate concerns regarding financial distress, which may result in lower-quality financial reporting. NOTICE_PERIOD represents the notice period for returning member shares, measured in months. A shorter notice period allows members to exit the cooperative more quickly under adverse circumstances, which is expected to be associated with lower financial reporting quality. MIN_TERM is a binary variable indicating whether a minimum membership duration is required before members can cancel their membership. If a minimum duration exists, members cannot easily leave the cooperative, thereby reducing the need for earnings management.

The extent of information asymmetries also depends on the monitoring efforts of the board of independent directors, which is mandatory for German cooperatives. We use the number of board members as a proxy for monitoring efforts. BOARD_SIZE refers to the minimum number of

⁷The statutes available at the time of data collection (July 2019) were often established before the investigation period (2008–2017). Only a few cooperatives have updated their statutes since 2008. For some cooperatives, we have multiple sets of statutes. It became clear that cooperatives generally make only minor modifications to their statutes, leaving the variables under investigation unchanged.

⁸We select the third quartile (€880) because personal liability must be sufficiently high to be deemed a significant financial loss. However, the qualitative results remain unchanged when we control for the presence or absence of personal member liability.

independent supervisory board members required by the statute. Most cooperatives require three independent board members, which is the minimum mandated by Section 36 I of the GenG. We have no data on board member characteristics. We also account for whether the cooperative has CHARITY status. Financial reporting incentives may differ for charitable cooperatives, as they may need to avoid reporting excessively high profits to better justify receiving government subsidies (Eldenburger et al. 2011, Leone and Van Horn 2005). CHARITY is a binary variable that takes the value of 1 if the cooperative's name includes a term suggesting it is a charity, such as '*Gemeinnützige Genossenschaft*' or the designation 'geG', in which the letter 'g' stands for 'charitable' (*gemeinnützig*), and 0 otherwise.

3.4. Empirical design: Mundlak random-effects model

The panel data structure requires us to consider serial correlation. The Hausman test indicates that we should use a firm-fixed effects model rather than a pooled OLS model. However, we cannot implement a firm-fixed effects model because MULTVOTE and other corporate governance characteristics, such as HONOR, NON_HOUSING, and HIGH_MEMB_LIAB, have no within-cooperative variation over time.

Therefore, we use a Mundlak (1978) model that involves random-effects regression. The Mundlak model relaxes the unrealistic assumption of a random effects model in that no correlation exists between unobservable firm-specific effects and independent variables. This model includes the firm-specific group means of the control variables as independent variables. The time averages of control variables capture the time-invariant 'between' variation across cooperatives, whereas the controls themselves account for the time-variant variation within each cooperative. The time averages of the control variables can only be included if they vary over time; otherwise, the time averages would correlate perfectly with the respective control variables. Therefore, we did not include mean values for the 'sticky' variables mentioned above (e.g. MULTVOTE, HONOR, and HIGH_MEMB_LIAB).

Considering industry, year, and regional affiliations, the Mundlak model's random-effects regression analyses are represented by Equation (2):

$$\begin{aligned}
 ABSDACC_{i,t} = & \alpha_0 + \alpha_1 MULTVOTE_i + \alpha_2 HONOR_i + \alpha_3 SIZE_{i,t} + \sum_{j=4}^J \alpha_j Controls_{i,t} \\
 & + \sum_{k=J+1}^K \alpha_k \text{group means of control variables}_i + \rho v_l + \gamma z_t + \vartheta y_s + \varepsilon_{i,t}
 \end{aligned} \tag{2}$$

We also assess the robustness of our findings by implementing random effects and pooled OLS models with time fixed effects using firm-level clustered standard errors. The qualitative results remain consistent, as partially shown in the tables below.

3.5. Empirical design: propensity score matching

Cooperatives with multiple voting rights may have different characteristics from other cooperatives, and these differences, rather than the presence of multiple voting rights, may influence financial reporting choices. Therefore, we perform analyses with both the full sample of cooperatives and propensity score-matched samples.

Table 2 shows that cooperatives with multiple voting rights are present in specific industries. Panel A of Table 3 indicates that these cooperatives tend to display higher levels of discretionary or absolute accruals and engage in more income smoothing. However, these firms are generally smaller, have less leverage, face higher operational risks, and operate in more concentrated industries.

Table 2. Sample distribution across industries, sample with and without propensity score matching.

Industries	Without PSM		With PSM 1		With PSM 2	
	One-shareholder-one-vote principle	Multiple votes	One-shareholder-one-vote principle	Multiple votes	One-shareholder-one-vote principle	Multiple votes
A: Agriculture and fishing	244	38	164	38	161	38
C: Manufacturing	202	23	111	23	57	22
D: Energy supply	25	0	10	0	0	0
F: Construction	70	2	19	2	0	0
G: Trade and garages	1007	58	600	58	434	57
L: Real estate	2431	0	2	0	0	0
M: Freelance work, scientific and technical services	45	0	24	0	0	0
N: Other business services	18	0	12	0	0	0
S: Other services	32	8	9	8	0	0
Total	4074	129	951	129	652	117

Notes: This table shows the distribution across industries for the full sample without propensity score matching and for the sample with propensity score matching based on the matching criteria SIZE and NON_HOUSING (PSM 1) and SIZE within different industry-year clusters (PSM 2), see Table 3. In our sample, there are no cooperatives in the industries B (mining, mineral resources), E (water supply, waste disposal, recycling), H (transportation), I (accommodation & restaurants), J (information & communication), P (education), Q (health and welfare services), and R (arts, recreation, and entertainment).

We conduct PSM twice based on different matching criteria. With PSM 1, we employ 1:10 nearest neighbour matching based on SIZE and NON_HOUSING status (with a calliper size of $\epsilon < 0.1$ and with replacement, as described by Rosenbaum and Rubin 1985). Empirical research indicates that firm size is a significant predictor of financial reporting quality (Beyer et al. 2010). As discussed above, conflicts of interest between executives and shareholders, as well as information asymmetries, tend to escalate as firm size increases. Furthermore, larger firms are generally better equipped to absorb the (fixed) costs associated with high-quality financial reporting (Verrecchia 1983). Moreover, large firms are more likely to face tax audits or regulatory oversight, which may influence their financial reporting decisions (Hoopes et al. 2012).

Housing cooperatives differ significantly from other types of cooperatives because they are exempt from corporate income tax, which may reduce incentives for earnings management. Furthermore, housing cooperatives appear to be more reluctant than other cooperatives to grant multiple voting rights.⁹

⁹To better understand the reluctance surrounding multiple voting rights in housing cooperatives, we randomly selected 18 such cooperatives and reached out to them via email or telephone. The management teams provided the following reasons for their stance. (1) They are concerned that allowing members with multiple voting rights could unfairly influence decisions to the detriment of 'minority' members, especially because housing is a fundamental personal need. (2) The 'one-shareholder-one-vote' principle discourages institutional or larger private investors. Conceivably, the potential investor base in the housing sector could be significantly larger than in sectors such as agriculture. (3) Multiple voting rights are generally intended for members who contribute significantly to the cooperative's goals. However, what would constitute a 'significant contribution' in the context of housing cooperatives is unclear.

Table 3. Descriptive statistics for cooperatives with and without the 'one-shareholder-one-vote' principle, full sample without PSM.

Panel A: Cooperative characteristics				Difference in mean (t-stat., unequal var.)			
Cooperatives with the 'one-shareholder-one-vote' principle		Cooperatives that allow multiple voting rights		Without PSM		With PSM	
N	Mean	N	Mean	Without PSM	With PSM 1	With PSM 2	
ABSDACC_3yr	4074	0.087	0.209	-0.122*** (-9.0)	-0.042*** (-3.0)	-0.035** (-2.3)	
ABSDACC_1yr	4074	0.027	0.066	-0.038*** (-6.5)	-0.013** (-2.1)	-0.012* (-1.8)	
ABSDACC_ROA	3584	0.088	0.193	-0.105*** (-7.6)	-0.028* (-1.9)	-0.031** (-2.1)	
TOTACC_3yr	4074	0.128	0.263	-0.135*** (-9.45)	-0.068*** (-4.6)	-0.042*** (-3.0)	
ABS_WCA	2400	0.026	0.052	-0.025*** (-3.9)	-0.011* (-1.7)	-0.005 (-0.9)	
SMTH	3609	-0.573	-0.335	-0.239*** (-6.2)	-0.067* (-1.7)	-0.024 (-0.6)	
RESTATE	4047	0.026	0.039	-0.013 (-0.8)	-0.011 (-0.6)	-0.013 (-0.8)	
SIZE	4074	17.52	16.804	0.717*** (10.15)	-0.220*** (-3.0)	0.034 (0.5)	
DEBT	4074	0.554	0.502	0.053** (2.8)	0.014 (0.7)	0.010 (0.6)	
RISKSALLES	4074	0.123	0.275	-0.151*** (-6.4)	0.029 (1.25)	-0.056** (-2.5)	
LOSS	4074	0.132	0.147	-0.015 (-0.5)	-0.026 (-0.8)	-0.063* (-1.8)	
ROA	4074	0.040	0.042	-0.003 (-0.6)	0.003 (0.6)	0.001 (0.2)	
HHI	4074	0.00010	0.00032	-0.00022*** (-5.0)	-0.00012** (-2.6)	-0.00011* (-1.9)	
LOCAL_TAXRATE	4074	0.143	0.133	0.011*** (7.2)	0.003 (1.65)	0.003** (2.1)	
NON_HOUSING	4074	0.404	1	-0.597*** (-77.7)	-0.002 (-1.4)	-	

Panel B: Propensity score matching			
Nearest neighbour, $\epsilon < 0.1$, with replacement, matching criteria:	PSM 1: SIZE, NON_HOUSING		PSM 2: SIZE within different industry-year clusters
	No significant differences	No significant differences	No significant differences for SIZE and years, but for some industries
Mean/median of standardised percentage bias:	0% / 0%	0% / 0%	4.3% / 1.2%
Rubin's B in % / Rubin's R	0 / 1	0 / 1	6.6 / 1.26

Notes: This table exhibits descriptive statistics of cooperatives depending on multiple vote status. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. For a definition of variables, see Table A1 in the Appendix. RISKSALLES and SMTH are winsorized at the 5th and 95th percentiles; all other metric variables are winsorized at the 1st and 99th percentiles. PSM 1 and PSM 2 represent propensity score matchings, based on different matching criteria.

