Has the Accounting Directive benefited Britain?

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Declaration of Interests
None.

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Abstract: This study contributes to examining the efficacy of the EU Accounting Directive (AD) in achieving its regulatory goals in the UK capital market. The main purpose of the AD was to simplify accounting requirements to lower firms' administrative burdens, with a focus on lowering the business costs of small firms. Using a sample of UK firms, we find that while reported business costs decrease post AD adoption, small firms do not exhibit lower costs during this period. Upon AD adoption, the UK Government also argued that implementing AD provisions must not undermine firms' accounting quality. Contrary to this expectation, we find that the post AD adoption period coincides with a period of lower earnings persistence, lower conservatism, increased smoothing and lower value relevance for UK firms. There also appears to be a shift from accruals management towards real activities manipulation during this time. The decline in accounting quality is exhibited in both small and non-small firms. This is the first study to examine the relationship between AD adoption and firms' business costs and accounting quality. Overall, the evidence in our paper should assist UK policy makers in assessing the utility of the AD for UK.

Keywords: Accounting Directive, Accounting Quality, Earnings Persistence, Conservatism, Real Activities Manipulation, Business Costs

1. Introduction

In this study, we examine the efficacy of the EU Accounting Directive (Directive 2013/34/EU) (henceforth 'AD') in achieving its regulatory goals in the UK capital market. The AD provides the statutory framework for single company and consolidated financial statements for EU firms (BIS, 2014, Collis, Jarvis, & Skerratt, 2017; Deloitte, 2015; Kaufhold, 2015). This directive was adopted originally by the EU in June 2013 for its Member States, who were allowed up to July 2015 to transpose it into their national laws, and up to January 2016 to implement it in their countries (BIS 2014, 2015a). Accordingly, the UK Government held a consultation round with firms, accounting professionals and other stakeholders in August 2014 to determine the AD provisions to be adopted for UK firms (BIS, 2014). This was followed by an impact assessment of these provisions in March 2015 (BIS, 2015b). Subsequently, the UK Government implemented the AD by incorporating it in Companies, Partnerships and Groups (Accounts and Reports) Regulations 2015 (SI 2015/980), effective in the UK from 1 January 2016 (Collis et al., 2017; Deloitte, 2015). Existing research on the AD is scarce and do not examine the efficacy of this directive in attaining its regulatory agenda. This paper contributes to the literature by addressing this gap.

In particular, we examine two aspects of the AD regulatory agenda for UK firms. First, we examine whether UK business costs have changed post AD adoption. Second, we examine whether the accounting of UK firms have changed following AD adoption.

The main objective of the AD was to simplify statutory accounting requirements, with a view to lowering firms' financial and administrative burdens (BIS, 2014; Collis et al., 2017). The implication of this "de-regulatory" initiative was to lower firms' business costs and improve profitability. Upon adoption, the UK Government argued that several AD provisions applicable to all UK firms were expected to lower firms' administrative burdens. This includes the provisions to increase the flexibility of financial statement layouts and to

use the equity method to account for participating interests in individual company statements (BIS, 2014). The AD also increased the firm-size thresholds substantially, to allow as many firms as possible to access its small firm regime (BIS 2014, 2015a, b). This was consistent with the AD regulatory agenda to create a largely harmonized accounting regime for small firms across the EU Member States. Concurrently, the AD offered a number of accounting exemptions to its small firm regime with a view to lowering their business costs. Included in this list are several provisions adopted by the UK Government, such as to reduce the number of mandatory notes to the financial statements and to allow the preparation of abbreviated accounts instead of fully-fledged financial statements (BIS, 2014; Collis et al., 2017). However, critics of the AD argued during the UK consultation round that the cost reduction benefits from preparing abbreviated accounts should be low given that the same amount of information required before still needs to be entered in the accounting software (BIS 2014, 2015a). In light of these arguments, we hypothesize that the business costs of UK firms are expected to change post AD adoption.

During adoption, the UK Government argued that implementing AD provisions must not undermine firms' accounting quality (BIS, 2014). Apparently, the increased flexibility in the format and content of the financial statements offered by some AD provisions was a matter of concern for UK policy makers. In this connection, the UK Government considered but ultimately rejected an AD provision that exempted small firms from producing auditor's reports. Similarly, an AD provision to exempt small groups from preparing consolidated accounts was not extended towards listed UK firms (BIS, 2015a). However, we argue that several other AD provisions adopted by the UK Government may be linked to firms' accounting quality. For instance, the increased flexibility offered to firms to customize their financial statement layouts are likely to lower comparability and thus the decision-usefulness of the financial statements (BIS, 2015a). Allowing firms to use the equity method to account

for participating interests in individual company statements may confuse retail investors, as this method was only used for consolidated accounts prior to AD adoption. Further, increased exemptions for accounting disclosures increase managerial discretion in financial reporting, thus increasing the potential for earnings management (BIS, 2014). Overall, we hypothesize that the accounting quality of UK firms are expected to change post AD adoption.

To examine our hypotheses, we obtain a sample of UK firms for the years 2008 – 2021. We first compare the level of business costs before and after the adoption of AD in the UK. We examine five reported cost items that are likely to be relevant for the new AD provisions adopted – audit fees, selling and administrative expenses, salaries and wages, operating expenses and total business costs. Our multivariate analysis suggests that all our cost items with the exception of selling and administrative costs decrease post AD adoption. We also find that firms report higher profitability and a lower incidence of loss during this period. We then compare the level of accounting quality before and after AD adoption in the UK. We use six proxies of accounting quality – earnings persistence, conservatism, discretionary accruals, real activities manipulation, earnings smoothing and value relevance. Our multivariate analysis suggests that firms exhibit lower earnings persistence and lower conservatism post AD adoption. We also find that discretionary accruals decreases while real activities manipulation increases post AD adoption, implying a trade-off between the two earnings management methods. Finally, we find that earnings smoothing increases and value relevance decreases after AD adoption. Overall, this implies that the post AD adoption period in UK coincides with a period of decreasing accounting quality. This also suggests that the cost reductions and profit improvements reported post AD adoption are unlikely to represent efficient managerial decision making.

For supplementary analysis, we separate the effects of small firms post AD adoption from non-small firms. Our results indicate that the cost reduction benefits are lower in small

firms than their non-small counterparts, contrary to the AD regulatory agenda. Specifically, we find that for small firms, all of our cost measures excepting salaries and wages are higher in the post AD adoption period. We find that both groups report higher net income although the incidence of losses incurred is higher for small firms in the post AD adoption period. With respect to accounting quality, we find that earnings persistence decreases for small firms but increases for non-small firms post AD adoption. Although both groups exhibit lower conservatism and discretionary accruals post AD adoption, only non-small firms seem to trade-off lower discretionary accruals with higher real activities manipulation. Overall, the main regulatory goals of the AD appear to be unattained in the UK capital market.

This paper contributes to the literature on the efficacy of the AD for the UK capital market. Prior research on the AD was predominantly limited to describing procedural matters on transposing the AD into the national law of different EU Member States (Collis et al., 2017, Kaufhold, 2015; Sacer, Meeh-Bunse, & Luer, 2019). In contrast, this paper uses empirical data to examine the AD regulatory agenda for UK firms. Specifically, this is the first paper to examine the link between reported business costs and AD adoption. Our results complement the cost reduction estimates projected by the UK Government during the AD impact assessment stage. To the best of our knowledge, this is also the first paper to examine the association between AD adoption and firms' accounting quality. Our findings provide supporting evidence to the assertions made in the UK consultation round on the effects of the AD provisions on the decision-usefulness of the financial statements. We argue the evidence in this paper will assist UK policy makers in assessing the utility of the AD for UK firms.

The rest of the paper is organized as follows. Section 2 provides an overview of the AD, reviews the related literature and develops the hypotheses. Section 3 discusses the sample selection procedure and variable measurements. Section 4 reports our main results while Section 5 presents some additional results. Section 6 concludes.

2. Literature review

2.1. Background of the Accounting Directive

On 26 June 2013, the EU Commission adopted the AD for its Member States. The primary purpose of this directive was to 'simplify' the accounting requirements in the income statements, balance sheets, consolidated accounts and associated disclosures, with a view to reducing firms' financial and administrative burdens (BIS, 2014, 2015a; Collis et al., 2017, Kaufhold, 2015). For this purpose, some AD provisions increased the flexibility of accounting options available to firms for disclosure and layout of financial information. Concurrently, greater comparability of financial statements across EU firms was also envisaged, as other AD provisions limited the number of accounting options available to the preparers in terms of recognition, measurement and presentation of financial information (BIS, 2014; Collis et al., 2017). A particular focus of the AD was to move towards a harmonized accounting regime for small firms across the EU, by offering small firms a number of accounting exemptions (Collis et al., 2017; Kaufhold, 2015; Sacer et al., 2019). Overall, the EU Commission argued that this deregulatory agenda would contribute to greater market efficiency, cross-border trade and investments and higher economic growth (BIS, 2014; Kaufhold, 2015). In response, the UK Government issued a consultation document in August 2014 to highlight the provisions of the AD that were expected to change the ongoing financial reporting practices in the UK. To determine the implementation of these provisions, the UK Government concurrently initiated a consultation process with firms, auditors, professional accounting bodies and other stakeholders, the responses of which were collected over an eight-week period (BIS, 2014; Collis et al., 2017).

In January 2015, the UK Government published its response to the consultation round, including its decisions on how the AD provisions should be implemented (BIS,

2015a). This was followed in March 2015 by an impact assessment of these decisions for UK firms (BIS, 2015b). The EU Commission had asked its Member States to transpose the AD into national law by 20 July 2015 (BIS, 2014; Kaufhold, 2015). However, it allowed the Member States to permit firms to start applying the AD-induced changes to their financial statements for financial years commencing on or after 1 January 2016 (Collis et al., 2017; Kaufhold, 2015). Accordingly, the UK Government introduced the Companies, Partnerships and Groups Regulations 2015, to implement the AD provisions adopted by the UK Government, effective for financial years starting on or after 1 January 2016 (BIS 2014, 2015a, b; Collis et al., 2017).

An important provision of the AD was to increase the size threshold for small firms, to allow as many firms as possible to access its small firm regime. The AD classifies a firm as 'small' if it meets at least two of the following three criteria: (i) balance sheet total (net assets) less than or equal to £5.1 million, (ii) net revenue less than or equal to £10.2 million, and (iii) average number of employees less than or equal to 50 (BIS, 2014; Collis et al., 2017). Essentially, this new threshold allowed all medium-sized firms and a few large firms to access the accounting exemptions eligible for the small firm regime (BIS, 2014). Included in these exemptions were the option to reduce the number of mandatory notes to the financial statements and to prepare abbreviated accounts subject to approval from all shareholders of the company (BIS 2014, 2015a; Collis et al., 2017). All accounting exemptions applicable to small firms were also applicable to micro-entities. In addition, micro-entities were exempted from the requirement to publish a Directors' Report. The AD classifies a firm as a 'micro-entity' if it meets at least two of the three following criteria: (i) balance sheet total less than or equal to £0.316 million, (ii) net revenue less than or equal to £0.632 million, and (iii) average number of employees less than or equal to 10 (BIS, 2014, 2015a; Collis et al., 2017).

Other AD provisions were extended to firms of all size categories. This includes the provision to reduce the number of allowable income statement formats from four to two but provided firms with greater flexibility within the layouts (BIS, 2014, 2015a). The AD also permitted firms to account for participating interests in individual financial statements by using the equity method, allowed writing off of goodwill in 10 years or less where its value cannot be reliably estimated and ensured that firms provided information on their subsidiaries as notes to the financial statements (BIS 2014, 2015a; Collis et al., 2017). We discuss the implications of these changes for UK firms in greater detail in the subsequent sections.

