Chapter 5

Creative Accounting: Deceptive Practices and Strategies for Prevention

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5.1. Introduction

When external entities seek to assess the financial position of a company, they most often rely on financial statements issued in Central Europe. These statements provide a comprehensive overview of a company's financial performance – not only at a specific point in time but also in terms of its development over time. Key financial documents include the balance sheet, income statement, and cash flow statement, which together allow an assessment of a company's stability, profitability, and liquidity.

Investors use financial statement data to analyse a company's past performance and try to predict its future performance. This process plays a crucial role not only in investment decisions, but also in the assessment of a company's creditworthiness by banks and other creditors. Financial statements therefore have a wide range of applications, from assessing a company's financial health to determining its market value – an essential factor in cases such as company sales or initial public offerings.

Company owners and management responsible for preparing financial statements are aware of the significant impact these reports can have on how their company is perceived by external stakeholders. As a result, some may adopt strategies that involve accounting adjustments to present their company in a more favourable light than reality suggests. Such practices may include artificially inflating revenues, understating expenses, or misvaluing assets and liabilities, which can create a misleading picture of a company's financial stability.

Recent decades have seen several accounting scandals with far-reaching consequences not only for the companies involved but also for the financial system as a whole. Among the most notorious were the collapses of Enron and WorldCom, which resulted in billions of dollars of losses and severely undermined investor confidence in the transparency of financial reporting.

In Europe, the best-known case was that of the Italian company Parmalat. These incidents led to the introduction of stricter regulations, such as Directive 2006/43/EC on statutory audits, which imposes stricter requirements on firms authorised to audit financial statements.

In some cases accounting fraud has been seen as a contributing factor to wider economic crises, including the global financial crisis of 2008 which was driven in part by opaque accounting practices related to risky assets and inadequate assessments of the financial health of key institutions. These events underlined the importance of adhering to ethical principles and ensuring transparency in financial reporting to maintain market stability and investor confidence in the future.

A study published in 2024 by the Association of Certified Fraud Examiners (ACFE) identified 1,921 cases of accounting fraud in 138 countries between 2022 and 2023, resulting in total losses of USD 3.1 billion. The study's authors categorised the fraud cases into three groups (some cases fell into more than one category, resulting in a total of more than 100%); asset misappropriation occurred in 89% of cases, with an average fraud value of USD 120,000. A total of 48% of cases were classified as corruption, with an average loss of USD 200,000, whereas the least common (5%) but most damaging in terms of financial loss (USD 776,000 per case), was financial statement fraud – an increase of 29 percentage points compared to the 2022 study data (Association of Certified Fraud Examiners [ACFE], 2024). The groups and their intersections are also illustrated in Fig. 5.1.

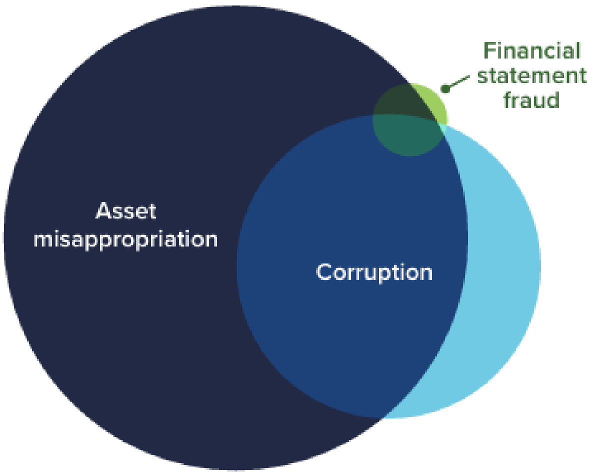

Fig. 5.1. Categorised fraud cases

Source: ACFE (2024).

When analysing who commits fraud, the authors of the study came up with some interesting findings. Managers and employees commit fraud in almost equal proportions (around 40% each), with business owners making up the remainder. However, the financial damage caused by these groups differs significantly. Employees are responsible for an average loss of USD 60,000 per case, managers USD 184,000, and owners up to USD 500,000.

