# Earnings Management. An overview of the relative literature

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## Abstract

This article aims to present a critical overview of the traditional studies in earnings management, focusing on the impact on the making decision process. This overview in the literature provides numerous aspects of this topic, in line with the firms' motivations. Earnings management procedure includes smoothing and opportunistic practices and illustrating accounting rules with a significant effect on accounting information quality. Several researchers have shifted their attention to real activities as a primary method or supplementary to accrual-based methods to obtain a complete view of the earnings management levels. Earnings management is considered an opportunistic instrument, and it can be part of the aggregate long-term business strategy. This review study provides some guidelines, to academics and professionals, in line with the models and the motivations that lead managers to engage in this procedure. This overview creates new research avenues enhancing the existing knowledge.

## 1 Introduction

In the world of business, accounting information plays a crucial role in the decision-making process. The reliable information is in line with the accounting framework compliance. However, companies have the ability to manage this information using accounting policies, affecting the quality of the accounting figures. The issue of earnings management is one of the most popular research topics in the field of accounting, with economic and social impact.

Several motivations by the side of policymakers are in line with the procedures which are followed in earnings management. The intention for this act is justified by the importance of accounting information as a common language between the business and the use of this information as a tool for making decision process. Li et al. (2021) characterizes earnings management "as one of the salient accounting anomalies," while the manipulation of earnings is connected with accounting fraud. Filip and Raffournier (2014) claim that earnings management can also be used as a tool to influence the execution of contracts between the firm and its stakeholders.

Perols and Lougee (2011) studied the relation between earnings management and financial statement fraud. The manipulation of financial statements is succeeded using discretionary accruals or committing fraud during the process of earnings management. Additionally, the issue of earnings management is connected with the corporate policy in various decisions fields such as acquisitions and mergers

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(Papathanasiou et al. 2021), the financing of investments, the capital structure choice, the participation in the capital market, and the "share behavior," the effort for penetration in new markets.

The personal motivations of CEOs constitute a significant parameter of the earning's management. A technical raise of corporate profitability enhances CEOs' position and reputation (Francis *et al*. 2008). The process of earnings manipulation is used in the normalization of fundamental accounting figures among the accounting periods, providing smoothing results. Nevertheless, the range of the manipulation level depends on the regulating framework, the auditor's ethics and the knowledge of accounting standards, and the ability to apply the accounting policies according to the desire of the management in line with accounting information disclosure.

Another significant aspect is the methodology in the estimation of the earnings manipulation. Several models were implemented to estimate earnings management using two approaches: accruals (Healy,1985; DeAngelo,1986; McNichols and Wilson,1988, Jones 1991) and real earnings (Roychowdhury, 2006). An issue for discussion is the separation of the accruals in discretionary and non – discretionary and the use of accounting policies for this purpose, while a significant part of the related literature focuses on the effect of the earnings manipulation level in the various financial figures such as the leverage level.

The scope of this paper is to present, with an analytical way, the aspects of the earnings management phenomenon. The start point of this presentation consists of the discussion relevant to the traditional models adopted in the measurement of the manipulation. An Essential part of this overview is the analysis in the second stage, where numerous studies investigate the linkage between earnings management and various financial figures. In essence, the majority of these approaches provide the corporate strategy in crucial economic issues for the firm's viability. Also, personal motivations from the side of the policymakers configure the level and the type of earnings management. Notably is the fact that the macroeconomic conditions (Johnson, 1999) affect the handling of accounting policies to establish the process of earning management. Kourdoumbalou (2017), provided a review of the proxies of the earnings management models. The study of the existing literature shows that the earnings management process is a fundamental tool used by policymakers in the building of the corporate strategy.

This paper attempts to concentrate the major research in the field of earnings management, providing all the aspects of this issue. The structure of this survey is organized as follows: Section 2 provides the fundamental definitions and theories, assumptions, and the traditional approaches in the establishment of earnings management models. Additionally, this paper highlights the expansion of research, emphasizing the second stage of analysis. A critical discussion of the literature findings is deployed in Section 3. Concluding remarks appear in Section 4.

# 2  Literature review

The structure of this section includes two stages of literature presentation. In the first stage, the discussion focuses on the classical approaches offering the knowledge of the fundamental theory and models in the field of earnings management. In essence, the above subsection provides the pioneers of the research in the topic of earnings management. In the second stage, the trend of the earnings management is justified by the motivations of the management. In the third stage of the literature presentation, the newest studies present a joint investigation in earnings management, where complex models with more than one stage analysis are established. In the second stage the motivations, for the manipulation of earnings constitute a highlight discussant issue.

### 2.1 Traditional studies

Earnings management constitutes one of the most widely discussed issues in the literature of accounting. Various reasons could illustrate the use of accounting policies in earnings manipulation. This review presents the traditional studies on the basis of accruals and real activities.

According to Healy (1985), the system of the extra bonuses in the salary of managers offers incentives for manipulation. In this case, managers attempt to manipulate the firm earnings to succeed the

highest bonus in their wage. Healy (1985) defined accruals as the difference between reported earnings and cash flows from operations. In this study, the comparison concerns the actual sign of accruals for a particular company and year with the predicted sign given the managers' bonus incentives. The results show that bonus schemes and performance plans configurate the level of earnings management significantly. DeAngelo (1986) investigated the hypothesis that managers engage in earnings management when they intend to convert a public-traded firm to a private entity. Managers attempt to manipulate the announced earnings downwards to reduce the buyout compensation. De Angelo (1986) developed an alternative model from the Healy (1985) approach. The major difference concerned the definition of non-discretionary accruals. For the investigated period (t), De Angelo used as non-discretionary accruals the previous year's observation (t-1). However, the fundamental hypothesis relevant to the non-discretionary accruals behavior (constant) is common in the two models. The reliability of these models depends on the non-discretionary accrual's behavior among the accounting years. McNichols and Wilson (1988) provided evidence that firms use income-decreasing accruals when the earnings are extremely high or low. Compared to other approaches, the added value of this research concerns the number of accruals involved in the establishment of a proxy for earnings management. According to McNichols and Wilson (1988), various economic factors affect the characteristics of total accruals, which create difficulties in the separation of discretionary and non–discretionary accruals. The composition of accruals with the highest contribution in earnings management includes a small number from discretionary accruals, such as the bad debt provisions. The residuals of bad debt provisions are the discretionary accrual proxy examined to detect earnings management levels in their sample.

A considerable amount of literature has been affected by the research conducted by Jones (1991). Jones demonstrated that investigations for import relief stimulate decreasing income accounting policies. This study's innovation was Jones's model, which was fundamental for subsequent modifications and alternative models. Jones attempted to recognize the accruals that cannot be subject to the discretion and estimate the portion of discretionary accruals. The model uses revenues and gross plant property and equipment (PPE) as non-discretionary figures. Revenues, as one of the selected variables, represent the firm performance and the effect of the economic environment, while the second variable (PPE) is connected with the non-discretionary part of the depreciation. Total accruals were calculated as the change in non-cash working capital before taxes payable less total depreciation expenses.

Dechow et al. (1995) evaluated four accrual-based detecting earnings management models (Healy,1985, DeAngelo, 1986, Jones,1991, Dechow and Sloan, 1991). The results of the comparison show non-significant differences in the case of random sample. The reliability of these models reduces in the case of samples presenting extreme financial performance. Dechow et al. (1995) provided a modification in the basic edition of the Jones model, offering more reliable results. This alternative approach adopts the assumption that the credit revenues could be used in the earnings manipulation process. Peasnell et al. (2000) compared the dynamic of the first Jones model with the modified model and introduced an alternative approach, namely the "margin model." This model uses working capital accruals instead of total accruals. The non-discretionary variables, which compose the non - discretionary part of the working capital, are total revenues and the changes of trade debtors. In the proposed model the accrual of depreciation is ignored, under the assumption of its limited effect in the process of earnings management. Additionally, the margin model separates the change in revenue term into two components, replacing revenues of the prior period with cash receipts.

Kothari et al. (2005) modified the Jones model to introduce the current value of ROA as an independent variable. This choice is based on the test of ROA using in an alternative way the current ROA (year t) and the ROA of the previous year (t-1). The results of these tests highlight the current ROA as the most reliable variable in the model. The proposed model adopts Dechow et al. (1995) 's finding relevant to the linkage of discretionary accruals with the firm performance. Also, this model includes the influences of the business environment, ignoring the factors which are in relation to earnings management. Comparing the introduced model with Jones (1991) and modified Jones (1995) model, Kothari et al. concluded that the performance-matched model could reduce type I errors under the condition that the partitioning variable of interest is associated with firm performance.

Dechow and Dichev (2002) attempted to estimate the period among the accruals and the corresponding cash flow, providing an additional measure of accrual quality. Accruals accounting uses assumptions and estimations to resolve this "gap." Inaccurate estimations negatively affect the quality of earnings. The estimation error results from the manipulation process of earnings or missing accounting information. Working capital accruals introduced in the model as the depended variable, while the group of the explanatory variables includes the operational cash flows for three continuing years (t-1, t, t+1), where consist the investigated period. The standard deviation of the regression residuals represents the proxy for the accrual's quality. Dechow and Dichev (2002) findings provide a positive relationship between accrual quality and earnings persistence. McNichols (2002) conducted a review of the Dechow and Dichev (2002) model and incorporated the Jones model variables to improve both tests. McNichols implied that the Jones model estimates discretionary accruals associated with cash flows and are possibly non-discretionary. Francis et al. (2005) extended the Dechow and Dichev (2002) model, attempting to separate accruals quality measure into innate and discretionary components and finally to examine their effect on capital cost. In order to estimate the effect of economic conditions on accruals quality, focused on five innate factors that are affected in the non-discretionary part of the accrual's quality. One of the tasks of Francis et al., study is to create the discretionary portion of the accrual quality proxy (Dechow and Dichev, 2002) which represents the management judgment on the earnings.

Stubben (2010) approached the issue of earnings management, focusing on a specific component of accruals. This research highlights the revenues as a measure in the earnings management estimation. The model employs the change of account receivables as a dependent variable regressed by the change of revenues in three first quarters of the year and the change of the last quarter. The residuals describe the discretionary revenues, which constitute the component of revenues that is the subject of managerial accounting policies. Stubben (2009) compared existing popular accrual models with the revenue model and concluded that the research model was presented better-specified and less biased than models that use the aggregate accruals. Dechow et al. (2012) focused on the case where a change of the accruals in the period t could be reversed in the period t+1. This study provides a dynamic of the earning management models to improve its reliability status by adding figures which estimate the manipulation level in the two periods: t and t+1. The nature of these variables contribute positively to the reliability of models, reducing the misspecifications connected with the existence of limited information relevant to the size of the non-discretionary accruals.