2.2. Research on the Accounting Directive

Existing research on the AD is predominantly limited to describing procedural matters on transposing the AD into the local GAAPs of different EU Member States. Kaufhold (2015) explores the compatibility of the AD with IFRS for SMEs in Germany. They argue that while most existing incompatibilities between the AD and IFRS for SMEs could be resolved, the lack of an option in Germany to use the latter as an accounting standard either in addition to or instead of local GAAP will prevent its wide use. Collis et al. (2017) discuss the steps for transposing the AD into UK GAAP. They describe at length the main processes involved in implementing the AD in UK with a focus on moving towards a more IFRS-based approach in UK GAAP. Sacer et al. (2019) compare the accounting legal frameworks of Germany and Croatia. They discuss the procedural similarities, differences and challenges in transposing the AD into the national accounting legislation of the two countries.

Our paper differs from the aforementioned research in that it is the first to provide empirical evidence on the efficacy of the AD in attaining its regulatory agenda. Our empirical results complement the assertions made during the UK consultation round and impact assessment stages on the association between AD adoption in the UK and firms' business

costs and accounting quality. Further, we believe our findings have policy significance given that the UK is not bound by EU laws post Brexit. As such, the evidence in our paper should assist UK policy makers in assessing the relevance of the AD for UK in future.

2.3. Hypothesis development

The chief objective of the AD was to simplify accounting requirements to ease firms' administrative burdens (BIS, 2014, Collis et al., 2017; Deloitte, 2015). During the UK consultation rounds, the UK Government claimed that eliminating unnecessary burdens for businesses was consistent with their commitment to the "Red Tape Challenge", a government initiative to leave office having reduced the overall regulatory burden (BIS, 2014; BIS, 2015a). The UK Government argued that substantial differences in the size and nature of operations across firms in the UK merit that the regulatory reporting framework accommodates the needs of the firm and the users of their financial information (BIS, 2014). This implies that firms should have the ability to customize their disclosures based on their user needs and also to lower their financial and administrative burdens. Consistent with the EU's "Think Small First" principle, the AD used a 'building block approach' to the statutory financial disclosures, with increasing levels of disclosure dependent on the size of the undertaking (BIS 2014, 2015a, b; Deloitte, 2015). Arguably, the de-regulatory nature of the AD provides firms with the opportunity to reduce administrative burdens associated with preparing and publishing statutory accounts (BIS, 2014). The implication was that 'less demanding' financial reporting requirements would help firms to lower their business costs and improve profitability. Accordingly, during the impact assessment stage, the UK Government predicted that UK business costs would decline post AD adoption (BIS 2015, b).

While a number of the AD provisions adopted by the UK Government to ease firms' regulatory burden apply only to private companies, we identify from these some provisions

that are also applicable to listed UK firms. This includes the option for firms: (i) to use alternative layouts when preparing income statements and balance sheets, and (ii) to use the equity method to account for participating interest in individual company financial statements (BIS, 2014). In addition, under the AD small firm regime, firms were allowed to reduce the number of mandatory notes in the financial statements from 17 (for most firms) to 13. Small firms were also allowed to prepare abbreviated income statements and abbreviated balance sheets subject to approval from all shareholders of the company (BIS, 2014, 2015a; Collis et al., 2017). Arguably, the increased flexibility offered in these aforementioned provisions are expected to lower firms' accounting, auditing and other administrative expenses, wages and salaries and the costs of revealing proprietary business information in response to stringent reporting requirements.

Nevertheless, critics of the AD argued that the information acquisition costs from allowing more firms to prepare abbreviated accounts are unlikely to decrease, as the same amount of information required for preparing company accounts prior to AD adoption still needs to be entered on accounting software (BIS, 2014). In addition, the benefits of preparing abbreviated accounts may be outweighed by the costs arising from increased information asymmetry for creditors and shareholders (BIS 2014, 2015a, b). Some respondents in the UK consultation rounds also criticised the AD provision of increasing the flexibility of financial statement layouts, arguing that it would increase the costs of reduced layout comparability (BIS, 2014, 2015a). Overall, in light of the expected relationships between the above AD provisions and UK business costs, we hypothesize:

H1: Business costs of UK firms change following the adoption of the AD.

From the start, the UK Government's Department of Business Innovation and Skills (BIS) adopted the position that implementing AD provisions must not undermine accounting

quality. Specifically, they argued that post AD adoption the UK's financial reporting framework must continue to provide high-quality information to investors, creditors, regulators and other users of financial statements (BIS, 2014). In this connection, an AD provision to exempt small firms from external auditing requirements was rejected by the UK Government on the grounds that it may lower the reliability of the financial statements (BIS, 2014). Similarly, another AD provision to exempt small groups from preparing consolidated accounts was adopted by the UK government but only for groups that do not have a public interest entity (PIE), thus excluding listed firms from this exemption (BIS, 2014, 2015a). During adoption, the BIS also argued that (a) the AD-induced financial reporting changes are trivial, and (b) the AD retains most of the accounting treatment options previously available to the Member States (BIS, 2015a). Nevertheless, we argue that several AD provisions extended to listed UK firms are likely to be associated with their accounting quality. We discuss these provisions below.

First, the AD reduced the number of allowable income statement formats from four to two but concurrently provided firms with greater flexibility in customizing the layouts of their income statements and balance sheets (BIS, 2014). The UK Government adopted both these provisions but argued that the Financial Reporting Council (FRC) may provide guidance on how to use this flexibility through its financial reporting standards (BIS, 2015a). While the mandate to reduce the number of allowable income statement layouts was intended to increase comparability across firms, the UK Government argued that the effect of this change should be minimal as most UK firms already used one of the two allowable formats (BIS, 2014, 2015a). However, increased flexibility in customizing the financial statement layouts is expected to lower both year-on-year and across-firm comparability, thus reducing the decision usefulness of financial statements.

Second, the AD provided its small company regime with the option to prepare abbreviated accounts for financial reporting (BIS, 2014). Previously in the UK, although small firms had the option to 'publish' abbreviated accounts, all firms, with the exception of micro-entities, were required to 'prepare' a full set of financial statements and accompanying notes. During the UK consultation, the majority of respondents opposed the idea of allowing more firms to prepare abbreviated accounts (BIS, 2014, 2015a). They argued that abbreviated accounts were less likely to present a true and fair view of firms' financial performance, potentially lowering accounting quality. In the end, the UK Government appeared to adopt a 'compromise' position of allowing the AD small firm regime to prepare abbreviated accounts subject to approval from all shareholders in the company (BIS, 2014, 2015a).

Third, the AD allows group participating interests to be accounted for in an investor's individual financial statements by using the equity method (BIS, 2014). Prior to AD adoption, while the UK Companies Act allowed individual accounts to be prepared under the cost-based and fair value measurement methods, the equity method was only permitted for consolidated accounts. The UK Government argued that making the equity method option available would provide firms with greater flexibility and allow them to better represent their financial performance, thus improving accounting quality (BIS, 2015a). However, increasing the number of options of accounting for participating interests may also undermine comparability (BIS, 2014). In addition, participants in the UK consultation rounds on AD adoption argued that the equity method adds complexity to the process of financial statements preparation and may confuse users between individual accounts and consolidated accounts, thus lowering accounting quality (BIS, 2014, 2015a).

Fourth, the AD mandates that the notes to consolidated financial statements should include information on subsidiaries included in the group (BIS, 2014). Prior to AD adoption, UK firms were allowed to separately provide information on subsidiaries when submitting

their annual return to the Companies House. The UK Government decided to remove this option post AD adoption to ensure that groups are left with no choice but to include information on their subsidiaries in the consolidated accounts (BIS, 2015a), thus increasing their informativeness. Overall, in light of the expected relationships between accounting quality and the aforementioned changes to UK financial reporting practice, we hypothesize:

H2: Accounting quality of UK firms change following the adoption of the AD.

3. Research design

3.1. Sample selection

Consistent with our hypotheses, we restrict our sample to listed UK firms only. We first obtain from *Refinitiv* the list of FTSE All-Share Index constituents during the years 2008 – 2021. Our sample period consists of 8 years in the pre-AD adoption period (2008 – 2015) and 6 years in the post-AD adoption period (2016 – 2021). This provides us with a comparable number of observations in the pre- and post- adoption periods. For variable calculations, we start collecting data from the year 2007. Our initial sample consists of 645 unique firms and 8819 firm-year observations across 2007 – 2021. After deleting the observations for 2007 and also firm-year observations with missing variable information in *Refinitiv*, our final sample consists of 641 unique firms and 7732 firm-year observations across 2008 – 2021. A breakdown of the sample by years reveals that the number of observations steadily increases from 2008 – 2019, and then slightly drops in the final two years. The yearly sample representation ranges between 6.14% in 2008 to 8.06% in 2019, suggesting a comparable share of observations across the years. A breakdown of the sample by industries indicates that nearly half of the observations represent firms in the *Financials* industry (49.22%). Firms in the *Industrials* (16.54%), *Consumer Services* (12.82%) and

Consumer Goods (11.67%) industries taken together represent around four-fifths of non-financial firms. Table 1 illustrates the sample development and composition.

[Table 1 near here]

3.2. Measuring business costs

To examine changes in business costs following AD adoption, we adopt five cost measures related to different cost items reported in the income statement: (i) *AUDFEE* – natural log of audit costs, (ii) *SADEXP* – natural log of selling and administrative expenses, (iii) *SALEXP* – natural log of salaries and wages, (iv) *OPEXP* – natural log of operating expenses and (v) *TOTCOST* – natural log of total cost. Total cost is measured as the difference between sales revenue and net income after tax. For ease of interpretation, we scale each of these measures by 100.

3.3. Measuring accounting quality

To examine changes in accounting quality following AD adoption, we use six accounting quality measures: (i) earnings persistence, (ii) accounting conservatism, (iii) discretionary accruals, (iv) real activities manipulation, (v) earnings smoothing and (vi) value relevance. We believe using six different measures of accounting quality strengthens the generalizability of our findings. We detail our measurement techniques below.

3.3.1. Earnings persistence

Our first measure of accounting quality is earnings persistence, which indicates the continuity of accounting earnings from one period to the next (Dechow, Ge, & Schrand, 2010). Higher earnings persistence represents greater accounting quality, as firms with more persistent earnings streams have greater precision in estimating future earnings and firm

equity value, thereby assisting capital allocation decisions (Dechow et al., 2010; Hsu & Hu, 2016).[3] Consistent with the approach of Sloan (1996), we measure earnings persistence as the 'slope' of a regression of future earnings on current earnings.

3.3.2. Accounting conservatism

Our second measure of accounting quality is conservatism, which is an accounting principle characterized by higher standards of verification for recognizing profits than for recognizing losses (Basu, 1997). The assumption underlying this principle is that net income is more strongly associated with concurrent negative unexpected returns than positive unexpected returns. Firms with more conservative accounting practices have fewer incentives to overstate profits and understate losses. Following Basu (1997), we develop a measure of conditional conservatism as follows:

$$N_{it} = \beta_0 + \beta_1 R_{it} + \beta_2 NEG_{it} + \beta_3 (R_{it} \times NEG_{it}) \quad (1)$$

In Eq. (1), N_{it} is year-end net income scaled by share price at the start of the year, R_{it} is annual returns scaled by share price at the start of the year, NEG_{it} is a dummy variable which takes the value of 1 if R_{it} is negative, and 0 otherwise. Our measure of conservatism, *CONSERVE*, is represented by the coefficient β_3 in Eq. (1). A higher value of *CONSERVE* implies more conservative accounting, and thus higher accounting quality.

3.3.3. Discretionary accruals

Our third measure of accounting quality is discretionary accruals. Discretionary accruals allow managers to transfer unrealized non-obligatory expenses between periods, thereby portraying a profit figure that fits with their objectives (DeAngelo, 1986; Healy, 1985; Sloan, 1996). Hence discretionary accruals is used as a proxy for accruals management (Dechow, Sloan, & Sweeney, 1995; Dechow & Dichev, 2002; Teoh, Welch, & Wong, 1998:

[3] A potential issue with earnings persistence as a measure of accounting quality is that persistence can be achieved in the short-term by engaging in earnings management practices, such as accruals management or earnings smoothing (Dechow et al., 2010).