The study revealed that financial statement fraud is detected relatively infrequently, yet the financial damage it causes is significantly higher than other types of fraud – more than six times greater than asset misappropriation and nearly four times greater than corruption. The fact that financial statement fraud is difficult to detect does not mean that it is rare. A review of published research on the subject suggests that creative accounting techniques, which can lead to financial statement fraud, are widely used by companies. Safta et al. (2020) found that about 84% of Romanian companies engage in creative accounting practices. Durana et al. (2022) reported that 90% of Slovak companies used such techniques and, more recently, Blazek et al. (2023) conducted a study of companies in the V4 region and concluded that 88% of the companies in the sample used these methods.

This chapter focuses primarily on the issue of creative accounting used by entrepreneurs to manipulate financial statements and, consequently, the data presented to external stakeholders. In addition to explaining the most common applications of creative accounting, it examines the motivation behind these practices and the measures available to limit them. Academic research has developed several models to detect the use of creative accounting techniques. The author tested one of these models in an academic setting, and the concluding section presents a summary of the findings.

5.2. Creative Accounting Techniques

In examining the origins of creative accounting techniques, their emergence is generally attributed to the 20th century Anglo-Saxon economies. This development is linked to the increasing complexity of economic realities and is characterised by flexible legal frameworks that allow for subjective information in financial statements (Bachtijeva, 2021). According to Comandaru et al. (2020), the first mention of creative accounting in academic literature dates to 1976. While some view creative accounting as an innovation in financial reporting practices, it is often criticised for its potential to mislead stakeholders and undermine the transparency and reliability of financial statements, see e.g. (Kamau & Murori, 2024; Shevchenko & Liadska, 2022).

Creative accounting refers to accounting practices that, while technically legal, may be considered unethical or even fraudulent. These techniques involve the manipulation of financial data to present a company's performance in a more favourable light than reality. Although creative accounting does not always break the law, its use can result in misleading information for investors, creditors, and other stakeholders. In extreme cases, prolonged use of these techniques can mask underlying financial problems, potentially leading to severe financial distress or even corporate bankruptcy.

The most common reason for engaging in these practices is the desire to meet financial targets, which may be critical to attracting investors, maintaining shareholder confidence or securing performance-related bonuses for management. Companies may also be motivated to manipulate financial data during economic downturns to project stability and prevent market panic. Another common motivation is to inflate share value, particularly for companies preparing for mergers, acquisitions, or initial public offerings (IPOs). In such cases, the temptation to report higher profitability and lower risk – regardless of the true financial position – can be considerable.

There are various creative accounting techniques, depending on a company's specific objectives and the regulatory environment in which it operates. The most common include inflating revenues, understating expenses, deferring or accelerating income recognition, and manipulating balance sheets. While creative accounting may improve a company's short-term financial picture, it can ultimately damage its reputation, lead to regulatory penalties, or even lead to legal consequences.

Adjustments to inflate reported revenues have been extensively studied by researchers such as Gudev (2020) and Kamau and Murori (2024). Practical approaches that demonstrate the real-world application of this technique include: early invoicing, fictitious invoicing between related parties, and upward revaluation of assets.

Early invoicing is a creative accounting method that artificially inflates revenue in the current accounting period. It involves issuing an invoice for a transaction before it actually takes place, allowing a company to report higher revenue than it should under proper accounting principles. For example, if a company signs a contract in December for the delivery of goods in January of the following year, it should correctly recognise the revenue only when the goods are actually delivered. However, if the company issues the invoice in December, it recognises the revenue early, artificially inflating its financial results for that year. While this practice may temporarily improve financial indicators, it distorts the true and fair view of the financial statements. Moreover, it creates an offsetting effect in the following period, as the company will then lack part of the revenue that should rightfully belong to the new financial year. From an accounting perspective, this practice violates the accrual accounting principle, which requires that revenues and expenses be recognised in the period in which they are incurred, regardless of when the invoice is issued or the payment is received. This manipulation can lead to a misleading improvement in financial performance, often due to pressure from shareholders or the need to meet internal targets for the reporting period.