The issue of earnings manipulation is investigated effectively by the side of the real activities. In this case, the manipulation process affects the cash flows. The strategy of the firms focuses on the rise of sales using technics such as discount percentage and the credit lines extension. Additionally, other policies and tactics concern the overproduction and the reduction of administrative and R& D costs. The most popular model in estimating real earnings manipulations introduced by Roychowdhury (2006) and generates measures of sales manipulations, the overproduction and the adjustments on discretionary expenses. The first dimension of the proposed model concerns the measure of the sales manipulation level using as depended variable the operating cash flows in the current period and as independent variables the current amount of revenues and the change of them between the period t and t-1. The proxy of abnormal operational cash flows, is the residuals of the function which is described above. The second dimension of the Roychowdhury defines as depended variable the production cost, while the group of independent variables include current revenues, the change of revenues between current and prior year, and the changes of revenues between the year t-2 and t-1. The third dimension of the model defines as dependent variable the discretionary expenses and as independent variable the current revenues. The proxy of abnormal operational cash flows, is the residuals of the three functions which are described above. Concluding the above theoretical framework, we have to emphasize in three specific issues.

First of all, total accruals can be estimated either with the balance sheet method3 or with the cash flow statement method4. Hribar and Collins (2002) supported that the balance sheet method may lead to

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[3] The change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization

errors and biased outputs when non-operating events occur. This misspecification of the balance sheet approach stems from the fact that these events, such as mergers and divestitures, affect the current asset and liabilities but are not reflected in the income statement. In essence, the changes in the balance sheet are faultily considered as accruals influencing the estimation of total accruals.

Secondly, the estimation of earnings management has been developed through time-series or cross-sectional procedures. Peasnell et al. (2000) implemented cross-sectionally the Jones and modified Jones model and concluded that it performed well-specified in a random sample. Bartov et al. (2000), comparing time-series and cross-sectional models, demonstrated that cross-sectional perform better than time series models and offer additional advantages. The cross-sectional processes outperform time-series in the sample selection because time-series models often exclude short-history firms. Moreover, time-series models require larger size samples; otherwise, survivorship bias may influence the provided results.

At last, according to Roychowdhury (2006) model, the proxy for sales manipulation is the abnormal level of cash flows from operations. Many studies (Zang,2012; Anagnostopoulou and Tsekrekos,2017; Ali and Zhang, 2015) often omit this model and employ only the other two measurements because overproduction and sales increases negatively affect CFO while decreases in discretionary expenses have a positive impact and, on aggregate the net effect on CFO is ambiguous.

Finally, Table 1 presents the models and summarizes the specific characteristics of them.

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[4] Earnings before extraordinary items minus operating cash flows

*Ioannis Dokas et al.*

Table 1: Earnings management models

| *Accrual-based earnings management models* | | | | |
|---|---|---|---|---|
| *Non-regression estimation models* | | | | |
| *Model type* | *Study* | *Assumptions* | *Characteristics* | |
| Total accruals | Healy (1985) | 1. Non-discretionary accruals are constant.<br>2. Discretionary accruals' mean equals zero in the estimation period. | Non-discretionary accruals | Means of total accruals of the estimation period (scaled by total assets in period t-1) |
| Total accruals | DeAngelo (1986) | 1. Non-discretionary accruals are constant.<br>2. Under the null hypothesis of no earnings management, the change of total accruals is zero | Non-discretionary accruals | Total accruals of the prior period |
| *Regression estimation models* | | | | |
| *Model type* | *Study* | *Assumptions* | *Characteristics* | |
| | | | *Dependent variable* | *Independent variables* |
| Specific accrual | McNichols and Wilson (1988) | Single accrual approaches can isolate the non-discretionary components more efficiently than total accrual models. | Provisions in period t (deflated by sales in period t) | • Beginning balance in the allowance for bad debts in period t<br>• Write-offs for period t<br>• Write-offs for period t+1<br><br>*All variables are deflated by sales in period t |
| Total accruals | Jones (1991) | 1. Non-discretionary accruals are non-constant<br>2. The model identifies non-discretionary accruals to separate them from the discretionary component of total accruals | Total accruals in year t (deflated by total assets in year t-1) | • Change in sales between year t and t-1<br>• Property plant & equipment in year t<br><br>*All variables are deflated by total assets in year t-1 |
| Total accruals | Dechow et al. (1995) (or modified Jones model) | The credit revenues can be used in the earnings manipulation process | Total accruals in year t (deflated by total assets in year t-1) | • Change in sales between year t and t-1 minus change in credit revenues between year t and t-1.<br>• Property plant & equipment in year t<br>*All variables are deflated by total assets in year t-1) |
| Working capital accruals | Peasnell et al. (2000) | 1. Working capital accrual models can be more powerful in cases of earnings management through working capital accounts.<br>2. Excludes depreciation because of its limited effect in the process of earnings management | Working capital accruals | • Revenues<br>• Total revenues minus the change in debtors |

| Total accruals | Kothari et al. (2005) | Return on Assets variable controls for the effect of performance on the discretionary accruals. | Total accruals in year t (deflated by total assets in year t-1) | • Change in sales between year t and t-1.<br>• Property plant & equipment in year t<br>• Return on Assets in year t or t-1.<br><br>*All variables are deflated by total assets in year t-1 |
|---|---|---|---|---|
| Working capital accruals | Dechow and Dichev (2002) | Accruals are temporary estimations and assumptions that resolve the timing gap between the revenues (or expenses) and the corresponding cash flow. The estimation errors affect the earnings quality. | Change in working capital in period t | • Cash flows from operations in period t-1<br>• Cash flows from operations in period t<br>• Cash flows from operations in period t+1<br><br>*The standard deviation of regression residuals is the proxy for accruals/earnings quality |
| Working capital accruals | McNichols (2002) | The incorporation of Jones model variables in the Dechow and Dichev model can improve both models' power. | Change in working capital in period t | • Cash flows from operations in period t-1<br>• Cash flows from operations in period t<br>• Cash flows from operations in period t+1<br>• Change in sales between year t and t-1<br>• Property plant & equipment in year t |
| Working capital accruals | Francis et al. (2005) | Accruals quality can be separated into innate and discretionary. The discretionary component of accruals quality stems from management accounting policies. | The standard deviation of the residuals of the McNichols model | • Size of the firm-Log of total assets<br>• Revenues<br>• Length of operating cycle (log of the firm's operating cycle),<br>• The number of years where the firm reported negative earnings |
| Specific accrual | Stubben (2010) | Revenues are a large component of earnings and is a common means of earnings manipulations | Change of account receivables | • Change of revenues in the three first quarters of the year<br>• Change of revenues of the last quarter of the year |
| Working capital accruals | Dechow et al. (2012) | A change of the accruals in a period t can be reversed in a future period. | Non-cash working capital accruals | • Dummy variable that (1 in a period during which a hypothesized determinant of earnings management is present and 0 otherwise<br>• dummy variable ( 1 in the first year following an earnings management year and o otherwise)<br>• Dummy variable (1 in the second year following an earnings management year and o otherwise)<br>• Control variables for non-discretionary accruals |
| **Real earnings management models** | | | | |
| *Model type* | *Study* | *Assumptions* | *Characteristics* | |
| | | | *Dependent variable* | *Independent variables* |
| Real activities | Roychowdhury (2006) | Temporary increase of sales leads to an increase in profits and affects the cash flows from operations | Cash flow from operations in year t | • Sales in year t<br>• Change of sales between year t and t-1<br><br>*All variables are deflated by total assets in year t-1 |

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|---|---|---|---|---|
| | | Decrease in production cost through overproduction can increase the earnings | Production cost in year t | • Sales in year t<br>• Change of sales between year t and t-1<br>• Change of sales between year t-1 and t-2<br><br>*All variables are deflated by total assets in year t-1 |
| | | Reduction of discretionary expenses (R&D, selling, general and administrative, advertising expenses) increases earnings. | Discretionary expenses in year t | Sales in year t-1 (deflated by total assets in year t-1) |
| Real activities | Gunny (2010) | Four types of real activities manipulation<br>1. Decreasing discretionary R&D expense<br>2. Decreasing discretionary SG&A expense<br>3. Timing the sale of fixed assets to report gains<br>4. Overproduction reflecting an intention to cut prices or extend more lenient credit terms to boost sales and/or overproduction to decrease COGS expense | R&D expenses in period t | • Natural logarithm of market value in period t<br>• Tobin's Q in period t<br>• Internal funds in period t<br>• R&D expenses in period t-1 |
| | | | Selling, general & administrative expense | • Natural logarithm of market value in period t<br>• Tobin's Q in period t<br>• Internal funds in period t<br>• Change of revenues between period t and t-1<br>• Change of revenues between period t and t-1 multiplied by an indicator variable(equals 1 when total sales decrease between t-1 and t, and zero otherwise) |
| | | | Income from asset sales | • Natural logarithm of market value in period t<br>• Tobin's Q in period t<br>• Internal funds in period t<br>• Sales of long-lived assets<br>• Sale of long-lived investment |
| | | | Production cost (COGS plus change of inventories) | • Natural logarithm of market value in period t<br>• Tobin's Q in period t<br>• Revenues<br>• Change of revenues between period t and t-1<br>• Change of revenues between period t-1 and t-2 |

**2.2 Motivations of earnings management**
The manipulation of the earnings is based on subjective illustrations of the accounting rules and standards. In this subsection, the discussion focuses on the motivations for earnings manipulation according to the findings of the literature.

**2.2.1 Stock market incentives**
The behavior of investors and shareholders to the announcement of firms' financial statements, associated with the issue of earnings management, has been a challenging area for research. Cormier and Martinez (2006) investigated the impact of forecasts on earnings management decisions of French firms in the year after a public offer. The findings indicated a more intense income manipulation in firms that announced forecasts contrary to the other firms. Beyer (2009) verified the effect of management forecasts and provided evidence that managers adopt earnings management procedures to mitigate the forecast errors and avoid being classified as a risky investment by the markets. Notably is the fact that the markets define additional benchmarks to evaluate the investments. Cohen et al. (2009) and Gunny (2010) claimed that managers engage in real earnings management tactics to meet benchmarks (e.g., the prior year's earnings, zero profits) in the attempt to influence the stakeholders' predictions for the future performance.

