

Income smoothing: a review of the international literature

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Abstract

Purpose – We provide a systematic literature review of the determinants and consequences of income smoothing in an international context. First, we offer a theoretical discussion of income smoothing, which is motivated either by opportunistic or by informative reasons, followed by an examination of its measurement. Next, we review the determinants of income smoothing, categorizing them into financial reporting standards, firm characteristics, corporate governance, managerial characteristics and macro environment determinants. We then review the empirical literature on the consequences of income smoothing from the perspective of capital market and credit market consequences. We also provide some suggestions for future research.

Design/methodology/approach – We perform a systematic literature review using the Preferred Reporting Items for a Systematic Review of Meta-Analysis (PRISMA) guidelines to examine archival studies investigating the determinants and consequences of income smoothing. Using a Boolean search strategy on Scopus and PRISMA selection criteria, we review 111 published archival research articles from 2004 to the first quarter of 2025.

Findings – The implementation of reporting standards reduces income smoothing practices. Firm characteristics have varied effects on income smoothing, while governance reforms and internal corporate governance mechanisms are generally found to constrain smoothing behavior. Our review further reveals that managerial characteristics are associated with income smoothing practices. Furthermore, exogenous shocks also shape managerial incentives to engage in income smoothing. The capital market consequences of income smoothing reveal that income smoothing improves earnings informativeness, lowers both equity and credit investors' perceived risk, but increases future stock price crash risk. The credit market effect shows that income smoothing lowers the cost of debt capital.

Originality/value – Although there remains a high-quality review on earnings quality (e.g. Dechow *et al.*, 2010), we lack a thorough coverage of the evolution of income smoothing research for the last two decades. We fill that void in the literature, highlight some research gaps, draw researchers' attention to measurement problems associated with existing smoothing measures, and offer some suggestions for future research.

Keywords Income smoothing, Earnings management, Financial reporting regulations, Corporate governance, Capital markets

Paper type Literature review

1. Introduction

We provide a systematic review of the determinants and consequences of income smoothing in an international context. Income smoothing can be defined as the managerial attempt to use their discretion to “intentionally dampen the fluctuations of their firms' earnings realizations”



(Beidleman, 1973, p. 653). Income smoothing, “cookie jar” accounting prevails as long as the managers have accounting choices. These smoothing choices can either enhance earnings informativeness or distort it, depending on whether managerial discretion is used to signal or to manipulate performance. Graham *et al.* (2005) indicate that 78% of the Chief Financial Officers (CFOs) in their survey admit to engaging in real earnings smoothing [1]. Given that managerial choices around income smoothing are often influenced by agency problems, this has important implications for accounting disclosures, capital market outcomes, and governance effectiveness. Understanding managerial incentives behind income smoothing is essential, as this practice reduces earnings volatility by lessening uncertainty and enhancing the predictability of future earnings. These characteristics of smoothed earnings are associated with favorable capital market outcomes, including a lower cost of capital, higher stock returns, and improved analyst following and forecast accuracy (Demski, 1998; Erickson *et al.*, 2017; Subramanyam, 1996; Tucker and Zarowin, 2006).

The managerial incentives to engage in income smoothing can be explained using at least two competing theoretical perspectives. The signaling perspective, i.e. informativeness, posits that managers smooth earnings to communicate private information about the firm’s prospects to investors and creditors. This behavior reduces information asymmetry, improves the predictability of future earnings (Demski, 1998; Tucker and Zarowin, 2006), and enhances financial statement reliability in ways that support more efficient contracting and investment decisions (Cao *et al.*, 2023; Demerjian *et al.*, 2020b). In contrast, the opportunistic or the garbling view, grounded in agency theory, suggests that income smoothing conceals the firm’s actual performance and impairs the usefulness of accounting information for evaluation and monitoring purposes (Bhattacharya *et al.*, 2003; Khurana *et al.*, 2018; Leuz *et al.*, 2003). It is important to note that the garbling effect arises when income smoothing obscures rather than clarifies firm performance. If smoothing is used for opportunistic reasons, rather than to signal private information, it is expected to reduce the informativeness of earnings. In such cases, current earnings will have a weaker association with future performance. Just as Roychowdhury (2006) highlights the long-term costs of real earnings management via aggressive sales tactics, excessive or artificial income smoothing may distort market perceptions, increase information risk, and ultimately reduce the transparency of the firm’s information environment. Furthermore, the political cost hypothesis (Watts and Zimmerman, 1978) offers a complementary explanation, suggesting that managers smooth earnings to reduce visibility and avoid regulatory scrutiny, especially in politically sensitive contexts. Together, these perspectives underscore that income smoothing can serve both informational and self-serving purposes, and its consequences depend on the underlying managerial intent and institutional setting.

There is a growing body of contemporary research published in academic journals examining the determinants and consequences of income smoothing within the fields of accounting, finance, and corporate governance. To ensure comprehensive coverage of the literature, we conducted a systematic and in-depth search using the Scopus database. This approach enabled the identification of a wide range of peer-reviewed academic publications relevant to the topic. We employed a Boolean keyword search incorporating terms such as “income smoothing,” “earnings smoothing,” “earnings AND volatility,” and “smoothing AND financial reporting.” The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Preferred Reporting Items for a Systematic Review of Meta-Analysis (PRISMA)) framework guided our study selection process through four key stages: identification, screening, eligibility, and inclusion. Our search covered the period from January 2004 to the first quarter of 2025 to capture the evolution of income smoothing research over time. For reviews on income smoothing preceding this era, readers are referred to Stolowy and Breton (2004) and Buckmaster (1992, 1997) [2].

Our initial search returned a total of 210 records (*identification*). We then excluded 49 records published in non-business-related journals, resulting in 161 records pertinent to the fields of “Business Management” and “Finance and Economics” disciplines. We also excluded 25 articles that were not relevant to the “income smoothing” concept. To maintain the

quality of the review, we primarily included journals listed on the 2022 Australian Business Deans Council (ABDC) rankings, Field of Research codes 3,501 (Accounting) and 3,502 (Finance) and 3,801 (Economics) [3]. We retained the articles published in the 2022 ABDC journal outlets ranked A*, A, and B (*screening* and *eligibility* phases of the PRISMA) and hence further excluded 25 articles published in below B-ranked journals. Finally, a total of 111 published studies are *included* in the review. Figure 1 shows the study selection process in detail following the PRISMA recommendations. Table 1 provides a breakdown of the publication outlets of the reviewed papers, including the ABDC journal rank.

We group the determinants into financial reporting standards, firm characteristics, governance, managerial characteristics, macro environment and other factors. The main objective of financial reporting standards is to enhance transparency, consistency, and comparability (FASB, 2010). In line with this objective, a stream of research has examined the

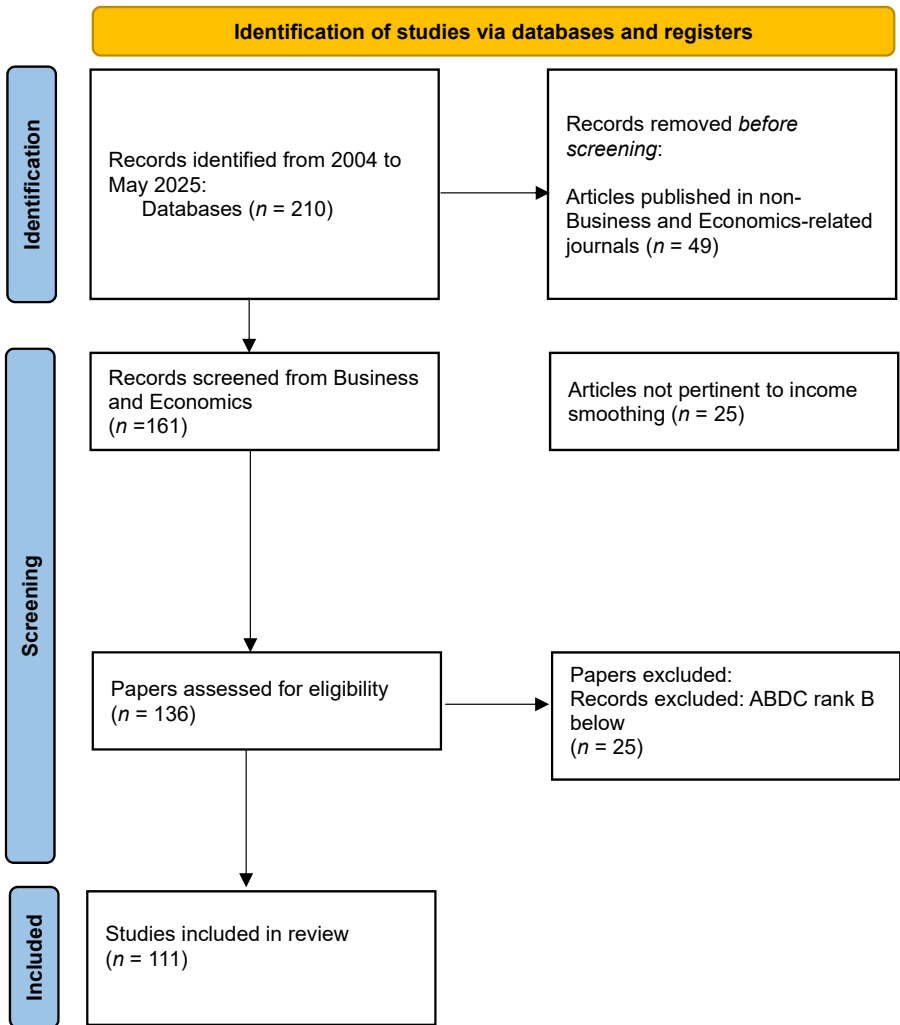


Figure 1. PRISMA Framework: Paper selection process. Source(s): Authors' own work

Table 1. List of journals

Journals	ABDC rank	Count
<i>Accounting and Finance</i>	A	1
<i>Accounting and Business Research</i>	A	2
<i>Accounting Horizons</i>	A	1
<i>Accounting Research Journal</i>	B	1
<i>The Accounting Review</i>	A*	7
<i>Advances in Accounting</i>	A	3
<i>Applied Economics Letters</i>	B	2
<i>Applied Financial Economics</i>	B	1
<i>Asia-Pacific Journal of Accounting and Economics</i>	B	3
<i>Asia-Pacific Journal of Financial Studies</i>	B	1
<i>Australian Accounting Review</i>	B	1
<i>British Accounting Review</i>	A*	2
<i>British Food Journal</i>	B	1
<i>China Accounting and Finance Review</i>	A	1
<i>China Journal of Accounting Research</i>	B	2
<i>Contemporary Accounting Research</i>	A*	9
<i>Corporate Governance: An International Review</i>	A	1
<i>Emerging Markets Finance and Trade</i>	B	1
<i>European Accounting Review</i>	A*	1
<i>International Journal of Accounting</i>	A	1
<i>International Journal of Accounting and Information Management</i>	B	1
<i>International Journal of Auditing</i>	A	1
<i>International Journal of Disclosure and Governance</i>	B	2
<i>International Journal of Emerging Markets</i>	B	2
<i>International Journal of Finance and Economics</i>	B	1
<i>International Journal of Managerial Finance</i>	A	1
<i>International Review of Economics and Finance</i>	A	1
<i>International Review of Finance</i>	A	1
<i>International Review of Financial Analysis</i>	A	2
<i>Journal of Accounting and Public Policy</i>	A	4
<i>Journal of Accounting in Emerging Economies</i>	B	3
<i>Journal of Accounting Literature</i>	A	1
<i>Journal of Accounting, Auditing and Finance</i>	A	4
<i>Journal of Applied Accounting Research</i>	B	4
<i>Journal of Banking and Finance</i>	A*	6
<i>Journal of Business Finance and Accounting</i>	A*	4
<i>Journal of Business Research</i>	A	1
<i>Journal of Corporate Finance</i>	A*	3
<i>Journal of Financial Economic Policy</i>	B	1
<i>Journal of Financial Services Research</i>	A	1
<i>Journal of International Accounting Research</i>	A	3
<i>Journal of International Accounting, Auditing and Taxation</i>	B	1
<i>Journal of International Financial Management and Accounting</i>	B	2
<i>Journal of Management Accounting Research</i>	A*	1
<i>Journal of Multinational Financial Management</i>	B	1
<i>Journal of Risk and Insurance</i>	A	1
<i>Journal of the American Taxation Association</i>	A	1
<i>Management Science</i>	A*	2
<i>Managerial Auditing Journal</i>	A	1
<i>Managerial Finance</i>	B	1
<i>North American Journal of Economics and Finance</i>	B	1
<i>Pacific Accounting Review</i>	B	1
<i>Research in International Business and Finance</i>	B	1
<i>Review of Accounting and Finance</i>	B	3

(continued)

Table 1. Continued

Journals	ABDC rank	Count
<i>Review of Pacific Basin Financial Markets and Policies</i>	B	2
<i>Review of Quantitative Finance and Accounting</i>	B	3
<i>Total</i>		<i>111</i>

Note(s): This table reports the list of journals and the distribution of the articles included in this review
Source(s): Authors' own work

impact of financial reporting standards on managerial income smoothing behavior, with most evidence suggesting that the implementation of such standards reduces income smoothing practices. Studies investigating firm-level characteristics report varied effects on income smoothing, while governance reforms and internal corporate governance mechanisms are generally found to constrain smoothing behavior. A substantial body of research has also explored the role of ownership structure, yielding mixed findings regarding its influence on earnings smoothing. In addition, informal institutional factors such as social trust, societal norms, and language orientation have been identified as important determinants of income smoothing. Our review further reveals that managerial characteristics, including ability, tenure, and gender, are associated with income smoothing practices. Finally, prior studies show that exogenous shocks, such as the global financial crisis and the implementation of new regulations, also shape managerial incentives to engage in income smoothing.

Research examining the consequences of income smoothing broadly considers the effects from both the capital market and credit market perspectives. The capital market consequences of income smoothing reveal that income smoothing improves earnings informativeness, lowers both equity and credit investors' perceived risk but increases future stock price crash risk. The credit market effect shows that income smoothing has a beneficial effect with respect to lowering the cost of debt capital.

Our review is important and timely within the broader context of accounting, finance, and corporate governance for understanding how income smoothing practices shape firm behavior and stakeholder responses. Our review supports the assertion by [Dechow et al. \(2010\)](#) concerning the challenges in measuring income smoothing. While existing measures effectively capture earnings volatility, they often fail to adequately disentangle the discretionary managerial component from underlying fundamental performance. As a result, controversy remains over whether income smoothing truly reflects earnings management and to what extent it is driven by discretion versus economic fundamentals. This review ([Section 2.2](#)) contributes to the ongoing debate by tracing the evolution of income smoothing measures and critically examining their effectiveness in capturing managerial intent.

The remainder of the paper proceeds as follows. We elaborate on the theoretical background and measurements of income smoothing in [Section 2](#). In [Section 3](#), we present the studies that investigate the possible determinants of income smoothing. [Section 4](#) reviews the literature on the consequences of income smoothing. [Section 5](#) discusses the opportunities for future research. [Section 6](#) concludes the paper.

2. Theoretical overview and measurement of income smoothing

2.1 Theory of income smoothing

The objective of income smoothing is to reduce the amount of variation in periodic earnings over time. As long as managers retain discretion over accounting choices, they may engage in income smoothing, both in terms of reported earnings levels and the rate of earnings growth

(Gordon, 1964). The discretion permitted by accounting policies introduces flexibility that allows managers to adjust reported earnings to produce a smoother income stream.

The literature presents two contrasting views on income smoothing. One perspective perceives it as an efficient communication of private information (Demski, 1998; Kirschenheiter and Melumad, 2002; Ronen and Sadan, 1981; Sankar and Subramanyam, 2001). For example, prior research has examined the effect of earnings smoothing on the contemporaneous association between stock returns and earnings (Subramanyam, 1996) or the association between current returns and future earnings (Tucker and Zarowin, 2006). This line of research concludes that earnings smoothing improves the informativeness of past and current earnings about future earnings and cash flows.