Fictitious invoicing between related parties involves transactions where two or more financially connected entities issue invoices for services that were never provided or whose value does not reflect fair market prices. The primary objective of such transactions is to artificially inflate revenues or reduce costs, leading to the distortion of financial statements and potential tax manipulation. From an accounting perspective, such invoicing constitutes an improper increase in revenue where a company records income from non-existent transactions. In individual financial statements this can create the illusion of better financial performance than is the case. The practice is often used by management to improve financial indicators for investors, banks, or other external stakeholders, which also has significant tax implications. Fictitious invoicing between related entities can be used as a tool for tax optimisation or even tax evasion, particularly when these transactions are designed to shift profits across jurisdictions with different tax rates. This strategy, known as profit shifting, reduces the overall tax burden of a corporate group by reallocating profits to low-tax jurisdictions. For example, when a company operating in a high tax jurisdiction 'pays' a related company in a low tax jurisdiction for notional services, taxable income is effectively shifted to a more favourable tax jurisdiction. At the level of a consolidated group, these transactions have no impact on the overall financial results, as they are eliminated during preparation of the consolidated financial statements, whilst in individual companies they can have a significant impact on the calculation of tax liabilities. Due to their potential for tax abuse such practices are closely monitored by the tax authorities and regulators, implementing legislative measures to prevent their abuse.

Upward revaluation of assets increases the reported value of a company's assets. In Czechia this practice mainly applies to financial assets such as investments in securities, derivatives, or other financial instruments. Assets are revalued to fair value, which means that the book value of assets is adjusted to reflect current market prices. This process results in an increase in the value of assets on the company's balance sheet and the recognition of income, even though the company has not actually received any cash inflows. As a result, the reported increase in turnover is not the result of actual business activity, but of an accounting adjustment.

Ultimately, the same effect of an increase in the company's profits can be achieved by another common practice – understating costs in the following ways.

Deferred cost accounting is the practice of deferring the recognition of costs until the next accounting period, even though the costs relate to the previous period. This can lead to an artificial improvement in profit for the year because costs that should reduce profit are deferred and recognised later. For example, if a company uses external services (such as consulting, marketing, or IT support) in December but receives the invoice in January, the correct accounting treatment would be to recognise the expense in the previous year. However, if the company recognises it in the new accounting period, it effectively reduces the previous year's expense, thereby inflating reported profits while shifting the financial impact to the following year. This practice was observed in the case of Czech Airlines, which recognised aircraft lease payments in later periods than when they were actually made.

Capitalisation is the **reclassification of current operating expenses as capital expenditure**, allowing them to be amortised over future periods rather than being expensed immediately. This approach can temporarily improve financial results by reducing total expenses in the reported period below their actual level. A common example is the classification of development costs. A company needs to determine whether such costs should be treated as current operating expenses, which should be recognised immediately, or as capitalisable investments that are expected to generate future economic benefits. If an enterprise recognises expenditure on developing a new technology as a long-term intangible asset rather than as an expense, its current profit will appear higher.

Companies can **manipulate the depreciation period** to artificially reduce annual expenses and increase reported profits. This occurs when a company extends the depreciation schedule beyond the recommended useful life of an asset, thereby reducing annual depreciation costs and temporarily improving financial performance. For example, consider a new manufacturing machine with a recommended useful life of 10 years, which means it should be depreciated over that period. If the company decides instead to depreciate it over 20 years, the annual depreciation expense is effectively halved. As a result, reported expenses for the first ten years are lower than they should be, artificially inflating profits and creating a distorted view of the company's financial health.