Theo et al. (1998) concentrated on earnings management levels around an initial public offer (IPO) and the post IPO stock return performance. The research results suggested that firms that took part in an initial public offer presented higher discretionary accruals than private firms. Also, in the three following years after the IPO, the firms with high discretionary accruals show poor stock return performance. Previous studies (Rangan (1998); DuCharme et al., 2001; Armstrong et al., 2015) stated a negative relation between discretionary accruals and earnings and subsequent stock price performance after a public offer. High profitability leads markets to overvalue firms before a public offer event. Subsequently, considering the reverse of discretionary accruals, investors and market regulators restate the firm value to the fair levels, decreasing the stock price. However, Gao et al. (2017) provided evidence that institutional investors could detect earnings management in the period before an initial public offer (IPO) and could react accordingly to press the offering price to lower levels.

Managers often attempt to reduce the announced profits in order to affect the investors negatively. The scope of this activity is the establishment of a "personal portfolio" with low cost by the side of managers. DeAngelo (1986) conducted research that examined 64 firms during a buyout period but did not find significant results to support the hypothesis. However, numerous studies (Perry and Williams ,1994; Wu,1997; Marquardt et al.,2004; Fisher and Louis,2008; Ang et al., 2010) verify the systematic income decreasing manipulation. Mao and Renneboog (2013) demonstrated that firms during a buyout conduct income decreasing manipulation processes using not only creative accounting methods but also adjustments on real activities.

The corporate strategy in the field of mergers and acquisitions affects the decision of the managers to manipulate the earnings. The intensity and method of earnings management depend on the nature and characteristics of the transactions. Erikson and Wang (1999) and Louis (2004) and Botsari and Meeks (2008), examining acquiring firms involved in stock-for-stock takeovers, concluded that they manipulate their profits upwards during the period before the transaction's announcement to increase their firm's stock price and reduce the cost of the merger. According to Higgins (2013) findings in a sample of Japanese acquirer firms, the manipulation process could be succeeded using abnormal long-term accruals such as decreases of depreciation/amortization and extraordinary gains or losses which derive from sales of assets. Chang and Pan (2020) examined the real earnings management behavior during the pre-merger period and demonstrated that stock-for-stock mergers' acquirers engage in real earnings management, presenting unusually high credit sales levels and overproduction. Several studies (Erikson and Wang,1999; Koumanakos et al.,2005) focused on the study of earnings manipulation in cash takeovers providing non-significant findings.

Regarding target firms, according to Easterwood (1998), target firms overstate their earnings during the quarter before the merger initiation. Notably, in the case of hostile takeovers, the target firms show a high manipulation level in order to increase their profits. On the contrary, the results show low

manipulation levels in the case of firms that were involved in friendly takeovers. Similar results are provided by Anagnostopoulou & Tsekrekos (2013,2015) for firms that wish to be acquired which manipulate their earnings downwards to facilitate the transaction or signal a future potential for income-increasing earnings management.

### 2.2.2. Revealing or concealing private information

Trueman and Titman (1988) described earnings management as an effort from the side of a firm to enhance its dynamic in the markets, especially toward potential investors. In essence, this research studied the informative aspect of earnings management, demonstrating that keeping earnings in stable growth and mitigating the fluctuations with the prior period's figures (smoothing) can inform investors for the future, increasing profitability. This action permits the firms to exhibit an underlying economic value and influence the stakeholders' decisions more efficiently than firms with profitability variations. Rosner (2003) suggested that firms with severe sustainability problems conduct manipulation procedures intending to reconcile information that would manifest poor financial performance. In their empirical research, Tucker and Zarowin (2006) suggested that the currents stock prices include more information about the future profits in firms that engage in larger-scale smoothing policies than in other firms. Campa (2019) demonstrated that listed and unlisted firms, during the period of financial distress, embark on income-increasing earnings management practices through real activities on a larger scale than the accrual-based methods. Also, listed firms are shown to engage in earnings management more aggressively, especially in cases where the leverage is high.

### 2.2.3 Regulations and Political costs

Another significant point in the study of the earnings management phenomenon is the general economic and legal framework where the firms develop their activities. Earnings management strategies can mitigate the consequences of undesirable conditions and relieve firms from government controls, taxes, restrictions, or take advantage of favorable legislation directly correlated with earnings.

Jones (1991) claimed that firms attempt to decrease their earnings to benefit from import relief or increase the amount of relief granted. Cahan (1991) confirmed the political-cost hypothesis by finding evidence that firms, under the threat of government investigation for monopoly policies, present significant income-decreasing accruals. Key (1997) investigated the political cost theory in the sector of cable television and found evidence that firms used discretionary accruals to decrease their earnings and mitigate political control and regulations. Cahan et al. (1997) examined the relation between earnings management and environmental legislation, using the firm's data from the chemical sector. According to the findings, these firms engaged in income-decreasing discretionary accruals to avoid financing a superfund, which would be a high additional cost. Hall and Stammerjohan (1997) investigated the behavior of firms in the oil industry. Their findings showed a trend to reduce the long -term accruals in order to provide low profitability. The scope of this strategy is the reduction of the expenses which are created by legal procedures.

The mandatory adoption of IFRS in the majority of the firms directly affects the earnings management motivations. Callao and Jarne (2010) demonstrated that European firms presented increased discretionary accruals after adopting IFRS. This increase is justified by the discrepancies between national and international accounting standards, while the flexibility in the illustration of the IFRS framework plays a significant role. Karampinis and Hevas (2013), using evidence from Greece, examined the effect of IFRS adoption in the earnings management procedure. This research provided a direct linkage between taxable and financial profits. The findings indicated that tax-pressure was a significant reason why firms engaged in limited earnings management activities during the pre-IFRS period. The adoption of IFRS reduced the level of tax-conformity, disconnecting the financial and tax earnings. Other studies (Zeghal et al.,2011; Zeghal et al.,2012, Houge et al.,2012 ) provided evidence that the implementation of IFRS contributes to the improvement of earnings quality, while others (Jeanjean and Stolowy, 2008; Doukakis,2014) noticed no significant impact on earnings management level.

### 2.2.4 Private benefits of managers

Another side of the earnings management, is connected with the personal motivations of the management members. Managers often take advantage of their power to adjust the financial reports for their benefit. Prior studies (Healy,1985; Gaver et al.,1995;) concentrated on the linkage between bonus plans and discretionary accruals and concluded that managers embark on earnings management (upwards or downwards) considering the maximization of their current or future bonus compensations. Bergstesser and Philippon (2006) demonstrated that earnings management figures are higher in firms that adopt a CEO compensation plan linked with the stock price performance. Bartov and Mohanram (2004) and Bergstesser and Philippon (2006) examined stock-options as an award to CEOs. They inferred that periods of high accruals present simultaneously selling stock activity and exercising options by CEOs and other executives.

According to Easterwood (1998), managers, in order to secure their professional place in the company, intervene in takeovers overstating the earnings to convince the shareholders for strong future earnings performance. Eddey & Taylor (1999) examined the same hypothesis without finding significant results to support the relation between unexpected accruals and the director's recommendations. Wells (2002) found weak empirical evidence about abnormally high discretionary accruals during the period before and after the CEO change. However, Wells found robust results indicating that incoming CEOs undertake income-decreasing earnings management. Kalyta (2009) suggested that managers engage in income-increasing manipulation during the period preceding retirement when pension depends on the pre-retirement earnings performance. Ali & Zhang (2015) showed that incoming CEOs adopt intense income-increasing earnings management policies during the early years of their tenure to convince the markets of their abilities. However, Hu et al. (2015), examining Chinese firms, concluded that managers at the early years of their tenure present limited earnings management activity while the subsequent few years undertake more aggressive manipulation procedures. Finally, when they have reached the peak of the earnings management scale, they are more conservative.

### 2.2.5 Lending contracts

The choice of earnings management, as "unofficial" corporate strategy, often concerns a practice for the maintenance of the firms' financial status that is in line with a viable profile, offering collaterals in their creditors. A strong incentive for managers to adjust the announced income statements is their effort to avoid additional costs as a result of desirable behavior by creditors.

Defond and Jiambalvo (1994), Sweeney (1994) confirm the manipulation by companies that have violated creditors' clauses. Dichev and Skinner (2002) verified that managers resort to using specific financial and accounting policies to avoid a breach of creditors' terms. Prior studies (Anagnostopoulou, 2017; Bharath, Sunder & Sunder, 2008; Grahan, Li, and Qiu, 2008) indicate that banks can detect the accrual earnings management and financial statements quality and incorporate the associated risk in the terms and pricing of loan contracts. Pappas et al. (2019) investigated that, rather than the difficulty in detecting real earnings management, banks have the mechanisms to recognize the existence of manipulation of real activities. Consequently, this has an impact on interest spreads, maturity, and the requirement of collaterals. Also, recently, Premti and Smith (2020) investigated the characteristics of firms that are more prone to undertake earnings management practices during the pre-IPO period. The research findings indicated that the higher level of leverage is one of the most significant factors that mitigate pre-IPO earnings management levels.

Table 2:  provides a synopsis in the relative literature.

Table 2: Synopsis of the Literature

| Incentive | Studies | Number of Studies |
|---|---|---|
| Stock market incentives | Cormier and Martinez (2006), Beyer (2009), Cohen et al. (2009), Gunny (2010), Theo et al. (1998), Rangan (1998), DuCharme et al. (2001), Armstrong et al. (2015), Gao et al. (2017), DeAngelo (1986), Perry and Williams (1994), Wu (1997), Marquardt et al. (2004), Fisher and Louis (2008), Ang et al. (2010), Mao and Renneboog (2013), Erikson and Wang (1999), Lous (2004), Chang and Pan (2020), Bootsari and Meeks (2008), Koumanakos et al. (2005), Easterwood (1998), Anagnostopoulou & Tsekrekos (2013), Anagnostopoulou & Tsekrekos (2015), | 24 |
| Revealing or concealing private information | Trueman and Titman (1988), Rosner (2003), Tucker and Zarowin (2006), Campa (2019) | 4 |
| Regulations and Political costs | Jones (1991), Cahan (1991), Key (1997), Cahan et al. (1997), Hall and Stammerjohan (1997), Callao and Jarne (2010), Karampinis and Hevas (2011) | 7 |
| Private benefits of managers | Healy (1985), Bergstesser and Philippon (2006), Barton and Mohanram (2004), Kalyta (2009), Ali & Zhang (2015), Eddey & Taylor (1999), Hu et al. (2015) | 7 |
| Lending contracts | Defond and Jiambalvo (1994), Sweeney (1994), Dichev and Skinner (2002), Anagnostopoulou (2017), Bharath et al. (2008), Grahan et.al (2008), Pappas et al. (2019), Premti and Smith (2020) | 8 |

## 2.3 Expansion in second stage analysis

Several studies expand the research queries, attempting to investigate the issue of earnings manipulation relevant to other economic factors with a significant effect on the firm's financial status. The discussion bellow, concerns issues such as initial and seasoned public offers, mergers and acquisitions, IFRS, CEO private benefits, firm debt, corporate governance and cultural factors. The second stage models employ the earnings management proxies as dependent variable or as a determinant of other examined variables. The model reliability is enhanced by other control variables which affect earnings management and concern firm characteristics such as corporate governance, auditor firms, leverage, growth and size. Each model's variables are elaborated in Table III.

