On the Relationship between Peer Firms' Accounting Quality and Firm-level Capital Investment

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Declaration of Interests
None.

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Abstract: This study contributes to the literature on the externalities of firms' financial reporting practices on their peer firm's decision-making. If managers use their peer firms' financial disclosures to make investment decisions, it is plausible that their investments are related to peer accounting quality. Using conditional conservatism and discretionary accruals as alternative measures of accounting quality, in a sample of FTSE All-Share Index firms, we find that a firm's investment level and investment efficiency are both positively associated with its peers' accounting quality. As an alternative approach to examining this externality, we provide evidence that a firm's investment level and investment efficiency are both positively associated with its industry's accounting quality. Additional analysis reveals some differences in the alignments of investment efficiency and conservatism vis a vis accruals quality. Most notably, we find that peer (industry) conservatism is more strongly associated with the efficiency of small-sized relative to large-sized investments, while peer (industry) accruals quality is more strongly associated with the efficiency of large-sized relative to small-sized investments. We attribute this to the differences in which changes in conservatism and accruals quality influence the decision-relevance of accounting information.

Keywords: Peer Accounting Quality, Conservatism, Accruals, Investment Efficiency, Investment Turnover

1. Introduction

A flourishing stream of research suggests that due to the monitoring role of financial reporting, a firm's investment decisions are related to its accounting quality (e.g., Biddle & Hilary, 2006: Biddle, Hilary, & Verdi, 2009; Chen, Hope, Li, & Wang, 2011; Garcia Lara, Garcia Osma, & Penalva, 2016; Giao, Goncalves, & Cardoso, 2023; Gomariz & Ballesta, 2014; McNichols & Stubben, 2008). Consistent with agency theory, these studies argue that increased accounting quality alleviates adverse selection and moral hazard problems by lowering the information asymmetry between managers and shareholders. This allows shareholders to better monitor managers' investment choices, motivating manages to invest efficiently (Biddle & Hilary, 2006; Biddle et al., 2009; Bushman & Smith, 2001; Verdi, 2006). High accounting quality also improves internal decision-making by providing more decision-relevant accounting numbers, thus increasing investment efficiency (Chen et al., 2011; Gomariz & Ballesta, 2014).

A related but sparse research stream examines the spillover effects of firms' financial reporting practices on their peer firms' decision-making (e.g., Beatty, Liao, & Yu, 2013; Gleason, Jenkins, & Johnson, 2008; Li, 2016). If managers use their peer firms' financial disclosures to assess an investment opportunity, it is plausible that their investment decisions are related to peer (and industry) accounting quality (Roychowdhury, Shroff, & Verdi, 2019). Nevertheless, prior studies primarily focus on the externalities of fraudulent financial reporting without explicitly measuring peer (or industry) accounting quality and their relationships with firms' capital investments. In this study, we address this gap in literature.

Managers have incentives to select investments with positive net present values (NPV) for their firms – to increase their firm's profitability, and consequently, their own compensation. If the internal accounting numbers are inadequate for assessing the profitability of an investment opportunity, managers can look at peer firms' financial

disclosures (Beatty et al., 2013; Bushman & Smith, 2001; Durnev & Mangen, 2009, 2020). As peer firms sell substitutable products, they are subject to similar economic conditions, business operations and target markets, and are expected to be interested in similar investment opportunities (Durnev & Mangen, 2020; Roychowdhury et al., 2019). This implies, managers may find their peer firms' accounting information useful for making investment decisions. Financial reporting regulation mandates firms to report their revenues, expenses, assets and liabilities for the period (Lundholm & Sloan, 2013). In addition, firms may voluntarily disclose guidance on future sales, profits and trading outlook (Hutton, Miller, & Skinner, 2003; McNichols & Stubben, 2015; Roychowdhury et al., 2019). Aggregating such information from peer disclosures can help outside managers to assess peer performance or the demand and supply of a product, and thus, the net cash flows of an investment opportunity. Therefore, we hypothesize that a firm's investment level is associated with its peers' accounting quality.

Peer firms can disclose either value-relevant or misleading financial information, depending on the incentives of their managers (Beatty et al., 2013; Durnev & Mangen, 2009; Li, 2016). If peer firms disclose value-relevant (misleading) firm-fundamentals, it creates positive (negative) externalities for outside users. For instance, when managers use peer disclosures to make investment decisions, the efficiency of their decisions is expected to be related to peer accounting quality. Investment efficiency is the ability of an investment to generate revenue (Biddle et al., 2009; Garcia Lara et al., 2016; Gomariz & Ballesta, 2014; Verdi, 2006). High (low) peer accounting quality improves (deteriorates) managers' understanding of peer performance, which leads them to make better (poorer) investment decisions, thus increasing (decreasing) investment efficiency. Given this, we hypothesize that a firm's investment efficiency is associated with its peers' accounting quality.

We then adopt an alternative approach to examining the externalities of firms' financial disclosures on their peers' investment decisions. Specifically, we argue that a firm's investment level and investment efficiency are both associated with its industry's accounting quality. From a firm's perspective, the industry includes the firm in question and each of its peers (Bresnahan & Reiss, 1987; Durnev & Mangen, 2009; 2020). In accordance with this view, the industry accounting quality represents the sum-total of accounting informativeness of the firm in question and each of its peers. If managers base their investment decisions partly on their firms' accounting numbers and partly on peer firms' accounting numbers, then the firm's investment level is expected to be associated with the industry's accounting quality. For similar reasons, we also argue that a firm's investment efficiency is related to its industry's accounting quality. High (low) industry accounting quality implies more (less) decision-relevant accounting numbers for the firm and its peers. This improves (deteriorates) a manager's ability to assess the NPV of an investment opportunity, increasing (decreasing) investment efficiency.