Ignoring the principle of prudence in accounting is a fundamental accounting concept that ensures a true and fair view of a company's financial position. Under this principle, companies are required to make provisions and allowances to reflect potential risks and future losses. If a company fails to recognise these items or deliberately under-recognises them, it artificially improves its financial results and gives a misleading picture of its economic health. Allowances are made to reduce the book value of assets when there is a risk that the company will not recover their full value. A common example is the creation of allowances for doubtful accounts. If a company does not make such adjustments, it reports higher asset values on its balance sheet, even though some of these assets may be uncollectible. Adherence to the principle of prudence is essential for accurate financial reporting and for the long-term stability of the company. Failure to make provisions and allowances may temporarily improve reported profits, but it significantly increases the risk of financial difficulties in the future.

Most of the profit adjustments mentioned above also have an impact on the balance sheet, both indirectly (as net profit is part of equity on the liabilities side) and directly, as listed below:

- **Overstatement of fixed assets** – the revaluation of assets, the classification of expenditure as capital expenditure and the extension of depreciation periods results in the overstatement of fixed assets.

- **Higher value of receivables** – early or fictitious invoicing and the absence of impairment provisions result in receivables being reported at a higher value than their actual recoverable amount.
- **Understatement of liabilities** – delayed recognition of invoices received or failure to make provisions leads to an understatement of the company's actual liabilities.

All of these practices make a company appear to external stakeholders to be financially healthier and more stable than it actually is. Artificially inflating revenues, understating expenses, overstating assets or manipulating liabilities results in financial statements that do not present a true and fair view of the company's performance – one of the core principles of financial reporting. Such a company will report higher profitability, which may influence the decisions of investors, creditors and business partners. Higher profits can give the impression that the company is profitable and less risky, making it easier to obtain loans, investments or favourable contracts. Similarly, reporting higher asset values can increase the company's market value and attractiveness to capital markets. For example, if a company reports inflated asset values, this can lead to an overvaluation of its shares, which poses a significant risk to investors who rely on this information to make decisions. Reporting lower liabilities can distort the true level of the company's indebtedness and solvency. A company that appears to have fewer liabilities may appear more financially stable and thus obtain better credit terms or more favourable contracts. The creators of such manipulations not only violate ethical accounting principles, but also risk legal consequences when they cross the line between creative accounting and accounting fraud. Accounting ethics emphasises that financial statements should give a true and fair view of the financial position of a company (Remenarić et al., 2018). This principle is further supported by the International Federation of Accountants (IFAC), which has issued a code of ethical conduct for accountants that outlines five fundamental principles that every accountant should uphold:

- **Integrity** requires for the accountant to act honestly and fairly in all professional and business relationships.
- **Objectivity** is focused on avoiding bias and conflicts of interest, and emphasises that accountants should resist pressure from individuals or entities seeking to manipulate accounting data.
- **Professional Competence & Due Care** – accountants are required to maintain their professional knowledge and skills at a level that ensures they remain competent and able to apply relevant laws and professional standards effectively.
- **Confidentiality** means that information obtained during professional and business relationships shall remain confidential and shall not be disclosed to others without proper authority.
- **Professional Behaviour** – accountants must comply with laws and regulations, act in the public interest, and avoid any conduct that may bring the accounting profession into disrepute.

5.3. Creative Accounting Motives

Motives for creative accounting can vary but often include the pursuit of personal and/or corporate goals, such as meeting financial targets or increasing share prices. These actions can result in significant financial losses to stakeholders and damage the reputation of the accounting profession (Kaaya, 2022).

From a personal motivation perspective, the most common driver is often a managerial bonus, whether in the form of salary-based rewards or the promise of employee stock options, linked to the company's profit performance. As a result, managers may be incentivised to manipulate financial statements to achieve the desired figures for their personal benefit. Other motives usually lead to the achievement of business objectives and may include: improving the financial picture for investors, improving the financial picture for banks, lenders or customers, tax optimisation.