### 2.3.1  Issue for examination: Public offers (IPO and SPO)

The IPO behavior constitutes an interesting research topic in the fields of accounting and finance (Kenourgios et al. 2007). Theo et al. (1998) examined the relation between earnings management policies during the year of an IPO and the subsequent stock return underperformance. The empirical model focuses on the association between buy-and-hold return during the post-IPO three years and current and long-term discretionary accruals. The findings suggested a negative relation between post IPO underperformance and current discretionary accruals. In essence, firms that are susceptible to income-

increasing accounting policies during the period preceding the IPO present lower stock return performance during the post-IPO period.

Similarly, Rangan (1998) focused on the earnings management behavior around a seasoned public offer and its effect on the earnings and stock return performance. To test this hypothesis, Rangan regressed the change of ROA for the three years following the offering on the discretionary accruals. The results of this empirical approach indicated that the discretionary accruals negatively affect the subsequent earnings performance. The research also focused on earnings management's effect on the stock return in the year after the SPO. Rangan (1998) found robust results about the negative relation between discretionary accruals and stock return. On aggregate, the market, considering the reduced earnings, perceives the earnings management in the seasoned offering year and evaluated the stock prices.

The effect of issuing an IPO forecast investigated by Cormier and Martinez (2006). The findings indicated significantly higher discretionary accruals in the year following the IPO for firms that announced forecasts than in non-forecast firms. According to the findings of this work, the level of earnings management is low for the firms that announced lower than expected earnings. The status of the corporate government, the ownership, the IFRS compliance and the size of the auditor (i.e., big 4) play a significant role in the manipulation level of the earnings. The findings suggested that scrutiny by big4 auditors and concentrated ownership can limit the income-increasing manipulation activities. However, no significant results were found for the board's independence and compliance with accounting standards.

Gao et al. (2017) stated the hypothesis whether the institutional investors' bid prices are negatively affected by earnings management during the pre-IPO period. The research suggested the weighted average of all bid prices submitted by all institutional investors and the market-clearing price of all bids submitted by institutional investors as dependent variables representing the investors' behavior regressed by earnings management proxies. The study results verified the hypothesis that accrual-based earnings management is significantly negatively related with institutional investors' bid prices. Regarding real earnings management the findings were weak, probably because of the difficulty in detecting real earnings management.

Premti and Smith (2020) focused on the characteristics that discourage or lead firms to pre-IPO earnings management procedures. The proposed model employs discretionary accruals of the IPO period and a period before the IPO as dependent variables regressed by a team of explanatory variables representing the pre-IPO earnings management determinants. The results of this stage render the level of leverage, venture capital funding, and the national rule of law as factors that can limit the earnings management procedures in the pre-IPO period. Additionally, the study examined the relationship between a future return to the market for additional capital and earnings management. In particular, the model introduced an indicator for firms that return to the market in the subsequent IPO two years as a dependent variable. This variable is regressed by discretionary accruals and firm, industry, and country characteristics control variables. The results designated a significant negative association between discretionary accruals and the dependent variable, indicating that firms that presented high earnings management levels during a pre-IPO period are less likely to return to the market because of a potential need for additional capital.

The above studies provide a significant earnings management status in the pre-IPO or SPO period. In second stage these studies attempt to investigate the subsequent earnings and stock performance to determine the consequences of the earnings management strategies.

### 2.3.2  Issue 2: Mergers and acquisitions

Erickson and Wang (1999), implementing Jones (1991) model with quarter and year indicators, demonstrated that the quarter before the merger, acquiring firms engage in income-increasing earnings management procedures. Furthermore, examined the relationship between discretionary accruals and economic incentives that lead managers to conduct a merger. The deal size found to be significantly positively related to discretionary accruals and management ownership as well, but not statistically significant.

Eddey and Taylor (1999) examined hypothesis whether the directors who recommend the acceptance (or rejection) of a takeover bid, proceed to income decreasing (or increasing) earnings management to influence the shareholders to accept (or reject) a bid. A logistic regression model was employed to estimate the effect of unexpected accruals on the directors' recommendation. The model also includes as an explanatory variable a measure for the bid premium which is calculated as bid price over target price minus one. The empirical results did not support the association between unexpected accruals and recommendations, but presented a significant positive relation with the bid premium.

Louis (2004) examined the post-merger market reaction in response to acquiring firms' accounting earnings manipulations. In particular, the research explains the stock return underperformance in the period following the merger announcement. The proposed regression model emphasizes the association between the abnormal short-term and long-term stock return with the magnitude of discretionary accruals during the pre-merger period. The results indicate that there is a significant negative correlation between short- and long-term stock return with the abnormal discretionary accruals of the period preceding the merger announcement. This fact attributes to the market's difficulty to fully observe the earnings management procedures before the merger announcement. Also, the long-term stock return underperformance stems partially from the reversals of the effect of income-increasing earnings management.

Anagnostopoulou and Tsekrekos (2013), investigated earnings management behavior of firms that seek to be acquired and the stock performance around the announcement regarding the intention for an acquisition. Having provided evidence for significant negative discretionary accruals in the period around the announcement, the study focused on the effect of discretionary accruals on the abnormal stock return. The findings stated that discretionary accruals are positively related to abnormal stock return during the period around the announcement for seeking a buyer. In essence, the markets are shown to perceive the downward earnings manipulation as a signal of firm operational malfunctions, which leads to deteriorating stock performance. An extension of this research was the recognition of the characteristics of firms which are susceptible to earnings management during the period of an announcement for their intention to be acquired. Anagnostopoulou and Tsekrekos (2015) examined the association of discretionary accruals with variables related to financial, auditing, and governance firm characteristics. In line with the results, seeking-acquirer firms' major features are poor earnings performance and low sales growth. Additionally, Anagnostopoulou and Tsekrekos also investigated whether earnings management affects the decision of an announcement for seeking a buyer by using discretionary accruals as the primary explanatory variable in a logit regression model to define its impact on the firm decision to seek an acquirer. The findings of this stage provided robust negative relation between discretionary accruals and the decision of seeking a buyer, which points out that downward earnings management constitutes a significant characteristic of firms that decide to be available for acquisition. The third research part examines the impact of earnings management on the conclusion of a potential takeover, employing a dummy variable representing the outcome of the seeking-a-buyer announcement as a dependent variable. This stage results provide evidence that candidate acquirers, considering the earnings management level, tend to prefer firms that present limited earnings management activities.

The studies which research the earnings management behavior during a merger or acquisition deal examine the period close to the announcement of the deal to report signals of manipulations. Similarly, to other researches, the second stages focus on defining the factors that influence the decisions of shareholders and explore the market reaction and firm performance after the event of the takeover.

### 2.3.3 Issue 3: Leverage
Several studies attempt to provide the linkage of earnings management procedure with the firms' leverage. Anagnostopoulou and Tsekrekos (2017) find a significant positive impact of leverage on real earnings management and a non-significant relation on accrual-based manipulation. The results suggest a significant complementarity effect between AM and unexpected RM levels for the highly levered firms. In essence, this fact can be interpreted that firms with higher levels of debt combine the two earnings management methods. Pappas et al. (2019) investigated the impact of real earnings management on the

loan contract terms such as interest rate, the loan's maturity, the collateral requirements, and the number of financial covenants required by a loan contract. The results point out that real earnings management proxies are significantly positively related to interest rate, financial covenant intensity, and the likelihood of collaterals and significantly negatively with maturity. Overall, the findings indicate lenders' potential to detect the manipulations of real activities and react accordingly, imposing stricter terms to the borrowing firms. Campa (2019) investigate the earnings management behavior of financial distressed listed and unlisted firms. The research model introduced a proxy for the financial situation of the examined firms constructed by Altman's Z-score, which separated the sample into three groups in accordance with their score. The results indicate that, during the period of financial difficulties, firms engage in more intense real earnings management practices, probably because the adjustments of real activities are detective more difficult. Also, the listed firms are shown to manipulate their income statement more aggressively than unlisted, especially when they present higher leverage levels. Thanh et al. (2020) examined the association between accrual-based earnings management and debt ratio in Vietnamese listed firms. The results demonstrated a non-linear effect of debt ratio on earnings management. In particular, defining two debt ratio thresholds, firms that exceed the upper threshold are less susceptible to earnings management than firms that present a below the low debt ratio threshold.

The orientation of recent studies is to utilize more systematically real earnings management models to investigate the impact of leverage on firm's earnings reporting strategies, considering the fact that real activities manipulation is more difficult detected in contrast with accrual-based practices.

### 2.3.4 Issue 4: CEO benefits
Bergstresser and Philippon (2006) investigated the intensity of accrual-based earnings manipulation in firms that adopt a CEO compensation system that is directly linked with stock prices and option holdings. The proposed model focuses primarily on the relation between the absolute value of total (or discretionary) accruals as dependent value and the percentage of a point increase in the value of equity of the CEO's firm, representing the incentive of the CEO as the main explanatory variable. The finding verified the positive relationship between discretionary accruals and the incentive proxy, which suggests that increases in CEO's benefits can lead to extensive use of accounting policies to manipulate earnings accordingly.

Kalyta (2009) examined the impact of CEO retirement plans on accrual-based earnings management behavior. The study emphasized the horizon problem associated with the CEOs' behavior on the firm's reported profitability during the year before their retirement and concentrated on the relationship between discretionary accruals and variables that represent observations that belong to the determination period close to retirement and observations that concern the last year prior to CEO's retirement. The results indicated a positive association between discretionary accruals and horizon problem, only when the CEOs' pension is linked with the earnings performance and provided evidence that the horizon problem emerges earlier than the final year prior to retirement.

Ali and Zhang (2015) investigated whether CEOs engage in earnings management more intensively during the early years than the later years of their tenure. The employed models examined the effect of an indicator that concerns the early years of the CEO tenure on real and accrual-based earnings management proxies. The results performed a significant positive coefficient of the early-year indicator, which points out that CEOs use income-increasing accounting policies systematically during the early years of the tenure. Furthermore, abnormal discretionary expenses are shown to be significantly negatively correlated with the early-year indicator. In other words, during the starting period of their tenure, the CEOs engage in decreasing discretionary expenses to inflate the reported earnings.