McNichols, 2000), with higher levels of discretionary accruals implying lower accounting quality.[4] Consistent with prior literature (Bharat, Sunder, & Sunder, 2008; Chen, Liu, Ma, & Martin, 2017), we develop five alternative measures of discretionary accruals: (i) *ADA[1]* – absolute value of discretionary accruals based on Teoh et al. (1998), (ii) *ADA[2]* – absolute value of discretionary accruals based on Dechow, Sloan, and Sweeney (1995), (iii) *ADA[3]* – absolute value of discretionary accruals based on Dechow and Dichev (2002), (iv) *ADA[4]* – absolute value of discretionary accruals based on McNichols (2000) and (v) *EM* – the first principal component of *ADA[1]*, *ADA[2]*, *ADA[3]* and *ADA[4]*.

3.3.4. Real activities manipulation

Our fourth measure of accounting quality is real activities manipulation. Real activities manipulation involves firms changing their actions and business decisions in order to produce an earnings number that fits with their objectives (Roychowdhury, 2006; Zang, 2012). Higher levels of real activities manipulation indicate lower accounting quality.[5] Following the approach of Roychowdhury (2006), we first measure real activities manipulation, *RAM[1]*, as the sum of the abnormal levels of production costs and discretionary expenditures. We then use a supplementary measure, *RAM[2]*, which constitutes the abnormal level of production costs only, representing the level of inventory overproduction generated to manipulate reported profits (Zang, 2012).

3.3.5 Earnings smoothing

Our fifth measure of accounting quality is earnings smoothing. Following Barth, Landsman, and Lang (2008), we use four measures of earnings smoothing to proxy for accounting quality. Our first measure is based on the variability of annual change in net

[4] Dechow et al. (2010) argue that a potential problem of discretionary accruals as a measure of accounting quality is the association of correlated omitted variables with firm fundamentals, given that the estimation of non-discretionary accruals is also linked to these fundamentals.

[5] A likely issue with real activities manipulation as a measure of accounting quality is that it does not involve making the accounting treatments inconsistent with actual business activities.

income, scaled by total assets (ΔNI). Typically, a smaller variance in the change of net income is considered as evidence of earnings smoothing (Ball & Shivakumar, 2005, 2006, Barth et al., 2008, Leuz, 2003).[6] Given the susceptibility of factors external to financial reporting to affect variations in the change of net income (Barth et al., 2008), our proxy for earnings variability, *NI**, is the variance of residuals from the change in net income in Eq. (3) after controlling for factors based on prior research (Ashbaugh, 2001; Tarca, 2004; Lang, Raedy, & Wilson, 2006), as follows:

$$\Delta NI_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 GROWTH_{it} + \beta_3 EISSUE_{it} + \beta_4 LEV_{it} + \beta_5 DISSUE_{it} + \beta_6 TURN_{it} + \beta_7 CFO_{it} + \varepsilon_{it} \quad (2)$$

In Eq. (2), *SIZE* is measured as the natural log of total assets, *GROWTH* is measured as the change in sales in the year, *EISSUE* is measured as the percentage change in common shares, *DISSUE* is measured as the percentage change in total liabilities, *TURN* is measured as sales revenue scaled by year-end total assets, and *CFO* is measured as net cash flow from operating activities scaled by total assets.

For our second measure of earnings smoothing, we retain the aforementioned approach but replace the regresand annual change in net income in Eq. (2) with the annual change in operating income (*ΔOPINC*). Our proxy for earnings variability, *OPINC**, is now the variance of the residuals in a regression of the change in operating income on the same regressors used in Eq. (2).

Following Barth et al. (2008), our third measure of earnings smoothing is the mean ratio of the variability of the annual change in net income to the annual change in cash flows. The intuition here is that firms with more volatile earnings are also expected to have more volatile cash flows. If the level of accruals management is high, then the variability of change

[6] Barth et al. (2008) argue that a potential limitation of this earnings smoothing as a measure of accounting quality is that firms can engage in earnings management practices such as "big bath" to produce a larger variance in the change in net income.

in net income is expected to be lower than the variability of change in cash flows. We first obtain the residuals of the following regression of the change in cash flows on the same control variables used in Eq. (2):

$$\Delta CFO_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 GROWTH_{it} + \beta_3 EISSUE_{it} + \beta_4 LEV_{it} + \beta_5 DISSUE_{it} + \beta_6 TURN_{it} + \beta_7 CFO_{it} + \varepsilon_{it} \quad (3)$$

Our proxy for earnings variability, *NI*/CFO**, is the ratio of the variability of ΔNI^* to the variability of ΔCFO^*.

For our fourth measure we replicate our third measure but replace the annual change in net income with the annual change in operating income. We denote this as *OPINC*/CFO**.

3.3.6. Value relevance

Our sixth measure of accounting quality is value relevance. High quality accounting firms are expected to have higher value relevance as their financial statements are less subject to managerial discretion and provide a more true and fair value of the underlying financial performance (Barth, Beaver, & Landsman, 2001, Barth et al., 2008). Firms with more value relevant financial statements are expected to exhibit a stronger association between share price, earnings and equity book value (Barth et al., 2008)[7]. Consistent with this approach, our first measure of value relevance is the explanatory power of a regression of share prices on book value equity per share (*BVEPS*) and net income per share (*NIPS*). Alternatively, we replace in this regression model the regressand share price with (i) market-to-book value (*MTB*), market value per share (*MVPS*) and (iii) annual buy-and-hold returns (*RET*). Following Barth et al. (2008), our next value relevance measure is the explanatory power of a regression of *NIPS* on *RET*, and alternatively a regression of *NIPS* on *BVEPS*. In each case, greater explanatory power implies higher value relevance.

[7] A potential limitation of value relevance as a measure of accounting quality is that it assumes market efficiency (Dechow et al., 2010).

3.4. Defining AD, IFRS and firms eligible for AD small firm regime

To represent the post-AD adoption firm-years we use the dummy variable *AD*, which takes the value of 1 if the financial year commences on or after 1 January 2016, and 0 otherwise. We control for accounting standards by the dummy variable *IFRS* which takes the value of 1 if *Refinitiv* identifies the accounting standards followed for preparing the financial statements as IFRS, 0 otherwise. To represent firms eligible for the AD small firm regime, we use the dummy variable *SMALL*, which takes the value of 1 if at least two of the three AD criteria for small firms are satisfied, 0 otherwise. Hence *SMALL* includes all firms classified by the AD as small firms or micro-entities. We believe this approach makes sense since the accounting exemptions offered to small firms are also applicable to micro-entities. All other variables used in the study are defined in the Appendix.

4. Results

4.1. Descriptive statistics

Table 2 reports the descriptive statistics of the variables used in our analysis. The mean of AD is 0.46, suggesting that nearly half of the firm-year observations represent the post-AD adoption period. The means of all five cost measures – *AUDFEE*, *SADEXP*, *SALEXP*, *OPEXP* and *TOTCOST* are lower than their corresponding medians, implying left-skewness in the distribution of business costs. Consistent with this, the profit variables *EARN* and *NIAT* appear to be right-skewed, with mean values higher than the corresponding medians. Taken together, this suggests that while the business costs and profits levels are comparable across most firms, a small number of firms incur low costs and report high profits. The mean of *IFRS* suggests that nearly 84% of the sample firms follow IFRS for financial reporting. Similarly, almost 19% of firm-year observations report a loss while 80%

pay cash dividends. By construction, all observations of our five earnings management variables – *ADA[1]*, *ADA[2]*, *ADA[3]*, *ADA[4]* and *EM* – are greater than or equal to 0. For each of these variables, we find that the mean is nearly double the size of the median, suggesting a small number of firms engaging in high levels of accruals management. In contrast, the means of both *RAM[1]* and *RAM[2]* are lower than the corresponding medians, consistent with a large number of firms engaging in real activities manipulation. Over 86% of our sample consist of small and micro-entities (*SMALL*). Overall, these descriptive statistics are consistent with prior research on FTSE All-Share Index firms in similar time periods (Rahman, 2019; Schleicher & Walker, 2015).

[Table 2 near here]

4.2. Multivariate analysis

Our hypothesis tests examine the efficacy of the AD for the UK capital market. We deduce from Table 2 that according to the AD classification scheme over five of six FTSE All-Share Index firms are classified as small and micro-entities (*SMALL*), including nearly all FTSE 250 firms. Apparently, this reflects the AD regulatory agenda of maximizing the number of firms eligible to access its small company regime. Therefore, in the first part of our analysis, we examine the full sample but do not separate small firms from non-small firms. Instead, our regression estimates include firm-specific control for firm size as the natural log of total assets (*SIZE*). Given the dominance of *SMALL* in our sample, inferences on the overall efficacy of the AD for the UK are likely to be inadequate if small firms are separated from the rest of the sample.

4.2.1. Test of H1

H1 hypothesizes that business costs in UK change following the adoption of the AD. To test H1, we develop multivariate regressions of our five cost measures (*AUDFEE*, *SADEXP*, *SALEXP*, *OPEXP* and *TOTCOST*) on AD in Eq. (4) as follows (excluding industry and year fixed-effects):[8]

$$AUDFEE_{it} \text{ (or } SADEXP_{it} \text{ or } SALEXP_{it} \text{ or } OPEXP_{it} \text{ or } TOTCOST_{it}) = \alpha + \beta_1 AD_{it} + \beta_2 IFRS_{it} + \beta_3 EARN_{it} + \beta_4 CHEARN_{it} + \beta_5 STDEARN_{it} + \beta_6 RET_{it} + \beta_7 STDRET_{it} + \beta_8 SIZE_{it} + \beta_9 LOSS_{it} + \beta_{10} MTB_{it} + \beta_{11} LEV_{it} + \beta_{12} DIV_{it} + \beta_{13} LIQ_{it} + \beta_{14} TRCREDIT_{it} + \varepsilon_{it} \quad (4)$$

In Eq. (4), our main variable of interest is *AD*. For H1 to hold, the coefficient of *AD* should be either positive or negative. We also control for IFRS adoption, *IFRS*, and other firm characteristic variables related to costs based on prior research.

Columns (1) – (5) of Table 3 report the regressions results of the *AUDFEE*, *SADEXP*, *SALEXP*, *OPEXP* and *TOTCOST* models in Eq. (4) respectively. We find that the coefficients of *AD* are negative ($p<0.01$) in Columns (1), (3), (4) and (5). This is consistent with H1 and suggests that audit fees, salaries and wages, operating expenses and total costs of UK firms are lower after the adoption of AD. In contrast, we find that the coefficient of AD is positive ($p<0.10$) in Column (2), implying that selling and administrative costs of UK firms are higher post AD adoption. With regards to the control variables, we find that *IFRS* is positive across Columns (1) – (5), suggesting that IFRS adoption coincides with a period of increased business costs. Our results further suggest that *SIZE* and cash dividend payment (*DIV*) is positively associated with costs while liquidity (*LIQ*) and earnings variability (*STDEARN*) are negatively associated with more than one cost measures.

Overall, the results in Columns (1) – (5) of Table 3 indicate that most business costs decrease following AD adoption, which is apparently consistent with its regulatory goals.

[8] Consistent with our hypotheses, our regression models only tests associations between the dependent variable and independent variables. As such, we do not claim a direct causal link between the regressand and regressors in this study.