Prior analytical research explores the motivations behind managers' pervasive income smoothing. Trueman and Titman (1988) document that a manager may have an incentive to smooth the firm's reported income to maximize the present value of the cash flows accruing to the firm's risk-neutral shareholders. This incentive arises when the firm's future claimants, such as customers, employees, and suppliers, are adversely affected by earnings volatility. Demski (1998) documents that income smoothing can be seen as a means of signaling their acquired expertise. The key assumption is that a manager who works hard is better able to predict future earnings. The manager demonstrates his predictive powers, and hence his hard work, to the owner by smoothing earnings. Because earnings smoothing is an informative variable (the manager is better at it if he works than if he shirks), smoothing can reduce the cost of motivating the manager to work. In fact, the owner is better off allowing for earnings smoothing than if she could prevent it with a perfect and costless audit technology. When income smoothing is costly, it requires managers to accurately forecast future earnings (Demski, 1998; Trueman and Titman, 1988). This links smoothing behavior directly to managerial ability. Empirical research supports this view, suggesting that more capable managers are better at predicting earnings and cash flows, thereby engaging in more informative income smoothing (Baik *et al.*, 2020; Demerjian *et al.*, 2020a).

Related empirical evidence also shows that managers use income smoothing as a communication mechanism with various stakeholders. For instance, smoothing improves contracting efficiency between managers and debt holders by increasing the reliability of financial statements, thereby reducing the risk of technical default and facilitating access to debt financing (Demerjian *et al.*, 2020b). Furthermore, Stakeholders, such as customers and suppliers, also reward smoother earnings with better terms of trade (Dou *et al.*, 2013; Graham *et al.*, 2005). However, when firms are able to convey information directly, managers have less incentive to engage in income smoothing. For example, Jung *et al.* (2025) suggest that when supplier firms maintain close relationships with major customers, they can communicate information more directly, thereby reducing the need to rely on income smoothing as a signaling mechanism.

An alternative perspective views income smoothing as an opportunistic managerial practice (Leuz *et al.*, 2003; Jayaraman, 2008). Under this view, earnings smoothing obscures a firm's true economic performance, as managers may engage in such practices to achieve personal objectives, such as meeting bonus thresholds (Healy, 1985) or safeguarding their job security (DeFond and Park, 1997; Fudenberg and Tirole, 1995). By using discretionary accounting choices to artificially stabilize earnings, managers introduce noise into financial reports, increasing information opacity and making it more difficult for external stakeholders to assess the firm's actual operational performance. This lack of transparency enables managers to withhold bad news over extended periods (Jin and Myers, 2006; Leuz *et al.*, 2003; Levitt, 1998). For example, income smoothing has been found to increase the likelihood of stock price crash risk, as suppressed bad news eventually accumulates and is released abruptly (Chen *et al.*, 2017; Khurana *et al.*, 2018). In this case, firms with smoother earnings paths are more likely to increase information asymmetry, which in turn leads to wider bid-ask spreads (Habib and Jiang, 2012). These findings indicate that income smoothing is not inherently informative and may be perceived as a signal of opportunistic behavior.

It is important to note that distinguishing opportunistic income smoothing from informative earnings smoothing is often challenging. As a result, when the literature investigates the opportunistic role of income smoothing, it typically focuses on the opportunistic component embedded within overall smoothing activities. Given the differential costs and benefits associated with smoothing, researchers have explored the conditions under which managers are more likely to have incentives to smooth reported earnings. For instance, [Trueman and Titman \(1988\)](#) suggest that the impact of earnings smoothing on credit quality may depend on the amount of information available to investors. Some studies focus on real earnings smoothing ([Khurana et al., 2018](#)), while others decompose income smoothing into informative and garbling components ([Kuang, 2022](#)). Moreover, research on opportunistic income smoothing is often conducted in specific institutional contexts, such as environments with weak investor protection ([Cahan et al., 2008](#)) or where firms operate under high environmental uncertainty ([Habib et al., 2011](#)). Empirical research reviewed in [Sections 3 and 4](#) has used these two theoretical frameworks to develop their hypotheses.

2.2 Measures of income smoothing

[Dechow et al. \(2010, p. 362\)](#) note that, “[...] cross-sectional variation in smoothness can result from variation in the smoothness of fundamental performance [...] from variation in the ability of an accrual-based accounting system absent any choice to capture fundamental performance, or from variation in accounting choice. Moreover, the accounting choice can be motivated either to increase decision usefulness or to distort it. [Researchers need to] differentiat[e] inherent or fundamental smoothness from smoothness related to accounting choice, and differentiate informative choices from opportunistic choices [...]”.

Proxies like the correlation between the change in total accruals and the change in cash flow from operations ([Bhattacharya et al., 2003](#)) or the ratio of the standard deviation of net income to the standard deviation of cash flows from operations as a measure of smoothing ([Francis et al., 2004](#); [Jung et al., 2013](#); [Leuz et al., 2003](#)) do not take into account the motivation for accounting choices. Accruals-based earnings smoothing takes a step towards that direction by calculating smoothing as the correlation between the change in discretionary accruals proxies (ΔDap) and the change in pre-discretionary income (ΔPdi) over a rolling window period ([Tucker and Zarowin, 2006](#)). This method assumes that there is an underlying pre-managed income series and that managers use discretionary accruals to make the reported series smooth. Discretionary accruals are estimated using the Jones model modified by [Kothari et al. \(2005\)](#), as specified below:

$$Acc_{i,t} = \alpha_1 \left(\frac{1}{Assets_{i,t-1}} \right) + \alpha_2 \Delta Sales_{i,t} + \alpha_3 Ppe_{i,t} + \alpha_4 Roa_{i,t} + \varepsilon_{i,t} \quad (1)$$

where Acc is total accruals, Ppp is property, plant, and equipment, $\Delta Sales$ is the change in sales, Roa is return on assets, and $Assets$ is total assets. “Accruals” are earnings before extraordinary items and discontinued operations minus cash flows from continuing operations (i.e. total cash from operations minus cash portion of discontinued operations and extraordinary items) obtained directly from the statement of cash flows, following [Hribar and Collins \(2002\)](#).

The non-discretionary accruals ($Ndap$) are the fitted values of Regression (1) and the discretionary accruals (Dap) are the deviations of actual accruals from $Ndap$. The pre-discretionary income (Pdi) is calculated as net income minus discretionary accruals ($Pdi = Ni - Dap$). The income smoothing measure is the correlation between the change in discretionary accruals and the change in pre-discretionary income: $Corr(\Delta Dap, \Delta Pdi)$, using the current year’s and past four years’ observations. Firms with a more negative correlation receive a higher income smoothing ranking.

Khurana *et al.* (2018) rely on the intuition of Tucker and Zarowin (2006) to operationalize real earnings smoothing. They assume that there is an underlying pre-managed earnings stream and that management smooths reported earnings via their discretion over real activities, such as adjusting production activities and altering expense occurrences. Specifically, Khurana *et al.* (2018) use the negative correlation between managed earnings ascribed to the alteration of discretionary expenses (production) and the pre-managed earnings to capture real earnings smoothing via managerial discretion over expenses (production). The managed earnings ascribed to the adjustment of discretionary expenses are defined based on abnormal discretionary expenses that are estimated from Roychowdhury's (2006) model below by industry-year using the ordinary least squares regression:

$$\frac{Disexp_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta \left(\frac{S_{t-1}}{A_{t-1}} \right) + \varepsilon_t \quad (2)$$

where *Disexp* is the discretionary expense, computed as the sum of (1) advertising expenses, (2) R&D expenses, and (3) selling, general, and administrative expenses; *S* is sales; and *A* is total assets. Abnormal discretionary expenses are calculated as the actual values minus the normal levels predicted from Equation (2). Khurana *et al.* (2018) multiply the abnormal discretionary expenses by minus one (−1) to generate the managed earnings attributed to discretionary expenses so that higher values correspond to greater income-increasing, real earnings management through expenses.

The managed earnings attributed to the adjustment of production are defined as abnormal production costs. Specifically, Roychowdhury (2006) estimates the following model for each industry-year:

$$\frac{Prod_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}} \right) + \beta_1 \left(\frac{S_t}{A_{t-1}} \right) + \beta_2 \left(\frac{\Delta S_t}{A_{t-1}} \right) + \varepsilon_t \quad (3)$$

where *Prod* is the sum of the cost of goods sold and change in inventory, ΔS is the change in sales, and other variables are defined as above. Abnormal production costs are calculated as the actual values minus the normal levels estimated from Equation (3). The pre-managed earnings are calculated as earnings minus the managed component of earnings attributed to the adjustment of discretionary expenses or production. Khurana *et al.* (2018) then calculate the correlation between the managed component of earnings attributed to discretionary expenses and the pre-managed earnings over the rolling five-year window ending in the current year.

Although these models are widely used in the existing literature, Black *et al.* (2022) caution that discretionary accruals suffer from well-known model specification errors in that accruals are often correlated with firm-specific factors like growth, risk, and performance. Furthermore, the authors address concerns raised by Dechow *et al.* (2010) about benchmark selection and estimation bias, noting that many smoothing measures based on abnormal accrual models or predicted smoothing tendencies suffer from measurement error and inflated type I error rates [4].

3. Determinants of income smoothing

Dechow *et al.* (2010, p. 361) ask “When managers have accounting choices that can influence smoothness, do they make choices that result in greater earnings smoothness?” Such studies are categorized as the determinants of smoothness but do not speak about the quality of earnings *per se*. We review the literature on the determinants of income smoothing in this Section. To enhance clarity and facilitate a robust discussion, we categorize the reviewed studies into the following themes: (3.1) financial reporting standards, (3.2) firm characteristics, (3.3) governance, (3.4) managerial characteristics, (3.5) macro environment and (3.6) other factors.

3.1 Financial reporting standards and income smoothing

This sub-section elaborates on the literature that examined the impact of financial reporting standards on managerial income smoothing behavior. Studies examined whether voluntary adoption of the International Financial Reporting Standards (IFRS) resulted in smoother earnings. [Capkun et al. \(2016\)](#) find that earnings smoothing increased across all IFRS adopters, namely early adopters, late adopters and mandatory adopters. They explain that the IFRS standards provide flexibility because of vague criteria, subjective estimates, and multiple accounting options, which are further worsened by the lack of clear guidance on how to implement these new standards. While [Capkun et al. \(2016\)](#) examined the overall adoption of IFRS, other studies investigated the impact of implementing specific standards on income smoothing. Drawing on information asymmetry theory, [Athanasakou et al. \(2007\)](#) find a significant increase in the use of classificatory smoothing post-FRS3 which is consistent with FRS3 granting managers greater discretion over the classification of exceptional items.

The mandatory adoption of International Accounting Standards (IAS) 39 Financial Instruments: Recognition and Measurement ([IASB, 2004](#)), reduces managerial discretion and limits the build-up of reserves by prohibiting the recognition of forward-looking information in loan loss provisioning. Under IAS 39, banks are required to recognize loan impairments only when there is objective evidence of loss occurring after the asset's initial recognition, effectively prohibiting provisions based on expected credit losses. This restricts the use of LLPs as a tool for earnings manipulation ([Barth et al., 2008](#); [Ewert and Wagenhofer, 2005](#)). However, this incurred-loss model may exacerbate pro-cyclicality, as banks are compelled to record higher provisions during economic downturns ([Wall and Koch, 2000](#)). Empirical evidence supports these theoretical implications. [Adzis et al. \(2016\)](#) find that banks in Hong Kong engaged in less income smoothing following IAS 39 adoption, although they did not observe increased pro-cyclicality in LLPs. Similarly, [Osma et al. \(2019\)](#) report a decline in income smoothing among European banks post-IAS 39 adoption.

The Statement of Financial Accounting Standard No. 133 (SFAS 133) requires mandatory recognition and disclosure of derivative instruments and hedging activities. While the standard enhances transparency and visibility of derivative instruments ([Ahmed et al., 2006](#)), it has been criticized for the restrictions leading to higher earnings volatility ([Choi et al., 2015](#); [Sapra, 2002](#)). [Kilic et al. \(2013\)](#) explain that banks that are more affected by SFAS 133 rely more on LLPs to smooth income because the mandatory recognition of hedge ineffectiveness under SFAS 133 reduces banks' ability to smooth income through derivatives. [Tessema and Deumes \(2018\)](#) further support that income smoothing through discretionary accruals increases after SFAS 133 adoption, particularly for firms with hedge ineffectiveness. Staff Accounting Bulletin 102 was introduced in 2001 by the Securities and Exchange Commission and other banking regulatory agencies to establish a systematic loan loss allowance methodology for heterogeneous loans. Regulatory changes introduced by the [US FFIEC \(2001\)](#) and jointly by the Securities and Exchange Commission (SEC) and [US FFIEC \(2001\)](#) altered income smoothing practices in U.S. banks [5]. [Mamun et al. \(2019\)](#) find that these reforms reduced the discretionary use of loan recoveries and provisions. Specifically, they report a weakened relationship between charge-offs and recoveries for homogeneous loans, but a strengthened relationship for heterogeneous loans post-regulation. The Basel II framework introduces more refined risk measurement standards, increasing the risk sensitivity and requiring greater capital requirements, placing corporate banks under greater regulatory pressure ([Basel Committee, 2011](#)). [Lim and Yong \(2017\)](#) find that during the Basel II period, banks with low capital exhibit more income smoothing than those with high capital, with managers delaying the recognition of LLPs. This pattern is not observed in the retail banking sector.

[Ferracuti et al. \(2025\)](#) examine whether earnings smoothing reflects managerial attempts to avoid undue pressures from outsiders who cannot correctly distinguish the impact of transitory shocks from sustainable trends in value creation. Specifically, when investors cannot differentiate between transitory and permanent fluctuations in earnings, managers become

concerned that investors may take a temporary drop in profits as a sign of decline in long-term value creation. The opposite is also true. Using variation in firms' ability to hedge foreign currency exposure through derivatives, they find that firms are less likely to smooth earnings when they can better hedge against such currency fluctuations. These findings support the view that earnings smoothing can serve as a rational response to market misinterpretation [6].

The overarching objective of financial reporting standards such as IFRS, SFAS 133, IAS 39, and Basel II is to enhance the transparency and informativeness of financial statements. However, the extant literature presents inconclusive evidence on whether these standards effectively curtail opportunistic income smoothing practices and increase informativeness. While some studies highlight increased transparency and reduced managerial discretion, others find that the inherent flexibility and ambiguity of these standards may hinder the informativeness of earnings. Theoretically, this inconsistency reflects the tension between the signaling view, which suggests that regulatory reforms should reduce information asymmetry and improve financial reporting quality, and the opportunistic view, which posits that managers may exploit regulatory ambiguity to serve private interests.

3.2 Firm characteristics and income smoothing

A stream of studies investigated how firm-level characteristics such as firm size, profitability, customer concentration, and dividend policy impact income smoothing. There are mixed findings regarding the impact of firm size and profitability on income smoothing practices. Research highlights that smaller firms may be more likely to engage in income smoothing (Ozili, 2017a; Safdar and Yan, 2016; Silhan, 2014). For example, Safdar and Yan (2016) show that smaller firms experiencing more volatile economic activities tend to engage more aggressively in income smoothing practices. In contrast, larger firms are less likely to engage in income smoothing due to increased scrutiny and political visibility (Rusmin *et al.*, 2012). Evidence on profitability as a determinant of income smoothing is also mixed. Abou El Sood (2012) finds that bank holding companies are more likely to smooth income when they are more profitable, suggesting that strong financial performance provides greater discretion for earnings management. In contrast, Silhan (2014) finds that less profitable firms tend to smooth earnings more, possibly to conceal underperformance or reduce stakeholder concern. These contrasting findings reflect the political cost hypothesis, which posits that larger firms are subject to greater public and regulatory scrutiny and therefore have incentives to limit opportunistic income smoothing to avoid attracting unwanted attention or intervention. Monjed and Ibrahim (2020) show that higher financial and operational risks, measured by leverage, solvency, and cash flow volatility, are positively associated with income smoothing behavior.