Hu et al. (2015) investigated the impact of managers' tenure on firm earnings management activities. To estimate the effect of tenure on earnings management, the research model contains a linear term of the years that the CEO keep their job (tenure), and a nonlinear term, the square of tenure. The findings designated a significant negative coefficient of square tenure variable, with all earnings management proxies. In essence, during the early years of their tenure, the managers are conservative regarding their earnings management behavior. During the next few years, they engage in earnings

manipulation more intensively, and in the last years, they use earnings management policies less aggressively because of the accrual reversals.

### 2.3.5 Issue 5: Tax pressure

Karampinis and Hevas (2013) studied the effect of IFRS adoption on Greek firms' earnings management behavior. The separation of accounting and taxable income had a positive impact relevant to the tax pressure on accounting reporting. The research regards the pre-IFRS tax pressure as a crucial reason for the limited upward earnings manipulation activities. The proposed model focused on the effect of tax pressure variable (current tax over the operational cash flows) on discretionary accruals. The findings indicated that the tax pressure is negatively related to discretionary accruals in the pre-IFRS period, while in the case that the tax pressure is high, the firms avoid manipulating their earnings upwards. On the contrary, in the post-IFRS period, the effect of tax pressure seems to be weaker because of the changes in book-tax compliance imposed by the IFRS.

### 2.3.6 Issue 6: Related Party Transactions

El-Helaly et al. (2018) searched a potential linkage between related party transactions and earnings management and whether these transactions can constitute an alternative procedure of income statement manipulation. The main independent variable of interest is a dummy variable which equals one for firms that presented related party transactions in the examined year and exceeded 1% of total assets, otherwise equals zero and the model was implemented for real and accrual-based earnings management proxies as dependent variables. The real earnings management proxies were found to be negatively associated with related party transactions, which indicates that firms that involve in these transactions are less likely to undertake real earnings management. Regarding discretionary accruals, the findings show no significant relation with related party transactions.

### 2.3.7 Issue 7: The concentration degree in the market

El Diri et al. (2019) investigated the real and accrual-based earnings management intensity in concentrated and non-concentrated markets and the effect of corporate governance on the earnings management procedures. The research's first stage demonstrated a more intense accrual and real earnings management behavior in concentrated markets than in non-concentrative. The second stage focused on a constructed corporate governance index that incorporates the tenure, the qualifications, and the independence of the firm board. The findings verified a weaker impact of corporate governance on earnings management in concentrated markets than in non-concentrated. This fact could be attributed to the higher information asymmetry and the power of managers of concentrative industries, which allow them to engage in more aggressive earnings management policies.

Newest studies attempt to investigate qualitative issues such as the religious and cultural aspects associated with accounting and real activities manipulations.

### 2.3.8 Issue 8: Specific Sociological Characteristics

Halabi et al. (2019), examine the effect of religiosity, the power-distance, and individualism accompanied by constructed formal institution variables (investor protection, enforcement quality, and equity market development) and a set of other control variables. The major findings tend to real earnings management methods in countries that religious and cultural factors have a significant impact on the management procedures. This can be attributed to the dominant notion that real activities adjustments constitute a more ethical tactic than accrual-based earnings management.

### 2.3.9  Issue 9: Ownership

Garel et al. (2021) studied the impact of institutional investors' reduced attention on the earnings management procedures. The proposed model focuses on estimating the effect of investors' distraction on the earnings management proxies (accrual-based and real activities). The investors' distraction is calculated considering the shocks that occur in other industries, investors' attention on other industries,

and the investor's monitoring capability. The research findings indicated significant positive relation between the variable of investor's distraction and earnings management proxies. In other words, firms that are limited monitored by institutional investors are prone to present increased discretionary accruals and income-increasing real earnings management activities.

Jiang et al. (2020) outline the effect of multiple blockholders on the level of earnings management. The key explanatory variable is an indicator that separates the observations into firms owned by two or more large shareholders (ownership more than 10%) and others. The results of this stage highlight a significant positive effect of multiple blockholders on the earnings management intensity. Jiang et al., taking under consideration the different incentives of different types of large shareholders, examined whether the presence of the same (different) type shareholders facilitates (mitigate) the level of earnings management. Using the same pattern with the first-stage model, the proposed model focuses on two key dummy variables, the first control for firms with at least two large shareholders with the same type while the second control for firms with at least two different types. The same-type variable coefficient is significantly positive, while the different-type variable is also positive but not significant. The coefficients of the same-type variable are statistically higher than the different-type variable indicating that the positive effect of multiple shareholders on earnings management is more intense for shareholders of the same ownership type. These results are consistent with the assumption that shareholders of the same type probably have similar motivations and benefits, and the consensus is more feasible than shareholders of different ownership types.

Dong et al. (2020) addressed three hypotheses to investigate the effect of ownership structure issues on real earnings management. The research model estimates the impact of ownership structure, such as state control, the percentage of ownership of the largest shareholders, and managerial ownership, on real earnings management proxies. The research results confirmed that the real earnings management level is negatively related to the state control and managerial ownership and demonstrated a positive effect of ownership percentage of the largest shareholders.

**2.3.10 Issue 10: Earnings management as fundamental tool in the corporate strategy**

Espahbodi et al. (2021) investigated whether the earnings management measures are related to firm performance trajectories and if this association is more robust than unexpected earnings, which undoubtedly is a purpose of earnings management activities. The first hypothesis examines the linear relation between earnings management proxies (accrual-based and real earnings) with the firm performance proxy, which is the change of dividends. This stage's results, presenting a significant positive relation with the change of dividends, support that the real earnings management measures provide more information for firm performance trajectories than for unexpected earnings. The second hypothesis is whether the higher levels of earnings management measures are associated with a higher probability of increases in dividends. The logistic regression model uses a dummy variable that controls for firms that present an increase in dividends regressed by earnings management metrics, the unexpected earnings variable. This stage's findings demonstrate a significant positive coefficient of all earnings management measures, which indicates that the firms that intensively engage in earnings management procedures are more likely to increase their dividends. Furthermore, the research states a third hypothesis that examines whether the announcement of dividends change conveys more information to investors than earnings management activities. This regression model's dependent variable is the three-day cumulative stock return around the dividend declaration for the first dividend change of the year. The key independent variables are the change of dividends and earnings management measures, while the set of control variables of the previous stages is also included. The findings are shown to be consistent with the hypothesis and, in particular, indicated a significant positive coefficient of dividend change and an insignificant coefficient of earnings management metrics.

*Ioannis Dokas et al.*

Table 3: Newest studies

| Studies | Characteristics | | Results |
|---|---|---|---|
| | *Dependent variable* | *Independent variables* | |
| Ali & Zhang (2015) | Discretionary accrulas (McNichols,2002) | • Early period Dummy variable (one for early years, otherwise zero),<br>• Percentage of stock owned by CEO<br>• CEO age,<br>• Logarithm of market value of equity<br>• Ratio of market value of equity over book value of equity<br>• High-litigation industry indicator variable<br>• Leverage (total debt divided by total assets)<br>• Percentage of stocks owned by institutional investors<br>• Merger & acquisition indicator for the year t<br>• Dummy variable which control for an increase more that 10% of outstanding shares and at least 20% increase in debt<br>• Dummy variable to control for losses in the examined year<br>• Return on assets<br>• Cash flow from operations<br>• Lagged total accruals scaled by total assets<br>• Operation asset (shareholders equity less cash and marketable securities plus total debt, deflated by sales). | Evidence for more intensive income increasing earnings management during early years than in later years. |
| | Abnormal discretionary expenses (Roychowdhury,2006) | • Early period indicator<br>• Percentage of equities owned by CEO<br>• CEO age<br>• Logarithm of market value of equity<br>• Ratio of market value of equity over book value of equity<br>• Leverage<br>• Return on assets,<br>• Firm age<br>• Number of analysts issued annual earnings forecasts<br>• Asset growth<br>• Employment growth | |
| Anagnostopoulou & Tsekrekos (2013) | Abnormal stock return | • Return on asset<br>• Logarithm of total assets<br>• change of revenues (divided by total assets) | Abnormal stock return positively related to the downward earnings management practices. |

| | | | |
|---|---|---|---|
| | | • Discretionary accruals (kothari,2005 model)<br>• Binary variable (equals one if firm's stocks are traded in London, Paris, or Frankfurt stock exchange market, otherwise takes value zero). | |
| Anagnostopoulou & Tsekrekos (2015 | Discretionary accruals | • Ratio of debt over total assets<br>• Natural logarithm of total assets<br>• Annual sales growth<br>• Altman Z-score<br>• Ratio EBIT over total assets,<br>• Non-discretionary accruals<br>• Stock ownership percentage for institutional investors and<br>• Dummy variable for Big4 auditor firm | Major features of  seeking-a-buyer firms are poor earnings performance and low sales growth. |
| | Dummy variable (one for firms issued an announcement, otherwise equals zero. | • Working capital over total assets<br>• Retained earnings divided by total assets,<br>• Earnings before interest and taxes over total assets<br>• Market value of equity divided by total liabilities,<br>• Sales over total assets,<br>• Annual sales growth<br>• Natural logarithm of total assets<br>• Discretionary accruals. | Robust negative relation between discretionary accruals and decision of seeking a buyer |
| | Dummy variable (one for firms that finally acquired ,otherwise zero.) | • Leverage ratio,<br>• Current assets divided by current liabilities<br>• Other already used variables (leverage, size, sales growth, Z-score, EBIT over total assets and discretionary accruals). | Candidate acquirers, considering the earnings management level, tend to prefer firms that present limited earnings management activities |
| Anagnostopoulou & Tsekrekos (2017) | Real earnings management proxies (discretionary expenses, abnormal production cost) | • Leverage ratio<br>• Market share<br>• Altman's Z-score<br>• Marginal tax rate<br>• Dummy variable for big4 auditors<br>• Binary variables equal one if operating assets is above the industry mean,<br>• Operating cycle<br>• Firm's growth<br>• ROA<br>• Firm size | • Significant positive association between real earnings management and leverage level<br>• Non-significant relation between leverage levels and accrual-based manipulation.<br>• Significant complementarity effect between AM and unexpected RM levels for the highly levered firms.<br>• Firms with higher levels of debt combine the two earnings management methods. |
| | Discretionary accruals | • Leverage ratio<br>• Market share | |