Implicit in the goal of lowering business costs is an expectation to improve profitability, as firms are unlikely to benefit from cost reductions unless their profits rise. To examine changes in profitability following AD adoption, we develop the following regressions (excluding industry and year fixed-effects):

$$EARN_{it} \text{ (or } NIAT_{it}) = \alpha + \beta_1 AD_{it} + \beta_2 IFRS_{it} + \beta_3 CHEARN_{it} + \beta_4 STDEARN_{it} + \beta_5 RET_{it} + \beta_6 STDRET_{it} + \beta_7 SIZE_{it} + \beta_8 LOSS_{it} + \beta_9 MTB_{it} + \beta_{10} LEV_{it} + \beta_{11} DIV_{it} + \beta_{12} LIQ_{it} + \beta_{13} TRCREDIT_{it} + \varepsilon_{it} \quad (5a)$$

$$LOSS_{it} = \alpha + \beta_1 AD_{it} + \beta_2 IFRS_{it} + \beta_3 EARN_{it} + \beta_4 CHEARN_{it} + \beta_5 STDEARN_{it} + \beta_6 RET_{it} + \beta_7 STDRET_{it} + \beta_8 SIZE_{it} + \beta_9 MTB_{it} + \beta_{10} LEV_{it} + \beta_{11} DIV_{it} + \beta_{12} LIQ_{it} + \beta_{13} TRCREDIT_{it} + \varepsilon_{it} \quad (5b)$$

The regressand in Eq. (5a) is operating income (*EARN*) and alternatively net income after tax (*NIAT*), both scaled by total assets. The regressand in Eq. (5b) is the dummy variable *LOSS* which takes the value of 1 if operating income is negative, 0 otherwise.

Columns (6) – (8) of Table 3 report the results of Eq. (5). The coefficient of *AD* is positive in Columns (6) and (7) but negative in Column (8) ($p<0.01$), suggesting that operating income and after-tax profits are higher while the incidence of loss is lower post AD adoption in the UK. The results also suggest that *SIZE* is negatively associated with profits while *MTB* and *DIV* are positively associated with profits. The incidence of loss is negatively associated with annual buy-and-hold raw returns (*RET*) and *DIV* but positively associated with *SIZE*, *MTB* and *DIV*.

[Table 3 near here]

4.2.2. Test of H2

H2 hypothesizes that the accounting quality of UK firms changes post AD adoption. We now discuss our tests of H2 using the different measures for accounting quality.

4.2.2.1. AD and earnings persistence

To examine the link between AD adoption and earnings persistence in UK firms, we first develop the following baseline regression (excluding industry and year fixed-effects):

$$EARN_{it+1} \text{ (or } EARN_{it+2}) = \alpha + \beta_1 AD_{it} + \beta_2 EARN_{it} + \beta_3 (AD_{it} \times EARN_{it}) + \varepsilon \quad (6)$$

In Eq. (6), our main interest is in the interaction term *AD* × *EARN*. The coefficient of this interaction term represents the association between earnings persistence and the adoption of AD in UK. For H2 to hold, the coefficient of *AD* × *EARN* in Eq. (6) should either be positive or negative. To minimize the loss of observations in future earnings regressions, we examine the earnings persistence for years t+1 and t+2 only. Based on prior literature (Hsu & Hu, 2016; Li, 2008), we add to the basic regression model in Eq. (6) the following variables to control for future earnings – *IFRS*, *RET*, *STDRET*, *CFO*, *ACC*, *SIZE*, *LOSS*, *MTB*, *LEV*, *DIV*, *LIQ* and *TRCREDIT*, and the interaction terms between each of these variables with *EARN*.

Table 4 reports the results of the full regression model(s) of Eq. (6). Columns (1) and (2) present the results of $EARN_{it+1}$ and $EARN_{it+2}$ regressions respectively. In both Columns (1) and (2), we find that coefficient of the variable *EARN* is positive. This suggests that controlling for *AD*, *IFRS* and firm characteristic variables, earnings persistence is positive in both years t+1 and t+2. We find that the coefficient of the interaction term *AD* × *EARN* is negative in both $EARN_{it+1}$ ($p<0.05$) and $EARN_{it+2}$ ($p<0.01$) regressions. Consistent with H2, this suggests that the earnings persistence of UK firms decreases in years t+1 and t+2 following AD adoption. In contrast, the coefficients of *IFRS* × *EARN* in Columns (1) and (2) are both positive, suggesting that earnings persistence increases post IFRS adoption in both years t+1 and t+2. In addition, we find that *RET* and *STDRET* are positively associated earnings persistence while *ACC*, *SIZE* and *LOSS* are negatively associated with earnings persistence. These results typically are analogous with prior literature (e.g. Li, 2008; Schelicher, Hussainey, & Walker, 2007; Sloan, 1996).

[Table 4 near here]

4.2.2.2. AD and accounting conservatism

To examine the relationship between AD adoption and accounting conservatism in UK firms, we develop the following regression (excluding industry and year fixed-effects):

$$CONSERVE_{it} = \alpha + \beta_1 AD_{it} + \beta_2 IFRS_{it} + \beta_3 EARN_{it} + \beta_4 CHEARN_{it} + \beta_5 STDEARN_{it} + \beta_6 RET_{it} + \beta_7 STDRET_{it} + \beta_8 SIZE_{it} + \beta_9 LOSS_{it} + \beta_{10} MTB_{it} + \beta_{11} LEV_{it} + \beta_{12} DIV_{it} + \beta_{13} LIQ_{it} + \beta_{14} TRCREDIT_{it} + \varepsilon_{it} \quad (7)$$

In Eq. (7), our main variable of interest is *AD*, the coefficient of which represents the association between conditional conservatism (*CONSERVE*) and the adoption of AD in UK. For H2 to hold, the coefficient of *AD* in Eq. (7) should either be positive or negative. The other variables in Eq. (7) include controls for IFRS adoption and several firm-characteristics related to conservatism based on prior research (Iatridis, 2011).

`Table 5 reports the regression results of Eq. (7). We find that the coefficient of *AD* is negative ($p<0.05$), suggesting that the financial reporting of UK firms is less conservative after AD adoption. This supports H2. We also find that the coefficient of IFRS is positive, implying that financial reports are more conservative post IFRS adoption. With regards to the control variables, we find that *CONSERVE* is negatively associated with *EARN*, *SIZE* and *DIV* but positively associated with *STDEARN*, *LOSS* and *MTB*. These results are consistent with prior literature (Basu, 1997; Iatridis, 2011).

[Table 5 near here]

4.2.2.3. AD, discretionary accruals, real activities manipulation

We examine the association between AD adoption and two types of earnings management – discretionary accruals and real activities manipulation. For this, we devise the following regression models (excluding industry and year fixed-effects):

$$ADA[1]_{it} \text{ (or } ADA[2]_{it} \text{ or } ADA[3]_{it} \text{ or } ADA[4]_{it} \text{ or } EM_{it} \text{ or } RAM[1]_{it} \text{ or } RAM[2]_{it}) = \alpha + \beta_1 AD_{it} + \beta_2 IFRS_{it} + \beta_3 EARN_{it} + \beta_4 CHEARN_{it} + \beta_5 STDEARN_{it} + \beta_6 RET_{it} + \beta_7 STDRET_{it} + \beta_8 SIZE_{it} + \beta_9 LOSS_{it} + \beta_{10} MTB_{it} + \beta_{11} LEV_{it} + \beta_{12} DIV_{it} + \beta_{13} LIQ_{it} + \beta_{14} TRCREDIT_{it} + \varepsilon_{it} \quad (8)$$

In Eq. (8), our main variable of interest is *AD*. For H2 to hold, the coefficient of *AD* should be either positive or negative. Consistent with Eq. (7), the regression models control for IFRS adoption and firm-characteristics linked to earnings management based on prior research.

Columns (1) – (5) of Table 6 report the results of discretionary accruals models. Our chief measure of discretionary accruals is *EM* in Column (5), which is the first principal component of *ADA[1]*, *ADA[2]*, *ADA[3]* and *ADA[4]*. We find in Column (5) that the coefficient of *AD* is negative ($p<0.01$). Similarly, we find negative *AD* coefficients across Columns (1) – (4) ($p<0.01$), suggesting that discretionary accruals is lower in UK firms post AD adoption. In contrast, we find that the coefficient of IFRS is positive across Columns (1) – (5), implying increased accruals management following IFRS adoption. With regards to the control variables, we find that *SIZE* and *LEV* are negatively associated with discretionary accruals, while *STDEARN*, *LOSS*, *MTB* and *DIV* are positively associated with discretionary accruals. These findings are consistent with prior literature.

Columns (6) and (7) of Table 6 report the results of real activities manipulation models. Our main variable for real activities manipulation is *RAM[1]*, which represents total real activities manipulation. *RAM[2]* is a subset of *RAM[1]* representing inventory overproduction but not discretionary expenditure. In both cases, we find that the coefficient of *AD* is positive, suggesting that real activities manipulation in UK firms is higher after AD adoption. This is consistent with H2. Comparing these results with Columns (1) – (5) suggests that AD adoption in the UK coincides with a period of reduced discretionary

accruals but increased real activities manipulation. This is consistent with a trade-off between accruals management and real activities manipulation documented in prior research (Zang, 2012). We find that the IFRS coefficient is statistically insignificant for *RAM[1]* but negative for *RAM[2]*, thus providing no conclusive evidence of a trade-off between earnings management techniques post IFRS adoption. As for the control variables, we find that *SIZE* is positively associated with both *RAM[1]* and *RAM[2]*. The remaining variables in Columns (6) and (7) provide largely mixed results.

[Table 6 near here]

4.2.2.4. AD, earnings smoothing and value relevance

We compare the level of earnings smoothing of UK firms in the pre- and post- AD adoption periods to determine which period represents higher accounting quality. For this, we first calculate for all firm-year observations the values of our four earnings smoothing measures – *NI**, *OPINC**, *NI*/CFO** and *OPINC*/CFO**. We then divide our full sample of 7732 firm-year observations into two groups – the pre-AD adoption period (4184 observations) and post-AD adoption period (3548 observations). For each of our four earnings smoothing measures, we now calculate separately the standard deviations of the pre-adoption group and the post-adoption group. These results are reported in Panel A of Table 7. In Panel A, Column (1) reports the standard deviation of the pre-adoption group (AD=0), Column (2) reports the standard deviation of the post-adoption group (AD=1), Column (3) identifies the group with the higher standard deviation while Column (4) reports the results of F-test for the difference between the two sample standard deviations. The F-tests in Column (4) suggest that the standard deviations of *NI**, *OPINC**, *NI*/CFO** and *OPINC*/CFO** are all higher for the AD=0 group ($p<0.01$). This affirms H2 and suggests that the post AD

adoption period exhibits lower earnings variability, and thus represent higher earnings smoothing.

We also compare the value relevance of UK firms in the pre- and post- AD adoption periods to determine which period represents higher accounting quality. We measure value relevance using six regression models which examine the link between share price, net income and equity book value. For this, we first divide the sample into AD=0 and AD=1 groups and then run these regressions separately for each group. The explanatory powers of these regressions are reported in Panel B of Table 7. In Panel B, Columns (1) and (2) report the explanatory power of each value relevance regression in the pre-adoption group (AD=0) and post-adoption group (AD=1) respectively. Column (3) of Panel B identifies the group with the higher explanatory power and Column (4) of Panel B reports the results of Vuong tests comparing the R-squared of the regressions between two groups. The Vuong tests in Column (4) provide largely mixed results. For three of our six regression models, the Vuong tests suggest greater value relevance for AD=0 group. For two regression models, the Vuong tests suggest greater value relevance for AD=1 group. The Vuong tests provide inconclusive results for the other regression model.

[Table 7 near here]

Overall, most of our accounting quality measures in Tables 4 – 7 suggest that AD adoption in the UK is followed by a period of reduced accounting quality. Arguably, this diminishes the findings of Table 3 as the apparently improved financial performance in the post AD adoption period also represents a period of increased earnings manipulation.

5. Additional analysis

In the second part of our analysis, we examine if the market-level effects of small firms post AD adoption is different from non-small firms. At this stage, we do not distinguish between small and micro-entities but use the indicator variable *SMALL* to denote all firms below the small-firm threshold. In essence, *SMALL* represents all firms eligible for AD-induced accounting exemptions.