With PSM 2, the matching criterion is SIZE *within* different industry-year clusters. This is because the incentives and opportunities for earnings management can vary significantly depending on the industry. For example, if an entire industry performs poorly, any associated cooperatives may be more inclined to manage their earnings to facilitate bank lending (Mafrello and D'Amico 2017). Furthermore, cooperatives operating in industries with higher levels of tangible assets or accounts receivable generally find it easier to utilise discretionary accrual accounting. Matching by size *within* different industry-year clusters means we have lost observations from industries in which multiple voting rights do not exist. In addition, PSM 2 has limited applicability in the 'Construction' and 'Other Services' industries and is therefore primarily based on three industries: Agriculture and Fishing, Manufacturing, and Trade and Garages.

Panel A of Table 3 shows that the matching methods used for PSM 1 and PSM 2 both reduce the differences in means between cooperatives with and without multiple voting rights across all variables, resulting in partially non-significant differences.¹⁰ PSM 1 is likely more representative because it includes a wider range of industries and approximately 30% more observations than PSM 2.

4. Results: multiple voting rights and financial reporting quality

4.1. Descriptive statistics

Table 4 shows that the mean value of absolute discretionary accruals accumulated over three years is 9.0% of lagged total assets, while it stands at 2.8% on a one-year basis. In addition, the mean value of SMT_H is -0.5658, implying that accrual accounting mitigates approximately 43.4% of the volatility in cash flow from operations. Furthermore, only 2.6% of the financial statements were restated.

Before the matching process, approximately 3.1% of all observations pertained to cooperatives that permit members to hold multiple voting rights. Among the 129 observations, 106 allow a maximum of three voting rights per member, three allow a maximum of two voting rights, and nine allow up to 100 voting rights per member. Eleven observations impose no limits on the number of voting rights a member can possess. Figures A1 and A2 in the Appendix illustrate that the prevalence of cooperatives with multiple voting rights is notably high in Rhineland-Palatinate and the eastern German states, particularly Saxony-Anhalt and Saxony.¹¹

Among the analysed statutes, 56.6% allow honorary executives, while 65.4% permit either honorary or part-time executives. Most statutes stipulate that the supervisory board must comprise three members. The local corporate income tax rate ranges from 7.7% to 19.3%, with a median of 14.4%. Notably, 42.2% of the cooperatives in the sample are not in the housing sector. The median total assets held by a cooperative amount to €42.1 million. On average, a cooperative is owned by 1779 members and has a debt ratio of 57.7% and an ROA of 3.5%. The Pearson univariate correlation coefficients are moderate, and we find similar results for the Spearman correlations (see Table A2 in the Appendix).

¹⁰We also tested a third matching method based on the criteria of SIZE, RISKSALLES, and industry-year. The matching quality was worse than with PSM 1 or PSM 2; however, the qualitative results remain.

¹¹We do not observe any cooperatives with multiple voting rights in the regions of Berlin, Bremen, Hamburg, Hesse, Mecklenburg-West Pomerania, Lower Saxony, and Saarland.

Table 4. Descriptive statistics for cooperatives, full sample (without PSM).

Variable	N	Mean	Stand. dev.	1 st quartile	Median	3 rd quartile
ABSDACC_3yr	4203	0.0901	0.1089	0.0197	0.0416	0.1273
ABSDACC_1yr	4203	0.0282	0.0444	0.0044	0.0108	0.033
ABSDACC_ROA_3yr	3697	0.0906	0.1067	0.0205	0.0435	0.1277
TOTACC_3yr	4203	0.1321	0.1030	0.0699	0.0934	0.1602
ABS_WCA	2471	0.0274	0.0331	0.0130	0.0173	0.0259
SMTH	3722	-0.5658	0.5042	-0.8228	-0.4166	-0.1672
RESTATE	4175	0.0259		0	0	0
MULTVOTE	4203	0.0307		0	0	0
#VOTES	4203	1.3143	4.6949	1	1	1
HONOR	4203	0.5658		0	1	1
PART_TIME	4203	0.6538		0	1	1
#MEMB	4135	3284.1	4125.2	518.0	1779.0	4364
lnMEMB	4135	7.1504	1.6767	6.2500	7.4838	8.3811
HIGH_MEMB_LIAB	4203	0.0538		0.0000	0.0000	0
NON_HOUSING	4203	0.4216		0.0000	0.0000	1
LOCAL_TAXRATE	4203	0.1427	0.0182	0.1285	0.1435	0.1575
BOARD_SIZE	4203	3.92	1.90	3	3	3
NOTICE_PERIOD	4203	12.29	9.64	3	12	24
MIN_TERM	4203	0.0516		0.0000	0.0000	0
CHARITY	4203	0.0445		0.0000	0.0000	0
SIZE	4203	17.4983	1.2463	16.5821	17.5561	18.4343
in thousands of €	4203	78,758.79	97,860.82	15,904.75	42,121.45	101,374.2
DEBT	4203	0.5530	0.1908	0.4315	0.5770	0.7026
GROWTH	4203	0.0285	0.0475	0.0081	0.0212	0.0393
RISKSALES	4203	0.1278	0.2368	0.0029	0.0083	0.1411
LOSS	4203	0.1325		0	0	0
ROA	4203	0.0394	0.0341	0.0246	0.0345	0.0466
HHI	4203	0.000106	0.000272	0.000028	0.000038	0.000044
RATIO_MV_STATE	4203	0.0258	0.0226	0.0000	0.0260	0.0368

Notes: This table presents descriptive statistics for the full sample of cooperatives (without PSM). For a definition of the variables, see Table A1 in the Appendix. SMTH, GROWTH, and RISKSALES are winsorized at the 5th and 95th percentiles. The instrumental variable RATIO_MV_STATE and the corporate governance characteristics of cooperatives are not winsorized except for #MEMB and lnMEMB. #MEMB, lnMEMB, and other metric controls, as well as the measures of financial reporting quality (ABSDACC_3yr, ABSDACC_1yr, ABSDACC_ROA_3yr, TOTACC_3yr, ABS_WCA), are winsorized at the 1st and 99th percentiles.

4.2. Results for hypothesis 1

Table 5 presents the regression results for ‘one-shareholder-one-vote’ cooperatives only. These results indicate that cooperative size (SIZE_mean) is negatively associated with the level of discretionary accruals, although it is statistically significant only in the regressions in Columns 3, 4, and 6. The variable representing the number of members (lnMEMB_mean) has a negative coefficient (Columns 2 and 7, $p < 1\%$).

Cooperatives exhibit 35.6% (= 0.0148 / 0.0416) fewer discretionary accruals than the median when permitting honorary executives (Column 1). This finding supports the notion that honorary executives are less motivated to manipulate earnings than professional executives.

We also introduce an alternative dummy variable, PART_TIME, which is assigned a value of 1 if the statutes permit either honorary or part-time executives, and 0 otherwise. Although part-time executives may receive a modest salary, they are unlikely to earn performance-based

Table 5. Earnings management in the absence of multiple voting rights: ABSDACC (Mundlak model).

	Pred. sign	ABSDACC_3yr (z-value) (1)	ABSDACC_3yr (z-value) (2)	ABSDACC_3yr (t-value) Pooled OLS (3)	ABSDACC_3yr (z-value) effects Random (4)	ABSDACC_3yr (z-value) (5)	ABSDACC_3yr (z-value) (6)	ABSDACC_3yr (z-value) (7)
SIZE_mean/SIZE	-/+	-0.0114 (-1.24)		-0.0065*** (-2.91)	-0.0082*** (-3.34)	-0.0113 (-1.22)	-0.0187** (-1.96)	
lnMEMB_mean	-/+		-0.0342*** (-3.02)					-0.0386*** (-3.38)
HONOR	-/+	-0.0148** (-2.33)	-0.0142** (-2.29)	-0.0113** (-2.26)	-0.0158** (-2.44)		-0.0230*** (-3.15)	-0.0892** (-3.45)
PART_TIME						-0.0161** (-2.12)	0.0124*** (2.96)	
HONOR × SIZE_mean								0.0104*** (3.02)
HONOR × lnMEMB_mean								-0.627* (-1.83)
LOCAL_TAX_RATE_mean		-0.598* (-1.75)	-0.596* (-1.74)			-0.586* (-1.72)	-0.623* (-1.83)	
ROA_mean		0.120 (0.97)	0.101 (0.81)			0.113 (0.91)	0.114 (0.93)	0.102 (0.82)
DEBT_mean		0.0204 (0.72)	0.0038 (0.14)			0.0214 (0.76)	0.0177 (0.63)	0.0026 (0.10)
LOSS_mean		-0.0088 (-0.89)	-0.0045 (-0.46)			-0.0086 (-0.87)	-0.0073 (-0.74)	-0.0028 (-0.28)
HHI_mean		-72.08 (-1.54)	-69.36 (-1.48)			-67.33 (-1.43)	-67.28 (-1.45)	-59.99 (-1.29)
GROWTH_mean		0.206** (2.41)	0.236*** (2.70)			0.212** (2.47)	0.213** (2.49)	0.244*** (2.80)
RISKSALLES_mean		0.0120 (0.61)	0.0181 (0.91)			0.0107 (0.54)	0.0116 (0.59)	0.0184 (0.93)
Controls		Included	Included	Included	Included	Included	Included	Included
Industry, year, and region dummies		Included	Included	Included	Included	Included	Included	Included
N		4074	4008	4074	4074	4074	4074	4008
Overall R ² / Adj. R ² in %		50.8	50.7	50.5	50.2	50.8	51.2	50.9

(Continued)

Table 5. Continued.