| | | | |
|---|---|---|---|
| | | • Altman's Z-score<br>• Marginal tax rate<br>• Dummy variable for big4 auditors<br>• Binary variables equal one if operating assets is above the industry mean, otherwise zero<br>• Operating cycle<br>• Firm's growth<br>• ROA<br>• Firm size<br>• Unexpected real earnings management proxy<br>Real earnings management proxy multiplied by the leverage ratio | |
| Bergstesser and Philippon (2006) | Absolute value of total (or discretionary) accruals | • Percentage of point increase in the value of equity of CEO's firm, which represents the incentive of CEO<br>• Firm size<br>• Corporate governance<br>• Firm age<br>• Lagged leverage<br>• Lagged volatility of sales,<br>• Year and industry dummies,<br>• 10 deciles of market-to-book and<br>• Dummy variables for the stock exchange on which the firms 'shares trade | Positive relation between discretionary accruals and the incentive proxy- Increases in CEO's benefits can lead to extensive use of accounting policies to manipulate earnings accordingly. |
| Cormier and Martinez (2006) | Discretionary accruals (Generated by Jones model) | • Earnings-forecast deviation<br>• IAS/IFRS compliance (dummy)<br>• External board (dummy)<br>• Big 4 auditor firm (dummy)<br>• Concentrated ownership (percentage)<br>• Retained ownership (percentage)<br>• Size (log of total assets)<br>• Leverage (debt/total assets)<br>• Market listing Second market (Dummy)<br>• Market listing OTC (Dummy) | • In the year after IPO, forecasters presented a higher magnitude of discretionary accruals than non-forecasters.<br>• Beating forecast earnings benchmarks is positively correlated with earnings management intensity<br>• Presence of Big4 and concentrated ownership auditor firm limit the earnings management activities |
| El Diri et al. (2019) | Accrual and real Earnings management proxies | • Market concentration<br>• Corporate governance<br>• Earnings management of prior period<br>• Control variables (firm size, cash flow volatility, operating | Weaker impact of corporate governance on earnings management in concentrated markets than in non-concentrated |

| | | cycle, historical losses, managerial ability, national auditor indicator, indicator for litigious industries, market to book ratio, sales growth, number of segments) | |
|---|---|---|---|
| Dong et al. (2020) | Real earnings management proxies | • Dummy variable for state control<br>• Percentage of shares owned by the largest shareholders<br>• Percentage of shares owned by top managers and board members<br>• Discretionary accruals<br>• Inverse mills ratio<br>• Control variables (percentage of institutional investors, a dummy for the duality of CEO and chairman, percentage of independent directors of the board, net operating assets, operating cycle, firm size, leverage ratio, return on assets, cash flows from operations, sales growth, market to book ratio. Also, indicators for new stock issuance, for merger or acquisitions, punishments for illegal activities, and recognition as specially or particularly treated by regulators. Dummy variables for big4 auditors, audit firm tenure, auditor rotation, CEO and chairman changes, year and industry fixed effect indicators) | • Real earnings management level is negatively related to state control and managerial ownership.<br>• Positive effect of ownership percentage of the largest shareholders on real earnings management. |
| Eddey & Taylor (1999) | Recommendations for acceptance or rejection of a bid | • Unaccepted accruals<br>• Bid premium (Bid price over target price minus one) | • No significant association of recommendations with unexpected accruals<br>• Significant positive relation between recommendations and bid premium variable. |
| El-Helaly et al. (2018) | Earnings management proxies (real and accrual-based) | • Dummy variable for involvement in related party transactions<br>• Corporate governance variables (board size, board independence)<br>• Other control variables (leverage ratio, market to book ratio, firm size) | • Negative relation between related party transactions and real earnings management<br>• No significant association with discretionary accruals<br>• Related party transactions can be an independent substitution of real earnings management. |
| Erikson and Wang (1999) | Discretionary accruals (Jones,1991 model quarterly and yearly adjusted) | • Deal size (ratio of deal value to the market value of acquiring firm equity)<br>• Management ownership (percentage of stocks owned by managers0 | • Significant positive relation of discretionary accruals and deal size<br>• Positive but not significant coefficient of management ownership |
| Espahbodi et al. (2021) | Earnings management proxies | • Change of dividends<br>• Earnings surprise (equals one for observations that exceed median analysts' forecasts)<br>• Control variables (Change of cash flows, change of capital expenditures, Firm size, leverage ratio, total compensation other than salary as a percentage of total compensation of executives, | Significant positive relation with change of dividends. Real earnings management measures provide more information about firm performance trajectories than unexpected earnings. |

| | | Big-four auditor indicator, market to book value, firm age) | |
|---|---|---|---|
| | Indicator for an increase of dividends | • Earnings management measures<br>• Earnings surprise (equals one for observations that exceed median analysts' forecasts)<br>• 1st stage control variables | Significant positive coefficient of all earnings management measures. Firms that intensively engage in earnings management procedures are more likely to increase their dividends. |
| | Three-day cumulative abnormal return around the dividend declaration date for the first dividend change of the year. | • Change of dividends<br>• Earnings management measures<br>• 1st stage control variables | Significant positive coefficient of dividend change. The announcement of dividends change conveys more information to investors than earnings management activities. |
| Gao et al. (2017) | • Weighted average of all bid prices submitted by all institutional investors<br>• Market clearing price of all bids submitted by institutional investors | • Discretionary accruals or alternatively abnormal CFO, discretionary expenses, and production cost<br>• Operating cash flow<br>• Leverage<br>• Logarithm of revenue<br>• Ratio of fixed assets to total assets<br>• IPO's proposed price range<br>• Logarithm of the average online oversubscription ratio of the ten most recent IPOs<br>• Industry IPO activities<br>• Underwriter reputation<br>• Dummy variable for the removal of the three-month lock-up in 2012<br>• Dummy variable for state-ownership<br>• Dummy to account for main board listing | • Robust negative relation between accrual-based earnings management and institutional investors bid prices<br>• Weak results for real earnings management effect on the institutional investors' bid prices. |
| Garel et al. (2020) | • Discretionary accruals (modified Jones model)<br>• Real earnings management proxies (Roychowdhury model) | • Investors' distraction<br>• Institutional investors ownership<br>• Other earnings management determinants (firm size, firm age, leverage ratio, fixed assets scaled by total assets, market to book ratio, sales growth, standard deviation of sales divided by total assets, the ratio of the firm's cash flow from operation to its book assets, cash flow volatility, indicator for top-5 institutional investors) | Positive relation between the variable of investor's distraction and earnings management proxies. |
| Halabi et al. (2019) | • Discretionary accruals<br>• Abnormal cash flow from operations (a proxy for real earnings | • Religiosity<br>• Power distance<br>• Individualism<br>• Investor protection | Real earnings management methods prevail in countries that religious and cultural factors significantly impact the management procedures. |

| | | | |
|---|---|---|---|
| | management) | • Enforcement quality<br>• Market development<br>• Firm-level variables (firm size, leverage ratio, sales growth, return on asset, natural logarithm of shares)<br>• Fixed effects | |
| Hu et al. (2015) | • Total accruals<br>• Industry-adjusted total accruals (total accruals minus mean of total accruals in each industry)<br>• Discretionary accruals | • Tenure (linear term)-The years that the chair of the board takes position as chair of CEO<br>• Square tenure (Nonlinear term)<br>• Firm size<br>• Ratio of total liabilities to the market value of equity<br>• Sales growth<br>• Industry<br>• Year indicators | Negative coefficient of square tenure variable which indicates nonlinear relation with earnings management. |
| Jiang et al. (2020) | Absolute value of discretionary accruals (Jones, Modified Jones, Kothari) | • Dummy variable (one if there are two or more large shareholders, otherwise zero)<br>• Control variables (ROA, firm size, Tobin q, leverage ratio, standard deviation of sales over total assets, standard deviation of operating cash flows, number of firms' years has been listed, total percentage of shares held by blockholders, indicator equals one if the managers hold some shares, indicator that equals one if the firm has an unqualified or clean audit report, indicator variable that equals one in years t-3, t-2, and t-1 if the firm has seasoned equity offerings)<br>• industry fixed effects | Significant positive effect of multiple blockholders on the earnings management intensity. |
| Kalyta (2009) | Discretionary accruals (Jones model) | • 1st Horizon problem dummy variable (one for observations during the determination period, otherwise zero).<br>• 2nd Horizon problem dummy (one for the final year of CEO tenure, otherwise zero)<br>• Pension plan Indicator variable (one if the CEO's pensionable earnings depend on the earnings performance and zero if it depends on their salary or there is no supplementary retirement plan.)<br>• Firm size<br>• Ratio debt to assets<br>• Book-to-market ratio<br>• Return on asset<br>• Natural logarithm of cash flows from operations<br>• Standard deviation of revenue deflated by lagged total assets | • Evidence for income-increasing accounting procedures during the pre-retirement period for CEOs whose pension depends on the firm earnings performance.<br>• No robust results for CEO pre-retirement behavior of other firms |

| | | over the current and prior four years<br>• Standard deviation of cash flows from continuing operations deflated by lagged total assets over the current and prior four years<br>• Industry indicator | |
|---|---|---|---|
| Karampinis and Hevas (2013) | Discretionary accruals | • Tax pressure at firm level,<br>• Firm size<br>• Total liabilities minus cash divided by total assets<br>• Current assets over current liabilities,<br>• Cash flows from operations (scaled by lagged total assets),<br>• Dummy variable for presence of big4 auditor,<br>• Dummy variable for involvement in initial public offer,<br>• Dummy variable for pre-IFRS and post-IFRS period,<br>• Industry and year dummies. | • Pre-IFRS period: The tax pressure is negatively related to discretionary accruals-high levels of tax pressure lead to limitations to aggressive earnings management procedures.<br>• Post-IFRS period: The effect of tax pressure is weaker because of the changes in book-tax conformity imposed by IFRS regime. |
| Louis (2004) | Abnormal return of acquirer | • Estimate of earnings management by the acquirer,<br>• Percentage difference between the market capitalization of the target four weeks before the merger announcement date and the merger price<br>• Ratio of the total assets of the target to the total assets of its acquirer and<br>• The book-to-market ratio of the acquirer<br>• Dummy variable for industry relatedness for the merger participants<br>• Percentage of stocks owned by CEOs<br>• Binary variable that equals one if the merger is accounted for by the pooling-of-interest method and zero by the purchase method<br>• The number of directors on the board<br>• Percentage of external members of the board. | • Significant positive discretionary accruals in the quarter preceding a stock-swap merger<br>• The reaction of the market cannot be utterly totally predicted.<br>• The subsequent long-term underperformance partially derives from the reverse effect of the earnings management |
| Pappas et al. (2019) | • Interest spread (logarithm)<br>• Maturity (logarithm)<br>• Probability of collateral<br>• Financial covenants | • Real earnings management proxies (abnormal CFO, abnormal discretionary expenses, abnormal production cost, aggregate variable)<br>• Firm controls (discretionary accruals, firm size, leverage ratio, interest coverage ratio, current ratio, return on asset, earnings volatility, Altman's Z-score, firm's tangibility, firm market-to-book ratio)<br>• Loan controls (loan size, dummy variable for the loans funded by institutional investors, indicator for the presence of a performance pricing provision in the loan, variable for a prior | Real earnings management proxies are significantly positively related to interest rate, financial covenant intensity, and the likelihood of collaterals and significantly negatively with maturity. |