5.1. Alternative test of H1

We begin by repeating our tests of H1 but now separate small firms from non-small firms. For this, we re-estimate the regressions in Eq. (4) with two minor modifications. First, we replace the firm-specific variable *SIZE* with the dummy variable *SMALL*. Akin to Eq. (4), the coefficients of *AD* in these regressions still indicate the association between business costs and AD adoption. For H1 to hold, the coefficient of *AD* should be either positive or negative. Second, we replace the variable *SIZE* with *SMALL* and add the interaction term *SMALL* × *AD* to the regression models. This separates out the association between AD adoption and small firms from non-small firms. In these regressions, the coefficients of *SMALL* × *AD* indicate the association between business costs of small firms and AD adoption, while the coefficients of *AD* now indicate the association between business costs of non-small firms and AD adoption.

Table 8 reports the summaries of these regressions. In Table 8, we report the dependent variable and the main independent variables of each regression model corresponding to Eq. (4). All other variables in Eq. (4) are included in the respective regressions but are unreported for brevity. Column (1) of Table 8 reports the results of regressions replacing *SIZE* with *SMALL*. Column (2) of Table 8 reports the results of the same regression models with the added interaction term *SMALL* × *AD.* In Column (1) of Table 8, we find that the coefficient of *AD* is negative for *AUDFEE*, *SALEXP*, *OPEXP* and *TOTCOST*, but positive for *SADEXP*. These results are consistent with H1 and qualitatively

similar to Columns (1) – (5) of Table 3, implying a reduction in all of our cost measures post AD adoption with the exception of selling and administrative expenses. In Column (2) of Table 8, we find that the coefficient of *SMALL* × *AD* is positive for *AUDFEE*, *SADEXP*, *OPEXP* and *TOTCOST*, indicating that most business costs increased for small firms post AD adoption. Apparently, this is inconsistent with the regulatory goals of the AD. In contrast, we find that the coefficients of *AD* remain negative for *AUDFEE*, *SALEXP*, *OPEXP* and *TOTCOST*. Overall, this implies that non-small firms have been the primary beneficiary of cost reductions post AD adoption.

We also report in Table 8 summaries of regressions corresponding to Eqs. (5a) and (5b) with the same modifications described above. In Column (1) of Table 8, we continue to find that the coefficient of *AD* is positive for *EARN* and *NIAT* but negative for *LOSS*, analogous to Columns (6) – (8) of Table 3. In Column (2) of Table 8, we find that the coefficients of *AD* and the interaction term *SMALL* × *AD* are both positive for *EARN* and *NIAT*, suggesting that profits post AD adoption have increased across small and non-small firms. For the *LOSS* regression, we find in Columns (2) of Table 8 that the coefficient of *SMALL* × *AD* is positive but the coefficient of *AD* is negative. This implies that post AD adoption the incidence of loss increased for small firms but decreased for non-small firms.

[Table 8 near here]

For robustness, we re-define *AUDFEE*, *SADEXP*, *SALEXP*, *OPEXP* and *TOTCOST* by scaling each cost measure by: (i) total assets (ii) sales revenue. Using these two alternative variable definitions, we first estimate the original regressions in Eq. (4), and then re-estimate these regressions by replacing *SIZE* with *SMALL*. In both cases, the results (un-tabulated for brevity) continue to suggest that *AUDFEE*, *SALEXP*, *OPEXP* and *TOTCOST* decrease post

AD adoption, while the results for *SADEXP* are inconclusive. Subsequently, we add the interaction term *SMALL* × *AD* to the regression models replacing *SIZE* with *SMALL*. We continue to find that most costs increased for small firms but decreased for non-small firms post AD adoption.

5.2. Alternative test of H2

We subsequently repeat our tests of H2 but separate out small firms from non-small firms. Specifically, we re-estimate the regressions of Eq. (6) – (8) with the same two modifications: (i) replace *SIZE* with *SMALL*, and (ii) replace *SIZE* with *SMALL* and add the interaction term *SMALL* × *AD* to the regression models. The first modification is an alternative test of H2. For our regressions corresponding to Eq. (6), H2 will hold if the interaction term *AD* × *EARN* is either positive or negative. For H2 to hold in our regressions corresponding to Eqs. (7) – (8), the coefficients of *AD* should be either positive or negative. The second modification separates out the association between AD adoption and small firms from non-small firms. In this case, for our regressions corresponding to Eq. (6), *SMALL* × *AD* × *EARN* represents the association between earnings persistence of small firms and AD adoption, while *AD* × *EARN* represents the association between earnings persistence of non-small firms and AD adoption. For the regressions corresponding to Eqs. (7) – (8), the coefficients of *SMALL* × *AD* indicate the association between accounting quality measures of small firms and AD adoption, while the coefficients of *AD* now indicate the association between accounting quality measures of non-small firms and AD adoption.

Table 9 reports the summaries of the aforementioned regressions. Akin to Table 8, we report in Table 9 the dependent variable and the main independent variables of each regression model corresponding to Eqs. (6) – (8). All other variables in Eqs. (6) – (8) are included in the respective regression models but are unreported for brevity. Column (1) of

Table 9 reports the results of regressions replacing *SIZE* with *SMALL*. Column (2) of Table 9 reports the results of the same regression models with the added interaction term *SMALL* × *AD.* In Column (1) of Table 9, we find in our regressions corresponding to Eq. (6) that the coefficients of *AD* × *EARN* are negative for both years t+1 and t+2. In the regressions corresponding to Eqs. (7) – (8), we continue to find that the coefficients of *AD* are negative for *CONSERVE*, *ADA[1]*, *ADA[2]*, *ADA[3]*, *ADA[4]* and *EM* but positive for *RAM[1]* and *RAM[2]*. These results support H2 and are analogous to our findings in Tables 4 – 6. Overall, these findings continue to suggest a decline in earnings persistence, conservatism, and a replacement of accruals management by real activities manipulation post AD adoption. In Column (2) of Table 9, we find in our regressions corresponding to Eq. (6) that the coefficients of *SMALL* × *AD* × *EARN* is negative for both years t+1 and t+2, implying a decline in earnings persistence of small firms post AD adoption. In contrast, we find that the coefficient of *AD* × *EARN* is statistically insignificant in year t+1 but positive in year t+2, suggesting that earnings persistence increase for non-small firms two-years ahead. In our regressions corresponding to Eqs. (7) – (8), we find that the coefficients of *SMALL* × *AD* are negative for *CONSERVE*, *ADA[1]*, *ADA[2]*, *ADA[3]*, *ADA[4]* and *EM* but statistically insignificant for *RAM[1]* and *RAM[2]*. In addition, we find that the coefficients of *AD* are negative for *CONSERVE*, *ADA[1]*, *ADA[2]*, *ADA[3]*, *ADA[4]* and *EM* but positive for *RAM[1]* and *RAM[2]*. This implies that while conservatism and accruals management decrease across small and non-small firms, only non-small firms appear to increase the level of real activities manipulation.

[Table 9 near here]

For robustness, we regress one-year and two-year ahead cash flow from operating activities (CFO_{it+1} and CFO_{it+2}) on the full set of regressors in Eq. (6). We find that the coefficients of *AD* × *EARN* are negative in years t+1 and t+2 ($p<0.05$). Replacing *SIZE* with *SMALL* in Eq. (6) continue to produce negative *AD* × *EARN* coefficients in years t+1 and t+2. These results are consistent with our findings in Tables 4 and 9. Separating out the association between AD adoption and small firms from non-small firms reveal that the coefficients of *AD* × *EARN* and *SMALL* × *AD* × *EARN* are both statistically insignificant at the 10% level for years t+1 and t+2.

5.3. Separating small firms from micro-entities

In the final part of our analysis, we examine if the market-level effects of micro-entities post AD adoption are different from 'other small' firms. As most AD-induced accounting exemptions are applicable to both these groups, we expect the market-level effects of these two groups to be qualitatively similar. We first denote all micro-firms by the indicator variable *MICRO*, which takes the value of 1 if the firm satisfies at least two of the three AD criteria to be eligible for a micro-entity, 0 otherwise. We also develop an indicator variable *OTHERSMALL*, which takes the value of 1 to denote small firms that are not micro-entities, 0 otherwise. From the full sample of 7732 firm-year observations, 3761 observations represent *MICRO*, 2902 observations represent *OTHERSMALL*, and the remaining 1069 observations represent non-small firms.

We now repeat the full regression models of Eqs. (4) – (8) replacing *SIZE* with *MICRO* and *OTHERSMALL* and including the interaction terms *MICRO* × *AD* and *OTHERSMALL* × *AD*.[9] The results are un-tabulated for brevity. We find that post AD adoption, *SADEXP*, *OPEXP* and *TOTCOST* are higher for micro-entities. However, we find

[9] We include corresponding interaction terms for the earnings persistence regressions in Eq. (6).

that all our cost measures with the exception of *SADEXP* are higher for 'other small' firms but lower for non-small firms. We also find that *EARN* and *NIAT* are higher post AD adoption for all three groups. Subsequently, we find that while earnings persistence for micro-entities post AD adoption is lower in both years t+1 and t+2, the results are statistically insignificant for 'other small' firms and non-small firms in year t+1 and higher for both these groups in year t+2. We also find that conservatism is lower post AD adoption for both micro-entities and 'other small' firms but statistically insignificant for non-small firms. Finally, we find that *ADA[1]*, *ADA[2]*, *ADA[3]*, *ADA[4]* and *EM* are lower for micro-entities and non-small firms post AD adoption, but statistically insignificant for 'other small' firms. While non-small firms exhibit higher *RAM[1]* and *RAM[2]* post AD adoption, the results are statistically insignificant for both micro-entities and 'other small' firms.

For robustness, we exclude all non-small firms from our sample, which leaves 6663 firm-year observations representing small firms for analysis. Using this sample, we repeat the full regression models of Eqs. (4) – (8) by replacing *SIZE* with *MICRO* and including the *MICRO* × *AD* interaction term. The results are un-tabulated for brevity. We find that post AD adoption, *SADEXP*, *OPEXP* and *TOTCOST* are higher for micro-entities while *AUDFEE*, *SALEXP*, *OPEXP* and *TOTCOST* are higher for 'other small' firms. We continue to find that *EARN* and *NIAT* are higher for both groups. We then find that earnings persistence post AD adoption is lower for both groups in year t+1 but lower for micro-entities only in year t+2 while statistically insignificant for 'other small' firms. While the results for conservatism are statistically insignificant for both groups, we find lower *ADA[1]*, *ADA[2]*, *ADA[3]*, *ADA[4]* and *EM* post AD adoption for both groups. Finally, while we find increased *RAM[1]* and *RAM[2]* post AD adoption for 'other small' firms, the results for micro-entities are statistically insignificant.

Overall, our findings indicate that the business costs and profits of both micro-entities and 'other small' firms are higher post AD adoption. During this period, earnings persistence and conservatism decreases more for micro-entities than for 'other small' firms. The results for earnings management post AD adoption are more mixed, although it appears that micro-entities are less likely to substitute earnings management with real activities manipulation that 'other small' firms.

6. Conclusion

In this paper, we provide empirical evidence on the efficacy of the AD in attaining its regulatory agenda for UK firms. Consistent with this regulatory agenda and the estimation of the UK Government during the AD impact assessment stage (BIS 2014, 2015b), we find that the post AD adoption period in UK coincides with a period of lower business costs and higher profits. However, our supplementary analysis reveals that small firms have not been able to benefit from cost reductions during this period. In addition, we find that UK firms exhibit lower earnings persistence, lower conservatism, increased earnings smoothing, lower value relevance, and a potential shift from earnings management towards real activities manipulation in the post AD adoption period. Overall, this is contrary to the expectations of the UK Government which argued that accounting quality must not be undermined by the implementation of the AD provisions (BIS, 2014, 2015a).