Improving the financial picture for investors – the motivation for creative accounting is often driven by management's desire to demonstrate continued profit growth and thereby present strong financial results to external stakeholders. A notable example of a company whose management used such techniques in the early 2000s is WorldCom. Investigations revealed that the first accounting manipulations occurred around mid-1999. The most significant adjustment identified was the reclassification of operating expenses as long-term capital expenditures, specifically when the costs of maintaining telecommunications networks were recorded as capital assets. These accounting manipulations went undetected for three years, eventually uncovering adjustments totalling USD 11 billion. As a result of the company's collapse, shareholders lost approximately USD 180 billion (Al-Dulemi & Al-Shabatat, 2018).

Improving the financial picture for banks, lenders or customers is closely related to the previous one but focuses on management's efforts to achieve accounting figures required by banks to secure more favourable loan terms or to obtain additional funding. Similar behaviour is often observed among creditors who may be unwilling to provide assets or services on trade credit without satisfactory financial indicators – Enron was a prime example of this. The company's management improved its financial position by prematurely recognising revenue on contracts for future supplies of energy or services that had not yet materialised, and secondly by hiding debt and expenses through the use of special purpose entities (SPEs). Enron hid debts and costs outside of its main financial statements. Unsuccessful investments were also similarly kept off Enron's balance sheet. As a result of these manipulative practices, shareholders lost USD 74 billion in the four years leading up to the company's bankruptcy (Al-Dulemi & Al-Shabatat, 2018). In Czechia, an improvement of financial results was observed in the case of Skanska, which artificially inflated its profits in the Třinec division by about CZK 500 million over three years (Matocha, 2006).

Tax optimisation means that to reduce tax liability, company management may set up subsidiaries in tax havens. Through fictitious invoicing, profits are shifted to these jurisdictions, thereby reducing the overall tax burden for the entire corporate group. This practice was examined by Tørsløv et al. (2022), who identified Ireland as the largest tax haven in the EU. In 2015, foreign companies shifted around USD 100 billion in profits to Ireland – more than to any Caribbean country.

In addition to the two companies mentioned above, Parmalat and Tesco also used these motives and practices.

5.4. Creative Accounting – Prevention by a Company

To minimise the potential use of creative accounting techniques, companies should prioritise maximum transparency and integrity in financial reporting. This includes implementing internal controls, promoting and enforcing ethical standards, and complying with regulatory frameworks. While some of these measures can be addressed internally by the company, others require educational involvement both through primary education (e.g. schools) and lifelong learning (e.g. professional training and courses). In more serious cases, solutions may involve legislative adjustments and the implementation of related restrictions. The different areas of prevention can be divided into: internal controls, external control, code of ethics and culture, strict compliance with accounting standards.

Internal controls is the simplest way to defend against potential fraud within a company. Responsibility should be divided among several people to ensure that no person has complete control over the company's accounting, for example by the introduction of dual approval for significant payments. In line with the previous point (although it may seem contradictory), it is crucial to establish clear rules defining the authority of each position, particularly regarding access rights within accounting software and the ability to modify records. Such a system should be complemented by internal audits and spot checks, which can identify discrepancies at an early stage and prevent potential damage. Osmanović and Šarić (2023) conducted research among companies in Bosnia and Herzegovina and came to similar conclusions. Their survey confirmed that adequate control procedures either prevent fraud or detect it quickly enough to prevent its continuation. Such results were found in an earlier study conducted in the neighbouring Serbia (Ćerdić & Knežević, 2021).

External control is more financially demanding on the company than the previous method. However, a key advantage is that those performing the control are less likely to fear job loss (due to potential disapproval from management) if they uncover problems or fraud, which can be a weakness of internal audit. External control, most commonly in the form of an external audit, provides an independent review of the financial statements, thereby minimising the risk of manipulation. To enhance the credibility of such audits, it is recommended that auditors or audit firms be rotated regularly to avoid the development of close relationships between the auditor and the audited entity. Transparency is further enhanced when the audit report is presented to the owners and not only to management. In cases of uncertainty, it is advisable to proceed with a more in-depth audit focused on the identified concerns. Shah (1998) examined this area in the context of British companies, and concluded that auditors enhance the reliability of financial statements and are expected to actively verify compliance with the principle of providing a true and fair view.