| | | loan relationship between borrower and lender, the natural logarithm of the number of lenders in a loan syndicate) | |
|---|---|---|---|
| Premti and Smith (2020) | Discretionary accruals | • Sales growth during five years after the IPO<br>• Leverage ratio,<br>• Indicator for firms funded by venture capital at their beginning,<br>• Underwriter's reputation,<br>• Firm size<br>• Rule of law index,<br>• Earnings opacity index<br>• Control variables (ROA, industry concentration) | Leverage, venture capital funding, and the national rule of law as factors that can limit the earnings management procedures in the pre-IPO period |
| | Dummy variable equals one for firms that return to the market for additional capital in the subsequent two years. | • Discretionary accruals<br>• Control variables (firm, industry, and country characteristics) | Negative relation between discretionary accruals and the condition of return to the market for additional capital. |
| Rangan (1998) | Change of ROA (ROAt - ROA t-1) | • Discretionary accruals in the year 0 (offering year)<br>• Capital expenditure growth in year 0<br>• Percentage growth rate in sales from year -1 to year 0<br>• Change in capital expenditures from year -1 to year 0 scaled by assets at the end of year -1 | Negative correlation between earnings management in year 0 and the earnings in the following the seasoned offering year |
| | Abnormal stock return in year 1 | • Discretionary accruals in the year 0 (offering year)<br>• Capital expenditure growth in year 0<br>• Percentage growth rate in sales from year -1 to year 0<br>• change in capital expenditures from year -1 to year 0 scaled by assets at the end of year -1<br>Unexpected earnings for the year 1 | Significant negative relation between discretionary accruals and stock return in the following the seasoned offering year |
| Theo et al. (1998) | IPO three-year post-issue buy-and-hold returns | • Three-year value-weighted buy-and-hold market return from the exchange that listed the IPO,<br>• IPO firm's logged capitalization at December 1997 prices and logged book-to-market ratio<br>• IPO first-day underpricing return<br>• Two industry-indicator dummy variables,<br>• One plus the log of the firm's age<br>• Lagged asset-scaled mean capital expenditure,<br>• Asset-scaled mean capital expenditures in years 1, 2, and 3 less the asset-scaled mean capital expenditure in years -1 and 0; and<br>• Asset scaled net income growth | Negative correlation between current discretionary accruals and post-IPO underperformance. |

## 3  Critical Discusion

The above presentation provides rich literature in the field of earnings management. The intention for this activity is clearly and is illustrated by the actions of the policymakers. A first step for criticism concerns the reliability of these models in the estimation of manipulation level. A basic element in the construction of these models is the definition of accruals. This process varies among the firms as a result of the structure of corporate activities, while the accounting policies implementation plays a significant role.

In a second step, the separation of accruals in discretionary and non-discretionary is in line with the illustration of the accounting standard, which is followed by the firms. This fact provides differential qualitative characteristics of the variables which are composed of the earnings management models. The individual characteristics of each company, such as the governance status, the quality of auditing and the effect of fees, the share of the firm in the market, and the status of the competition, are some of the figures with an important role in the intensity of earnings manipulation.

The literature shows that the rapid changes in the structure of the economies and the firms, especially at an institutional level, revise the corporate strategy relevant to the available tools which are used in the manipulation of the accounting information. The topic of earnings management is in line with the performance of the firm and its potential in the market.

However, it is an acceptable procedure for the majority of the managers based on the accounting policies implementation. The range of this firm activity is in line with the degree of independence by auditing authorities. Finally, qualitative factors such as accounting knowledge and business ethics play a significant role in detecting earnings manipulation.

## 4  Concluding remarks – new avenues for research

Earnings management creates an unfair framework with undesirable impact on the economy and generally for the society. Constitute a fundamental manipulation tool of accounting information. The basic concept of earnings management procedure includes two alternative approaches: The accruals and the real activities. Newest studies show that the trend from the side of the managers is the use of the second approach because the results of the manipulation based on real activities are less detectable. Also, the research interest focuses on the connection of earnings management with the financial image of firms, especially in specific periods where procedures of mergers and acquisitions are in progress. An expansion of the relative research concerns the motivations of CEOs and the investigation of the role of auditing companies and the fees of them in the estimation of the earnings manipulation. However, the main scope of earnings manipulation is the technical rise of the firms' performance and the enchantment of the investment interesting for the firm.  The issue of earnings management has economic and social expansion with significant consequences and constitutes a fundamental component in the literature of creative accounting.

Accrual manipulations and adjustments of real activities are not always instrumenting for short-term opportunistic plans but can be part of an aggregate firm multiperiod performance that conveys information about prosperity and future profitability or conceal weaknesses that lead to undesirable consequences in the stock markets or the context of a contract. Firms that present a high level of leverage, especially listed, engage in income-increasing earnings management procedures to keep profitability requirements imposed by loan contracts. In other words, firms that are required to maintain a stable financial status have to support their multiperiod performance by earnings management methods through accruals or real activities or a combination of two.

An alternative tool for earnings management is the related party transactions which can be an independent method or can substitute real earnings management to improve the firm's financial performance or shift wealth from minority to controlling shareholders. The compulsory adoption of IFRS limits the utility of this procedure. However, mandatory implementation of IFRS is a controversial

determinant of IFRS. In some cases, IFRS play a significant role in mitigating the earnings management levels and, under specific conditions, constitutes a factor for extensive engagement in earnings manipulations.

Auditor firm size is generally accepted that is negatively correlated with earnings management. However, the auditor size provides limited information about the impact of auditor firms on earnings management. The auditor independence, which is related to auditing and non-auditing fees, is an additional factor that should be taken into consideration. Auditing fees are negatively associated with earnings management because they indicate auditors' efforts for an improved quality of financial statements, and adversely, non-auditing fees induce economic bonds, which lead to decreased financial reporting quality.

The ownership structure is often considered as earnings management determinant and affect the manipulation procedure in different ways in accordance with the means, strength and the influence that shareholders exercise to the board. For instance, institutional investors have the power to influence managerial decisions. The intense attention of institutional investors on owned firms can mitigate the earnings management levels because of their extensive ability to detect such activities. Despite their monitoring abilities, often they are not able to control their whole portfolio with the same intension which allows managers to exercise their discretion on the financial statements for private benefits.

The above discussion justifies the rising interest of the researchers in this topic. However, a new expansion of the research could be concerning the effect of the national accounting regulation and the general economic condition.

## References

Ali, A. and Zhang, W., (2015). CEO tenure and earnings management. Journal of Accounting and Economics, 59(1), pp.60-79.

Anagnostopoulou, S.C. and Tsekrekos, A.E., (2013). Do firms that wish to be acquired manage their earnings? Evidence from major European countries. International Review of Financial Analysis, 30, pp.57-68.

Anagnostopoulou, S.C. and Tsekrekos, A.E., (2015). Earnings management in firms seeking to be acquired. The British Accounting Review, 47(4), pp.351-375.

Anagnostopoulou, S.C. and Tsekrekos, A.E., (2017). The effect of financial leverage on real and accrual-based earnings management. Accounting and Business Research, 47(2), pp.191-236.

Anderson, M.C., Banker, R.D. and Janakiraman, S.N., (2003). Are selling, general, and administrative costs "sticky"?. Journal of accounting research, 41(1), pp.47-63.

Armstrong, C., Foster, G. and Taylor, D., (2016). Abnormal accruals in newly public companies: opportunistic misreporting or economic activity?. Management Science, 62(5), pp.1316-1338.

Baber, W.R., Fairfield, P.M. and Haggard, J.A., (1991). The effect of concern about reported income on discretionary spending decisions: The case of research and development. Accounting Review, pp.818-829.

Bartov, E. and Mohanram, P., (2004). Private information, earnings manipulations, and executive stock-option exercises. The Accounting Review, 79(4), pp.889-920.

Bartov, E., 1993. The timing of asset sales and earnings manipulation. Accounting Review, pp.840-855.

Bartov, E., Gul, F.A. and Tsui, J.S., (2000). Discretionary-accruals models and audit qualifications. Journal of accounting and economics, 30(3), pp.421-452.

Bergstresser, D. and Philippon, T., (2006). CEO incentives and earnings management. Journal of financial economics, 80(3), pp.511-529.

Beyer, A., (2009). Capital market prices, management forecasts, and earnings management. The Accounting Review, 84(6), pp.1713-1747.

Bharath, S.T., Sunder, J. and Sunder, S.V., (2008). Accounting quality and debt contracting. The Accounting Review, 83(1), pp.1-28.

Botsari, A. and Meeks, G., (2008). Do acquirers manage earnings prior to a share for share bid?. Journal of Business Finance & Accounting, 35(5-6), pp.633-670.

Cahan, S.F., (1992). The effect of antitrust investigations on discretionary accruals: A refined test of the political-cost hypothesis. Accounting review, pp.77-95.

Cahan, S.F., Chavis, B.M. and Elmendorf, R.G., (1997). Earnings management of chemical firms in response to political costs from environmental legislation. Journal of Accounting, Auditing & Finance, 12(1), pp.37-65.

Callao, S. and Jarne, J.I., (2010). Have IFRS affected earnings management in the European Union?. Accounting in Europe, 7(2), pp.159-189.

Campa, D., (2019). Earnings management strategies during financial difficulties: A comparison between listed and unlisted French companies. Research in International Business and Finance, 50, pp.457-471.

Chang, C.C. and Pan, H., (2020). How do stock-for-stock acquirers manage earnings? The accruals feature of real earnings management. Journal of Contemporary Accounting & Economics, 16(2), p.100202.

Cohen, D., Mashruwala, R. and Zach, T., (2010). The use of advertising activities to meet earnings benchmarks: Evidence from monthly data. Review of Accounting Studies, 15(4), pp.808-832.

Cormier, D. and Martinez, I., (2006). The association between management earnings forecasts, earnings management, and stock market valuation: Evidence from French IPOs. The International Journal of Accounting, 41(3), pp.209-236.

DeAngelo, L.E., (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. Accounting review, pp.400-420.

Dechow, P.M. and Dichev, I.D., (2002). The quality of accruals and earnings: The role of accrual estimation errors. The accounting review, 77(s-1), pp.35-59.