Nevertheless, our results should interpreted with a few caveats. First, given that we adopt a single-country setting and examine listed firms only, caution should be exercised for attributing our findings to the efficacy of the AD in other EU Member States / capital markets, or to non-listed private companies. Second, consistent with our research design, we do not claim a direct causal relationship between AD adoption in the UK and business costs

and accounting quality. Instead, we argue that the business costs and accounting quality changed following AD adoption in the UK.

In the aftermath of Brexit and the Covid-19 pandemic, the UK Government had taken the position that business regulations must not obstruct economic recovery (Thomas, Pichard, & Paker, 2021). Consistent with this, the UK parliament introduced the "Brexit Freedoms Bill" in 2021 which gives the government fast-track powers to reform EU-era regulations (Dooley, 2022; Fleming, 2022). Notwithstanding the debate on the efficacy of this legislation, it appears that UK regulations originating from EU directives can now be reformed or discarded with relative ease. We believe that the evidence in our paper should assist UK policy makers in determining the utility of the AD for the UK firms.

There are several avenues for further research. To begin, future studies can investigate further on why small firms seemed to benefit less from cost reductions than non-small firms in the post AD adoption period. One possible hint is that while earnings management decreased across the board post AD adoption, small firms were less likely to shift towards real activities manipulation than their non-small counterparts. If this is indeed the case, then the cost reductions reported by non-small firms are less likely to represent efficient resource allocation. Future studies can also investigate why accounting quality in the UK appeared to deteriorate post AD adoption. Several AD provisions increased reporting flexibility and exemptions for firms. Arguably, the effect of individual exemptions on accounting quality can be examined, by either consultation with stakeholders or empirical analysis. In this connection, proponents of greater reporting regulation argue that reducing the amount of information in the financial disclosures lowers the decision-usefulness of the reported numbers. Additionally, future studies can replicate this research on other EU capital markets, and to private companies. Future studies can also examine the effect of AD adoption on firms' cost of capital, information asymmetry and investment levels. Finally, future studies

can compare the level of AD enforcement across different EU capital markets, in line with its regulatory agenda.

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We, the authors, declare that we have no competing financial interests or personal relationships that could potentially affect the work reported in this paper.

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Data Availability

All data used in this paper have been obtained from publicly available sources identified in the paper. Data used in this study will be provided upon reasonable request.

References

Ashbaugh, H. (2001). Non-U.S. firms' accounting standard choices. *Journal of Accounting and Public Policy*, *20*(2), 129–153. https://doi.org/10.1016/S0278-4254(01)00025-4.

BIS. (2014). *UK Implementation of the EU Accounting Directive*. Consultation Document, August. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/350864/bis-14-1025-implemention-of-eu-accounting-directive-chapters-1-to-9-consultation.pdf.

BIS. (2015a). *UK Implementation of Chapters 1-9 of the EU Accounting Directive*. January. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/398885/bis-15-36-uk-implementation-of-chapters-1-9-of-the-eu-accounting-directive-government-response-to-the-consultation2-final.pdf.

BIS. (2015b). *UK Implementation of the EU Accounting Directive: Chapters 1-9*. Impact Assessment No. BISBE113. March. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/446443/bis-15-279-eu-accounting-directive-chapters-1-to-9-final-stage-impact-assessment.pdf.

Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economic*, *39*(1), 83–128. https://doi.org/10.1016/j.jacceco.2004.04.001.

Ball, R., & Shivakumar, L. (2006). The role of accruals in asymmetrically timely gain and loss recognition. *Journal of Accounting Research*, *44*(2), 207–242. https://doi.org/10.1111/j.1475-679X.2006.00198.x.

Barth, M. E., Beaver, W.H., & Landsman, W.R. (2001). The Relevance of the Value Relevance Literature for Accounting Standard Setting: Another View. *Journal of Accounting and Economics*, *31*(1-3), 77–104. https://doi.org/10.1016/S0165-4101(01)00019-2.

Barth, M.E., Landsman, W.R., & Lang, M.H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*(3), 467–498. https://doi.org/10.1111/j.1475-679X.2008.00287.x.

Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics 24*(1), 3–37. https://doi.org/10.1016/S0165-4101(97)00014-1.

Bharath, S. T. Sunder, J. & Sunder, S. (2008). Accounting quality and debt contracting. *The Accounting Review, 83*(1), 1–28. https://doi.org/10.2308/accr.2008.83.1.1.

Chen, D., Liu, M., Ma, T. & Martin, X. (2017). Accounting quality and trade credit. *Accounting Horizons. 31*(3), 69–83. https://doi.org/10.2308/acch-51711.

Collis, J., Jarvis, R., & Skerratt, L. (2017). The role and current status of IFRS in the completion of national accounting rules – evidence from the UK. *Accounting in Europe*, *14*(1-2), 235–247. https://doi.org/10.1080/17449480.2017.1300673.

DeAngelo, L.E. (1986). Accounting numbers as market valuation substitutes: a study of management buyouts of public stockholders. *The Accounting Review*, *61*(3), 400–420. https://www.jstor.org/stable/i302516.

Dechow, P. M. & Dichev, I.D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review, 77*(Supplement), 35–59. https://doi.org/10.2308/accr.2002.77.s-1.35.

Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, *50*(2-3), 344–401. https://doi.org/10.1016/j.jacceco.2010.09.001.

Dechow, P., Sloan, R. & Sweeny, A. (1995). Detecting earnings management. *The Accounting Review, 70*(2), 193–225. https://doi.org/10.1007/s10551-016-3048-3.

Deloitte. (2015). *A Closer Look – UK Implementation of the EU Accounting Directive*. Retrieved from: https://www.iasplus.com/en-gb/publications/uk/closer-look/a-closer-look-uk-implementation-of-the-eu-accounting-directive.

Dooley, A. (2022). The Brexit Freedoms Bill and changing retained EU laws. *Clifford Chance: Insurance Insights*. 16 February 2022. Retrieved from: https://www.cliffordchance.com/insights/resources/blogs/insurance-insights/2022/02/the-brexit-freedoms-bill-and-changing-retained-eu-law.html.

Fleming, A. (2022). *Brexit: EU laws overhaul will boost growth, vows Boris Johnson. BBC News*. 31 January 2022, London. Retrieved from: https://www.bbc.co.uk/news/uk-politics-60191402.

Healy, P.M. (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics, 7*(1-3), 85–107. https://doi.org/10.1016/0165-4101(85)90029-1.

Hsu, P. & Hu, X. (2016). Advisory board and earnings persistence. *Journal of Accounting, Auditing and Finance 31*(1), 134–157. https://doi.org/10.1177/0148558X15571733.

Iatridis, G.E. (2011). Accounting disclosures, accounting quality and conditional and unconditional conservatism. *International Review of Financial Analysis, 20*(2), 88–102. https://doi.org/10.1016/j.irfa.2011.02.013.

Kaufhold, G. (2015). Compatibility of the IFRS for small and medium-sized entities and the new EU Accounting Directive. *Acta Univesitatis Agriculturae et Silviculturae Mendelianae Brunensis*, *63*(6), 1945–1951. http://dx.doi.org/10.11118/actaun201563061945.

Lang, M., Ready, J., & Wilson, W. (2006). earnings management and cross listing: are reconciled earnings comparable to US earnings? *Journal of Accounting and Economics*, 42(1-2), 255–283.

Leuz, C. (2003). IAS vs US GAAP: information asymmetry-based evidence from Germany's new market. *Journal of Accounting Research, 41*(3), 445–472. https://doi.org/10.1111/1475-679X.00112.

Li, F. (2008). Annual report readability, current earnings and earnings persistence. *Journal of Accounting and Economics, 45*(2-3), 221–247. https://doi.org/10.1016/j.jacceco.2008.02.003.

McNichols, M.F. (2000). Research design issues in earnings management studies. *Journal of Accounting and Public Policy*, *19*(4-5), 313–345. https://doi.org/10.1016/S0278-4254(00)00018-1.

Rahman, S. (2019). Discretionary tone, annual earnings and market returns: evidence from UK Interim Management Statements. *International Review of Financial Analysis*, *65*(October), 101384. https://doi.org/10.1016/j.irfa.2019.101384.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, *42*(3): 335–370. https://doi.org/10.1016/j.jacceco.2006.01.002.

Schleicher, T., Hussainey, K., & Walker, M. (2007). Loss firms' annual report narratives and share price anticipation of earnings. *The British Accounting Review, 39*(2), 153–171. https://doi.org/10.1016/j.bar.2007.03.005.

Schleicher, T. & Walker, M. (2015). Are interim management statements redundant? *Accounting Business Research, 45*(2), 229–255. https://doi.org/10.1080/00014788.2014.1002444.

Sacer, I.M., Meeh-Bunse, G., & Luer, K. (2019). Croatian and German accounting – a guiding overview of regulations against the background of the Accounting Directive. *Intereulaweast*, *6*(2), 115–133. https://doi.org/10.22598/iele.2019.6.2.6.

Sloan, R. (1996). Do stock prices fully reflect information in accruals and cash flows about future earnings. *The Accounting Review, 71*(3), 289–315. https://www.jstor.org/stable/248290.

Tarca, A. (2004). International convergence of accounting practices: choosing between IAS and US GAAP. *Journal of International Financial Management and Accounting*, *15*(1), 60–91. https://doi.org/10.1111/j.1467-646X.2004.00102.x.

Teoh, S. H., Welch, I. & Wong, T.J. (1998). Earnings management and the underperformance of seasoned equity offerings. *Journal of Financial Economics, 50*(1), 63–99. https://doi.org/10.1111/0022-1082.00079.

Thomas, D., Pickard, J., & Parker, G. (2021). Boris Johnson calls for business support over regulatory change. *The Financial Times*. 6 January 2021. Retrieved from: https://www.ft.com/content/e2e5e8a9-f02d-4951-b175-06d25dcb23fc.

Zang, A.Y. (2012). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, *87*(2), 675–703. https://www.jstor.org/stable/23245619.

Table 1
Sample development and composition.

Panel A: Sample Summary	Firms	OBS
Data of FTSE All-Share Index constituent obtained from *Refinitiv* for variable calculation (years 2007 – 2021)	645	8819
Data of FTSE All-Share Index constituent used in analysis (years 2008 – 2021)	641	7732

Panel B: Year Composition of Sample	OBS	%
2008	475	6.14%
2009	480	6.21%
2010	483	6.24%
2011	503	6.51%
2012	529	6.84%
2013	552	7.14%
2014	571	7.38%
2015	591	7.64%
2016	600	7.76%
2017	603	7.80%
2018	615	7.95%
2019	623	8.06%
2020	618	7.99%
2021	489	6.32%
Total	**7732**	100.00%

Panel C: Industry Composition of Sample	OBS	%
ICB 0001 Oil and Gas	177	2.29%
ICB 1000 Basic Materials	323	4.18%
ICB 2000 Industrials	1279	16.54%
ICB 3000 Consumer Goods	564	11.67%
ICB 4000 Healthcare	172	7.29%
ICB 5000 Consumer Services	991	12.82%
ICB 6000 Telecommunications	64	0.83%
ICB 7000 Utilities	105	1.36%
ICB 8000 Financials	3806	49.22%
ICB 9000 Technology	251	3.24%
Total	**7732**	100.00%

Notes: This table presents the sample development and composition. The sampling period covers the years 2008 – 2021. Panel A presents the sample summary for 7732 firm-year observations of FTSE All-Share Index firms. Panel B breaks down the sample by years. Panel C breaks down the sample by industries. OBS = number of firm-year observations.

Table 2
Descriptive statistics.