Prior research finds that the extent of customer concentration is a factor that managers consider in making income smoothing decisions. Jung *et al.* (2025) find a negative association between customer concentration and income smoothing. This finding suggests that when supplier firms have close relationships with major customers, they can convey more information directly, reducing the need to use income smoothing as a signaling mechanism. Hartlieb and Roy (2022) report that increased cost stickiness reduces the extent of income smoothing, particularly in firms with high adjustment costs and during periods of high economic growth. By contrast, using wrongful discharge laws as an instrumented variable for cost stickiness, Filip *et al.* (2025) find that cost stickiness encourages income-smoothing behaviors, especially in firms more sensitive to labor costs and those with stronger incentives to provide information. Collectively, these findings underscore that the decision to engage in income smoothing is further shaped by firms' customer base and cost structures.

While firm characteristics such as profitability and customer concentration may reduce the need for income smoothing by providing alternative channels of information, financial policy decisions such as dividend payouts and share repurchases often motivate managers to engage in income smoothing as a signaling device aimed at capital markets and labor markets. Liu and Espahbodi (2014) find that dividend-paying firms are more likely to smooth earnings

compared to non-dividend payers, to sustain stable dividend policies. Similarly, [Di and Marciukaityte \(2015\)](#) report that firms experiencing temporary increases in operating cash flows tend to use negative discretionary accruals to smooth earnings before share buybacks. This strategy is employed to enhance the consistency and predictability of reported earnings, thereby signaling stability to investors. In addition to the signaling tool that is used to communicate to the capital markets, managers use income smoothing as a signaling mechanism to the labor markets. [Jung et al. \(2024\)](#) find that firms with greater dependence on skilled labor are more likely to engage in earnings smoothing as a means of reducing employee turnover and facilitating workforce stability, particularly during periods of performance volatility. [Sun and Zhang \(2023\)](#) find that short-selling prospect is negatively associated with one-year-ahead earnings smoothing, suggesting that short-selling interest acts as a disciplining mechanism. Additional analysis reveals that short sale prospect, by curbing income smoothing, reduces future stock price crash risk.

In the banking sector, income smoothing practices are shaped by a range of institutional and financial factors. While securitization offers banks immediate liquidity and risk dispersion, it also introduces agency problems such as adverse selection and moral hazard, weakening loan screening incentives ([Keys et al., 2010](#); [Wang and Xia, 2014](#)). [Kilic et al. \(2021\)](#) find that banks with higher levels of securitization engage more actively in income smoothing through LLPs, potentially supporting the informative view of income smoothing. Listing status and market pressures also influence smoothing behavior in the banks ([Ozili, 2017b](#)). From a business model perspective, [Di Fabio \(2019\)](#) finds that retail-funded European banks smooth income more than market-oriented or diversified-retail banks, with higher earnings quality supporting the argument that income smoothing can enhance earnings informativeness. Firm-level financial risks also play a role. [Ozili and Outa \(2018\)](#) report that South African banks are less likely to smooth income when facing under-capitalization, high levels of non-performing loans, or moderate ownership concentration. [Peterson and Arun \(2018\)](#) examine the differential use of income smoothing via LLPs between European global systemically important banks (G-SIBs) and non-G-SIBs. Their results show that G-SIBs smooth income more aggressively in the post-2008 crisis period, whereas non-G-SIBs exhibited stronger smoothing behavior before the 2008 financial crisis period. One possible explanation for this shift lies in the alignment between systemic banks and broader financial stability objectives [7].

Compared with the central state, local governments face stricter constraints on revenue, expenditure and debt ([Oates, 1999](#)). To circumvent these limits, they often shift spending and borrowing to municipally owned companies (MOCs), thereby avoiding statutory debt restrictions ([Grossi and Thomasson, 2011](#)). Using Polish data, [Bialek-Jaworska et al. \(2025\)](#) show that MOCs leverage their borrowing capacity to provide off-budget financing for local governments. This role encourages them to smooth earnings more than private firms, as stable performance helps meet debt covenants, enhance credit ratings and reduce financing costs [8].

3.3 Governance and income smoothing

Separation of ownership and control paves way for managers to engage in opportunistic behavior at the expense of the shareholders' interests but effective governance mechanisms constrain these adverse consequences ([Jensen and Meckling, 1976](#)). In view of this disciplining mechanism through internal and external governance, [Fonseca and Gonzalez \(2008\)](#) find that investor protection, legal enforcement and supervision affect managerial income smoothing behavior using evidence from listed and unlisted banks across forty countries. [Ibrahim et al. \(2020\)](#) investigate the impact of corporate governance reforms on firms' use of artificial and real income smoothing in the Egyptian context and find that managers are more inclined to engage in real income smoothing than in accrual-based smoothing. In addition to the board structure, research also examined the relationship between co-CEO structure and income smoothing. Although co-CEO structures are theoretically

expected to provide internal checks and balances through mutual monitoring and decision-making diversity (Baik *et al.*, 2020; Choi *et al.*, 2018), recent evidence (Demerjian *et al.*, 2020a; Lee and Shin, 2025) suggests that such arrangements may also facilitate opportunistic behavior in financial reporting. Lee and Shin (2025) find that firms with a co-CEO structure exhibit smoother earnings than those led by a sole chief executive officer (CEO).

CEO contractual incentives, such as insider debt holding and cash bonuses, may determine the extent of income smoothing. CEO equity ownership and bonus are intended to align managers' interests with those of shareholders to reduce agency problems (Jensen and Meckling, 1976). Prior research shows that higher inside debt holdings, CEO cash bonuses, and options encourage CEOs to take calculated risks (Edmans and Liu, 2011; Wei and Yermack, 2011). Shu (2021) provides empirical evidence supporting the argument that CEOs with lower inside debt smooth earnings to conceal firms' underlying economic performance [9]. Consistent with the interest alignment view, Shu and Thomas (2019) report that CEO's holding of stock increases the correlation between past smoothing and the predictability of future earnings. However, the study finds that CEO's holding of options exhibits a contrasting impact. In the context of income smoothing, managers are likely to dampen earnings volatility to signal smoothed income to secure their contractual benefits. Supporting this opportunistic view, Tessema (2018) finds that earnings smoothing and CEO cash bonuses are positively related. Similarly, Grant *et al.* (2009) report that CEO risk-taking incentives, measured by the sensitivity of stock options to volatility and stock price, are positively related to income-smoothing measures. Eckles *et al.* (2011) reveal that managers who receive higher bonuses and stock awards are more likely to make reserving decisions that reduce firm earnings. These findings highlight that CEO structures and incentives can both inform and distort earnings. While some mechanisms such as equity ownership and remuneration disclosures can enhance informativeness by aligning interests, others may enable opportunistic smoothing that reduces earnings transparency. This mixed evidence suggests that governance mechanisms are not uniformly effective.

Institutional ownership is considered as an external governance mechanism that determines managerial financial reporting behavior. Institutional investors' investment horizon, nature and ownership stake play a role in determining their governance effectiveness (Chang and Hong, 2000; Chen *et al.*, 2007; Yan and Zhang, 2009). In line with these assertions, Cho *et al.* (2019) contend that domestic institutional investors in the Korean market with short-term investment objectives encourage firm management to engage in earnings smoothing. Kwak *et al.* (2009) analyze Japanese banks and find that domestic financial and affiliated institutional owners lead to higher income smoothing through LLPs. In contrast, foreign institutional owners are likely to constrain managerial opportunistic behavior around financial reporting by engaging in effective monitoring mechanisms (Aggarwal *et al.*, 2011). Using evidence from the banking sector in emerging economies (i.e. Africa), Pinto *et al.* (2020) find that managers' income smoothing activities are less pronounced when there is higher foreign ownership. Similar evidence is revealed by Ozili and Arun (2023).

Although institutional ownership constrains income smoothing, their monitoring effectiveness can also result in higher income smoothing that signals inside information to the capital markets, supporting the informativeness view (Jung *et al.*, 2020). David *et al.* (2022) report that the exit threat of foreign non-blockholders' whose ownership of less than 5% is positively linked to income smoothing. Furthermore, Wu *et al.* (2015) find that foreign strategic investors increase earnings smoothing in Chinese local banks, and they attribute this effect to the safety and soundness channel. Skała (2021) also reports that amongst a sample of Central European banks, foreign-owned banks use LLPs to perform discretionary income smoothing, while state-owned banks do not smooth income. Similar results are reported for Australian firms regarding the positive association between institutional ownership and the likelihood of firms smoothing earnings towards their earnings trend (Koh, 2005). Within the Taiwan setting, Chen *et al.* (2020) report that high institutional ownership diminishes the informativeness of earnings in firms that engage in income smoothing. This effect is more

pronounced when ownership is held by qualified foreign institutional investors rather than local ones. Institutional ownership influences income smoothing in both constraining and enabling ways, with its effectiveness as a governance mechanism depending on ownership type, investment horizon, and monitoring intent, reflecting the dual role of income smoothing as either informative or opportunistic.

Prior research also examined the impact of ownership concentration on income smoothing. Higher ownership concentration can have a negative effect as larger owners can use the control of the firms for private benefits, consistent with the entrenchment hypothesis (Claessens *et al.*, 2002; Jensen and Meckling, 1976). Supporting this entrenchment effect of ownership concentration, Bouvazier *et al.* (2014) report that concentrated shareholding and control structures are positively related to the intensity of smoothed earnings in Europe. In contrast, on a cross-country sample, Tinaikar (2017) finds evidence that when the levels of private control benefits are low, firms exhibit lower levels of earnings smoothing. Doan *et al.* (2020) report that banks with more state-controlled shareholders located in developing countries tend to have more incentives to smooth income.

Family ownership is another factor that determines the managerial income smoothing behavior. In family-controlled firms, the agency conflict between owners and managers is reduced as the controlling family closely monitors management and often holds top executive positions (Villalonga and Amit, 2006). Moreover, the stewardship perspective suggests that controlling families are highly committed to the interests of the organization and its stakeholders (Davis *et al.*, 1997; Donaldson and Davis, 1991) because their financial well-being, personal fulfillment, and reputation are closely tied to the firm (Bubolz, 2001). Empirical evidence supports that family-controlled companies are less likely to engage in income smoothing (Prencipe *et al.*, 2011). Dual stakeholders, where shareholders own equity and debt, provide a unique setting to investigate managerial reporting behavior such as income smoothing. Both Type I and Type II agency problems can be addressed in a dual shareholder setting (Armstrong *et al.*, 2010). Bigus and Häfele (2018) find that German private firms with shareholders who are both equity holders and creditors engage in significantly low levels of earnings smoothing. Furthermore, stable shareholding with long-term investment horizons can mitigate myopic behavior and incentivize managers to pursue long-term stable earnings (Jacobson and Aaker, 1993). This view finds support in the Japanese setting, where firms conduct earnings smoothing that provides useful information when stable shareholdings increase (Shuto and Iwasaki, 2014).

Another important governance-related determinant for smoothing is the presence of firm-level political connections and the associated political risks. These factors influence managerial incentives, stakeholder expectations, and strategic financial reporting decisions. Rooted in the political cost hypothesis, prior research suggests that managers engage in accounting choices to minimize wealth transfers in the political process (Watts and Zimmerman, 1978, 1986). Consequently, firms facing higher political risk may have stronger incentives to engage in income smoothing. Supporting this view, Jung and Yang (2024) find a positive association between political risk and income smoothing, suggesting that managers use smoothing to reduce earnings variability and mitigate stakeholder scrutiny. Similarly, Pappas *et al.* (2024) associate government subsidization with greater political costs and find that subsidized firms engage in more aggressive income smoothing than their non-subsidized counterparts. In addition to the political cost hypothesis, another stream of research views political connections as a source of advantage, offering firms access to lower financing costs and increased chances of government support (Boubakri *et al.*, 2012). In line with this perspective, Tee (2020) finds that politically connected firms engage in more income smoothing than their non-connected counterparts, partly driven by domestic institutional investors who perceive smoothing as a way to convey private information. Jung (2024) finds that politically connected firms engage in more income smoothing, particularly when facing higher expected political costs [10]. In sum, the above research provides evidence to support the political cost incentive of managers when engaging in income smoothing behavior.

Labor unions, in certain circumstances, act as governance mechanisms in the sense that they monitor managerial behavior on behalf of the workforce. Employees with salary-based compensation may perceive earnings volatility as an indicator of heightened bankruptcy risk, prompting them to demand higher wages, enhanced benefits, and improved working conditions (Agrawal and Matsa, 2013). Consequently, managers have an incentive to present more stable earnings (i.e. reduced volatility) to mitigate wage-related demands from unions seeking risk compensation. Hamm *et al.* (2018) provide empirical evidence that the presence of strong labor unions is positively and significantly associated with income smoothing. This finding is substantiated by Shin and Park (2022) with evidence from South Korea. However, these findings are only significant in non-chaebol firms. Authors argue that Chaebol-affiliated firms have internal capital markets that reduce cash flow volatility, decreasing managers' incentives to smooth earnings via R&D adjustments in response to labor unions. These results support the notion that unions amplify managerial incentives to engage in income smoothing as a strategic tool to contain wage pressures, supporting the information view of income smoothing.

3.4 Managerial characteristics and income smoothing

A few studies that we reviewed examined whether managerial ability affects income smoothing. To engage in income smoothing, managers must have insight into the firm's future economic prospects, enabling more accurate earnings forecasting [11]. Building on these insights, Baik *et al.* (2020) posit that more capable managers can forecast earnings more accurately, leading to informative income smoothing and find that managerial ability enhances income smoothing and improves the prediction of future cash flows. Similarly, Demerjian *et al.* (2020a) find that high-ability managers engage in income smoothing when firms are near debt covenant violation thresholds and when managers are younger. Extending the concept of able managers' income smoothing strategies to the M&A setting, Doukas and Zhang (2020) find that acquiring firms engage in higher levels of earnings smoothing before M&A announcements compared to target firms.

The career concerns hypothesis suggests that long-tenured CEOs are less concerned about their career prospects (Thomas and Simerly, 1994), prioritize long-term objectives, and tend to use their authority to influence accounting results or reported earnings (Ghosh and Moon, 2005). Aligning with this view, Nurakhmet and Park (2024) report that firms led by CEOs with longer tenures tend to engage in more informative income smoothing. Literature establishes that managerial optimism affects a wide range of corporate and individual decisions, leading to overly optimistic earnings forecasts (Hribar and Yang, 2016) and misstated earnings (Schrand and Zechman, 2012). Bouwman (2014) extends this strand of research and reports that optimistic managers smooth earnings more than rational managers. Bae *et al.* (2025) find that firms with female CFOs engage in less income smoothing for a sample of Chinese listed firms. Additionally, the negative relationship between female CFOs and income smoothing is more pronounced in firms with lower financial leverage. Although the authors do not empirically investigate the underlying mechanisms behind this relationship, they suggest that female CFOs with higher risk-aversion and ethical sensitivity may engage in less income smoothing. In conclusion, these studies support the view that managerial characteristics influence income smoothing behavior.

3.5 Macro environment and income smoothing

Evidence exists to suggest that income smoothing behavior is affected by broader macro-environmental conditions. Exogenous shocks, such as the 2008 global financial crisis, have been shown to be associated with firms' income smoothing patterns. During the crisis, firms shifted their focus from long-term planning to short-term survival, which increased the incentive to manage earnings opportunistically (Bowman, 1982). Chen *et al.* (2020) find that the informativeness of smoothed earnings declined during this period, as firms frontloaded

future income to mitigate immediate financial distress. In the banking sector, income smoothing through LLPs persisted, though at varying intensities. Greek banks continued smoothing practices during the crisis, albeit to a lesser extent than in pre-crisis periods (Aggelopoulos *et al.*, 2024), while African banks increased LLP-based smoothing post-crisis, especially where investor protection mechanisms were weaker (Ozili, 2019). Similarly, Rusmin *et al.* (2012) show that transportation firms engaged in intertemporal earnings deflation during periods of economic stress to manage future expectations, whereas Abou El Sood (2012) finds that banks continued smoothing even in non-recessionary periods, indicating that macroeconomic conditions are just one of several contributing factors.