	ABSDACC_3yr (z-value) (1)	ABSDACC_3yr (z-value) (2)	ABSDACC_3yr (t-value) Pooled OLS (3)	ABSDACC_3yr (z-value) Random effects (4)	ABSDACC_3yr (z-value) (5)	ABSDACC_3yr (z-value) (6)	ABSDACC_3yr (z-value) (7)
Wald χ^2 / <i>F</i> -Stat.	1334	1317	27.8	1281	1331	1356	1342

Notes: This table shows how the characteristics of cooperatives are associated with their discretionary accruals, using a Mundlak random effects model in Columns 1–2 and 5–7, a pooled OLS model with standard errors clustered on the firm level (Column 3) and a random effects model (Column 4). *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. ABSDACC_3yr is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). HONOR (PART_TIME) is a dummy variable that takes the value of 1 if the statutes allow honorary executives (honorary or part-time executives, respectively) to run the cooperative, and 0 otherwise. Controls include SIZE (lnMEMB), LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, RISK_SALES, NON_HOUSING, LOCAL_TAXRATE × NON_HOUSING, BOARD_SIZE, CHARITY, MIN_TERM, HIGH_MEMB_LIAB, and NOTICE_PERIOD. For a definition of the variables, see Table A1 in the Appendix. GROWTH and RISKSALLES are winsorized at the 5th and 95th percentiles; other metric variables are winsorized at the 1st and 99th percentiles.

compensation. Consequently, they should have minimal incentives to distort financial reports. The regression analysis in Column 5 indicates that earnings management decreases even when including part-time executives.

In Column 6, we add the interaction term $HONOR \times SIZE_mean$ to the regression. The coefficient of the HONOR variable is statistically and economically stronger than that in Column 1. However, the positive sign of the interaction term $HONOR \times SIZE_mean$ suggests that honorary executives' impact on improving financial reporting quality decreases as cooperative size increases. We obtain similar results in Column 7 for the interaction term $HONOR \times \ln MEMB_mean$. Both the $SIZE_mean$ and $\ln MEMB_mean$ variables are significantly negatively related to ABSDACC.

Overall, this evidence supports Hypothesis 1 and clarifies its direction. Larger cooperatives appear to exhibit higher financial reporting quality when adhering to the 'one-shareholder-one-vote' principle. Given the strong correlation coefficient between SIZE and $\ln MEMB$ (+0.77), we focus on SIZE in the analyses reported from Table 6 onwards.

4.3. Results for hypotheses 2 and 3

We introduce the dummy variable MULTVOTE and include the interaction term $MULTVOTE \times HONOR$. Table 6 shows that MULTVOTE has a robust and generally significant positive coefficient. The regression results in Column 1 indicate that absolute discretionary accruals increase by approximately 0.05 in cooperatives that permit multiple voting rights. This economic effect is significant, amounting to approximately 120% (56%) of the median (mean) value of ABSDACC_3yr (0.0416 and 0.0901, respectively). Consequently, financial reporting quality tends to be significantly lower in cooperatives that permit multiple voting rights than in those that do not.

This finding remains consistent even when we exclude observations from industries in which multiple voting rights are absent (not tabulated). The results are also robust when using either a pooled OLS or random effects model (Columns 5 and 6), using the number of votes (#VOTES) instead of MULTVOTE (Columns 7–9), or running the regression with a propensity score-matched sample (Columns 3, 4, 8, and 9). We provide evidence supporting a positive association for the relationship outlined in Hypothesis 2.

The presence of an honorary executive is generally linked to reduced earnings management in cooperatives that adhere to the 'one-shareholder-one-vote' rule, as indicated by the negative sign of the HONOR variable. However, the presence of powerful members appears to reverse this effect, as shown by the positive sign of the interaction term $MULTVOTE \times HONOR$ (or $\#VOTES \times HONOR$). Notably, for PART_TIME executives, the presence of multiple voting rights does not further decrease financial reporting quality, as indicated by the insignificant sign of the interaction term $MULTVOTE \times PART_TIME$ (Column 10).

The subsample analyses in Table 7 offer further insights into the role of honorary executives. Table 7 shows the results for subgroups of cooperatives with a number of members (board size) below and above the median number (median board size). Columns 2 and 4 show that the results remain consistent for cooperatives with fewer members and smaller supervisory boards.¹² For cooperatives with a larger membership (more than 1779 members) and supervisory boards (more than three board members), we do not observe a significantly negative association with the HONOR variable or a significantly positive

¹²In Columns 3 and 5, the interaction term $MULTVOTE \times HONOR$ is excluded because a high number of members or larger supervisory boards perfectly predict it.

Table 6. Earnings management in the presence of multiple voting rights: ABSDACC (Mundlak model).

	ABSDACC_3yr full sample (z-value) (1)	ABSDACC_3yr PSM 1_ (z-value) (3)	ABSDACC_3yr PSM 2_ (z-value) (4)	ABSDACC_3yr full sample (t-value), Pooled OLS (5)	ABSDACC_3yr full sample (z-value), Random effects (6)	ABSDACC_3yr full sample (z-value) (7)	ABSDACC_3yr PSM 1_ (z-value) (8)	ABSDACC_3yr PSM 2_ (z-value) (9)	ABSDACC_3yr full sample (z-value) (10)
MULTIVOTE	-/+ 0.051*** (3.59)	0.042*** (2.91)	0.035 (1.42)	0.043** (2.11)	0.045*** (3.07)	0.0169*** (3.68)	0.0141** (2.00)	0.0130* (1.86)	0.0457*** (3.07)
#VOTES									
HONOR	-/+ -0.014** (-2.21)	-0.016** (-2.44)	-0.013 (-0.65)	-0.012** (-2.38)	-0.017** (-2.53)	-0.120*** (-3.74)	-0.155*** (-3.19)	-0.118** (-2.24)	
PART_TIME									-0.0172** (-2.24)
MULTIVOTE × HONOR		0.169*** (2.65)	0.173* (1.80)	0.174*** (6.75)	0.152*** (2.32)			0.104** (2.24)	
#VOTES × HONOR									0.0531 (1.07)
MULTIVOTE × PART_TIME									-0.022*** (-2.34)
SIZE_mean / SIZE	-0.022** (-2.36)	-0.022** (-2.38)	-0.124*** (-3.78)	-0.007*** (-3.19)	-0.008*** (-3.17)	-0.021** (-2.26)	-0.087*** (-3.39)	-0.119*** (-3.61)	Included
Other control means	Included	Included	Included	-	-	Included	Included	Included	Included
Controls	Included	Included	Included	Included	Included	Included	Included	Included	Included
Industry, year, and region dummies	Included	Included	Included	Included	Included	Included	Included	Included	Included
N	4203	4203	769	4203	4203	4203	1080	769	4203
Overall R ² / Adj. R ² in %	50.9	51.5	31.7	51.0	50.8	51.7	32.3	32.5	51.1
Wald chi ² / F-Stat.	1386	1400	167.2	90.31	1330	1415	257.2	172.7	1385

Notes: This table shows how the presence of multiple voting rights is associated with the cooperatives' discretionary accruals, using a Mundlak random effects model in Columns 1–4 and 7–10, a pooled OLS model with standard errors clustered on the firm level (Column 5), and a random effects model (Column 6). MULTIVOTE takes the value of 1 if members are allowed to have multiple voting rights, and 0 if not. #VOTES is the maximum number of voting rights per member. HONOR (PART_TIME) is a dummy variable that takes the value of 1 if the statutes allow honorary executives (honorary or part-time executives, respectively) to run the cooperative, and 0 otherwise. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. PSM 1 indicates propensity score matching with matching criteria: SIZE and NON_HOUSING; PSM 2 matches by SIZE, within different industry-year clusters; see Table 3, Panel B. ABSDACC_3yr is a measure of (the lack of) financial reporting quality. ABSDACC_3yr is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). Controls include SIZE, LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, RISK_SALES, NON_HOUSING, LOCAL_TAXRATE × NON_HOUSING, BOARD_SIZE, CHARITY, MIN_TERM, HIGH_MEMB_LIAB, and NOTICE_PERIOD. Other control means include the means of LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, and RISK_SALES. For a definition of the variables, see Table A1 in the Appendix. GROWTH and RISKSALLES are winsorized at the 5th and 95th percentiles; other metric variables are winsorized at the 1st and 99th percentiles.

association with the MULTVOTE variable (Columns 3 and 5). This suggests that permitting honorary executives or multiple votes do not have a significantly different impact on financial reporting quality when cooperatives and supervisory boards are larger. The enhanced monitoring capabilities of larger supervisory boards may explain the lack of a significant positive association for MULTVOTE.

4.4. Interpretation of the results

Table 5 presents the results for cooperatives that adhere to the ‘one-shareholder, one-vote’ principle. In these cooperatives, members are expected to be quite homogeneous, likely reducing the potential for Type II conflicts of interest among them (Adams and Deakin 2017, Hansmann 1996, Toms 1998). However, conflicts of interest may arise between members and executives (Type I). Executives may engage in earnings management to obscure the cooperative’s true performance, thereby allowing them to extract private benefits (Gopalan and Jayaraman 2012).