Variables	Mean	Std. Dev	1st Pct	1st Qrt	Median	3rd Qrt	99th Pct
AD	0.4589	0.4983	0.0000	0.0000	0.0000	1.0000	1.0000
AUDFEE	0.0554	0.0246	0.0000	0.0364	0.0586	0.0717	0.1067
SADEXP	0.0859	0.0456	0.0000	0.0729	0.0959	0.1183	0.1603
SALEXP	0.0809	0.0550	0.0000	0.0000	0.1053	0.1240	0.1592
OPEXP	0.1097	0.0468	0.0000	0.0932	0.1223	0.1390	0.1791
TOTCOST	0.1095	0.0480	0.0000	0.0921	0.1234	0.1399	0.1795
EARN	0.0818	0.1831	–0.3182	0.0251	0.0709	0.1276	0.4207
NIAT	0.0675	0.1782	–0.3182	0.0116	0.0600	0.1192	0.4315
IFRS	0.8379	0.3685	0.0000	1.0000	1.0000	1.0000	1.0000
RET	0.2072	3.2308	–1.0000	–0.1111	0.0358	0.2608	2.6843
STDRET	0.7051	6.4920	0.0000	0.1205	0.2431	0.4677	4.7062
CFO	0.0679	0.1773	–0.2064	0.0116	0.0491	0.1094	0.4072
ACC	0.1585	0.1981	0.0000	0.0055	0.0836	0.2459	0.8831
SIZE	13.769	1.9555	10.401	12.518	13.478	14.707	19.949
LOSS	0.1861	0.3892	0.0000	0.0000	0.0000	0.0000	1.0000
MTB	23.173	582.24	–4.2934	0.8772	1.3095	3.2888	88.417
LEV	0.1542	0.1859	0.0000	0.0000	0.0934	0.2510	0.7497
DIV	0.8024	0.3980	0.0000	1.0000	1.0000	1.0000	1.0000
LIQ	3.0912	97.094	–0.3411	0.0060	0.0371	0.0779	0.8906
TRCREDIT	0.4406	12.572	0.0000	0.0000	0.0412	0.1569	2.1621
CONSERVE	0.0998	0.6039	0.0000	0.0000	0.0000	0.0377	1.5320
CHEARN	–0.5623	33.682	–14.699	–0.4432	0.0197	0.2534	13.225
STDEARN	0.0554	0.1110	0.0006	0.0082	0.0220	0.0667	0.3994
ADA[1]	0.0626	0.1162	0.0005	0.0156	0.0324	0.0675	0.4680
ADA[2]	0.0623	0.1061	0.0006	0.0152	0.0322	0.0672	0.4667
ADA[3]	0.0612	0.0922	0.0007	0.0179	0.0345	0.0677	0.4660
ADA[4]	0.0606	0.0974	0.0006	0.0168	0.0332	0.0672	0.4441
EM	0.1233	0.1946	0.0054	0.0348	0.0673	0.1341	0.9422
RAM[1]	0.0000	0.3487	–1.0337	–0.0373	0.1284	0.1398	0.1471
RAM[2]	0.0000	0.5811	–0.9737	–0.0664	0.0580	0.1086	0.5805
SMALL	0.8617	0.3452	0.0000	1.0000	1.0000	1.0000	1.0000
						Number of Observations = 7732 (all variables)	

Notes: This table reports descriptive statistics of variables used in the study from 7732 firm-year observations during the period 2008 – 2021. Std. Dev = Standard Deviation. OBS = number of firm-year observations. All variables are defined as in Appendix.

Table 3
Accounting Directive, business costs and profits.

	$AUDFEE_{it}$	$SADEXP_{it}$	$SALEXP_{it}$	$OPEXP_{it}$	$TOTCOST_{it}$	$EARN_{it}$	$NIAT_{it}$	$LOSS_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.	(5) Coeff.	(6) Coeff.	(7) Coeff.	(8) Coeff.
INTERCEPT	–0.0463***	0.0420***	–0.1112***	–0.0543***	–0.0526***	0.1735***	0.1527***	0.6102***
AD_{it}	–0.0129***	0.0053*	–0.0298***	–0.0112***	–0.0102***	0.0703***	0.0733***	–0.1353***
$IFRS_{it}$	0.0116***	0.0058***	0.0377***	0.0237***	0.0219***	–0.0099*	–0.0009	–0.0096
$EARN_{it}$	–0.0010	0.0095***	0.0073***	–0.0180***	–0.0071***			–0.6464***
$CHEARN_{it}$	0.0001***	0.0000	0.0000	–0.0001	–0.0000	–0.0002	–0.0001	–0.0002
$STDEARN_{it}$	–0.0055***	0.0045	–0.0311***	–0.0377***	–0.0254***	–0.1166***	0.0453***	0.2154***
RET_{it}	0.0005	0.0000	0.0001	0.0006	–0.0001	–0.0004	–0.0004	–0.0031**
$STDRET_{it}$	0.0003	0.0002**	0.0000	0.0003	0.0000	0.0001	0.0002	–0.0005
$SIZE_{it}$	0.0062***	0.0019***	0.0103***	0.0090***	0.0090***	–0.0090***	–0.0080***	0.0001**
$LOSS_{it}$	–0.0001	0.0003	–0.0031***	0.0114***	0.0194***	–0.1506***	–0.2019***	
MTB_{it}	0.0000	0.0000**	0.0000	0.0000**	0.0000	0.0003***	0.0003***	0.0001**
LEV_{it}	0.0021*	–0.0101***	0.0046*	0.0080***	–0.0004	–0.0172	–0.0757***	0.2052***
DIV_{it}	0.0031***	0.0022*	0.0059***	0.0047***	0.0041***	0.0190***	0.0210***	–0.1838***
LIQ_{it}	–0.0001***	–0.0000	–0.0001***	0.0000	0.0000	0.0004**	0.0004**	–0.0004
$TRCREDIT_{it}$	–0.0001***	0.0001	–0.0001	–0.0002	–0.0000	–0.0001	–0.0001	–0.0002
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
F-VALUE	220.08***	25.58***	296.17***	320.29***	276.36***	48.60***	82.25***	63.02***
ADJ R-SQ	0.4980	0.1001	0.5720	0.5911	0.5549	0.1731	0.2633	0.2143
OBS	7732	7732	7732	7732	7732	7732	7732	7732

Notes: This table reports regressions of discretionary accruals and real activities manipulation on AD for 7732 firm-year observations during the period 2008 – 2021. *INDUSTRY FE* = industry fixed-effects. *YEAR FE* = year fixed-effects. OBS = number of firm-year observations. P-values are based on robust standard errors clustered two ways at the year-level and firm-level. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10, 0.05, 0.01$ level respectively.

Table 4
Accounting Directive and earnings persistence.

Variable	$EARN_{it+1}$	$EARN_{it+2}$
	(1) Coeff.	(2) Coeff.
INTERCEPT	–0.0763***	0.0320**
AD_{it}	0.0328***	–0.0054
$EARN_{it}$	2.1173***	1.4593***
$AD_{it} \times EARN_{it}$	–0.0464**	–0.1161***
$IFRS_{it}$	–0.0486***	–0.0473***
$IFRS_{it} \times EARN_{it}$	0.5294***	0.4859***
RET_{it}	–0.0022***	–0.0084***
$RET_{it} \times EARN_{it}$	0.0511***	0.1451***
$STDRET_{it}$	–0.0019***	–0.0012*
$STDRET_{it} \times EARN_{it}$	0.0179***	0.0103**
CFO_{it}	0.2281***	0.0547**
$CFO_{it} \times EARN_{it}$	–0.0743***	0.0791***
ACC_{it}	0.1222***	0.0499**
$ACC_{it} \times EARN_{it}$	–0.4421***	–0.0940***
$SIZE_{it}$	0.0060***	0.0032***
$SIZE_{it} \times EARN_{it}$	–0.1482***	–0.1122***
$LOSS_{it}$	0.0270***	0.0177***
$LOSS_{it} \times EARN_{it}$	–0.6326***	–0.3274***
MTB_{it}	–0.0000***	0.0000***
$MTB_{it} \times EARN_{it}$	0.0000***	–0.0001***
LEV_{it}	–0.0021	0.0095
$LEV_{it} \times EARN_{it}$	0.1068**	0.0266
DIV_{it}	0.0224***	0.0107**
$DIV_{it} \times EARN_{it}$	–0.1858***	0.0256
LIQ_{it}	0.0000	–0.0001***
$LIQ_{it} \times EARN_{it}$	–0.0001	0.0012***
$TRCREDIT_{it}$	0.0007**	0.0004
$TRCREDIT_{it} \times EARN_{it}$	–0.0112***	–0.0066
INDUSTRY FE	YES	YES
YEAR FE	YES	YES
F-VALUE	246.84***	137.03***
ADJ R-SQ	0.6042	0.4689
OBS	7732	7243

Notes: This table reports the regressions of future earnings on AD and its interaction with current earnings. The one-year ahead earnings regression is based on 7732 firm-year ahead observations during 2008-2021. The two-year ahead earnings regression is based on 7243 firm-year ahead observations during 2008-2020. *INDUSTRY FE* = industry fixed-effects. *YEAR FE* = year fixed-effects. OBS = number of firm-year observations. P-values are based on robust standard errors clustered two ways at the year-level and firm-level. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10, 0.05, 0.01$ level respectively.

Table 5
Accounting Directive and earnings conservatism.

Variable	CONSERVE$_{it}$ (1) Coeff.
INTERCEPT	0.3571***
AD_{it}	–0.0927**
$IFRS_{it}$	0.0553***
$EARN_{it}$	–0.0972**
$CHEARN_{it}$	–0.0003
$STDEARN_{it}$	0.1938***
RET_{it}	–0.0003
$STDRET_{it}$	–0.0007
$SIZE_{it}$	–0.0149***
$LOSS_{it}$	0.0725***
MTB_{it}	0.0002***
LEV_{it}	0.0500
DIV_{it}	–0.1080***
LIQ_{it}	0.0001
$TRCREDIT_{it}$	–0.0001
INDUSTRY FE	YES
YEAR FE	YES
F-VALUE	16.59***
ADJ R-SQ	0.0659
OBS	7732

Notes: This table reports the regressions of Basu (1997) coefficient of conditional earnings conservatism on AD for 7732 firm-year observations during the years 2008 – 2021. *INDUSTRY FE* = industry fixed-effects. *YEAR FE* = year fixed-effects. OBS = number of firm-year observations. P-values are based on robust standard errors clustered two ways at the year-level and firm-level. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10$, 0.05, 0.01 level respectively.

Table 6
Accounting Directive, discretionary accruals and real activities manipulation.

	$ADA[1]_{it}$	$ADA[2]_{it}$	$ADA[3]_{it}$	$ADA[4]_{it}$	EM_{it}	$RAM[1]_{it}$	$RAM[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.	(5) Coeff.	(6) Coeff.	(7) Coeff.
INTERCEPT	0.1628***	0.1761***	0.1225***	0.1200***	0.2903***	–0.1585***	–0.1369***
AD_{it}	–0.0333***	–0.0389***	–0.0284***	–0.0276***	–0.0641***	0.1103***	0.0620***
$IFRS_{it}$	0.0356***	0.0314***	0.0236***	0.0247***	0.0575***	–0.0048	–0.1083***
$EARN_{it}$	–0.1509***	–0.0589***	0.0305***	0.0350***	–0.0700***	0.5155***	–0.2558***
$CHEARN_{it}$	0.0004	0.0004	0.0003	0.0003	0.0008	–0.0002	–0.0001
$STDEARN_{it}$	0.3613***	0.2475***	0.3128***	0.3133***	0.6166***	0.0986	–0.1700***
RET_{it}	–0.0002	–0.0008	–0.0008	–0.0009	–0.0001	0.0002	0.0002
$STDRET_{it}$	–0.0009	–0.0007	–0.0001	–0.0001	–0.0001	0.0002	0.0001
$SIZE_{it}$	–0.0083***	–0.0085***	–0.0054***	–0.0055***	–0.0138***	0.0119***	0.0207***
$LOSS_{it}$	0.0209***	0.0370***	0.0475***	0.0491***	0.0776***	0.0187	–0.0244**
MTB_{it}	0.0001***	0.0000**	0.0000**	0.0000**	0.0000**	–0.0000	–0.0004***
LEV_{it}	–0.0240***	–0.0239***	–0.0100*	–0.0080	–0.0328***	0.0326	0.1044***
DIV_{it}	0.0095***	0.0058**	0.0062**	0.0064***	0.0139***	–0.0294*	0.0312***
LIQ_{it}	0.0002*	0.0002	0.0000	0.0001	0.0003*	0.0000	0.0001
$TRCREDIT_{it}$	–0.0006	–0.0004	–0.0003	–0.0004	–0.0000	0.0004	0.0000
INDUSTRY FE	YES	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES	YES
F-VALUE	79.60***	52.87***	75.27***	75.23***	71.66***	14.32***	41.91***
ADJ R-SQ	0.2624	0.1902	0.2516	0.2515	0.2424	0.0568	0.1563
OBS	7732	7732	7732	7732	7732	7732	7732

Notes: This table reports regressions of discretionary accruals and real activities manipulation on AD for 7732 firm-year observations during the period 2008 – 2021. *INDUSTRY FE* = industry fixed-effects. *YEAR FE* = year fixed-effects. OBS = number of firm-year observations. P-values are based on robust standard errors clustered two ways at the year-level and firm-level. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10, 0.05, 0.01$ level respectively.