Government guarantees represent another macro-level force that can influence income smoothing behavior by reducing perceived downside risk. These guarantees can lower investor scrutiny and shift the monitoring burden to regulators, potentially enabling riskier financial strategies (Duchin and Sosyura, 2014; Gropp *et al.*, 2014). However, Dantas *et al.* (2023) report that government guarantees essentially reduce income smoothing in European banks, while their removal increases the use of LLPs for earnings management, highlighting the dual role of guarantees in dampening smoothing incentives but also in weakening market discipline. The labor economics literature posits that unemployment risk is costly to firms because employees who are concerned about the adverse effects of unemployment require firms to provide a wage premium for this risk exposure. To mitigate these costs, managers have incentives to engage in income smoothing to make their firms appear less risky to current and prospective employees. Using exogenous variations in the U.S. unemployment insurance benefits, Ng *et al.* (2019) find that more generous state unemployment insurance benefits result in less income smoothing by firms.

The role of regulators and supervisory authorities is similarly complex. Regulatory bodies focused on financial stability may implicitly encourage income smoothing to align reported performance with supervisory expectations (Gaston and Song, 2014). LLPs are often seen as a regulatory tool to retain earnings, reduce cyclicality, and address moral hazard (Beatty *et al.*, 1995). Di Fabio *et al.* (2021) provide evidence that stricter prudential regulation increases smoothing, but only in jurisdictions with robust accounting enforcement and limited market discipline. This highlights the interdependence between regulation, enforcement quality, and managerial discretion in financial reporting. Legal institutions and enforcement quality further shape the extent and purpose of income smoothing. Strong legal systems enhance transparency and accountability, reducing the need for managerial obfuscation. Zhang and Zhang (2018) show that the enforcement of insider trading laws significantly decreases earnings smoothing, especially in countries with persistent enforcement and severe penalties. Dou *et al.* (2013) similarly find that firms in countries with weak contract enforcement are more likely to smooth earnings as a signal of long-term commitment, particularly in relationship-intensive industries. Drawing evidence from an international trade perspective, Biswas *et al.* (2024) find that global trade policies also affect managerial income smoothing practices. Macro-level forces such as exogenous shocks, regulatory frameworks, the extent of legal enforcement, and government guarantees shape income smoothing behavior in complex and often contradictory ways, making it difficult to determine whether such practices serve informative or opportunistic purposes.

3.6 Other factors and income smoothing

Societal trust reflects the generalized trust individuals have toward unknown members of their broader community (Gambetta, 1988). Higher levels of societal trust can influence the extent to which investors rely on reported earnings, as they may perceive financial disclosures as more credible in high-trust environments. Kim *et al.* (2025) find that firms domiciled in more trusting countries are less likely to use income smoothing, suggesting that societal trust reduces the demand of investors for managers to signal private information and consequently, managers reduce the use of income smoothing as a response to this reduced demand.

The perception of the future varies depending on whether a language requires speakers to grammatically mark future events, known as obligatory future time reference (Whorf, 2012). For weak future time reference languages, both the present and the future are in the same conceptual category, making the future feel closer and increasing speakers' psychological concern for it (Dahl, 2000). Speakers of weak future time reference languages tend to prioritize future-oriented benefits, such as savings, retirement wealth, and long-term health (Chen, 2013b). Cao *et al.* (2024a) find that firms in countries with weak future time reference languages engage in greater earnings smoothing, which enhances earnings informativeness. The findings support the theoretical view that weak future time reference speakers have more ambiguous perceptions and beliefs about future timing.

China, as the world's largest carbon emitter, introduced its Emission Trading Scheme pilot program in 2013, requiring firms to comply with environmental regulations while maintaining economic performance. To meet these requirements, firms invest in costly green technologies and innovation (Guo and Zhang, 2023) and purchase emission allowances, incurring direct compliance costs before transitioning to low-pollution operations. Cao *et al.* (2024b) find that ETS-regulated firms engage in income smoothing, reinforcing the argument that managers use income smoothing to reduce perceived risk and secure favorable financing terms (Francis *et al.*, 2004; Ni *et al.*, 2022). Prior research demonstrates that firms engage in earnings smoothing to maintain supply chain relationships (e.g. Dou *et al.*, 2013). Chen *et al.* (2019) argue that the income-smoothing behavior of socially responsible companies depends on how their supply chain partners approach corporate social responsibility (CSR). Specifically, CSR firms with greater supply chain dependence exhibit lower levels of income smoothing, indicating that the CSR-income smoothing trade-off is conditional on supply chain dependence levels.

Recent evidence highlights the role of local social norms in shaping managerial financial reporting decisions. For example, firms headquartered in more religious U.S. counties are found to engage in higher levels of income smoothing, suggesting that religiously influenced risk aversion may drive managers to reduce earnings volatility rather than abstain from smoothing for ethical reasons (James *et al.*, 2025). These studies that we reviewed underscore the importance of contextual and behavioral influences, such as societal trust, language structure, environmental regulation, and religious norms, on income smoothing practices. Collectively, they suggest that managers' smoothing decisions are shaped not only by firm-level incentives but also by broader cultural, institutional, and regulatory environments, often in ways that support the informative role of income smoothing. Table 2 summarizes the key findings of the papers surveyed in this section.

4. Consequences of income smoothing

In this section, we review the empirical literature on the consequences of income smoothing categorizing them into equity market consequences (Section 4.1), credit market consequences (Section 4.2), and other consequences (Section 4.3).

4.1 Income smoothing and equity market consequences

The findings of the consequences of income smoothing, i.e. the relation between income smoothing and decision outcomes such as stock market reaction, should be useful to address the informativeness of income smoothing. However, evidence from the empirical literature on the consequences of income smoothing is inconclusive. On one hand, a body of literature emphasizes the informative role of income smoothing, which is argued to benefit investors. Under this view, managers use income smoothing to communicate private information about firms' future cash flows (Tucker and Zarowin, 2006). On the other hand, the managerial opportunism view suggests that earnings smoothing can obfuscate the actual underlying

Table 2. Summary of literature – determinants of income smoothing

Author(s)	Research theme	Country/Sample	Findings
Koh (2005)	Institutional ownership and income smoothing	Australia: 836 firm-year observations from 1993 to 1997	There is a positive association between institutional ownership and the likelihood of firms smoothing earnings towards their earnings trend. The positive association is most evident among profit firms with pre-managed earnings above their earnings trend
Athanasakou <i>et al.</i> (2007)	FRS3 and income smoothing	UK: 1,828 observations from 1986 to 1998	There has been an increase in the practice of classificatory smoothing post-FRS3. The rise can be attributed to the incidences of higher absolute unexpected earnings which can be adjusted through reclassifying exceptional items
Fonseca and Gonzalez (2008)	Country-level determinants and income smoothing in banks	Global: 3,221 bank-year observations across 40 countries from	Stronger legal enforcement and investor protection reduce incentives to smooth earnings in banking. Accounting disclosures, restrictions on bank activities and supervision also reduce bank managers' incentives to engage in income smoothing through LLPs. A nation's financial system and the market orientation increase managerial incentives to engage in income smoothing in banks
Grant <i>et al.</i> (2009)	CEO risk-taking and income smoothing	US: 6,963 firm-year observations from 1992 to 2005	Risk-taking incentives of executive stock options are positively related to income-smoothing. The relationship is strongest in the presence of institutional investors, when risk-taking is high, and idiosyncratic volatility is high
Kwak <i>et al.</i> (2009)	Institutional ownership and income smoothing	Japan: 103 banks; 812 bank-year observations from 1990 to 1999	The percentage of institutional ownership of banks is positively associated with income smoothing via LLPs. There is a significant positive relationship between the extent of income smoothing and the percentage ownership of banks by domestic financial institutions and affiliated institutions
Eckles <i>et al.</i> (2011)	CEO bonuses and stock awards, corporate governance and income smoothing	US: 311 insurer-year observations from 1992 to 2004	Managers receiving larger bonuses and stock awards tend to make decisions that serve to decrease firm earnings. Managers are more likely to manipulate reserves in the presence of particular board structures
Prencipe <i>et al.</i> (2011)	Family control and income smoothing	Italy: 135 firm-year observations from 2001 to 2004	Income smoothing is less likely among family-controlled companies than non-family-controlled companies. The result is less pronounced in firms whose CEO and board chair are members of the controlling family
Rusmin <i>et al.</i> (2012)	Economic crisis, firm size and income smoothing	Asia: 1,094 transportation firm-year observations from 2002 to 2009	Managers opportunistically smooth income to beat earnings targets. During a period of economic stress, transportation firm managers manipulate their reported earnings downward. Larger firms subject to more public scrutiny and political actions exhibit less aggressive income-increasing earnings management behavior

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Abou El Sood (2012)	Regulatory target, non-recession and income smoothing	US: 878 bank holding companies; 4,689 bank-year observations from 2001 to 2009	There is strong evidence of income smoothing behavior. Bank holding companies accelerate LLPs to smooth income when (1) banks hit the regulatory minimum target, (2) are in non-recessionary periods, and (3) are more profitable. Bank-internally set regulatory capital ratios are relatively more significant than regulatory-set ratios to trigger income smoothing
Dou <i>et al.</i> (2013)	Contract enforcement and income smoothing	Cross-country (39 countries): 117,305 firm-year observations from 1992 to 2004	Firms that reside in countries with weak contract enforceability and operate in industries with a greater need for relationship-specific investments tend to smooth reported income more. The results are driven by the “informational” component rather than by the “garbled” component of income smoothing
Kilic <i>et al.</i> (2013)	SFAS 133 and income smoothing	US: 1,427 bank-year observations from 1998 to 2003	Because mandatory recognition of hedge ineffectiveness under SFAS 133 reduced banks’ ability to smooth income through derivatives, banks that are more affected by SFAS 133 rely more on LLPs to smooth income. The increased reliance has impaired the informativeness of LLPs for future loan defaults and bank stock returns
Bouvatier <i>et al.</i> (2014)	Ownership concentration and income smoothing	EU: 783 banks – 3,406 bank-year observations from 2004 to 2009	European commercial banks with more concentrated ownership use discretionary LLPs to smooth their income. This behavior is less pronounced in countries with stronger supervisory regimes or higher external audit quality
Bouwman (2014)	CEO optimism and income smoothing	US: 1,705 firm-year observations from 1984 to 1994	Optimistic managers smooth earnings more than rational managers and are more likely to show smaller earnings surprises
Khalil and Simon (2014)	Efficient contracting and income smoothing	Egypt: 438 firm-year observations from 2004 to 2007	Contracting incentives explain little of the variations in accounting choices (i.e. discretionary accruals) in the Egyptian context. Managers tend to adjust the accrual component of earnings to smooth fluctuations in reported income, increasing earnings when they are low and decreasing them when they are high
Liu and Espahbodi (2014)	Dividend policy and income smoothing	US: 3,826 firm-year observations from 1992 to 2009	Dividend-paying firms engage in more earnings smoothing than non-payers using both real activities and accruals management. Earnings smoothing, in part, drives the higher earnings persistence of dividend-paying firms
Silhan (2014)	Firm size, performance and income smoothing	US: 1,746 firms; 69,840 firm-quarter observations from 2000 to 2009	Smaller and less profitable firms exhibited the highest incidence of effective smoothing rates. Such firms tend to have higher earnings volatility and more risk than larger firms
Shuto and Iwasaki (2014)	Stable shareholdings and income smoothing	Japan: 8,795 firm-year observations from 1988 to 2006	As stable shareholdings increase, managers are more likely to conduct earnings smoothing that provides useful information to stable shareholders

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Di and Marciukaityte (2015)	Share repurchases and income smoothing	EU: 8,494 firm-year observations from 1989 to 2008	Firms experience temporary increases in operating cash flows and use negative discretionary accruals to smooth earnings before share repurchases. Firms with the highest pre-repurchase cash flows use the lowest pre-repurchase discretionary accruals. Firms with the strongest deterioration in operating cash flows after repurchases use the lowest pre-repurchase discretionary accruals
Wu <i>et al.</i> (2015)	Foreign investors, directors and earnings smoothing	102 local banks from 2006 to 2011	There is no significant difference in earnings smoothing between FSI and non-FSI banks. Banks with two FSIs tend to engage in more ES, supporting the “safety and soundness” channel. FSI banks with more FSI directors (two or more) engage in higher ES than those with only one FSI director
Adzis <i>et al.</i> (2016)	IAS 39 and income smoothing	Hong Kong: 13 banks - 126 bank-year observations from 2000 to 2009	Hong Kong banks engage less in income-smoothing activity after they comply with the IAS 39 - Financial Instruments: Recognition and Measurement. No evidence that LLPs of Hong Kong banks exhibit more pro-cyclical behavior after IAS 39 adoption
Safdar and Yan (2016)	Size, performance and income smoothing	Pakistan: 1,814 firm-year observations from 2007 to 2012	Smaller firms experiencing more volatile economic activities—measured through non-discretionary accruals—tend to engage more aggressively in income smoothing practices
Lim and Yong (2017)	Basel II and income smoothing	Cross-country (18 countries): 702 bank-year observations from 2003 to 2007	There is a greater (less) income smoothing in the corporate banking segments of low-capital (high-capital) banks during the Basel II period and LLPs are recognized in a less timely fashion. There are no such effects for retail banking
Ozili (2017a)	Firm size and income smoothing	EU: 231 banks - 1,874 bank-year observations from 2004 to 2014	European banks use commission and fee income to smooth reported earnings and this behavior is pronounced among non-too-big-to-fail (NTBTF) European banks compared to too-big-to-fail (TBTF) European banks. There is evidence for income-increasing earnings management in the post-crisis period, for larger European banks and when banks have higher ex post interest income
Ozili (2017b)	Listing status, audit quality, procyclicality and income smoothing	Africa: 302 banks - 2,345 bank-year observations from 2004 to 2013	African banks use LLPs to smooth reported earnings. Listed African banks use LLPs to smooth earnings to a greater extent than non-listed African banks. Income smoothing via LLPs is not reduced among African banks with Big 4 auditors. Bank provisioning in Africa is procyclical with fluctuations in the business cycle
Tinaikar (2017)	Ownership concentration and income smoothing	23 countries: 2,848 firm-year observations from 1994 to 2007	At low (high) levels of perceived rent extraction, firms decrease (increase) earnings smoothing. This relation is seen primarily in less developed stock markets