If executives act in the best interests of members, neither (1) the extent of information asymmetries or (2) honorary status should matter for financial reporting quality. In fact, the SIZE and lnMEMB variables exhibit significantly negative signs in Columns 2–4 and 6–7 of Table 5, as does the HONOR variable (Columns 1–4 and 6–7). Cooperatives that follow the ‘one-shareholder-one-vote’ principle tend to improve their financial reporting quality with more pronounced information asymmetry. This aligns with the demand hypothesis of financial disclosure theory (Beyer et al. 2010) and suggests that Type I agency problems also exist in cooperatives.

Table 6 presents additional findings regarding cooperatives that permit multiple voting rights. In these cooperatives, two types of conflicts of interest can arise: one between all members and executives (Type I agency problems) and another between powerful members with multiple voting rights and regular members (Type II agency problems). The coefficient of the MULTVOTE variable is consistently positive and generally statistically significant at the 1% or 5% level. For example, the coefficient in Column 2 of Table 6 indicates that absolute discretionary accruals, accumulated over three years, increase by approximately 0.042 in cooperatives with multiple voting rights ($p < 1\%$). This is approximately 46% of the mean value of ABSDACC_3yr (0.090).

The positive coefficient of the MULTVOTE variable can be interpreted in two ways, depending on the role of powerful members. From the first perspective, the presence of powerful members helps reduce conflicts of interest between all members and executives, as these influential members have a greater incentive to oversee the executives. Consequently, the demand of all members for high-quality financial reporting diminishes. However, if this interpretation were accurate, we would expect to see a negative coefficient for the interaction term $MULTVOTE \times HONOR$ rather than a positive one. This is because honorary executives are expected to act less selfishly than professional executives because they are not driven by compensation-related incentives for earnings management, leading to fewer conflicts between all members and executives. In line with this rationale, the influence of powerful members on financial reporting quality should be less pronounced when honorary executives are present.

MULTVOTE and the interaction term $MULTVOTE \times HONOR$ show positive signs. These findings align with the second perspective, supporting the hypothesis that powerful members who possess multiple voting rights may opportunistically hide their true performance to extract personal benefits, and honorary executives are unable or unwilling to undo this earnings management. According to Nagar et al. (2011), controlling shareholders can exploit minority shareholders in closely held corporations. Our findings indicate that members with multiple votes find it easier to conceal a cooperative’s true performance when honorary executives are

Table 7. Earnings management in the presence of multiple voting rights: ABSDACC, subsample analyses (Mundlak model).

	ABSDACC_3yr full sample (z-value) (1)	ABSDACC_3yr #MEMB ≤ Median (z-value) (2)	ABSDACC_3yr #MEMB > Median (z-value) (3)	ABSDACC_3yr BOARD_SIZE ≤ Median (z-value) (4)	ABSDACC_3yr BOARD_SIZE > Median (z-value) (5)
MULTVOTE	-/+ 0.0423*** (2.91)	0.0474*** (2.64)	0.0143 (0.19)	0.0526*** (3.51)	0.0417 (0.97)
HONOR	-/+ -0.0156** (-2.44)	-0.0384*** (-3.22)	-0.0040 (0.67)	-0.0225*** (-3.18)	0.0055 (0.38)
MULTVOTE × HONOR	0.169*** (2.65)	0.164** (2.21)		0.159*** (2.67)	
Controls	Included	Included	Included	Included	Included
Control means	Included	Included	Included	Included	Included
Industry, year, and region dummies	Included	Included	Included	Included	Included
N	4203	1986	2149	3169	1034
in %	51.5	43.4	43.3	55.0	48.6
Overall R ² / Adj. R ²					
Wald chi ² / F-Stat.	1400	656.0	381.9	1287	324.7

Notes: This table shows subsample analyses how the presence of multiple voting rights is associated with the cooperatives' discretionary accruals, using a Mundlak random effects model. MULTVOTE takes the value of 1 if members are allowed to have multiple voting rights, and 0 if not. HONOR is a dummy variable that takes the value of 1 if the statutes allow honorary executives to run the cooperative, and 0 otherwise. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. ABSDACC_3yr is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). Controls include SIZE, LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, RISK_SALES, NON_HOUSING, LOCAL_TAXRATE × NON_HOUSING, BOARD_SIZE, CHARITY, MIN_TERM, HIGH_MEMB_LIAB, and NOTICE_PERIOD. Control means include the means of SIZE, LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, and RISK_SALES. For a definition of the variables, see Table A1 in the Appendix. GROWTH and RISKSALLES are winsorized at the 5th and 95th percentiles; other metric variables are winsorized at the 1st and 99th percentiles.

Table 8. Earnings management in the presence of multiple voting rights: different specifications of ABSDACC (Mundlak model).

	ABSDACC_3yr full sample (z-value) (1)	ABSDACC_3yr PSM 1, (z-value) (2)	ABSDACC_3yr full sample (z-value) (3)	ABSDACC_3yr ($t-1; t+1$), PSM 1, (z-value) (4)	ABSDACC_3yr Controls averaged ($t-2; t$), full sample (z-value) (5)	ABSDACC_3yr Controls averaged ($t-2; t$), PSM 1 (z-value) (6)
MULTVOTE	-/+ 0.0423*** (2.91)	-/+ 0.0538** (2.45)	0.0444*** (2.85)	0.0497** (2.23)	0.0451*** (2.77)	0.0593*** (2.47)
HONOR	-/+ -0.0156** (-2.44)	-/+ -0.0284** (-2.52)	-0.0164** (-2.42)	-0.0302*** (-1.93)	-0.0089 (-1.32)	-0.0320* (-1.93)
MULTVOTE × HONOR	0.169*** (2.65)	0.199*** (3.15)	0.114** (2.159)	0.204*** (2.76)	0.250*** (4.23)	0.215*** (2.52)
SIZE_mean	-0.0221** (-2.38)	-0.0928*** (-3.63)	0.0038 (0.35)	-0.0559* (-1.89)	0.0216 (1.470)	0.0160 (0.38)
Other control means	Included	Included	Included	Included	Included	Included
Controls	Included	Included	Included	Included	Included	Included
Industry, year, and region dummies	Included	Included	Included	Included	Included	Included
N	4203	1080	3632	940	2693	711
Overall R ² in %	51.5	32.1	53.1	36.0	53.6	36.5
Wald chi ²	1400	255.6	1290	247.1	1054	209.7

Notes: This table shows additional analyses with different measures of discretionary accruals on how the presence of multiple voting rights is associated with the cooperatives' discretionary accruals, using a Mundlak random effects model. MULTVOTE takes the value of 1 if members are allowed to have multiple voting rights, and 0 if not. HONOR is a dummy variable that takes the value of 1 if the statutes allow honorary executives to run the cooperative, and 0 otherwise. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. ABSDACC_3yr is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). In Columns 1 and 2, ABSDACC_3yr is measured from $t-2$ to t and independent variables in t . In Columns 3 and 4, ABSDACC_3yr is measured from $t-1$ to $t+1$ and independent variables in t ; in Columns 5 and 6, independent variables are averaged from $t-2$ to t . PSM 1 indicates propensity score matching with matching criteria: SIZE and NON HOUSING. Controls include SIZE, LOCAL TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, RISK_SALES, NON_HOUSING, LOCAL_TAXRATE × NON_HOUSING, BOARD_SIZE, CHARITY, MIN_TERM, HIGH_MEMB_LIAB, and NOTICE_PERIOD. Control means include the means of SIZE, LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, and RISK_SALES. For a definition of the variables, see Table A1 in the Appendix. GROWTH and RISKSALLES are winsorized at the 5th and 95th percentiles; other metric variables are winsorized at the 1st and 99th percentiles.

in charge than when professional executives are in place. Thus far, we have argued that honorary executives may lack the motivation to manage earnings. However, they may also lack the necessary accounting skills and ambition to identify or curb any attempt to manipulate earnings. Consequently, members with multiple voting rights appear to have more opportunities to influence earnings management when honorary executives lead cooperatives. This supports the idea that multiple voting rights can lead to Type II agency problems in cooperatives, particularly when Type I agency problems are negligible (e.g. when the cooperative employs honorary executives).

As the size of the supervisory board increases and oversight potentially improves, the MULTVOTE variable consistently becomes insignificant (Column 5 of Table 7). When accounting for part-time executives, owners with multiple voting rights do not significantly influence discretionary accruals (see the coefficient of $MULTVOTE \times PART_TIME$ in Column 10 of Table 6). This suggests that part-time executives are more qualified or willing to resist pressure from powerful members. Notably, the findings in Table 7 hold even after conducting PSM (not shown).

4.5. Additional robustness checks: alternative specifications of the ABSDACC variable and alternative measures of financial reporting quality

In line with Whited et al.'s (2022) approach, we examine whether our results remain consistent after excluding specific groups of dummy variables, such as industry and region dummies, and certain control variables. As Table A4 in the Appendix shows, removing these controls does not affect the results.

We also examine the robustness of our results with respect to different specifications of the ABSDACC variable and various measures of financial reporting quality. In our main analyses, we measure ABSDACC as the three-year moving sum of absolute discretionary accruals calculated from $t-2$ to t . Accordingly, Table 8 presents the robustness analyses, in which ABSDACC is measured from $t-1$ to $t+1$, with independent variables assessed at time t (Columns 3 and 4). Furthermore, we investigated scenarios in which both ABSDACC and the control variables are measured from $t-2$ to t (Columns 5 and 6).

The results indicate that the coefficients of MULTVOTE and the interaction term $MULTVOTE \times HONOR$ remain significantly positive, whereas HONOR remains significant and negative. Notably, the results remain robust even when ABSDACC is measured from $t-2$ to t , and the control variables are assessed at $t-3$ (results not tabulated).