Dechow, P.M. and Sloan, R.G., (1991). Executive incentives and the horizon problem: An empirical investigation. Journal of accounting and Economics, 14(1), pp.51-89.

Dechow, P.M., Hutton, A.P., Kim, J.H. and Sloan, R.G., (2012). Detecting earnings management: A new approach. Journal of accounting research, 50(2), pp.275-334.

Dechow, P.M., Sloan, R.G. and Sweeney, A.P., (1995). Detecting earnings management. Accounting review, pp.193-225.

DeFond, M.L. and Jiambalvo, J., (1994). Debt covenant violation and manipulation of accruals. Journal of accounting and economics, 17(1-2), pp.145-176.

Dichev, I.D. and Skinner, D.J., (2002). Large–sample evidence on the debt covenant hypothesis. Journal of accounting research, 40(4), pp.1091-1123.

Dong, N., Wang, F., Zhang, J. and Zhou, J., (2020). Ownership structure and real earnings management: Evidence from China. Journal of Accounting and Public Policy, 39(3), p.106733.

Doukakis, L.C., (2014). The effect of mandatory IFRS adoption on real and accrual-based earnings management activities. Journal of Accounting and Public Policy, 33(6), pp.551-572.

DuCharme, L. L., Malatesta, P. H., & Sefcik, S. E. (2001). Earnings management: IPO valuation and subsequent performance. Journal of Accounting, Auditing & Finance, 16(4), 369-396.

Easterwood, C.M., (1998). Takeovers and incentives for earnings management: an empirical analysis. Journal of Applied Business Research (JABR), 14(1), pp.29-48.

Eddey, P.H. and Taylor, S.L., (1999). Directors' recommendations on takeover bids and the management of earnings: evidence from Australian takeovers. Abacus, 35(1), pp.29-45.

El Diri, M., Lambrinoudakis, C. and Alhadab, M., (2020). Corporate governance and earnings management in concentrated markets. Journal of Business Research, 108, pp.291-306.

El-Helaly, M., Georgiou, I. and Lowe, A.D., (2018). The interplay between related party transactions and earnings management: The role of audit quality. Journal of International Accounting, Auditing and Taxation, 32, pp.47-60.

Erickson, M. and Wang, S.W., (1999). Earnings management by acquiring firms in stock for stock mergers. Journal of accounting and economics, 27(2), pp.149-176.

Espahbodi, R., Liu, N. and Weigand, R.A., (2021). Opportunistic earnings management or performance-related effects? Evidence from dividend-paying firms. Global Finance Journal, p.100636.

Filip, A. and Raffournier, B., (2014). Financial crisis and earnings management: The European evidence. The International Journal of Accounting, 49(4), pp.455-478.

Fischer, P.E. and Louis, H., (2008). Financial reporting and conflicting managerial incentives: The case of management buyouts. Management Science, 54(10), pp.1700-1714.

Francis, J., Huang, A.H., Rajgopal, S. and Zang, A.Y., (2008). CEO reputation and earnings quality. Contemporary Accounting Research, 25(1), pp.109-147.

Francis, J., LaFond, R., Olsson, P. and Schipper, K., (2005). The market pricing of accruals quality. Journal of accounting and economics, 39(2), pp.295-327.

Gao, S., Meng, Q., Chan, K.C. and Wu, W., (2017). Earnings management before IPOs: Are institutional investors misled?. Journal of Empirical Finance, 42, pp.90-108.

Garel, A., Martin-Flores, J.M., Petit-Romec, A. and Scott, A., (2021). Institutional investor distraction and earnings management. Journal of Corporate Finance, 66, p.101801.

Gaver, J.J., Gaver, K.M. and Austin, J.R., (1995). Additional evidence on bonus plans and income management. Journal of accounting and Economics, 19(1), pp.3-28.

Gunny, K.A., (2010). The relation between earnings management using real activities manipulation and future performance: Evidence from meeting earnings benchmarks. Contemporary accounting research, 27(3), pp.855-888.

Halabi, H., Alshehabi, A. and Zakaria, I., (2019). Informal institutions and managers' earnings management choices: Evidence from IFRS-adopting countries. Journal of Contemporary Accounting & Economics, 15(3), p.100162.

Hall, S.C. and Stammerjohan, W.W., (1997). Damage awards and earnings management in the oil industry. Accounting Review, pp.47-65.

Healy, P.M., (1985). The effect of bonus schemes on accounting decisions. Journal of accounting and economics, 7(1-3), pp.85-107.

Herrmann, D., Inoue, T. and Thomas, W.B., (2003). The sale of assets to manage earnings in Japan. Journal of Accounting Research, 41(1), pp.89-108.

Higgins, H.N., (2013). Do stock-for-stock merger acquirers manage earnings? Evidence from Japan. Journal of Accounting and Public Policy, 32(1), pp.44-70.

Hribar, P. and Collins, D.W., (2002). Errors in estimating accruals: Implications for empirical research. Journal of Accounting research, 40(1), pp.105-134.

Hu, N., Hao, Q., Liu, L. and Yao, L.J., 2015. Managerial tenure and earnings management. International Journal of Accounting & Information Management.

Jeanjean, T. and Stolowy, H., (2008). Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption. Journal of accounting and public policy, 27(6), pp.480-494.

Jiang, F., Ma, Y. and Wang, X., (2020). Multiple blockholders and earnings management. Journal of Corporate Finance, 64, p.101689.

Johnson, M.F., (1999). Business cycles and the relation between security returns and earnings. Review of Accounting Studies, 4(2), pp.93-117.

Jones, J.J., (1991). Earnings management during import relief investigations. Journal of accounting research, 29(2), pp.193-228.

Kalyta, P., (2009). Accounting discretion, horizon problem, and CEO retirement benefits. The Accounting Review, 84(5), pp.1553-1573.

Karampinis, N.I. and Hevas, D.L., (2013). Effects of IFRS adoption on tax-induced incentives for financial earnings management: Evidence from Greece. The International Journal of Accounting, 48(2), pp.218-247.

Kenourgios, D.F., Papathanasiou, S. and Melas, E.R., (2007). Initial performance of Greek IPOs, underwriter's reputation and oversubscription. Managerial Finance.

Key, K.G., (1997). Political cost incentives for earnings management in the cable television industry. Journal of accounting and economics, 23(3), pp.309-337.

Kothari, S.P., Leone, A.J. and Wasley, C.E., (2005). Performance matched discretionary accrual measures. Journal of accounting and economics, 39(1), pp.163-197.

Koumanakos, E., Siriopoulos, C. and Georgopoulos, A., (2005). Firm acquisitions and earnings management: evidence from Greece. Managerial Auditing Journal.

Kourdoumpalou, S., (2017). Detecting earnings management: a review of the proxies. International Journal of Critical Accounting, 9(2), pp.103-118.

Li, C., Lou, C., Luo, D. and Xing, K., (2021). Chinese corporate distress prediction using LASSO: The role of earnings management. International Review of Financial Analysis, p.101776.

Louis, H., (2004). Earnings management and the market performance of acquiring firms. Journal of financial economics, 74(1), pp.121-148.

Mao, Y. and Renneboog, L., (2015). Do managers manipulate earnings prior to management buyouts?. Journal of Corporate Finance, 35, pp.43-61.

Marquardt, C.A. and Wiedman, C.I., (2004). How are earnings managed? An examination of specific accruals. Contemporary Accounting Research, 21(2), pp.461-491.

McNichols, M. and Wilson, G.P., (1988). Evidence of earnings management from the provision for bad debts. Journal of accounting research, pp.1-31.

McNichols, M.F., (2002). Discussion of the quality of accruals and earnings: The role of accrual estimation errors. The accounting review, 77(s-1), pp.61-69.

Papathanasiou, S., Vasiliou, D., Magoutas, A. and Koutsokostas, D., (2021). Do Hedge and Merger Arbitrage Funds Actually Hedge? A Time-Varying Volatility Spillover Approach. Finance Research Letters, p.102088.

Pappas, K., Walsh, E. and Xu, A.L., (2019). Real earnings management and Loan Contract terms. The British Accounting Review, 51(4), pp.373-401.

Peasnell, K.V., Pope, P.F. and Young, S., (2000). Detecting earnings management using cross-sectional abnormal accruals models. Accounting and Business research, 30(4), pp.313-326.

Perols, J.L. and Lougee, B.A., 2011. The relation between earnings management and financial statement fraud. Advances in Accounting, 27(1), pp.39-53.

Perry, S.E. and Williams, T.H., (1994). Earnings management preceding management buyout offers. Journal of Accounting and Economics, 18(2), pp.157-179.

Premti, A. and Smith, G., (2020). Earnings management in the pre-IPO process: Biases and predictors. Research in International Business and Finance, 52, p.101120.

Rangan, S., (1998). Earnings management and the performance of seasoned equity offerings. Journal of Financial economics, 50(1), pp.101-122.

Rosner, R.L., (2003). Earnings manipulation in failing firms. Contemporary Accounting Research, 20(2), pp.361-408.

Roychowdhury, S., 2006. Earnings management through real activities manipulation. Journal of accounting and economics, 42(3), pp.335-370.

Stubben, S.R., 2010. Discretionary revenues as a measure of earnings management. The accounting review, 85(2), pp.695-717.

Sweeney, A.P., (1994). Debt-covenant violations and managers' accounting responses. Journal of accounting and Economics, 17(3), pp.281-308.

Teoh, S.H., Welch, I. and Wong, T.J., (1998). Earnings management and the long-run market performance of initial public offerings. The journal of finance, 53(6), pp.1935-1974.

Thanh, S.D., Canh, N.P. and Ha, N.T.T., (2020). Debt structure and earnings management: A non-linear analysis from an emerging economy. Finance Research Letters, 35, p.101283.

Trueman, B. and Titman, S., (1988). An explanation for accounting income smoothing. Journal of accounting research, pp.127-139.

Tucker, J.W. and Zarowin, P.A., (2006). Does income smoothing improve earnings informativeness?. The accounting review, 81(1), pp.251-270.

Wells, P., (2002). Earnings management surrounding CEO changes. Accounting & Finance, 42(2), pp.169-193.

Wu, Y.W., (1997). Management buyouts and earnings management. Journal of Accounting, Auditing & Finance, 12(4), pp.373-389.

Zéghal, D., Chtourou, S. and Sellami, Y.M., (2011). An analysis of the effect of mandatory adoption of IAS/IFRS on earnings management. Journal of international accounting, auditing and taxation, 20(2), pp.61-72.

Zeghal, D., Chtourou, S.M. and Fourati, Y.M., (2012). The effect of mandatory adoption of IFRS on earnings quality: Evidence from the European Union. Journal of International Accounting Research, 11(2), pp.1-25.