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Bigus and Häfele (2018)	Shareholder loans and income smoothing	Germany: 6,224 firm-year observations from 2005 to 2012	Private firms with shareholder loans exhibit significantly lower levels of earnings smoothing than other private firms. This effect is more pronounced with higher managerial ownership and is slightly weaker with dispersed ownership
Hamm <i>et al.</i> (2018)	Labor unions and income smoothing	US: 74,018 firm-year observations from 1983 to 2014	Earnings smoothing measures are significantly and positively related to the strength of labor unions. Managers in states with higher unionization rates tend to smooth earnings more extensively. Smoothing activities increase after a strike, when labor union threats become more tangible. There is a negative association between wage reduction and income smoothing, which is stronger in the presence of labor unions
Cho <i>et al.</i> (2019)	Institutional investors and income smoothing	Korea: 10,709 KRX-listed nonfinancial firms for the period 2005–2014	The presence of domestic institutional investors with transient investment goals incentivizes firms' management to smooth out earnings
Ozili and Outa (2018)	Capital constraints, performance, ownership concentration and income smoothing	South Africa: 30 banks – 223 bank-year observations from 2002 to 2014	South African banks do not use LLPs to smooth income when they are under-capitalized, have large non-performing loans and have a moderate ownership concentration. On the other hand, income smoothing is pronounced when South African banks are more profitable during economic boom periods, well-capitalized during boom periods and is pronounced among banks that adopt IFRS and among banks with a Big 4 auditor
Peterson and Arun (2018)	Income smoothing in European systemic and non-systemic banks	Europe: 231 banks of 16 European countries from 2004 to 2013	Income smoothing is pronounced among global systemically important banks in the post-crisis period and among non-global systemically important banks in the pre-crisis period. Global systemically important banks exhibit greater income smoothing when they: (1) have substantial non-performing loans, (2) are more profitable and meet/exceed minimum regulatory capital ratios (3) engage in forward-looking loan-loss provisioning and during recessionary periods
Tessema and Deumes (2018)	SFAS 133 and income smoothing	US: 201,939 firm-year observations from 1992 to 2006	There is a significant increase in income smoothing after the adoption of SFAS 133. This increase is associated with the level of hedging ineffectiveness and is more pronounced if market volatility is higher. The authors explain that higher earnings volatility may stem from SFAS 133's strict criteria, mandating recognition of gains and losses from derivatives to be reflected in current earnings if the criteria for hedge accounting are not satisfied

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Tessema (2018)	CEO compensation and income smoothing	US: 137,113 firm-year observations from 1992 to 2006	Earnings smoothing and CEO compensation are positively related. The positive relation is stronger after the adoption of SFAS 133 (mandatory derivative instruments disclosure requirement)
Zhang and Zhang (2018)	Law enforcement and income smoothing	EU: 74,247 firm-year observations from 1988 to 2004	Earnings smoothness decreases significantly after the initial enforcement of insider trading laws in countries with strong legal institutions. The decrease is more pronounced for countries that have more persistent insider trading law enforcement and for countries that impose more severe penalties on insider trading cases. The impacts are more pronounced among firms that are not closely held and among high-growth firms
Chen <i>et al.</i> (2019)	Corporate social responsibility and income smoothing	US: 26,798 firm-year observations from 1991–2013	CSR is negatively associated with income smoothing. Companies engaging in higher levels of CSR performance who have greater dependence on the supplier-buyer relationship are associated with lower levels of income smoothness. The capital market perceives the smoothed earnings of firms with superior CSR performance to be less informative than the earnings of other firms
Ng <i>et al.</i> (2019)	Unemployment insurance benefits and income smoothing	US: 75,537 firm-year observations from 1987 to 2011	More generous state unemployment insurance benefits result in less income smoothing by firms. The link between unemployment insurance benefits and income smoothing is stronger when there is higher unemployment risk and when the firm is likely to employ more low-wage workers, who find unemployment insurance benefits especially useful
Mamun <i>et al.</i> (2019)	1999 charge-off policy and income smoothing	US: 13,250 bank-quarter observations from 1991–1998 and 27,301 bank-quarter observations from 2001 to 2013	For homogeneous loans, the relationship between previous quarter charge-offs and current quarter recoveries that was prevalent in the 1990s is insignificant but for heterogeneous loans the relationship became significant in the years following the regulatory changes
Di Fabio (2019)	Business model and income smoothing	EU: 198 banks – 820 bank-year observations from 2004 to 2015	Smoothing propensity varies among the business models. Retail-funded banks engage more in income smoothing and exhibit higher quality earnings compared to other business models. Country-level complementarity between the audit function and national supervision is positively associated with income smoothing by market-oriented banks. External governance reduces smoothing in diversified retail banks

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Osma <i>et al.</i> (2019)	IAS 39 and income smoothing	EU: 125 banks; 1,750 bank-year observations from 2000 to 2013	Income smoothing has reduced after the adoption of IAS 39. The effect of IAS 39 is lower in countries with more powerful supervisors. Prudential supervisors' independence mitigates this effect
Ozili (2019)	Financial crisis and income smoothing	Africa: 302 banks –652 bank-year observations from 2004 to 2013	Cross-country variation in bank income smoothing is observed. Banks use LLPs to smooth positive earnings particularly in the post-2008 crisis period and this behavior is reduced by strong investor protection. Banks in highly corrupt environments smooth their positive earnings as opposed to smoothing the entire profit distribution
Shu and Thomas (2019)	CEO stock and option holdings and income smoothing	US: 50,870 firm-year observations from 1994 to 2010	The association between past smoothing and the predictability of future earnings is increasing (decreasing) in CEO stock (option) holdings. The results are stronger when the CEO is the chairman of the board and has a shorter tenure
Baik <i>et al.</i> (2020)	Managerial ability and income smoothing	US: 43,322 firm-year observations from 1991 to 2011	Managerial ability is positively associated with income smoothing. Smoothing by high-ability managers incorporates more forward-looking information into current earnings. Smoothing by high-ability managers enhances the ability of current earnings to predict future cash flows. At the highest level of smoothing, the relationship between current earnings and future cash flows is twice as strong for high-ability managers compared to low-ability managers
Chen <i>et al.</i> (2020)	Crisis, ownership and income smoothing	Taiwan: 6,446 firm-year observations from 2001 to 2009	Earnings informativeness of income smoothing decreased after the crisis. High institutional ownership reduces the informativeness of earnings for firms with income smoothing. This result is prominent when the institutional ownership is held by the qualified foreign rather than local institutional investors
Demerjian <i>et al.</i> (2020a)	Managerial ability and intentional income smoothing	US: 13,153 firm-year observations from 1995 to 2013	Intentional smoothing is significantly greater among high-ability managers than among lower-ability managers. High-ability managers' smoothing is less costly (or more beneficial) than smoothing by other managers. There is a positive association between high-ability managers' intentional smoothing activities and voluntary executive turnover, but no association with forced executive turnover. High-ability managers intentionally smooth earnings when the firm is near debt covenant violation thresholds and when the managers are younger

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Doan <i>et al.</i> (2020)	Ownership (state-owned) and income smoothing	Cross-country (78 countries): 13,889 bank-year observations from 2003 to 2012	Banks with more state-controlled shareholders in developing countries have more incentives to smooth income. Income smoothing behavior of state-controlled banks is driven by political objectives. The magnitude of the income smoothing behavior varies across different countries
Doukas and Zhang (2020)	Managerial ability, M&A and income smoothing	US: 3,350 takeovers from 1992 to 2017	Acquiring firms engage in higher earnings smoothing before M&A announcements, particularly when managed by highly skilled managers, leading to better announcement returns and post-merger performance
Ibrahim <i>et al.</i> (2020)	Corporate governance reforms and income smoothing	Egypt: 338 firm-year observations from 2004 to 2011	Managers switch from accrual income smoothing to real income smoothing after the governance reforms. Real income smoothing still exists even after the governance reform in 2007. The findings further reveal that the implementation of the Egyptian Corporate Governance Code (ECGC) in 2007 had little effect in curbing real earnings management, suggesting that the reform was largely ineffective in addressing this type of manipulation. Additionally, the study finds no evidence that managers use accrual-based and real income-smoothing techniques as substitutes
Jung <i>et al.</i> (2020)	Foreign investors' ownership and income smoothing	Korea: 4,236 firm-year observations from 2000 to 2013	Foreign investors' ownership is positively related to the level of earnings smoothing. Earnings smoothing improves earnings informativeness in the presence of high foreign investor ownership
Monjed and Ibrahim (2020)	Financial risk, operational risk and income smoothing	UK: 814 firm-year observations from 2005 to 2015	Firm financial risk measures such as leverage, solvency and operational risks are positively associated with income smoothing. High-risk firms are more likely to report jointly risk information and smoothed income
Pinto <i>et al.</i> (2020)	Corporate governance, foreign direct investments and income smoothing in banks	Africa: 112 listed and non-listed banks across 20 African countries from 2011 to 2017	Bank managers use LLP to smooth their income. This association is more pronounced when there is ownership concentration. However, foreign direct investments reduce the likelihood of engaging in income smoothing
Tee (2020)	Firm-level political connections and income smoothing	Malaysia: 4,783 firm-year observations from 2000 to 2015	Politically connected firms are more likely to engage in income smoothing activity in comparison with their less-connected counterparts. Institutional investors, particularly domestic institutional investors, moderate the relationship
Di Fabio <i>et al.</i> (2021)	Regulatory oversight and income smoothing	EU: 231 banks - 811 bank-year observations from 2003 to 2015	Prudential supervision increases bank income smoothing. The effect of prudential supervision is conditional on the intensity of market discipline and strict accounting enforcement. Accounting enforcement reduces bank smoothing only in countries where prudential supervision is effective

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Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Kilic <i>et al.</i> (2021)	Securitization and income smoothing	US: 22,687 bank-quarter observations from 2001 to 2013	Managers exploit their own information limitations strategically and use LLPs of retained seller's interest of securitized loans more for earnings management than LLPs of other loans. The propensity to smooth income via LLP is increasing in the ratio of interest of securitized loans to total loans. Interest of securitized loans is useful for income smoothing in the fourth quarter, when greater auditor scrutiny makes it more difficult to manage earnings
Shu (2021)	CEO inside debt and income smoothing	US: 11,601 firm-year observations from 2006 to 2012	For firms where the CEO holds less inside debt, income smoothing reduces stock price informativeness. The effect is more pronounced when firms have higher debt financing, lower analyst coverage, or weaker corporate governance
Shin <i>et al.</i> (2021)	Related party transactions and income smoothing	Korea: 4,966 firm-year observations from 2001 to 2013	Related party transactions (RPTs), in particular operating RPTs are significantly associated with income smoothing. Income smoothing based on RPTs improves the informativeness of firms' reported earnings about their future earnings
Skala (2021)	Ownership (foreign- and state-owned) and income smoothing	EU: 221 banks; 1,362 bank-year observations from 2003 to 2014	Foreign banks use LLP to perform discretionary income smoothing, while state banks do not smooth income. Higher LLP of foreign banks are observed in banks with low asset quality and high profitability. Post financial crisis, both foreign and state banks are more prudent than domestic private banks, and their discretionary LLP are higher
Black <i>et al.</i> (2022)	Income smoothing using pseudo fiscal years	US: 131,968 firm-year observations from 1981 to 2015	Managers may use accruals in the fourth quarter to smooth fiscal-year income, leading to lower volatility in reported fiscal-year earnings compared to pseudo-year earnings. Income smoothing is greater in (1) public firms, (2) firms with public debt, and (3) firms that consecutively meet or beat prior-year earnings
David <i>et al.</i> (2022)	Foreign non-blockholders and income smoothing	Japan: 25,864 firm-year observations from 1998 to 2014	Foreign non-blockholders' (investors with ownership <5%) exit threat is positively associated with the extent of income smoothing. This effect is more pronounced for firms less embedded in Japan's stakeholder-based system, firms with greater stock liquidity, and firms with higher US institutional ownership. Smoothing associated with such an exit threat is informative
Hartlieb and Loy (2022)	Cost stickiness and income smoothing	US: 25,507 firm-year observations from 1980 to 2019	Increased cost stickiness significantly mitigates the degree of income smoothing. The relationship is pronounced for firms with high adjustment costs and in times of high economic growth

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Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Shin and Park (2022)	Labor unions and income smoothing	Korea: 2,675 firm-year observations from 2001 to 2009	Labor unions are positively associated with income smoothing, particularly through the adjustment of R&D expenses. The positive relationship between labor unions and income smoothing through R&D spending is significant only for non-chaebol firms
Ozili and Arun (2023)	Loan loss provisions and income smoothing	Africa: 370 banks from 21 African countries from 2002 to 2021	The findings reveal that African banks use LLPs to smooth their income when they are more profitable during an economic boom or recession. Income smoothing is persistent in African countries that have greater corruption control, better regulatory quality and political stability. In contrast, moderately concentrated ownership reduces bank income smoothing. Bank income smoothing is also reduced in African countries that have a strong rule of law, high government effectiveness, and a strong foreign bank presence
Dantas <i>et al.</i> (2023)	Government guarantees and income smoothing	EU: 4,425 bank-year observations from 1996–2001	Exogenous changes in government guarantees, the increase in implicit guarantees following the creation of the Eurozone and the removal of explicit guarantees granted to the Landesbanken are associated with significant decreases (increases) in banks' income smoothing
Li <i>et al.</i> (2023)	Shareholder litigation risk and income smoothing	US: 15,953 firm-year observations from 1995 to 2003	The increasing difficulty of class action lawsuits, the ruling of the Ninth Circuit Court of Appeals in 1999 as an exogenous shock to the threat of litigation, decreases income smoothing. Such an effect is stronger for firms that face greater pressure from the threat of shareholder litigation risk
Sun and Zhang (2023)	Short sale prospect and income smoothing	US: 40,860 firm-year observations from 1994 to 2020	Short sale prospect has a negative impact on future income smoothing. Short sale prospect, by curbing income smoothing, reduces future stock price crash risk
Aggelopoulos <i>et al.</i> (2024)	Financial crisis and income smoothing	Greece: 129 banks – 8,928 bank-year observations from 2006 to 2011	Bank managers at the business unit level smooth loan income via the accrual of LLPs during the expansion period. When the crisis occurred, the bank continued to use LLPs to smooth bank income, but with less intensity. LLP-based income smoothing is associated with geographic-related factors
Biswas <i>et al.</i> (2024)	Trade openness and income smoothing	Global: 78 commercial banks from five BRICS nations spanning 2014 through 2020	Trade openness influences managerial income smoothing practices through LLPs in the banks. Path analysis reveals that the effect of trade openness is driven by nonperforming loans. Additionally, the IFRS restricts earnings management in the BRICS banking sector when a better institutional environment is present

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Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Cao <i>et al.</i> (2024a)	Future time reference of languages and income smoothing	Cross-country (42 countries): 10,020 industry-year observations from 1987 to 2019	Firms in weak-future time reference countries tend to smooth earnings more. The relationships with major stakeholders (i.e. debtholders, suppliers, and employees) amplify the effect of the future time reference of languages on income smoothing. Income smoothing driven by the future time reference of languages enhances earnings informativeness
Cao <i>et al.</i> (2024b)	Carbon emission trading scheme (ETS) and income smoothing	China: 15,664 firm-year observations from 2008 to 2019	Firms subject to ETS pilot regulations exhibit greater earnings smoothness compared to non-regulated firms. Regulated firms intentionally smooth earnings to secure additional financial resources and manage the compliance costs associated with ETS regulations. Further analysis indicates that the extent of earnings smoothing in regulated firms is influenced by environmental regulations, managerial integrity, and capital market incentives. Firms with smoother earnings experience a notable decrease in their cost of capital, aligning with the idea that income smoothing helps secure favorable financing terms
Jung (2024)	Firm-level political connection, political cost and income smoothing	US: 16,179 firm-year observations from 1971 to 2012	Firms in the home state of a promoted officeholder are incentivized to avoid reporting extreme earnings through income smoothing to reduce adverse political attention. These effects are stronger for firms facing higher political costs
Jung and Yang (2024)	Firm-level political risk and income smoothing	US: 28,179 firm-year observations from 2002 to 2018	Firm-level political risk is positively associated with income smoothing. The relation between firm-level political risk and income smoothing is stronger for firms more susceptible to tax-related scrutiny. The relation between firm-level political risk and income smoothing is weaker for firms spending more on political lobbying. Income smoothing associated with political risk neither enhances nor garbles the informativeness of earnings and stock prices about future performance
Jung <i>et al.</i> (2024)	Labor skills and income smoothing	US: 38,100 firm-year observations from 1999 to 2016	Firms' labor skills are positively associated with income-smoothing activities. The positive relation is stronger for firms headquartered in states that did not adopt the "Inevitable Disclosure Doctrine Rules" and during non-recession periods
Nurakhmet and Park (2024)	CEO tenure, accounting and finance degree, gender and income smoothing	UK: 1,087 firm-year observations from 2008 to 2017	Firms with longer CEO tenure engage in more income smoothing because they use their power to smooth earnings. Firms run by CEOs with accounting or finance educational backgrounds, or by female CEOs tend to smooth earnings