Table 7
Accounting Directive, earnings smoothing and value relevance.

Panel A: Earnings Smoothing				
Measures	(1) AD = 0 Std. Dev.	(2) AD = 1 Std. Dev.	(3) Higher Std. Dev.	(4) F-Test (two-tailed)
NI^*_{it}	55.62	32.99	AD = 0	0.0000
$OPINC^*_{it}$	46.54	33.41	AD = 0	0.0000
NI^*/CFO^*_{it}	311.40	225.01	AD = 0	0.0000
$OPINC^*/CFO^*_{it}$	169.71	97.85	AD = 0	0.0000
OBS	4184	3548		
Panel B: Value Relevance				
Regressions	(1) AD = 0 R-Sq.	(2) AD = 1 R-Sq.	(3) Higher R-Sq.	(4) Vuong Test (two-tailed)
Share Price on *BVEPS* and *NIPS*	0.4285	0.5785	AD = 1	0.0000
MTB on *BVEPS* and *NIPS*	0.5114	0.0008	AD = 0	0.0000
MVPS on *BVEPS* and *NIPS*	0.5917	0.7800	AD = 1	0.0000
RET on *BVEPS* and *NIPS*	0.0001	0.0000	AD = 0	0.0990
NIPS on *RET*	0.0001	0.0000	AD = 0	0.1983
NIPS on *BVEPS*	0.1093	0.0315	AD = 0	0.0285
OBS	4184	3548		

Notes: This table reports tests for measures of earnings smoothing (Panel A) and value relevance (Panel B) for 4184 firm-year observations when AD=0 and 3548 firm-year observations when AD=1 during the period 2008-2021. *INDUSTRY FE* = industry fixed-effects. *YEAR FE* = year fixed-effects. OBS = number of firm-year observations. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10, 0.05, 0.01$ level respectively.

Table 8
Accounting Directive, business costs and profits – the effect on small firms.

		Models Replacing SIZE with SMALL	Models Interacting SMALL with AD
Dependent Variable	Main Variables	(1) Coeff.	(2) Coeff.
$AUDFEE_{it}$	AD_{it}	–0.0116***	–0.0147***
(OBS = 7732)	$SMALL_{it}$	–0.0284***	–0.0301***
	$SMALL_{it} \times AD_{it}$		0.0023*
$SADEXP_{it}$	AD_{it}	0.0064**	0.0011
(OBS = 7732)	$SMALL_{it}$	–0.0132***	–0.0163***
	$SMALL_{it} \times AD_{it}$		0.0056**
$SALEXP_{it}$	AD_{it}	–0.0221***	–0.0250***
(OBS = 7732)	$SMALL_{it}$	–0.0484***	–0.0500***
	$SMALL_{it} \times AD_{it}$		0.0015
$OPEXP_{it}$	AD_{it}	–0.0042**	–0.0118***
(OBS = 7732)	$SMALL_{it}$	–0.0405***	–0.0449***
	$SMALL_{it} \times AD_{it}$		0.0073***
$TOTCOST_{it}$	AD_{it}	–0.0033*	–0.0095***
(OBS = 7732)	$SMALL_{it}$	–0.0400***	–0.0436***
	$SMALL_{it} \times AD_{it}$		0.0058***
$EARN_{it}$	AD_{it}	0.0637***	0.0429***
(OBS = 7732)	$SMALL_{it}$	0.0456***	0.0335***
	$SMALL_{it} \times AD_{it}$		0.0240**
$NIAT_{it}$	AD_{it}	0.0675***	0.0479***
(OBS = 7732)	$SMALL_{it}$	0.0396***	0.0282***
	$SMALL_{it} \times AD_{it}$		0.0226**
$LOSS_{it}$	AD_{it}	–0.1437***	–0.1771***
(OBS = 7732)	$SMALL_{it}$	0.0398***	0.0204
	$SMALL_{it} \times AD_{it}$		0.0387*

Notes: This table reports summaries of business cost and profit regressions: (i) replacing SIZE with SMALL (ii) replacing SIZE with SMALL and including an interaction term between SMALL and AD. Only the dependent variable and main independent variables are reported, all other variables are included in the models but unreported for brevity. OBS = number of firm-year observations. P-values are based on robust standard errors clustered two ways at the year-level and firm-level. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10, 0.05, 0.01$ level respectively.

Table 9
Accounting Directive and accounting quality – the effect on small firms.

		Models Replacing SIZE with SMALL	Models Interacting SMALL with AD
Dependent Variable	Main Variables	(1) Coeff.	(2) Coeff.
$EARN_{it+1}$	AD_{it}	0.0563***	0.0518***
(OBS = 7732)	$EARN_{it}$	0.2424***	0.2022**
	$AD_{it} \times EARN_{it}$	–0.1372***	–0.0474
	$SMALL_{it}$	0.0038	0.0015
	$SMALL_{it} \times EARN_{it}$	0.0232	0.0643
	$SMALL_{it} \times AD_{it}$		0.0046
	$SMALL_{it} \times AD_{it} \times EARN_{it}$		–0.0918*
$EARN_{it+2}$	AD_{it}	–0.0030	–0.0136
(OBS = 7243)	$EARN_{it}$	0.1476***	0.0049
	$AD_{it} \times EARN_{it}$	–0.1742***	0.1628***
	$SMALL_{it}$	0.0003	–0.0103
	$SMALL_{it} \times EARN_{it}$	–0.0767***	0.1026**
	$SMALL_{it} \times AD_{it}$		0.0134
	$SMALL_{it} \times AD_{it} \times EARN_{it}$		–0.3926***
$CONSERVE_{it}$	AD_{it}	–0.0998***	–0.0594*
(OBS = 7732)	$SMALL_{it}$	0.0520**	0.0756***
	$SMALL_{it} \times AD_{it}$		–0.0469*
$ADA[1]_{it}$	AD_{it}	–0.0411***	–0.0287***
(OBS = 7732)	$SMALL_{it}$	0.0218***	0.0290***
	$SMALL_{it} \times AD_{it}$		–0.0143**
$ADA[2]_{it}$	AD_{it}	–0.0470***	–0.0318***
(OBS = 7732)	$SMALL_{it}$	0.0215***	0.0304***
	$SMALL_{it} \times AD_{it}$		–0.0176***
$ADA[3]_{it}$	AD_{it}	–0.0341***	–0.0195***
(OBS = 7732)	$SMALL_{it}$	0.0116***	0.0201***
	$SMALL_{it} \times AD_{it}$		–0.0170***
$ADA[4]_{it}$	AD_{it}	–0.0334***	–0.0180***
(OBS = 7732)	$SMALL_{it}$	0.0121***	0.0210***
	$SMALL_{it} \times AD_{it}$		–0.0178***
EM_{it}	AD_{it}	–0.0778***	–0.0490***
(OBS = 7732)	$SMALL_{it}$	0.0334***	0.0501***
	$SMALL_{it} \times AD_{it}$		–0.0334***
$RAM[1]_{it}$	AD_{it}	0.1192***	0.1313***
(OBS = 7732)	$SMALL_{it}$	–0.0612***	–0.0541**
	$SMALL_{it} \times AD_{it}$		–0.0140
$RAM[2]_{it}$	AD_{it}	0.0805***	0.0833***
(OBS = 7732)	$SMALL_{it}$	–0.0506***	–0.0490***
	$SMALL_{it} \times AD_{it}$		–0.0032

Notes: This table reports summaries of accounting quality regressions: (i) replacing SIZE with SMALL (ii) replacing SIZE with SMALL and including an interaction term between SMALL and AD. Only the dependent variable and main independent variables are reported, all other variables are included in the models but unreported for brevity. OBS = number of firm-year observations. P-values are based on robust standard errors clustered two ways at the year-level and firm-level. All variables are defined in Appendix. *, **, *** indicate significance at the $p < 0.10, 0.05, 0.01$ level respectively.

Appendix. Variable definitions.

Variable	Definition
AD	Indicator variable which takes the value of 1 if the financial year starts on or after 1 January 2016 and 0 otherwise.
AUDFEE	Natural logarithm of audit fee, scaled by 100.
SADEXP	Natural logarithm of selling and administrative expenses, scaled by 100.
SALEXP	Natural logarithm of salaries and wages, scaled by 100.
OPEXP	Natural logarithm of operating expenses, scaled by 100.
TOTCOST	Natural logarithm of total costs, scaled by 100. Total cost is calculated as the difference between sales revenue and net income after tax.
EARN	Operating income divided by total assets.
NIAT	Net income after tax divided by total assets
IFRS	Indicator variable which takes the value of 1 if the accounting standard followed for preparing the financial statements is IFRS, 0 otherwise.
RET	Annual buy and hold raw returns.
STDRET	Standard deviation of RET over the previous three years.
CFO	Net cash flow from operating activities divided by total assets.
ACC	Difference between operating income (EARN) and operating cash flow (CFO).
SIZE	Natural logarithm of total assets.
LOSS	Indicator variable taking the value of 1 if operating income is negative, 0 otherwise.
MTB	Market capitalisation divided by total book value. Total book value is computed as the number of shares outstanding multiplied by the book value per share.
LEV	Long term debt divided by total assets.
DIV	Indicator variable taking the value of 1 if the firm pays cash dividends, 0 otherwise.
LIQ	Value of common shares divided by the number of shares outstanding.
TRCREDIT	Accounts payable divided by the cost of goods sold.
CONSERVE	Conditional earnings conservatism coefficient based on Basu (1997).
CHEARN	Annual change in operating income.
STDEARN	Standard deviation of EARN over the past three years.
ADA[1]	Absolute discretionary accruals based on Teoh et al. (1998).
ADA[2]	Absolute discretionary accruals based on Dechow et al. (1995).
ADA[3]	Absolute discretionary accruals based on Dechow and Dichev (2002).
ADA[4]	Absolute discretionary accruals based on McNichols (2010).
EM	First principal component of ADA[1], ADA[2], ADA[3] and ADA[4].
RAM[1]	Real activities manipulation based on Zang (2012). This combines the abnormal level of production and the abnormal level of discretionary expenses.
RAM[2]	The abnormal level of discretionary expenses based on Zang (2012).
SMALL	Indicator variable taking the value of 1 if a firm satisfies at least two of the three AD criteria for small-firm classification, 0 otherwise. The three criteria are: (i) net assets less than or equal to £5.1 million (ii) net turnover less than or equal to £10.2 million (iii) average number of employees less than or equal to 50.

Notes: This appendix table provides the definitions of the variables used in the study.