We also conduct robustness tests using various measures of financial reporting quality, including: (a) absolute discretionary accruals measured over one year (ABSDACC_1yr); (b) discretionary accruals calculated according to the performance-adjusted Jones model (ABSDACC_ROA; Kothari et al. 2005); (c) total accruals measured over three years (TOTACC_3yr) while controlling for the independent variables noted in Equation (1), as suggested by Chen et al. (2018); (d) absolute working capital accruals (ABS_WCA; Dechow and Dichev 2002); (e) earnings smoothing (SMTH; Burgstahler et al. 2006); and (f) incidence of restatements (RESTATE; Demerjian et al. 2013).

The change in working capital ($\Delta WCA_{i,t}$) is calculated as the difference between the change in current non-cash assets and that in current liabilities. The earnings management component is the absolute value of the residual from the following regression equation (OCF: cash flow from operations; all variables are scaled by lagged total assets):

$$\Delta WCA_{i,t} = \beta_0 + \beta_1 OCF_{i,t-1} + \beta_2 OCF_{i,t} + \beta_3 OCF_{i,t+1} + \varepsilon_{i,t} \quad (3)$$

Earnings smoothing is proxied by the ratio of the volatility of net income to the volatility of cash flow from operations, where both net income and cash flow are standardised by total assets

Table 9. Earnings management in the presence of multiple voting rights: alternative financial reporting quality measures (Mundlak model).

	Panel A: Alternative accruals measures						
	ABSDACC_1yr full sample (z-value) (1)	ABSDACC_1yr PSM 1 (z-value) (2)	ABSDACC_3yr full sample (z-value) (3)	ABSDACC_3yr PSM 1 (z-value) (4)	TOTACC_3yr full sample (z-value) (5)	TOTACC_3yr PSM 1 (z-value) (6)	
MULTVOTE	-/+	0.0140*** (3.52)	0.0181*** (3.00)	0.0348** (2.36)	0.0437** (1.98)	0.0546*** (3.68)	0.0624*** (2.72)
HONOR	-/+	-0.0057*** (-3.40)	-0.0143*** (-3.02)	-0.0074 (-1.15)	-0.0218 (-1.40)	-0.0114* (-1.69)	-0.0185 (-1.11)
MULTVOTE × HONOR		0.0703*** (4.79)	0.0801*** (4.05)	0.172*** (2.85)	0.172** (2.08)	0.0338 (0.63)	0.0840 (1.03)
Controls and their means		Included	Included	Included	Included	Included	Included
Industry, year, and region dummies		Included	Included	Included	Included	Included	Included
N	4309	1116	3697	986	4348	1151	1151
Overall R ² in %	31.0	21.6	52.2	33.6	41.6	26.4	26.4
Wald chi ²	1598	291.2	1308	270.1	1070	214.6	214.6

Panel B: Additional measures on financial reporting quality

	Pred. sign	ABS_WCA full sample (z-value) (7)	ABS_WCA PSM 1 (z-value) (8)	SMTH full sample (z-value) (9)	SMTH full sample (z-value) (10)	SMTH PSM 1 (z-value) (11)	SMTH full Pooled OLS (12)	RESTATE, full sample (z-value) (13)	RESTATE PSM 1 (z-value) (14)
MULTVOTE	-/+	0.0094* (1.74)	0.0096 (1.31)	0.104* (1.68)	0.0901 (1.39)	0.110* (1.74)	0.0833* (1.80)	0.333* (1.72)	0.261 (1.20)
HONOR	-/+	-0.0002 (-0.10)	-0.0044 (-0.77)	-0.0300 (-1.06)	-0.0323 (-1.14)	0.0306 (0.07)	-0.0264 (-1.02)	0.141 (1.34)	-0.0341 (-0.12)
MULTVOTE × HONOR		0.0487** (2.44)	0.0404* (1.72)	—	0.142 (0.67)	-0.0194 (-0.09)	0.151* (1.76)	—	—
Controls		Included	Included	Included	Included	Included	Included	Included	Included
Industry, year, and region dummies		Included	Included	Included	Included	Included	—	—	—
N		2557	698	3962	3962	1099	3962	4320	998
Overall $R^2/Adj. R^2$ / Pseudo R^2 in %		25.3	22.7	22.6	22.7	28.4	21.0	7.3	17.6
Wald χ^2 / F-Stat.		499.4	165.8	655.4	655.3	245.8	20.9	101.0	50.9

Notes: This table shows how the characteristics of cooperatives are associated with their financial reporting quality in the presence of multiple voting rights, with alternative measures of financial reporting quality, including ABSDACC_1yr, ABSDACC_ROA, TOTACC_3yr, ABS_WCA, SMTH and RESTATE. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. Generally, a Mundlak random effects model is applied; we only employ a probit model with the RESTATE analysis, because demeaning does not remove unobserved fixed effects in nonlinear models. ABSDACC_1yr is the absolute value of discretionary accruals, based on the Modified Jones Model (Dechow et al. 1995). ABSDACC_ROA is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the performance-adjusted Jones Model (Kothari et al. 2005). TOTACC_3yr is the firm-level three-year moving sum of the absolute value of total accruals, controlled for the independent variables of the Modified Jones Model (Dechow et al. 1995), as suggested by Chen et al. (2018), excluding interactions with year dummies due to multicollinearity. ABS_WCA is the absolute value of discretionary accruals, based on the working capital accrual model by Dechow and Dichev (2002). SMTH is the standard deviation of (net income before taxes divided by lagged total assets) divided by the standard deviation of (cash flow from operations divided by lagged total assets), each calculated over three years, multiplied by -1. RESTATE is a dummy variable that takes the value of 1 if the financial statement has been restated or information has been added, and 0 if not. PSM 1 indicates propensity score matching with matching criteria: SIZE and NON_HOUSING. Controls include SIZE, LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, RISK_SALES, NON_HOUSING, LOCAL_TAXRATE × NON_HOUSING, BOARD_SIZE, CHARITY, MIN_TERM, HIGH_MEMB_LIAB, and NOTICE_PERIOD. Control means include the means of SIZE, LOCAL_TAXRATE, ROA, DEBT, LOSS, HHI, GROWTH, and RISK_SALES. For a definition of the variables, see Table A1 in the Appendix. SMTH, GROWTH, and RISKSALLES are winsorized at the 5th and 95th percentiles; other metric variables are winsorized at the 1st and 99th percentiles.

(Burgstahler et al. 2006):

$$SMTH_{i,t} = (-1) \cdot \frac{SD\left(\frac{\text{net income before taxes}_{i,t}}{\text{total assets}_{i,t-1}}\right)}{SD\left(\frac{\text{cash flow from operations}_{i,t}}{\text{total assets}_{i,t-1}}\right)} \quad (4)$$

SD stands for standard deviation and is calculated over three years. SMTH indicates the extent to which the volatility of cash flow from operations is reflected in net income. A ratio of 1 indicates that net income fully reflects the volatility of cash flow, whereas a ratio of 0 indicates that earnings management masks all cash flow volatility. We multiply by (-1) , such that higher SMTH values signify greater earnings smoothing.

RESTATE is a dummy variable that equals 1 if the financial statement has been restated or if additional information has been included; otherwise, it equals 0. In this dataset, only 3% of the observations involve restatements or additions, and less than 1% feature restatements alone.

Table 9 shows that the sign of the MULTVOTE variable is typically positive and often significant regardless of whether we analyse the entire sample or the propensity score-matched sample. We observe a significantly negative sign for the HONOR variable when earnings management is assessed using one-year discretionary accruals. However, this coefficient is not significant when SMTH or RESTATE are used as dependent variables. The interaction term MULTVOTE \times HONOR generally displays a significant and positive sign across various accrual measures; however, this is not the case for the earnings smoothing regressions. For the RESTATE analysis, the coefficient of the interaction term is not reported because of multicollinearity issues.

The robustness analyses confirm the hypothesis that cooperatives with multiple voting rights demonstrate higher levels of discretionary or total accruals. However, the evidence regarding earnings smoothing and the likelihood of restatements is less compelling. Although the presence of multiple votes is consistently linked to various indicators of lower financial reporting quality, we do not find as robust evidence for the HONOR variable.

4.6. Additional robustness checks: endogeneity of MULTVOTE status

Cooperatives do not randomly permit multiple voting rights but determine them deliberately. However, this decision was often established several years earlier. For many executives, provisions for multiple voting rights were already in place when they made their earnings management decisions. This indicates that endogeneity resulting from reverse causality is unlikely to be a significant issue in our setting.

Nevertheless, we use a treatment effect model to control for otherwise uncontrolled differences between the group that allows multiple voting rights and the group that follows the ‘one-shareholder-one-vote’ principle. This model is specifically designed for situations in which an endogenously chosen binary variable is expected to influence the dependent variable, which, in this case, is the financial reporting quality measured by ABSDACC. Furthermore, it accounts for the factors that influence the decision to allow multiple voting rights, leading to the inclusion of two sets of independent variables.

In addition to the regression outlined in Equation (2), we estimate a second regression. MULTVOTE is a potentially endogenous variable; therefore, the binary decision to permit multiple voting rights is modelled as the outcome of an unobserved latent variable, MULTVOTE* (Bharath et al. 2011). In the first stage, MULTVOTE* is expressed as a function of the

Table 10. Multiple voting rights and earnings management, dependent variable: ABSDACC, treatment effect model (Mundlak model).