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Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
Pappas <i>et al.</i> (2024)	Subsidized firms, political cost and income smoothing	US: 27,535 firm-year observations from 1990–2018	Subsidized firms smooth their earnings more aggressively than their unsubsidized peers. The result is more pronounced when the subsidies are granted through nontax-related channels, for firms under higher public scrutiny and with less transparent information environments
Bae <i>et al.</i> (2025)	CFO gender and income smoothing	China: 13,971 firm-year observations from 2000–2020	Firms with female CFOs engage in less income smoothing. The negative relationship between female CFOs and income smoothing is more pronounced in firms with lower financial leverage
Białek-Jaworska <i>et al.</i> (2025)	Municipally-owned companies' (MOCs) income smoothing behavior to leverage	Poland: 121,826 firm-year observations from 2010–2022	Income smoothing in MOCs increases their likelihood of obtaining borrowings and achieving higher leverage. The extent of income smoothing is influenced by firms' debt ratios, the fiscal autonomy of municipal owners, and the electoral cycle
Ferracuti <i>et al.</i> (2025)	Foreign exchange (FX) rate (forex) fluctuations and income smoothing	US: 39,259 firm-year observations for 5,961 MNCs headquartered in the US from 1997–2017	Firms are less likely to smooth earnings when they have better ability to hedge forex exposure using derivatives. The effects are stronger when (1) the forex exposure is more complex, (2) firms have more retail investors who have less ability and resources to process accounting information, and (3) CEO welfare is more closely tied to short-term performance
Filip <i>et al.</i> (2025)	Cost stickiness and income smoothing	US: 47,115 firm-year observations from 1969 to 2003	Cost stickiness increases managers' income-smoothing activities. This response is more pronounced in firms whose earnings are more sensitive to labor costs and in firms with stronger information-provision incentives. Income smoothing improves earnings informativeness and the impact of cost stickiness is primarily driven by labor costs
Kim <i>et al.</i> (2025)	Social trust and income smoothing	Global: 162,558 firm-year observations spanning the period 1991 to 2019	There is a negative association between social trust and income smoothing. Lower income smoothing in high-trust environments is driven by reduced reliance on smoothing for communication—not by a reduction in managerial opportunism. The negative effect of societal trust on income smoothing is weaker in countries with stronger formal institutions
Lee and Shin (2025)	Co-CEO structure and income smoothing	Korea: 23,209 firm-year observations from 2002 to 2021	Firms with a co-CEO structure exhibit smoother earnings compared to those with a sole-CEO structure. However, this smoothing is accompanied by reduced earnings informativeness, indicating that co-CEOs may engage in income smoothing primarily for personal or strategic gain, rather than to enhance the quality of information available to stakeholders

(continued)

Table 2. Continued

Author(s)	Research theme	Country/Sample	Findings
James et al. (2025)	Religion and income smoothing	US: 40,907 firm-year observations from 1993 to 2018	Firms headquartered in more religious counties have more informative income smoothing and this effect is stronger when they face heightened volatility and risk
Jung et al. (2025)	Customer concentration and income smoothing	US: 5,125 firm-year observations from 1992 to 2016	There is a negative association between customer concentration and income smoothing. Supplier firms' income smoothing activities decrease as the length of their relationship with their major customers increases. This negative effect is less strong when there are strong labor unions, higher equity financing needs, and there is higher managerial stock ownership. The association between income smoothing through R&D activities and customer concentration is also negative. The reduced earnings income smoothing induced by customer concentration results in a lower future earnings response coefficient

Note(s): The papers are listed in reverse chronological order

Source(s): Authors' own work

performance of firms and thus reflects the opportunistic behavior of managers ([Bhattacharya et al., 2003](#); [Khurana et al., 2018](#)).

[Tucker and Zarowin \(2006\)](#) conclude that smoothness improves earnings informativeness. They also conclude that the net smoothing effect of accrual accounting enhances earnings informativeness. Specifically, although accruals have the potential to distort earnings if applied opportunistically, their findings support the notion that accrual accounting helps reduce noise and enhance informativeness. Further corroborating the informational value of smoothing, [Chen \(2013a\)](#) documents that firms engaging in higher income smoothing exhibit higher earnings announcement returns, and lower implied cost of equity or lower expected earnings. Importantly, [Chen \(2013a\)](#) demonstrates that income smoothing tends to reduce firms' information uncertainty, as evidenced by decreased stock return volatility, narrower analyst earnings forecast dispersion, and lower analyst earnings forecast errors. These findings reinforce the notion that income smoothing serves as an effective mechanism for reducing information asymmetry and improving the information environment of the firm.

Extending the research by [Tucker and Zarowin \(2006\)](#), subsequent studies demonstrate that the informativeness of income smoothing varies across different contexts. For example, [Sun \(2011\)](#) finds that income smoothing enhances earnings informativeness more significantly in firms with high analyst coverage compared to those with low coverage, suggesting that analysts play an important intermediary role in enhancing the informativeness of income smoothing. [Habib et al. \(2011\)](#) document that current stock price incorporates more information about future earnings for firms operating in high-uncertainty environments, thus supporting the informational value view of income smoothing [12]. This occurs because environmental uncertainty accentuates the information asymmetry between its managers and outside stakeholders. Consequently, managers operating in an environment with high uncertainty, therefore, have an incentive to reduce such variability by smoothing income numbers. [Yang and Zhu \(2014\)](#) find that stock returns are generally positively associated with earnings smoothing, supporting the informative view of income smoothing. [Cahan et al. \(2008\)](#) document that earnings smoothing becomes more (less) informative in countries with

strong (weak) investor protection, thereby suggesting that managers in weak (strong) investor protection countries are more likely to use income smoothing for opportunistic (signaling) reasons.

In contrast to the view that income smoothing is linked to firm stock returns, [McInnis \(2010\)](#) finds no relation between earnings smoothness and average stock returns. In other words, owners of firms with volatile earnings are not compensated with higher returns, as one would expect if volatile earnings lead to greater risk exposure. [McInnis \(2010\)](#) further shows that the negative association between income smoothing and the cost of equity capital is driven primarily by optimism in analysts' long-term earnings forecasts. This optimism yields target prices and implied cost of capital estimates that are systematically too high for firms with volatile earnings. [Mayberry et al. \(2015\)](#) find that smoothness reduces the value relevance of taxable income. Their results show that firms exhibiting higher levels of taxable income smoothness, particularly those engaging in discretionary smoothing, experience a substantial decline in value relevance [13]. Furthermore, the authors find that discretionary smoothing is positively associated with higher levels of future tax avoidance, suggesting that managers may smooth taxable income not only to influence investor perceptions but also as part of a broader tax avoidance strategy.

Literature also examines how income smoothing is associated with information asymmetry under certain circumstances, such as managerial incentives and diversification ([Habib and Jiang, 2012](#); [Yu et al., 2018](#)). Using data from New Zealand, [Habib and Jiang \(2012\)](#) find that managerial ownership-induced discretionary smoothing is positively associated with bid-ask spreads, indicating that markets perceive this form of smoothing as increasing rather than reducing information asymmetry. [Yu et al. \(2018\)](#) find that investors have difficulty seeing through opportunistic income smoothing before the unexpected loss announcements. When a smoothing firm reports a smoothed stream of earnings in the past, but has to report an unexpected loss in the current quarter, investors are surprised by the breaking of the historical income smoothing pattern, leading to a significant increase in bid-ask spreads around unexpected loss announcements.

A stream of literature examines how income smoothing affects investors' perceptions of firm risk. Using US public firms, [Kim et al. \(2021\)](#) find that real earnings smoothing [14] lowers both equity and credit investors' perceived risk. While this finding suggests that income smoothing can serve as a risk-reducing signal, [Kim et al. \(2021\)](#) further suggest that real earnings smoothing may mislead investors. In specific, they find that firms engaging in real earnings smoothing tend to have higher realized volatility than implied volatility, suggesting that real earnings smoothing operates as a form of artificial smoothing that conceals underlying risk.

Some studies have shown that income smoothing is associated with stock price crash risk ([Chen et al., 2017](#); [Khurana et al., 2018](#); [Kuang, 2022](#); [Zhong et al., 2021](#)). The literature defines crash risk as related to negative skewness in the distribution of returns for individual stocks ([Chen et al., 2001](#); [Kim et al., 2014](#); [Callen and Fang, 2015](#)). Since crash risk captures higher moments of the stock return distribution, i.e. extreme negative returns, it has important implications for portfolio theories and asset and option-pricing models ([Kim and Zhang, 2016](#)).

Using US data, [Chen et al. \(2017\)](#) and [Khurana et al. \(2018\)](#) report a positive association between income smoothing and crash risk, supporting the view that income smoothing reflects managerial opportunism in financial reporting rather than the private information signaling view. [Chen et al. \(2017\)](#) also show that the impact of earnings smoothing on price crash risk is stronger among firms more likely to conceal information through earnings smoothing, providing evidence that managers tend to use smoothing to hide bad news. [Khurana et al. \(2018\)](#) shift their focus to real earnings smoothing and document a positive association between real earnings smoothing and one-year-ahead stock price crash risk. [Khurana et al. \(2018\)](#) identify overinvestment and resource diversion as key mechanisms through which real earnings smoothing contributes to crash risk. [Kuang \(2022\)](#) investigates the association

between real earnings smoothing and stock price crash risk in the Japanese setting. [Kuang \(2022\)](#) decomposes real earnings smoothing into garbling and informative components, thereby distinguishing artificial smoothness from informative smoothness more effectively. The study reveals a positive association between the garbled component of real earnings smoothing and crash risk, attributable to management's concealment of bad news about a firm's prospects. However, no significant relationship is found between informative earnings smoothing and crash risk.

The adverse consequences of opportunistic earnings smoothing are also found in the Chinese setting. [Zhong et al. \(2021\)](#) investigate the relationship between discretionary income smoothing and stock price crash risk. Building on the model proposed by [Lang et al. \(2012\)](#), [Zhong et al. \(2021\)](#) decompose income smoothing into expected and discretionary components, focusing on how the discretionary portion—representing the opportunistic aspect of income smoothing—affects crash risk. While [Chen et al. \(2017\)](#) find a positive association between overall income smoothing and stock price crash risk, [Zhong et al. \(2021\)](#) find that general income smoothing has no significant effect on crash risk, whereas discretionary income smoothing significantly increases crash risk. This suggests that the opportunistic use of income smoothing, rather than income smoothing itself, is the key driver of stock price crashes.

Income smoothing, which is a form of earnings management ([Dechow and Skinner, 2000](#)), can also improve or impair the quality of earnings and therefore firm value ([Beaver, 2002](#)). Building on this idea, [Bao and Bao \(2004\)](#) document that merely reducing earnings variability does not guarantee higher firm values for firms that practice income smoothing (i.e. income smoothers). Instead, the earnings of smoothing firms become more value-relevant only when those earnings are of high quality. They also find that smoothing firms with quality earnings have the highest price-earnings multiple, while non-smoothing firms with low quality earnings have the lowest price-earnings multiple.

In contrast, [Dyussembina et al. \(2024\)](#) find a negative association between income smoothing and firm value in Korea, suggesting that income smoothing increases uncertainty about firms' earnings and thus negatively influences firm value. However, they find that this negative association is stronger for firms with high foreign ownership than for those with low foreign ownership. These results suggest a value-enhancing effect of foreign ownership, which positively moderates the relationship between income smoothing and firm value.

A smooth income stream can be achieved through "artificial smoothing" (e.g. abnormal accruals) or "real earnings smoothing" (e.g. derivatives)", with the former characterized by greater managerial discretion and thus more vulnerable to opportunistic manipulation, while the latter relies on real transactions aimed at reducing economic volatility. Asymmetric information is an important phenomenon underlying the choice of artificial and real income smoothing devices. While managers can engage in real smoothing to reduce agency costs, they are likely to use artificial techniques to cosmetically improve income to extract their private benefits. [Huang et al. \(2009\)](#) highlight that artificial and real income smoothing exert distinct effects on firm value. Specifically, they find that firm value decreases with the magnitude of abnormal accruals and increases with the level of derivative use. In further support of agency theories, they report that poor corporate governance motivates the use of abnormal accruals and discourages derivative use.

[Ngo and Varela \(2012\)](#) provide novel evidence on the positive association between earnings smoothing and firm value in the context of seasoned equity offerings (SEOs). Consistent with risk management and signaling theories, they find that income smoothing through discretionary accruals enhances firm value by reducing SEO underpricing. Specifically, firms with a sustained history of smooth earnings before SEOs exhibit significantly superior stock performance and operating outcomes for at least three years following the offerings. The authors argue that sustained earnings through smoothing serve as a credible signal of firm quality, as maintaining smooth earnings over an extended period is more costly for lower-quality firms, thereby increasing the informativeness of such behavior.

4.2 Income smoothing and credit market consequences

While much of the literature examines the impact of income smoothing on equity markets, a stream of literature investigates its effects on the credit market ([Allayannis and Simko, 2022](#); [Amiram and Owens, 2018](#); [Demerjian et al., 2020b](#); [Li and Richie, 2016](#)).

[Li and Richie \(2016\)](#) examine whether smoothing affects the cost of public debt in the US bond market. They document a negative association between earnings smoothing and bond yield and accordingly conclude that the information signaling view of smoothing, rather than the garbling perspective of smoothing dominates the public credit markets. The negative association between income smoothing and the cost of debt is stronger in firms with more opaque information, where signaling provides greater value.

However, given institutional differences across markets, the relationship between income smoothing and the cost of debt may be conditional on the country-specific institutional environment. For example, in certain markets, the garbling effect of income smoothing may dominate, leading creditors to interpret smoothing as a signal of managerial opportunism. Expanding on this idea, [Amiram and Owens \(2018\)](#) take advantage of an international setting to examine how variation in the contracting environment affects the relationship between income smoothing and the cost of debt in the private loan market. They document that income smoothing is associated with lower (higher) cost of debt in countries characterized by low (high) threat of private benefits consumption. They also find that the effects of smoothing on the cost of debt are particularly pronounced for firms with relatively high credit risk, consistent with the intuition that lenders would be particularly concerned about the implications of smoothing for expected credit loss in cases where it is more likely that borrowers will default.

Using a sample of 100 listed firms from the UK and 100 from Nigeria, [Aboud et al. \(2023\)](#) find that income smoothing is observed to be more prevalent among Nigerian firms than UK firms. However, despite the cross-country differences in the extent of income smoothing, the study finds no statistically significant association between income smoothing and the cost of debt across the two countries. The authors suggest that this insignificant relationship is consistent with the findings of [Amiram and Owens \(2018\)](#). Nevertheless, the paper does not clearly explain the underlying reasons for the observed differences in income smoothing between the two countries, nor does it offer a detailed account of why income smoothing appears unrelated to the cost of debt. Future research is needed to further investigate the motivations for income smoothing in both the UK and Nigerian contexts.

While [Amiram and Owens \(2018\)](#) identify private benefits consumption threat as the feature of the contracting environment that empirically reveals a sign reversal in the relationship between smoothing and cost of debt, [Allayannis and Simko \(2022\)](#) emphasize the importance of information environment in shaping the association between income smoothing and credit quality as well as firm value. Specifically, [Allayannis and Simko \(2022\)](#) document that firms with higher discretionary income smoothing exhibit a lower cost of debt, and that association is more pronounced for firms with a weak information environment. This is because, in less transparent settings, managers' ability to smooth earnings and obscure volatile cash flows can make the firm appear more stable to investors, thereby reducing perceived risk.