Code of ethics and culture as a preventive measure should be seen in a long-term context, as it requires changing the mindset not only of employees, but of society, to ensure that everyone understands that manipulating financial statements is unethical. Within a company, it is important not to put pressure on employees, ideally implementing a corporate code of ethics that sets out the principles to which employees must adhere to. Regular ethics training should be provided, emphasising both the legal and professional consequences of accounting fraud. Best practice is for management to lead by example and avoid pressuring subordinates to alter financial results (for example, through bonus schemes linked to the achievement of specific financial targets), a concern highlighted by Roy and Choudhary (2016). Focusing on accounting students, Hermawan et al. (2023) found that early exposure to the ethics of the accounting profession and issues surrounding creative accounting positively influenced future behaviour. Similar findings were obtained by Christensen et al. (2018) and Okougbo and Okike (2021), highlighting the importance of ethics education in shaping responsible financial practices.

Strict compliance with accounting standards means it is essential that internal policies set out precise procedures that must be strictly adhered to, and it is not important whether these rules are based on national legislation, International Financial Reporting Standards (IFRS) or US

Generally Accepted Accounting Principles (US GAAP). The aim is to minimise the possibility of creative accounting adjustments by employees or management. As part of these procedures it is crucial to increase transparency for external stakeholders regarding changes within the company. In Czechia such practices should be implemented through notes to the financial statements, where companies are expected to provide a detailed explanation of the accounting methods they use, how changes in financial reporting occur, and the reasons for these changes. A currently voluntary, yet credibility enhancing practice, is the disclosure of non-financial information about the company, e.g. Tesla, which publishes quarterly reports on the number of vehicles produced and delivered.

5.5. Creative Accounting – Fraud Detection

When internal prevention systems fail, it is necessary to implement fraud detection methods. In recent years the development of artificial intelligence has made it possible to integrate automated processes into accounting systems that detect suspicious behaviour (e.g. non--compliance with internal policies) and notify the appropriate personnel for further investigation. Artificial intelligence can be more effective at identifying patterns of behaviour that might go unnoticed by humans, particularly due to the large amount of data that needs to be analysed, as noted by Ali et al. (2024). Examples of such detection techniques include recurring payments to the same entities or identical bank account numbers used by both employees and suppliers.

Another approach is forensic accounting, which increasingly integrates techniques such as data mining, blockchain, and cybersecurity, as highlighted by Haddad et al. (2024). These techniques not only analyse historical data but also prevent retrospective changes to accounting records, processing both structured (e.g. numerical figures and invoices) and unstructured data (e.g. contracts and emails) to detect anomalies. Using advanced tools and software (such as Power BI), these methods can uncover complex and suspicious relationships and identify irregularities hidden in financial data.

5.6. Creative Accounting – Academic Research

The above methods are primarily designed for companies and their internal staff or management. However, when considering the issue from the perspective of external users, different approaches need to be adopted. This is mainly due to the limited access to primary accounting data that would otherwise allow the identification of irregular or manipulative practices. In academic research, several approaches have been developed to detect irregular financial behaviour based on publicly available information.

In Central Europe, four models are commonly used to analyse creative accounting practices. The CFEBT model was developed specifically for companies in Czechia, but has already been tested on Slovak companies. This method analyses the development of cash flow (CF) and earnings before tax (EBT) (Kovalová & Frajtová Michalíková, 2020), using the formula:

$$\mathrm{CFEBT} = \sum_{t=1}^{5} \left(\frac{\Delta \mathrm{CF}_t - \mathrm{EBT}_t}{\mathrm{EBT}_t} \right).$$

When the CFEBT exceeds the materiality threshold (typically 5-10%), there is an increased risk of distorting the true and fair view of financial reality. In such cases, it is necessary to analyse significant discrepancies between cash flows and financial performance, as these discrepancies may be caused by significant corporate investments.