Dep. variable	Pred. sign	Without treatment effects		Treatment effects model		Treatment effects model	
		ABSDACC_3yr		Full sample		PSM 1 sample	
		Coeff. (z-value), full sample	ABSDACC_3yr Coeff. (z-value) (1)	MULT_VOTE Coeff. (z-value) (2)	MULT_VOTE Coeff. (z-value) (3)	ABSDACC_3yr Coeff. (z-value) (4)	
MULTVOTE	-/+	0.0510*** (3.59)	0.0518*** (3.89)			0.0600* (1.70)	
RATIO_MV_STATE	+		14.65*** (7.77)	18.10*** (7.99)			
HONOR	-/+	-0.0141** (-2.21)	-0.0146 (-2.28)	-0.0093*** (-2.99)	-0.453** (-2.57)	-0.0224** (-2.28)	
SIZE_mean		-0.0220** (-2.36)	0.539 (1.27)	-0.0146 (-0.88)	0.748 (1.41)	-0.0830** (-2.56)	
NON_HOUSING, CHARITY		Included	Included	Included	-	Included	
Other controls		Included	Included	Included	Included	Included	
Control means		Included	Included	Included	Included	Included	
Year dummies		Included	Included	Included	Included	Included	
Industry dummies		Included	Included	Included	Included	Included	
Region dummies		Included	Included	Included	Included	Included	
N		4203	-	4203	-	1080	
Wald χ^2 / prob. > χ^2		1386 / 0.0000	3579 / 0.0000	475.7 / 0.0000			
Pseudo R^2 of MULTVOTE regression without/with IV			0.275 / 0.315	0.114 / 0.175			
Wald test of $\rho = 0$, χ^2 / prob. > χ^2			3.82 / 0.051	0.18 / 0.669			
Durbin-Wu-Hausman: prob. > F			1	1			

Notes: This table presents the results of an endogeneity-adjusted regression analysis that examines the relationship between cooperatives that allow multiple voting rights and discretionary accruals, using a Mundlak model. We utilize RATIO_MV_STATE as the instrumental variable in the first-stage regression, which models the choice of multiple voting rights. RATIO_MV_STATE is the ratio of cooperatives that allow multiple voting rights to all cooperatives for each region. In the first-stage regression, we exclude the variables NON_HOUSING, LOCAL_TAX × NON_HOUSING, CHARITY as well as region dummies, due to multicollinearity issues. In the second stage, all variables of the baseline regression in Table 6, Column 1 are included. ABSDACC_3yr is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). MULTVOTE takes the value of 1 if members are allowed to have multiple voting rights, and 0 if not. HONOR is a dummy variable that takes the value of 1 if the statutes allow honorary executives to run the cooperative, and 0 if not. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. PSM 1 indicates propensity score matching with matching criteria SIZE and NON_HOUSING; see Table 3. Panel B. Controls include SIZE, LOCAL_TAXRATE, ROA, DEBT_LOSS, HHI, GROWTH, RISK_SALES, NON_HOUSING, LOCAL_TAXRATE × NON_HOUSING, BOARD_SIZE, CHARITY, MIN_TERM, HIGH_MEMB_LIAB, and NOTICE_PERIOD. Control means include the means of SIZE, LOCAL_TAXRATE, ROA, DEBT_LOSS, HHI, GROWTH, and RISK_SALES. For a definition of the other variables, see Table A1 in the Appendix. GROWTH and RISKSALLES are winsorized at the 5th and 95th percentiles; other metric variables are winsorized at the 1st and 99th percentiles.

instrumental variable and cooperative characteristics:

$$\begin{aligned} MULTVOTE_i^* = & \beta_0 + \beta_1 Instrument_{i,t} + \sum_{j=2}^J \beta_j Controls_{i,t} \\ & + \sum_{k=J+1}^K \beta_k Control\ means_i + \varepsilon_{i,t}. \end{aligned} \quad (5)$$

$$\begin{aligned} ABSDACC_{i,t} = & \alpha_0 + \alpha_1 MULTVOTE_i + \alpha_2 HONOR_i + \alpha_3 SIZE_{i,t} + \sum_{j=4}^J \alpha_j Controls_{i,t} \\ & + \sum_{k=J+1}^K \alpha_k Control\ means_i + \rho v_l + \gamma z_t + \vartheta y_s + \varepsilon_{i,t}. \end{aligned} \quad (6)$$

The treatment effect model estimates Equations (2) and (5) simultaneously. The control variables are the same as those used in the basic regression analyses outlined in Equation (2). However, NON_HOUSING and CHARITY are excluded from this analysis because they show no variation when MULTVOTE is equal to 1.¹³

The instrumental variables must correlate with the structural variable of interest, MULTVOTE, while remaining uncorrelated with the error term of the structural (second) equation (Larcker and Rusticus 2010). For our instrumental variable, we use the regional propensity of cooperatives to permit multiple voting rights (RATIO_MV_STATE). This choice is grounded in the New Institutionalism approach to organisational theory, which posits that firms' decisions are influenced by rational and effective peer firms that serve as role models (Tempel and Walgenbach 2007). According to Czarniawska (2005), similar to the New Institutionalism perspective, organisations tend to adapt practices from their peers, which leads to the convergence of organisational practices. We anticipate similar trends for cooperatives. Therefore, we expect the regional propensity for specific corporate governance choices to affect cooperatives' decisions to allow multiple voting rights.

We do not find compelling reasons to believe that the regional propensity for multiple votes is related to the financial reporting choices of individual cooperatives. The correlation coefficient between RATIO_MV_STATE and ABSDACC_3yr is -0.01 , which is not statistically significant ($p > 10\%$, see Table A2). We expect that regional preference for specific legal forms will satisfy the exclusion restriction. We eliminate the regional dummies from the first regression to address multicollinearity concerns.

Table 10 presents the results of the treatment effect models. The left column of each model shows the estimated impact of the instrumental variable and cooperative characteristics on the MULTVOTE variable. Across various analyses, RATIO_MV_STATE displays a positive coefficient that is significant at the $p < 0.1\%$ level (Columns 1 and 3).

The right-hand columns of each model present the endogeneity-adjusted estimate of MULTVOTE relative to the financial reporting quality measure ABSDACC. The coefficient of MULTVOTE is significantly positive for the full and propensity score-matched samples (Columns 2 and 4). The coefficients and standard errors associated with MULTVOTE are similar to those in the baseline model in Column 1.

¹³When MULTVOTE equals 1, all corresponding NON_HOUSING (CHARITY) realizations also equal 1 (0). Therefore, these two variables do not affect the estimation of the probability of multiple voting rights.

After controlling for potential endogeneity, we find that the presence of multiple voting rights is generally negatively correlated with financial reporting quality. Furthermore, honorary executives tend to be linked to lower levels of earnings management.

A treatment effect model is necessary when the estimated correlation between the error terms of the two regressions, ρ , is sufficiently high. The Wald test of independent equations helps determine whether the null hypothesis – that this correlation is zero – can be rejected. In the PSM specification, the correlation is low and statistically insignificant (Columns 3 and 4 of [Table 10](#)). Consequently, the Wald statistic does not reject the null hypothesis, indicating that a treatment effect model may be unnecessary. The Durbin–Wu–Hausman test generally suggests that the treatment effect model does not provide more reliable inferences than the estimates obtained from the baseline random effects model.

We also evaluate the appropriateness of the instrumental variable. For the full sample, the pseudo R^2 in the first stage increases from 11.0% to 15.7% when the instrument is included. This effect is even more pronounced for the propensity score-matched samples.

5. Conclusion

Our analysis of financial reporting quality in cooperatives provides evidence supporting the notion that different agency problems are associated with financial reporting quality in various ways. For cooperatives with a homogeneous ownership structure that follow the ‘one-shareholder-one-vote’ principle, the quality of financial reporting improves with the size of the cooperative and number of owners (members). When conflicts of interest exist between executives and members (Type I agency problem), financial reporting quality appears to adapt to meet members’ greater information needs. Moreover, cooperatives led by honorary executives tend to demonstrate even higher-quality financial reporting.

Cooperatives that permit multiple votes have a more diverse ownership structure, which can result in conflicts of interest between members with multiple and those with single voting rights (Type II agency problem). Our research indicates that the presence of members with multiple voting rights is linked to lower-quality financial reporting, particularly when cooperatives are managed by an honorary executive and Type I agency problems are possibly negligible. These findings suggest that members with multiple voting rights may exploit their accounting discretion to hide the cooperative’s true performance and obscure the extraction of private benefits.

This study represents an initial attempt to analyse the impact of the ‘one-shareholder one-vote’ principle on financial reporting choices. Furthermore, this study contributes to the limited literature on financial reporting in cooperatives. Notably, we are unable to observe the actual shares held by members with multiple voting rights because cooperatives are not required to disclose information about their ownership structures. Despite using PSM, employing a Mundlak approach, and accounting for the endogenous choice of ownership structure, we cannot entirely eliminate the possibility that our results are influenced by unobserved variables, such as executive compensation patterns. Future research may be better positioned to address the limitations of the present study.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

We collected data from the statutes of cooperatives, which are accessible at the local court in Hagen, North Rhine-Westphalia (Germany). We also utilised information from the publicly available Dafne database (Bureau van Dijk).

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Appendix

Table A1. Definition of variables.