Using a sample of private debt contracts from 1996 to 2017, [Demerjian et al. \(2020b\)](#) explore whether income smoothing enhances the usefulness of earnings in the context of debt contracting. In specific, they document that debt contracts to borrowers with greater levels of income smoothing are more likely to include earnings-based covenants in contracts because earnings smoothing improves the ability of earnings to reflect the borrower's credit risk, making earnings more useful for debt contracting purposes. To assess monitoring effectiveness, the authors also document that income smoothing is associated with a reduced likelihood of Type I errors, without an accompanying increase in the likelihood of Type II errors. These findings suggest that income smoothing can be a channel through which private information is integrated into reported financial and thus improves the usefulness of earnings for monitoring the borrower.

Demerjian *et al.* (2020b) show that income smoothing enhances the usefulness of earnings for lender monitoring in non-financial firms. Extending this to the banking sector, Narayanamoorthy and Wheeler (2025) develop a bank-specific measure of discretionary smoothing building on the broader literature on non-bank smoothing. Using a sample of US banks from 1994 to 2019, they examine the relationship between discretionary smoothing and the informativeness of LLPs. They find that banks with higher discretionary smoothing record LLPs that better predict future charge-offs and changes in nonperforming loans. These banks' stock returns also reflect more forward-looking information, and analyst forecasts of LLPs are more informative. Importantly, the effect is stronger following the SEC's intervention in 2001 (FFIEC guidance), especially among banks with more homogeneous loan portfolios. Overall, the findings suggest that, in a well-regulated environment, income smoothing can improve bank transparency rather than obscure it.

Because credit ratings have significant cost implications for firms, including affecting both future borrowing costs and the valuation of stocks and bonds, managers are incentivized to maintain or improve their credit ratings. To achieve this, they may take actions aimed at influencing rating agencies' perceptions of credit risk. Jung *et al.* (2013) provide evidence that earnings smoothing can be used as a tool to manage credit ratings. They find that firms with plus-notch ratings exhibit significantly more income smoothing than firms with middle-notch ratings within the same category. Moreover, firms tend to increase their smoothing activity after receiving a plus-notch upgrade, suggesting that rating status itself alters managerial behavior. Importantly, changes in smoothing are positively associated with the likelihood of a future rating upgrade, supporting the interpretation that smoothing can be an effective mechanism for upward rating management.

4.3 Other consequences of income smoothing

Supporting the informative role of income smoothing, Chang *et al.* (2021) find a negative association between income smoothing and audit fees, suggesting that firms with more smoothed earnings are perceived to be less risky by auditors and therefore pay lower audit fees. Further distinguishing between innate and discretionary earnings smoothing, the authors find that both types are negatively associated with audit fees, indicating that regardless of the source of earnings smoothing, auditors offer more favorable pricing terms to clients with smoother earnings. While these findings support the idea that auditors view income smoothing as a signaling rather than opportunistic behavior, the decrease in audit fees could indicate either a reduction in perceived audit risk or a decrease in audit effort, but the authors do not test for these possibilities. Using audit fees per hour as a proxy for audit risk, Kim and Park (2024) also find that income smoothing reduces perceived audit risk in the Korean context, which is consistent with the informative perspective of income smoothing.

Shubita (2015) investigates the relationship between income smoothing and earnings quality within the Gulf Cooperation Council (GCC) region. The findings suggest that, on average, income smoothing enhances earnings quality as measured by the ability of earnings per share to explain variations in stock returns over the same period. However, this effect varies across countries. Specifically, income smoothing is found to reduce earnings quality in Saudi Arabia, while it improves earnings quality in Kuwait, Oman, and Qatar. Although these results indicate considerable variation in how income smoothing is practiced across GCC markets, the underlying reasons for these differences remain unclear. For instance, whether income smoothing in each country serves an informative or opportunistic purpose has not been investigated. Using a sample of EU-listed companies in the food and industrial sectors, Paolone *et al.* (2022) find that non-smoothing firms exhibit higher levels of conditional conservatism, as they provide greater opportunities for the timely recognition of future economic losses. This is because market participants can better anticipate future losses embedded in profit information by relying on stock return data. However, as highlighted in Dechow *et al.*'s (2010) review, a key concern in this stream of literature is that income

smoothing is one component of financial reporting quality. While income smoothing can be either informative or opportunistic, a higher level of conditional conservatism is not, in itself, the ultimate objective of financial reporting. Further discussion is needed, for example, in light of the specific operating environment of the firm.

Earnings smoothing can reduce information asymmetry and improve the ability of stock prices to predict future earnings performance (Demski, 1998; Erickson *et al.*, 2017; Tucker and Zarowin, 2006). Building on information asymmetry theory, Cao *et al.* (2023) find that real earnings smoothing improves labor investment efficiency through reduced information asymmetry. This is consistent with the private information signaling view that earnings smoothing conveys managers' assessments of firms' future profitability and has a positive impact on corporate employment decisions. Since the extent and nature of income smoothing can differ across institutional contexts, such as varying levels of investor protection, future research could explore the relationship between income smoothing and labor investment efficiency in an international setting. This line of inquiry would help clarify whether institutional factors influence the informational versus opportunistic effects of income smoothing on firms' resource allocation decisions.

In addition, future research could investigate how income smoothing affects labor market outcomes, particularly with respect to human capital stability. For instance, when income smoothing reduces transparency, it may increase employees' perceived uncertainty about the firm's future, thereby raising the likelihood of voluntary exit. Conversely, informative smoothing could reduce such uncertainty and enhance retention. Exploring these micro-level channels would deepen the understanding of how financial reporting quality affects human capital dynamics within the firm. Table 3 summarizes the key findings of the papers surveyed in this section.

5. Future research

In this section, we offer some directions for future research on income smoothing. We organize our discussion around some thematic clusters.

5.1 Improved measure(s) of income smoothing

We propose an investigation into new and more nuanced measures of income smoothing. Greater volatility of fourth-quarter earnings relative to earnings in the first three quarters of the fiscal year has long attracted scholarly attention. By comparing fiscal-year earnings with pseudo-year earnings [15], Gunny *et al.* (2013) find that if fourth-quarter earnings management is the primary driver of this volatility, then fiscal-year earnings should exhibit greater volatility than pseudo-year earnings. Building on the intuition and methodology of Gunny *et al.* (2013), Black *et al.* (2022) argue that managers may use fourth-quarter accruals to intentionally smooth fiscal-year earnings. Specifically, Black *et al.* (2022) measure pseudo-year earnings that consist of Q3, Q2, and Q1 of the current fiscal year and Q4 of the prior fiscal year. Income smoothing is then calculated as pseudo-year earnings volatility minus fiscal-year earnings volatility. To the extent that managers use accruals to reduce fiscal-year earnings volatility, the reported volatility of fiscal-year earnings should be lower than that of pseudo-year earnings.

The authors also document that compared to traditional approaches, such as using the ratio of earnings volatility to operating cash flow volatility (e.g. Leuz *et al.*, 2003), their method avoids the confounding influence of naturally smoothed cash flows or operating decision-induced cash flow volatility. It also circumvents the model specification errors associated with estimating discretionary accruals, which are often correlated with firm-specific factors like growth, risk, and performance. Furthermore, the authors address concerns raised by Dechow *et al.* (2010) about benchmark selection and estimation bias, noting that many smoothing measures based on abnormal accrual models or predicted smoothing tendencies suffer from

Table 3. Summary of literature – consequences of income smoothing

Authors	Research theme	Country/sample	Findings
Bao and Bao (2004)	Income smoothing, earnings quality, and firm valuation	US: 12,651 firm-year observations from 1993–2000	Income smoothing alone does not lead to higher firm valuation. Firms that engage in income smoothing and exhibit high earnings quality receive the highest valuations, whereas those with low earnings quality and no smoothing receive the lowest
Tucker and Zarowin (2006)	Income smoothing and informativeness of earnings	US: 17,019 firm-year observations from 1993–2000	Firms with greater income smoothing have higher future earnings response coefficient (FERC)
Cahan <i>et al.</i> (2008)	Investor protection, income smoothing and earnings informativeness	International: 55,357 firm-year observations over the period 1993 to 2002 across 44 countries	Earnings informativeness is more positively associated with income smoothing for firms in countries with strong investor protection than in countries with weak investor protection
Huang <i>et al.</i> (2009)	Impact of artificial smoothing and real earnings smoothing on firm value	US: 1,105 firm-year observations from 1994–1996	Artificial smoothing measured by abnormal accruals is inversely related to the firm value. Real earnings smoothing improves firm value, and the value enhancement is more pronounced in weakly governed firms relative to firms with stronger governance
McInnis (2010)	Earnings smoothing and cost of equity	US: 682,435 firm-month observations for 6,076 unique firms	No relation is found between income smoothing and average stock returns. Although prior literature links smoother earnings to a lower implied cost of capital, the link is driven primarily by optimism in analysts' long-term earnings forecasts. This optimism yields target prices and implied cost of capital estimates that are systematically too high for firms with volatile earnings
Habib <i>et al.</i> (2011)	Environmental uncertainty, earnings smoothing, and stock market response	US: 11,605 firm-year observations from 1993–2006	The positive association between stock returns and income smoothing is higher for firms operating in an environment of high uncertainty
Ngo and Varela (2012)	Earnings smoothing and the underpricing of seasoned equity offerings (SEOs)	US: 5,108 SEOs from 1989–2009	Smooth performance is negatively related to underpricing of SEO, such that smoothing via discretionary accruals adds value to firms by reducing the degree of SEO underpricing, while smoothing via cash flows does not. Firms with a higher level of earnings smoothing have higher ROAs and earnings per share in every year over the three years following SEOs than those with a lower level of earnings smoothing
Sun (2011)	Analyst coverage and the informativeness of income smoothing	US: 4,730 firm-year observations from 1996–2002	Income smoothing enhances earnings informativeness more greatly for firms with high analyst coverage than for firms with low analyst coverage

(continued)

Table 3. Continued

Authors	Research theme	Country/sample	Findings
Habib and Jiang (2012)	Managerial ownership-induced income smoothing and information asymmetry	New Zealand: 827 (759) firm-year observations from 1998–2009	Managerial ownership-induced discretionary smoothing has a positive effect on bid-ask spreads, supporting the entrenchment view of managerial ownership
Chen (2013a)	Income smoothing, information uncertainty, stock returns, and cost of equity	US: 55,499 firm-year observations from 1988–2017	Income smoothing tends to reduce information uncertainty, which is measured by stock return volatility, analyst earnings forecast dispersion and forecast error. Firms with higher income smoothing tend to have significantly higher earnings announcement returns. Firms with higher income smoothing tend to have lower implied cost of equity or lower expected returns
Jung <i>et al.</i> (2013)	Earnings smoothing and credit ratings	US: 11,943 firm-year observations from 1998–2008	Plus-notch firms smooth earnings to a larger extent than do firms within the same broad rating category but with middle-notch ratings. After a firm's rating changes from a middle-notch rating to a plus-notch rating, the firm's discretionary earnings smoothing activity increases. Among plus notch firms, those relying more on debt financing are more likely to smooth earnings
Yang and Zhu (2014)	Income smoothing, market uncertainty, and stock returns	US: 18,229 firm-year observations from 1991–2009	Stock returns are positively associated with earnings smoothing. Stock returns are negatively associated with the interaction between earnings smoothing and market uncertainty
Mayberry <i>et al.</i> (2015)	Income smoothness and the value relevance of taxable income	US: 38,122 firm-year observations from 1993–2019	Smoother taxable income is less value-relevant than volatile taxable income. Innate smoothness is not associated with the value relevance of taxable income. Discretionary smoothness is associated with a reduction in taxable income's value relevance. Discretionary smoothness is also associated with higher levels of future tax avoidance
Shubita (2015)	Income smoothing and earnings equity	Gulf Cooperation Council countries (Saudi Arabia, Kuwait, UAE, Oman and Qatar): 325 firm-year observations from 1999 to 2008	On average, income smoothing improved the quality of earnings. In Saudi Arabia, income smoothing reduced earnings quality, whereas it enhanced the quality of earnings in Kuwait, Oman and Qatar to different extents
Li and Richie (2016)	Income smoothing and cost of debt	US: 796 unique firms and 2097 bond issues from 2002–2007	Firms with higher income smoothing rankings exhibit lower cost of debt The effect of earnings smoothing on debt cost reduction is stronger in firms with more opaque information and greater distress risk

(continued)

Table 3. Continued

Authors	Research theme	Country/sample	Findings
Chen <i>et al.</i> (2017)	Earnings smoothing and stock price crash risk	US: 157,722 firm-year observations from 1993–2011	A higher degree of earnings smoothing is associated with greater crash risk. The positive association between earnings smoothing and stock price crash risk is more pronounced for firms with fewer analysts following, smaller institutional holdings, and positive cumulative discretionary accruals
Amiram and Owens (2018)	Income smoothing and cost of debt	Global: 1,817 facility-level observations across 1,084 loan packages for 639 distinct non-US borrowers across 20 countries	Income smoothing is associated with a lower (higher) cost of debt when the threat of private benefits consumption by managers is low (high)
Khurana <i>et al.</i> (2018)	Income smoothing and stock price crash risk	US: 32,188 firm-year observations from 1993–2014	Real earnings smoothing is positively associated with stock price crash risk over and above discretionary accruals. The effect of real smoothing on crash risk is mitigated when firms' credit rating shifts from minus to middle notch ratings, suggesting that real smoothing can be informative when firms have less pressure to use it to meet credit rating goals. The impact of real smoothing on crash risk is more pronounced when a firm faces stock return volatility, lower product market competition, and higher balance sheet constraint
Yu <i>et al.</i> (2018)	Bid-ask spreads around loss announcements in income smoothing firms	US: 10,875 firm-quarter observations with unexpected losses from 1996–2015	Bid-ask spreads around unexpected loss announcements are significantly larger when preceded by smoother patterns of reported earnings; In contrast, total bid spreads before loss announcements are not associated with income smoothing levels for firms that had not reported earlier losses. The positive relationship between total bid-ask spreads and historical income smoothing levels is less manifested for firms with higher institutional ownership or analyst following. The extent of income smoothing significantly decreases following loss announcements

(continued)

Table 3. Continued

Authors	Research theme	Country/sample	Findings
Demerjian et al. (2020b)	Income smoothing and the usefulness of earnings in debt contracting	US: 13,708 debt contracts for 4,069 unique borrowers from 1996–2017	Private debt contracts to borrowers with greater income smoothing are more likely to include earnings-based covenants. Smoothing improves earnings' ability to reflect credit risk. Income smoothing is associated with a lower likelihood of spurious technical default (when the borrower's economic performance has not declined but the loan nevertheless enters technical default). No association between income smoothing and performance technical default (when the borrower's economic performance has declined)
Chang et al. (2021)	Income smoothing and audit fees	US: 12,823 firm-year observations from 2000–2018	Income smoothing is negatively associated with audit fees. The negative association between income smoothing and audit fees weakens for firms with higher analyst coverage, greater institutional ownership, and larger firm size
Kim et al. (2021)	Real earnings smoothing and investors' perceived risk	US: 3,911 firm-year observations from 2001–2018	Real earnings smoothing is negatively associated with option-implied volatility, suggesting that real earnings smoothing reduces equity investors' perceived risk. When firms rely more on equity finance and pay out higher dividends, they have stronger incentives to use real activities to smooth earnings and hence reduce equity investors' perceived risk to a greater extent. Real earnings smoothing is negatively associated with credit default swap spread, implying that real earnings smoothing also reduces credit investors' perceived risk. When firms rely more on debt finance and have speculative-grade credit ratings, they have stronger incentives to use real activities to smooth earnings, and thereby reduce credit investors' perceived risk to a greater extent
Zhong et al. (2021)	Discretionary income smoothing and stock price crash risk	China: 18,857 firm-year observations from 2003–2017	Income smoothing has an insignificant effect on crash risk, while discretionary income smoothing significantly increases crash risk. Discretionary income smoothing also reduces price jumps, indicating that discretionary income smoothing generally predicts fat-tailed price distribution. The positive impact of discretionary income smoothing on crash risk is more pronounced when there is no institutional ownership, the information environment is poor, and agency conflicts are severe