The next method used to identify creative accounting is the Jones model and its variants. More details can be found in (Durana et al., 2022):

$$\frac{\mathrm{NDA}_{it}}{\mathrm{A}_{it-1}} = \alpha_0 \frac{1}{\mathrm{A}_{it-1}} + \alpha_1 \frac{\Delta\mathrm{REV}_{it} - \Delta\mathrm{REC}_{it}}{\mathrm{A}_{it-1}} + \alpha_2 \frac{\mathrm{PPE}_{it}}{\mathrm{A}_{it-1}} + \varepsilon_{it},$$

where: NDA_{it} – non-discretionary accrual in year *t*,
TA_{it} – total accrual in year *t*,
A_{it-1} – total assets in year *t*–1,
ΔREV_{it} – annual change in revenue in year *t*,
ΔREC_{it} – annual change in receivables in year *t*,
PPE_{it} – long-term tangible assets in year *t*,
$\alpha_0, \alpha_1, \alpha_2$ – coefficients,
$\varepsilon_{\mathrm{it}}$ – prediction error.

The last two models were developed by Beneish, who established the standard 5-parameter model and later extended it to the 8-parameter model (Durana et al., 2022). The formula for the first model is:

$$\text{M-Score} = -6.065 + 0.823 \times \text{DSRI} + 0.906 \times \text{GMI} + 0.593 \times \text{AQI} + 0.717 \times \text{SGI} + 0.107 \times \text{DEPI}.$$

The formula for the 8-parameter model is:

$$\text{M-Score} = -4.84 + 0.92 \times \text{DSRI} + 0.528 \times \text{GMI} + 0.404 \times \text{AQI} + 0.892 \times \text{SGI} + 0.115 \times \text{DEPI} - 0.172 \times \text{SGAI} + 4.679 \times \text{TATA} - 0.327 \times \text{LVGI},$$

where: DSRI – days' sales in a receivable index,
GMI – gross margin index,
AQI – asset quality index,
SGI – sales growth index,
DEPI – depreciation index,
SGAI – sales, general and administrative expenses index,
LVGI – leverage index,
TATA – total accruals to total assets.

The classification rule for these models was set by Beneish at –2.22, which is the boundary between manipulation and non-manipulation. If the resulting M-score is below this value, there has been no manipulation of the financial statements in the accounting period.

Beneish (1999), the author of the two models mentioned above, justifies each financial ratio and its evolution over time as follows:

- DSRI – measures the year-on-year change in receivables relative to sales. An increase in the DSRI may indicate a change in credit policy or an excessive increase in receivables relative to sales, increasing the likelihood of overstatement of sales.
- GMI – a decline in gross margin worsens a company's outlook. Beneish hypothesised a positive relationship between GMI and earnings manipulation.

- AQI – a value greater than 1 indicates deferred expense recognition (e.g. suspension of depreciation). There is a positive relationship between AQI and earnings manipulation.
- SGI – high sales growth may indicate manipulation to achieve targeted earnings. A positive correlation is expected between SGI and earnings manipulation.
- DEPI – a value above 1 indicates an extension of the useful life of assets. A positive relationship with earnings manipulation is expected.
- SGAI – increasing SGA expenses relative to sales may signal a negative outlook. A positive relationship with earnings manipulation is expected.
- LVGI – a value above 1 indicates increasing financial leverage, often linked to debt covenants.
- TATA – a higher level of accruals signals a greater likelihood of earnings manipulation.

As most of the indicators are based on year-on-year changes, Beneish (1999) ensured that the data did not have extreme values by applying winsorisation at the 1% level to both tails.