	Definition	Data source
Dependent variables: measures of (the lack of) financial reporting quality		
ABSDACC_3yr	Firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). A higher value of ABSDACC_3yr indicates lower financial reporting quality.	Dafne
ABSDACC_1yr	Absolute value of discretionary accruals, based on the Modified Jones Model (Dechow et al. 1995). A higher value of ABSDACC_1yr indicates lower financial reporting quality.	Dafne
ABSDACC_ROA	Firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the performance-adjusted Jones Model (Kothari et al. 2005). A higher value of ABSDACC_ROA indicates lower financial reporting quality.	
TOTACC_3yr	Firm-level three-year moving sum of the absolute value of total accruals, controlled for the independent variables of the Modified Jones Model (Dechow et al. 1995), as suggested by Chen et al. (2018). A higher value of TOTACC_3yr indicates lower financial reporting quality.	Dafne
ABS_WCA	Absolute value of discretionary accruals, based on the working capital accrual model by Dechow and Dichev (2002). A higher value of ABS_WCA indicates lower financial reporting quality.	Dafne
SMTH	Standard deviation of (net income before taxes divided by lagged total assets) divided by the standard deviation of (cash flow from operations divided by lagged total assets), each calculated over three years, multiplied by -1 . A higher value of SMTH indicates lower financial reporting quality.	Dafne
RESTATE	Dummy variable: 1 if the financial statement was restated or information was added, and 0 if not.	Federal Gazette
Variables concerning cooperatives' corporate governance		
MULTVOTE	Dummy variable: 1 if members are allowed to have multiple voting rights, and 0 if not.	Statutes
#VOTES	The maximum number of voting rights per member that is allowed by the statute.	Statutes
HONOR	Dummy variable: 1 if the cooperative's statutes allow it to hire honorary executives, and 0 if not.	Statutes
PART_TIME	Dummy variable: 1 if the cooperative's statutes allow it to hire either honorary executives or part-time executives, and 0 if not.	Statutes
HIGH_MEMB_LIAB	Dummy variable: 1 if members are liable with their private assets in the event of a cooperative's bankruptcy, with an amount per share exceeding the third quartile, and 0 if at least one of these two criteria is not met. The MEMB_LIAB variable takes the value of 1 if there is member liability, and 0 if not.	Federal Gazette, Statutes
MIN_TERM	Dummy variable: 1 if there is a minimum period to hold the share, and 0 if not.	Statutes
NOTICE_PERIOD	Number of months of the notice period for members to be able to return their shares.	Statutes

(Continued)

Table A1. Continued.

	Definition	Data source
BOARD_SIZE	Minimum number of supervisory board members required by the cooperative's statutes.	Statutes
CHARITY	Dummy variable: 1 if the cooperative's name includes a term indicating a charity, e.g. 'Gemeinnützige Genossenschaft' or the addendum 'geG,' where the letter 'g' stands for 'charitable,' and 0 if there is no such term or addendum.	Dafne
LOCAL_TAXRATE	Local corporate income tax rate (<i>Gewerbsteuersatz</i>).	Federal Statistical Office
NON_HOUSING	Dummy variable: 1 if the cooperative does not belong to the real estate and housing sector, and 0 otherwise.	Dafne
lnMEMB	Natural logarithm of the number of members.	Federal Gazette
Other control variables		
SIZE	Natural logarithm of total assets.	Dafne
DEBT	Financial debt divided by total assets.	Dafne
GROWTH	Changes in sales growth in the current year's sales scaled by lagged sales, averaged over three years.	Dafne
LOSS	Dummy variable: 1 if the cooperative reported a net loss in the current year or in at least one of the two preceding years, and 0 otherwise.	Dafne
ROA	(EBIT + extraordinary income) divided by lagged total assets.	Dafne
RISKSALLES	Standard deviation of sales divided by lagged total assets, computed over three years.	Dafne
HHI	Herfindahl–Hirschman Index to measure competition within an industry, based on the sales for all firms included in the Dafne database that operate within the same single-digit WZ (<i>Wirtschaftszweige</i>) industry code.	Dafne
Year dummies	Binary variable for the year of observation.	
Industry dummies	Binary variable based on the single-digit WZ code classification.	Dafne
Region dummies	Binary variable based on the German state in which the cooperative is domiciled.	
Instrumental variable		
RATIO_MV_STATE	Ratio of cooperatives that allow multiple voting rights to all cooperatives in this region, for each year.	Statutes

Table A2. Pearson correlation table (full sample, without PSM).

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) ABSDACC_3yr	1									
(2) TOTACC_3yr	0.89**	1								
(3) SMTH	0.35**	0.31**	1							
(4) RESTATE	0.00	-0.42**	0.01	1						
(5) SIZE	-0.46**	-0.42**	-0.12**	0.05**	1					
(6) DEBT	0.02	-0.01	0.15**	0.02	0.22**	1				
(7) GROWTH	0.27**	0.22**	0.11**	0.01	-0.14**	0.09**	1			
(8) RISKSALLES	0.58**	0.52**	0.25**	0.01	-0.42**	0.07**	0.29**	1		
(9) ROA	0.15**	0.14**	-0.02	0.02	-0.11**	-0.07**	0.17**	0.15**	1	
(10) LOSS	-0.03	-0.01	-0.24**	-0.00	-0.10**	0.01	-0.07**	-0.07**	-0.23**	1
(11) HHI	0.08**	0.11**	-0.04**	-0.03	-0.19**	-0.28**	0.09**	-0.03	0.05**	0.06**
(12) MEMBERS	-0.32**	-0.27**	-0.04**	0.07**	0.70**	0.14**	-0.10**	-0.29**	-0.08**	-0.05**
(13) MULTVOTE	0.19**	0.23**	0.08**	0.02	-0.10**	-0.05**	0.05**	0.11**	0.01	0.01
(14) HONOR	-0.38**	-0.35**	-0.17**	0.01	0.33**	0.12**	-0.13**	-0.35**	-0.12**	-0.00
(15) PART TIME	-0.47**	-0.42**	-0.18**	-0.01	0.46**	0.18**	-0.14**	-0.44**	-0.14**	-0.01
(16) NOTICE_PERIOD	0.26**	0.22**	0.14**	-0.01	-0.22**	0.05**	0.06**	0.27**	0.00	-0.01
(17) MIN_TERM	0.19**	0.15**	0.11**	-0.03*	-0.16**	-0.06**	0.09**	0.24**	-0.04**	0.02
(18) BOARD_SIZE	-0.15**	-0.14**	-0.00	0.01	0.31**	0.03	-0.05**	-0.13**	-0.00	-0.09**
(19) HIGH_MEM_LIAB	0.19**	0.15**	0.11**	-0.00	-0.08**	0.08**	0.03	0.11**	0.01	-0.03
(20) LOCAL_TAXRATE	-0.27**	-0.27**	-0.12**	0.01	0.35**	0.14**	-0.10**	-0.22**	-0.02	-0.07**
(21) NON_HOUSING	0.61**	0.53**	0.29**	0.00	-0.59**	-0.15**	0.20**	0.59**	0.18**	-0.05**
(22) CHARITY	-0.13**	-0.12**	-0.10**	-0.04*	0	-0.00	-0.04*	-0.11**	-0.05**	0.01
(23) RATIO_MV_STATE	-0.01	0.01	-0.05**	-0.02	-0.08**	-0.23**	-0.06**	-0.10**	-0.06**	0.11**

	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
(1) ABSDACC_3yr													
(2) TOTACC_3yr													
(3) SMTH													
(4) RESTATE													
(5) SIZE													
(6) DEBT													
(7) GROWTH													
(8) RISKSALLES													
(9) ROA													
(10) LOSS													
(11) HHI	1												
(12) MEMBERS	-0.06**	1											
(13) MULTIVOTE	0.14**	-0.11**	1										
(14) HONOR	-0.23**	0.15**	-0.18**	1									
(15) PART_TIME	-0.24**	0.29**	-0.21**	0.83**	1								
(16) NOTICE_PERIOD	0.04**	-0.24**	0.06**	-0.20**	-0.29**	1							
(17) MIN_TERM	-0.03	-0.12**	0.16**	-0.17**	-0.22**	0.06**	1						
(18) BOARD_SIZE	-0.07**	0.36**	-0.01	-0.02	0.10**	-0.05**	-0.04**	1					
(19) HIGH_MEM_LIAB	0.01	-0.08**	0.04*	-0.05**	-0.07**	0.09**	0.07**	0.02	1				
(20) LOCAL_TAXRATE	-0.21**	0.30**	-0.10**	0.24**	0.33**	-0.10**	-0.27**	0.18**	-0.03	1			
(21) NON_HOUSING	0.28**	-0.41**	0.21**	-0.58**	-0.70**	0.38**	0.27**	-0.17**	0.18**	-0.37**	1		
(22) CHARITY	-0.05**	-0.01	-0.04*	0.14**	0.16**	-0.00	-0.04*	-0.04*	-0.04	0.11**	-0.16**	1	
(23) RATIO_MV_STATE	0.17**	-0.12**	0.14**	-0.05**	-0.11**	0.09**	0.06**	-0.16**	-0.03*	-0.23**	0.07**	-0.04*	1

* and ** indicate significance at the 5% and 1% levels, respectively.

Table A3. Results of propensity score matching regression.

	MULTVOTE PSM 1 (z-value) Probit (1)
SIZE	0.0256 (1.60)
NON_HOUSING	1.5728*** (16.50)
Industry-year predictors	Included
Constant	-3.3688*** (-11.52)
N	12,229
Pseudo R^2 in %	17.2
LR χ^2	657.5

Notes: This table shows the results of propensity score matching regression (PSM 1) with MULTVOTE as the dependent variable. The matching is based on the initial sample of 15,622 cooperatives. Actual sample size is smaller due to missing data on the respective independent variables. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. MULTVOTE takes the value of 1 if members are allowed to have multiple voting rights, and 0 if not. SIZE is the natural logarithm of total assets. NON_HOUSING is a dummy variable that takes the value of 1 if the cooperative does not belong to the real estate and housing sector, and 0 otherwise. SIZE is winsorized at the 1st and 99th percentiles.

Table A4. Earnings management in the presence of multiple voting rights: ABSDACC (Mundlak model), without various controls.