(continued)

Table 3. Continued

Authors	Research theme	Country/sample	Findings
Allayannis and Simko (2022)	Earnings smoothing, credit quality, and firm value	US: 35,827 firm-year observations for the cost of debt analysis for the period 1988 to 2018	The association between discretionary income smoothing and firms' cost of debt and Tobin's Q is stronger when the information environment for the firm is weaker. During the pre-Reg Financial Disclosure period, smoothing firms with a low information environment exhibited more systematic smoothing behavior, suggesting that managers of more opaque firms are more able to capture hidden cash flows when using accounting discretion to smooth earnings
Kuang (2022)	Real earnings smoothing and stock price crash risk	Japan: 27,240 firm-year observations from 1982–2014	Crash risk increases as the <i>garbling real earnings smoothing</i> increases due to the managerial concealment of bad news about firms' prospects. There is no significant relationship between <i>informative income smoothing</i> and crash risk. The positive relationship between <i>garbling real earnings smoothing</i> and crash risk is less pronounced for firms with higher stable institutional holdings and after the implementation of J-SOX. <i>Garbling real earnings smoothing</i> decreases the timeliness of loss recognition relative to profit recognition, while there is no significant relationship between the <i>informative real earnings smoothing</i> and asymmetric timeliness of bad news
Paolone et al. (2022)	Accounting conservatism and income smoothing	EU: 308 EU-listed companies currently operating in the EU food and drink sector	Non-smoothing firms have higher levels of conditional conservatism compared with income-smoothing firms
Aboud et al. (2023)	Income smoothing and cost of debt	UK: 2,774 firm-year observations from 2000–2019 Nigeria: 1,190 firm-year observations from 2000–2019	The cost of debt is significantly higher in Nigeria than in the U.K. The practice of income smoothing is also found to be much more prevailing in Nigeria than in the U.K. Despite the differences between the two countries in terms of both the cost of debt and income smoothing, the authors find no statistically significant associations between income smoothing and the cost of debt

(continued)

Table 3. Continued

Authors	Research theme	Country/sample	Findings
Cao et al. (2023)	Real earnings smoothing and corporate labor investment	US: 46,761 firm-year observations from 1995–2016	Real earnings smoothing significantly improves labor investment efficiency by mitigating market friction stemming from information asymmetry between managers and external capital suppliers. The positive relationship between real earnings smoothing and labor investment efficiency is driven primarily by the informational component rather than the garbling component of real earnings smoothing, holds for both labor overinvestment and underinvestment, and is more pronounced for firms with greater financial constraints and loss-making firms
Dyussemina et al. (2024)	Income Smoothing, foreign ownership, and firm value	Korea: 7,322 firm-year observations from 2003–2017	Income smoothing is negatively associated with firm value. The negative association between income smoothing and firm value is stronger for firms with high foreign ownership than for those with low foreign ownership. The positive moderating effect of foreign ownership on the income smoothing-firm value relationship is more pronounced for firms that have higher profitability and pay dividends. Foreign ownership weakens the beneficial effect of income smoothing on the cost of debt
Kim and Park (2024)	Accounting comparability, income smoothing, and engagement partners on audit risk	Korea: 2,998 firm-year observations from 2014–2018	Both accounting comparability and income smoothing reduce perceived audit risk The interaction of accounting comparability and income smoothing incrementally reduces perceived audit risk. The interaction effect is more pronounced when engagement partners exert more effort in auditing
Narayanamoorthy and Wheeler (2025)	Income smoothing and the informativeness of LLPs in banks	US: 50,605 bank-quarters between 1994Q3 and 2019Q4	Discretionary smoothing is associated with more informative LLPs. LLPs of banks with greater discretionary smoothing are more predictive of future charge-offs and changes in nonperforming loans than the LLPs of banks with lower discretionary smoothing. Current-period stock returns of these banks reflect future accounting performance (as captured by LLPs) to a significantly greater extent. Analyst LLP forecasts contain more information about future changes in nonperforming loans for banks with greater discretionary smoothing

Note(s): The papers are listed in reverse chronological order

Source(s): Authors' own work

measurement error and inflated type I error rates. Empirically, they find that their measure aligns more consistently with known managerial incentives to smooth earnings—such as meeting or beating prior-year performance or facing public scrutiny—than do other commonly used metrics. Additionally, their measure is less sensitive to firm-specific operating features, such as cycle length or natural volatility, making it particularly suitable for studies involving heterogeneous samples. Therefore, future research needs to carefully consider appropriate smoothing measure(s) to substantiate their empirical findings.

5.2 Alternative theories for income smoothing

While current research tends to examine income smoothing through either the lens of informativeness or garbling, most studies lack clear evidence on whether managerial incentives align more closely with one perspective over the other. We propose that future research should explicitly address this debate by investigating whether managerial motivations reflect an intent to inform or to obscure. We argue that while the informativeness and garbling views provide foundational explanations for income smoothing, to move the field forward, researchers should incorporate broader behavioral and psychological theories to capture the nuances of managerial decision-making. Although political cost theory has been applied in some studies, the dominant theoretical frameworks used to understand the determinants and consequences of income smoothing remain limited. A more diverse and integrative theoretical lens is needed to advance the literature meaningfully.

5.3 Managerial characteristics, corporate culture, and income smoothing

While a significant number of prior studies have examined various firm-level characteristics such as profitability, liquidity, customer concentration, and financial policies (Section 3.2), there is limited evidence on whether factors such as strategic orientation, organizational stability, organizational capital, and stakeholder orientation influence income smoothing behavior. Our review revealed that prior research examined the impact of various managerial characteristics, such as CEO risk-taking and managerial stock ownership on income smoothing. However, managerial cognitive aspects such as CEO depression, CEO narcissism and emotions can have an impact on the smoothing behavior. Future research can delve into these aspects to determine whether managerial psychological states can explain income smoothing. In addition to managerial individual characteristics, top management team dynamics may play a role in determining income smoothing practices. For instance, future research can examine whether top management stability, team dynamics, and conflicts determine firm-level income smoothing. Furthermore, culture can be another determinant of managerial financial reporting behavior. Although prior research provides evidence that culture affects financial reporting practices such as real earnings management (Guggenmos and Van der Stede, 2020) and financial statement comparability (Afzali, 2023), there is a lack of evidence on the relationship between culture (organizational culture as well as community culture) on income smoothing. Additionally, given the growing global focus on climate change, sustainability, diversity, and equity, future research should explore how these factors interact with capital market dynamics and influence managerial incentives for income smoothing. Examining the intersection of environmental, social and governance considerations and financial reporting behavior can offer novel insights into how firms balance long-term stakeholder expectations with short-term earnings management practices.

5.4 Alternative institutional settings and income smoothing

A majority of the extant research on income smoothing has focused on non-financial firms in the United States. Interestingly, a substantial body of work has also examined income smoothing behavior in the banking sector, contributing valuable diversity to the accounting and finance literature. However, this line of inquiry can be meaningfully extended to other

organizational settings—such as private firms, not-for-profit entities, and public sector organizations—to better understand the determinants and consequences of income smoothing in non-listed environments. Additionally, more international evidence is needed to assess how institutional, cultural, and regulatory differences shape income smoothing practices across jurisdictions. Insights from such research would be particularly valuable for regulators, as they can inform the design of context-appropriate monitoring mechanisms and disclosure requirements.

5.5 Machine learning and income smoothing

Last but not least, another promising avenue for future research in income smoothing lies in the application of machine learning and natural language processing (NLP) techniques. As reviewed in this paper, a substantial body of research has explored the determinants and consequences of income smoothing; however, there remains a lack of in-depth, granular empirical evidence on the underlying motivations and incentives behind managers' smoothing behavior. These nuanced insights can be uncovered through NLP by analyzing unstructured textual data from earnings calls, 10-K, and 8-K filings, offering a richer understanding of managerial intent and strategic discretion for income smoothing.

6. Concluding remarks

Income smoothing is a well-established managerial practice whereby managers use their discretion to intentionally smooth out the fluctuations in earnings to report a more predictable earnings pattern (Beidleman, 1973). Such discretionary smoothing practices can either enhance earnings informativeness or distort it, depending on whether managerial discretion is used to signal or to manipulate performance. In this paper, we have reviewed 111 published articles on income smoothing categorizing them into determinants and consequences of smoothing. While our review is systematic and comprehensive, it does not incorporate non-English language studies or grey literature (e.g. working papers, regulatory reports), which may provide further insights, particularly in the context of emerging markets. Engagement with a bibliometric analysis would further enhance the breadth of the issue investigated. We further caution against potential publication bias arising from the article selection criteria we adopted. Specifically, we focused on papers published in ABDC "B" and above, and Academic Journal Guide "2" and above journals. This selection criterion may have excluded papers from under-represented contexts, as well as findings that are statistically insignificant or that contradict theory. Such exclusions may have introduced a biased perspective into our review.

Our review finds that the implementation of financial reporting standards reduces income smoothing practices. Studies investigating firm-level characteristics report varied effects on income smoothing, while governance reforms and internal corporate governance mechanisms are generally found to constrain smoothing behavior. Income smoothing reduces earnings volatility by lessening uncertainty and enhancing the predictability of future earnings. These characteristics of smoothed earnings are associated with favorable capital market outcomes, including a lower cost of capital, higher stock returns, and improved analyst following and forecast accuracy, among others.

We critically review empirical studies that investigate the determinants and consequences of income smoothing, including factors related to financial reporting standards, auditing practices, and governance mechanisms. The evidence from these studies informs regulators and policy setters about the effectiveness of current standards in monitoring managerial financial reporting behavior, thereby guiding future revisions and the development of financial reporting standards and governance reforms. Although listed firms are subject to external audits, extant research reveals that income smoothing remains a widespread practice and is associated with negative capital market implications. Our review highlights managerial

motivations for income smoothing, whether garbling or informative. These insights are useful for practitioners, regulators, and academics in shaping and understanding managerial financial reporting behavior.

Notes

1. Real earnings smoothing involves real economic actions that managers undertake to reduce earnings volatility. It can be achieved by changing the timing or structuring of an operating, investment, or financing transactions.
2. [Dechow et al. \(2010\)](#) in their comprehensive review of earnings quality discuss earnings smoothness as a proxy for earnings quality in Section 3.1.3. and provide some references to earlier studies in footnote 29. In their subsequent discussions on the determinants and consequences of earnings properties in [Section 5](#), the authors list several factors (six and nine categories, respectively) but do not discuss the evolving literature on earnings smoothness that we do in our review. [Bansal \(2024\)](#) offers a bibliometric analysis of the earnings management literature spanning the past thirty years (1992–2022) using four search terms (i.e. “earnings management” or “earnings quality” or “discretionary accruals” or “classification shifting”). The term “earnings smoothing” has not been incorporated. Importantly, our review provides an extensive overview of the income smoothing literature since 2004, summarizing, critiquing, and offering directions for future research.
3. ABDC ranks journals into four categories: A*, A, B, and C. This literature review includes studies published in journals ranked B and above to ensure a certain quality threshold. The full list of ABDC rankings can be retrieved from <https://abdc.edu.au/research/abdc-journal-list/> (accessed at the end of May 2025). We also consulted the Academic Journal Guide (AJG) rankings. We considered journals ranked 2 and above following the AJG ranking for inclusion in our review. The complete list of AJG Journal rankings can be retrieved from <https://chartereddabs.org/academic-journal-guide-2021/>.
4. [Allayannis and Simko \(2022\)](#) develop a Discretionary Smoothing Index (DSI), which captures the extent to which managers reduce earnings volatility through discretion. It is calculated as the ratio of unexpected volatility in reported earnings to unexpected volatility in pre-managed earnings, where pre-managed earnings are estimated by adjusting reported earnings for discretionary accruals using the modified Jones model. A lower DSI indicates a higher degree of discretionary income smoothing.
5. In response to concerns over income smoothing through discretionary LLPs, the SEC issued Staff Accounting Bulletin (SAB) No. 102 in 2001, requiring banks to base loan loss estimates on historical loss experience with clear justification for any deviations. Concurrently, the US Federal Financial Institutions Examination Council (US FFIEC) issued its 2001 Policy Statement ([US FFIEC, 2001](#)), which extended similar guidance to both public and private banks.
6. Theoretical work (e.g. [Acharya and Lambrecht, 2015](#); [Ewert and Wagenhofer, 2005](#)) shows that less precise earnings can serve a beneficial function by insulating managers from short-term pressures that might otherwise lead to costly real investment distortions. In this view, a reduction in earnings informativeness does not necessarily imply inefficiency—it may, in fact, reflect a more optimal balance between market discipline and managerial discretion. Unlike the stream of literature that focuses on the informativeness of earnings smoothing (e.g. [Kilic et al., 2013](#); [Tucker and Zarowin, 2006](#)), which has produced mixed and context-dependent results, [Ferracuti et al. \(2025\)](#) adopt a different perspective. Rather than evaluating whether smoothed earnings are informative, they directly study whether earnings smoothing depends on the presence of transitory shocks, regardless of what it does to the informativeness of earnings.
7. As [Brunnermeier et al. \(2009\)](#) argue, income stability at the firm level can translate into greater macro-level financial system stability. Thus, G-SIBs, due to their systemic importance, may adopt income smoothing as a tool to project resilience and contribute to perceived stability. In the aftermath of the crisis, G-SIBs were placed under intense regulatory scrutiny as their failure was recognized as a major systemic risk ([Acharya, 2009](#); [Gorton et al., 2010](#)).
8. Although high leverage appears to encourage income smoothing, the possibility of reverse causality cannot be fully ruled out. Firms that already engage in income smoothing may find it easier to obtain debt financing, which in turn increases their leverage. While leverage can serve as a proxy for the extent to which local governments rely on MOCs for financing, it does not fully capture this relationship. Future research could further compare the income smoothing of state-owned enterprises with that of locally

controlled firms. For example, in the Chinese context, research can examine how local government fiscal stress shapes firms' incentives to smooth income under different ownership structures.

9. This effect is amplified in firms with high leverage, low analyst coverage, or poor governance. These findings are consistent with [Edmans and Liu \(2011\)](#), who argue that debt-like compensation aligns managerial incentives with debt holders, suggesting that lower inside debt may lead CEOs to smooth earnings in ways that reduce transparency and increase perceived risk.
10. [Jung \(2024\)](#) identifies firms located in the home states of senators newly promoted to committee chair positions as politically connected, noting that these firms tend to receive preferential treatment and increased media attention.
11. Prior research has established a positive association between managerial ability and both the accuracy of management earnings forecasts ([Baik et al., 2011](#)) and accruals ([Demerjian et al., 2013](#)). Moreover, high-ability managers possess superior business knowledge compared to their lower-ability counterparts ([Holcomb et al., 2009](#)).
12. Theoretical work suggests that ambiguity and uncertainty in the market environment can obscure the relevance of firms' underlying fundamentals ([Bansal and Yaron, 2004](#); [Hansen and Sargent, 2010](#); [Veronesi, 2000](#)) and should therefore be explicitly incorporated into the valuation process ([Drechsler, 2013](#); [Epstein and Schneider, 2008](#)).
13. Firms in the highest quintile of discretionary smoothness report a roughly 70% reduction in value relevance, indicating that managerial intervention significantly diminishes the informativeness of taxable earnings. By contrast, innate smoothness, which arises from firms' underlying operational characteristics, has no significant impact on value relevance.
14. Managers can smooth the fluctuations in earnings figures over time via their discretion over real activities such as production, sales, investment, and financing; this practice is called real earnings smoothing ([Acharya and Lambrecht, 2015](#); [Lambert, 1984](#); [Lev and Kunitzky, 1974](#); [Liu and Espahbodi, 2014](#)).
15. Pseudo-year earnings are defined as earnings over four consecutive quarters other than the fiscal year (e.g. the earnings in four consecutive quarters ending with the third quarter of the current fiscal year).

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