If a particular variable was missing from the calculation (i.e. had a value of zero), the ratio was automatically replaced by 1 (neutral value) – this applied to AQI, DEPI, and SGAI. This assumption implies that Beneish considered a neutral benchmark value of 1 for each financial ratio. If a value exceeded this threshold, it was flagged as a potential indicator of earnings manipulation.

However, subsequent research using Beneish's models did not fully agree with this assumption, and thresholds for individual indicators have evolved. For example, Durana et al. (2022) set updated thresholds based on their empirical findings, as shown in Table 5.1.

Table 5.1. Cut-off scores for each indicator

DSRI	GMI	AQI	SGI	DEPI	SGAI	LVGI	TATA
≥ 1.46	≥ 1.19	≥ 1.25	≥ 1.61	≥ 1.077	≥ 1.041	≥ 1.111	≥0.031

Source: own processing based on (Durana et al., 2022).

Srbová and Pěta (2024) examined Czech companies with total assets of up to CZK 500 million and with annual turnover of up to CZK 1 billion. The dataset included only companies with complete financial statements for all the analysed years 2016-2018, providing a database of 4,515 companies.

The analysis showed that 74.33% of these companies used creative accounting practices to manipulate their financial results during the observed period, whilst 26.51% used these techniques consistently throughout the period, meaning that their financial statements showed signs of accounting manipulation. This distorts the true financial picture of the company.

The research compared these findings with the cut-off values for each indicator, as established by Durana et al. (2022). Table 5.2 presents the results of creative accounting practices based on the sub-criteria of the two evaluation approaches.

Table 5.2. Percentage of companies that exceed cut-off values – comparing two approaches

DSRI	GMI	AQI	SGI	DEPI	SGAI	LVGI	TATA	Approaches' authors
67.20	63.34	26.45	81.97	40.11	71.56	66.93	2.39	Beneish (1999)

31.87	49.94	16.39	17.21	31.85	67.13	42.83	81.44	Durana et al. (2022)

Source: (Srbová & Pěta, 2024).

There were significant differences in the identification of adjusted data depending on the specific indicators used. For example, while Durana et al. (2022) set a cut-off value of 1.61 for the sales growth index, Beneish (1999) consistently used a threshold of 1. In contrast, for the total accruals to total assets indicator, Durana et al. (2022) suggested that values above 0.031 indicate potential data manipulation, which differs from Beneish's method.

5.7. Conclusions

In general, the use of creative accounting techniques poses significant challenges and risks for all stakeholders. While the manipulation of financial statements may appear to provide a competitive advantage, in reality it has long-term negative consequences that can threaten the financial stability, credibility and even the very existence of a company. Business that engage in creative accounting run the risk of asset loss and financial instability. The distorted financial results can lead to a misallocation of resources, resulting in unsustainable financial decisions. If the legal threshold is crossed, companies may face heavy fines, lawsuits, or even criminal prosecution of those responsible. In addition, those that manipulate their financial statements may gain an unfair advantage over businesses that comply with accounting standards, thereby distorting market competition. In extreme cases, accounting scandals can lead to wider economic disruption, affecting not only individual companies but entire sectors and economies.

Creative accounting harms not only the company itself, but also external entities that rely on distorted financial information to make critical decisions. The negative effects also extend to public finances. If a company overstates expenses in a high-tax jurisdiction or inflates profits in low-tax jurisdictions, it can artificially reduce its tax liability, ultimately resulting in lower revenues for the state budget.

In addition to traditional approaches, modern technologies that were previously unavailable can now be used. The key advantage of these new tools is their efficiency, particularly in handling large volumes of data, which these methods can effectively process and analyse. When it comes to evaluating financial data from an external perspective, a study by Srbová and Pěta (2024) suggested that most companies in Czechia use some form of creative accounting techniques. More worrying findings were reported by Durana et al. (2022), who found that only 1 in 10 companies refrained from using such methods, indicating a widespread problem in financial reporting practices.

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