		ABSDACC_3yr full sample (z-value)								
Regression analyses without a single group of dummies and without single control variables		Full model	w/o industry dummies	w/o year dummies	w/o region dummies	w/o ROA	w/o LOSS	w/o HHI	w/o GROWTH	w/o RISKSALLES
Pred. sign		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
MULTVOTE	-/+	0.0423*** (2.91)	0.0439*** (3.02)	0.0418*** (2.87)	0.0371*** (2.59)	0.0411*** (2.82)	0.0423*** (2.91)	0.0432*** (2.97)	0.0445*** (2.99)	0.0472*** (3.17)
HONOR	-/+	-0.0156** (-2.44)	-0.0169*** (-2.69)	-0.0156** (-2.44)	-0.0147** (-2.33)	-0.0156** (-2.44)	-0.0156** (-2.45)	-0.0158** (-2.48)	-0.0158** (-2.41)	-0.0162** (-2.47)
MULTVOTE × HONOR		0.169*** (2.65)	0.173*** (2.69)	0.167*** (2.61)	0.167*** (2.61)	0.164** (2.56)	0.169*** (2.65)	0.169*** (2.64)	0.161** (2.46)	0.150*** (2.28)
Other controls		Included	Included	Included	Included	Included	Included	Included	Included	Included
Other dummies		Included	Included	Included	Included	Included	Included	Included	Included	Included
N		4203	4203	4203	4203	4203	4203	4203	4203	4203
Overall R ² in %		51.5	50.3	51.0	51.0	51.3	51.5	51.5	50.7	49.0
Wald chi ²		1400	1360	1330	1376	1388	1400	1396	1308	1189

Notes: This table shows the robustness of the results in Table 6 when a specific group of dummies or specific control variables are dropped from the regression analysis. MULTVOTE takes the value of 1 if members are allowed to have multiple voting rights, and 0 if not. HONOR is a dummy variable that takes the value of 1 if the statutes allow honorary executives to run the cooperative, and 0 otherwise. *, **, and *** indicate significance at the 10%, 5%, and 1% levels, using a two-tailed test. ABSDACC_3yr is a measure of (the lack of) financial reporting quality. ABSDACC_3yr is the firm-level three-year moving sum of the absolute value of discretionary accruals, in accordance with Hutton et al. (2009), based on the Modified Jones Model (Dechow et al. 1995). Other controls include all controls included in the baseline regression in Table 7 except for the respective control variable that was dropped. For a definition of the variables, see Table A1 in the Appendix.

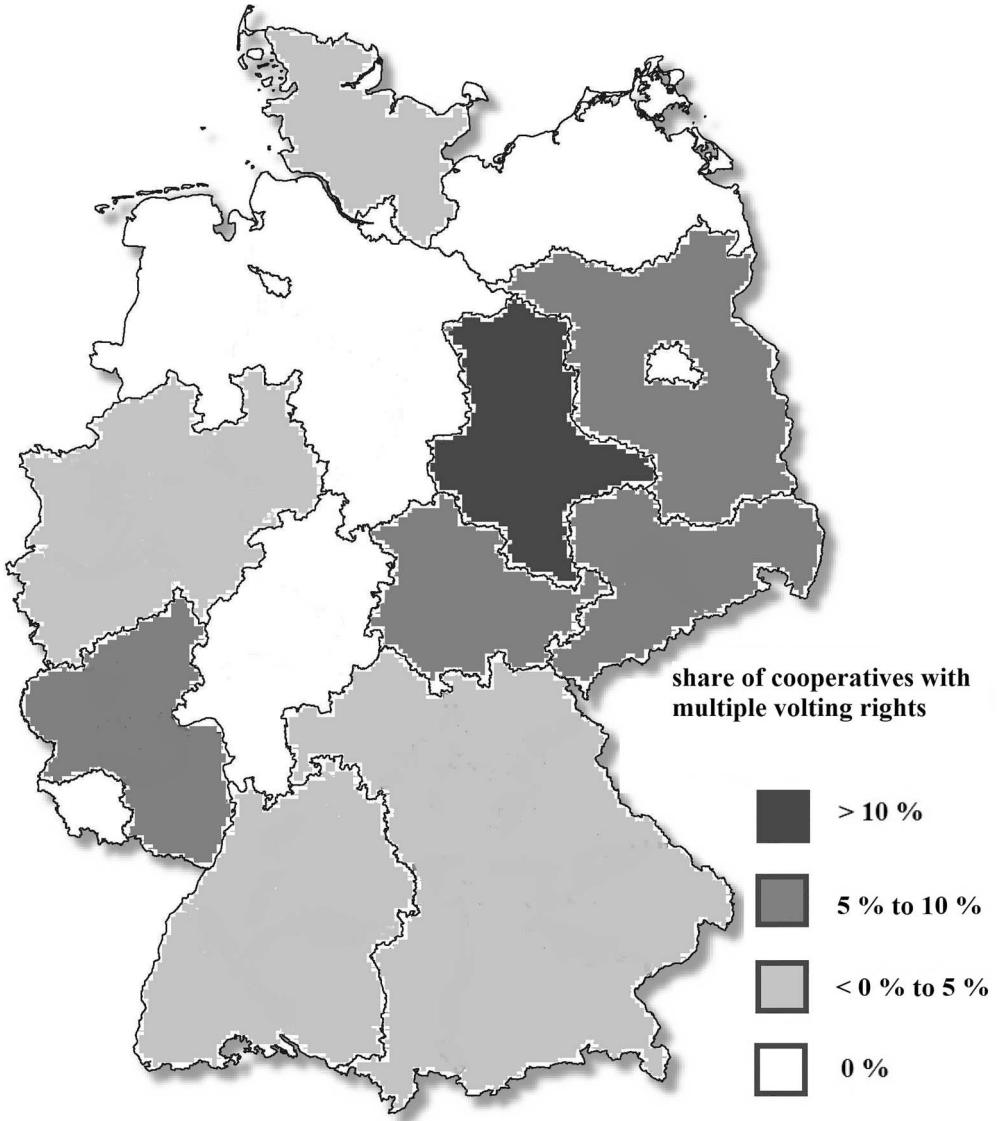


Figure A1. Proportion of multiple-vote cooperatives in different German states. Source of the map: GeoBasis-DE / BKG (2024).

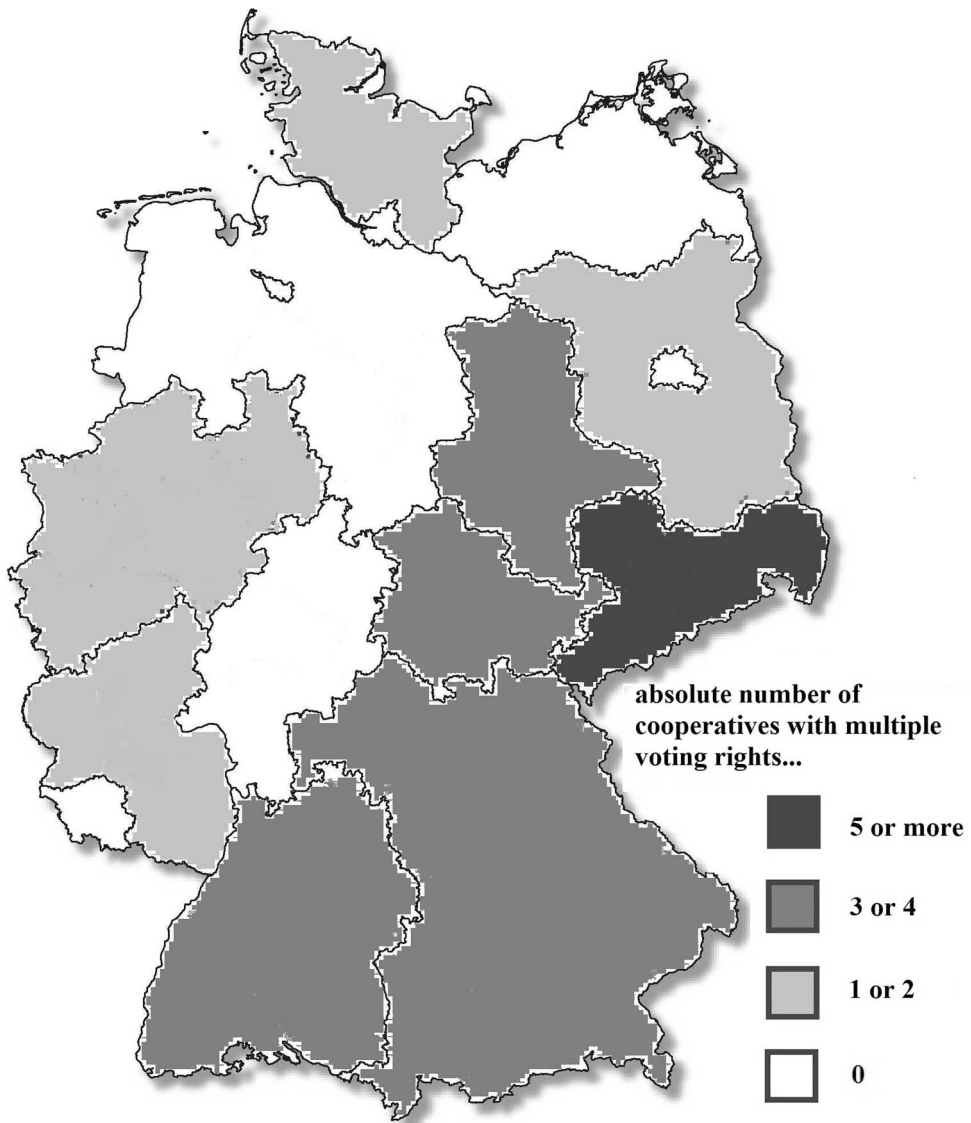


Figure A2. Number of multiple-vote cooperatives in different German states.
Source of the map: GeoBasis-DE / BKG (2024).