To examine our hypotheses, we select a sample of FTSE All-Share Index firms for the years 2008 – 2022. We use two separate proxies for accounting quality – conditional conservatism and discretionary accruals – to improve the generalizability of our findings. We measure investment level as the annual change in investment-related items (property, plant and equipment, intangible assets and research and development expenses). We proxy investment efficiency by the investment turnover ratio. Our multivariate analysis suggests, first, that a firm's investment level is positively associated with its peers' accounting quality. Second, we find that a firm's investment efficiency increases with increased levels of accounting quality. Similarly, we find that a firm's investment level and investment efficiency are both positively associated with its industry's accounting quality. Overall, our results are consistent with our hypotheses and robust to alternative variable definitions.

Supplementary to our main hypotheses, we argue that as accounting quality measures, conservatism and discretionary accruals affect managers' ability to assess the NPV of small-sized and large-sized investments differently. On the one hand, increased conditional conservatism restricts the reporting of difficult-to-verify projects (Basu, 1997, 2005; Beaver & Ryan, 2005; Iatridis, 2011; Qiang, 2007). We believe that most of these difficult-to-verify projects are smaller investments, as they are often subject to lower visibility and less transparent reporting. Hence as peer conservatism increases, small investments that are reported tend to have reliable NPVs (Rahman, 2023). Therefore, we expect peer conservatism to exhibit a stronger association with the efficiency of small relative to large investments. On the other hand, the NPV of larger investments are often easier to assess as they are deemed more price-sensitive and thus subject to more extensive reporting (McNichols & Stubben, 2008; Rahman, 2023; Schleicher & Walker, 2015). As peer accruals quality increases, the already visible numbers are now more decision-relevant, improving the reliability of outside manager assessments. As such, we expect peer accruals quality to exhibit a stronger association with the efficiency of large relative to small investments. For the same reasons, we contend that these arguments can also be extended to industry accounting quality.

As part of additional analysis, we now examine differences in the alignment of investment efficiency and peer (industry) conservatism vis a vis peer (industry) accruals quality. Consistent with our conjectures, we find that peer (industry) conservatism is more strongly and positively associated with the efficiency of small relative to large investments. Similarly, we find that peer (industry) accruals quality is more strongly and positively associated with the efficiency of large relative to small investments. Subsequently, to better understand the differences in the alignment of investment efficiency and conservatism vis a vis accruals quality, we examine their differences across the following groups of firms –

profit firms vs loss firms, high leverage vs low leverage firms and dividend payer vs non-dividend payer firms.

This study contributes to the literature on the externalities of peer firms' financial disclosures for managers' investment decisions. Prior studies examine the spillover effects of firms' financial reporting practices on their peers' decision-making without directly testing the relationship between peer accounting quality and capital investments (e.g., Beatty et al., 2013; Durnev & Mangen, 2009; Gleason et al., 2008; Li, 2016). To the best of our knowledge, this is the first study to directly examine the association between peer accounting quality and firms' investment level. This is also the first study to examine the association between peer accounting quality and firms' investment turnover as a measure of investment efficiency. We document that peer accounting quality is positively associated with firms' investment level and investment efficiency. As an alternative approach to examining the externalities of peer firms' financial reporting, we also examine the linkage between industry accounting quality and firms' capital investments and arrive at similar conclusions.

A second contribution of this paper is to explore some differences in the relationships of capital investments with our two accounting quality measures. Prior research is agnostic on how peer accruals quality and peer conservatism is linked to firms' investments. Our findings contribute to the currently sparse research stream that compares the efficacies of conservatism vis a vis discretionary accruals as accounting quality proxies (e.g., Garcia Lara et al., 2020). While peer (industry) conservatism and peer (industry) accruals quality are both positively associated with investment efficiency, we provide evidence that their alignments vary by firms' investment size, profitability status, dividend payer status and leverage.

The rest of this paper is organized as follows. Section 2 reviews the relevant literature and develops the hypotheses. Section 3 outlines the sample selection and research design

while Section 4 reports the results of the hypotheses tests. Section 5 reports the results of some additional analysis not hypothesized in Section 2. Section 6 concludes.

2. Literature Review

2.1. Accounting quality and capital investments

Accounting quality refers to the decision-usefulness of reported accounting information (Dechow, Ge, & Schrand, 2010). If managers use their firms' financial disclosures to make capital investment decisions, it is plausible that the efficiency of their decisions are related to their accounting quality. This line of reasoning has led a growing number of studies to investigate the relationship between accounting quality and capital investments. Grounded in agency theory, these studies argue that high (low) accounting quality improves (reduces) investment efficiency by ameliorating (exacerbating) adverse selection and moral hazard problems that arise from the information asymmetry between the preparers and users of financial disclosures (Leuz & Verrecchia, 2000; Bushman & Smith, 2001; Biddle et al., 2009).

Moral hazard problems arise when managers use their information advantage vis a vis shareholders to make self-serving investment decisions that do not maximize shareholder wealth (Roychowdhury et al., 2019). Examples of moral hazard costs include empire building (Jensen, 1986, 1993), effort-aversion (Bertrand & Mullainathan, 2003) and risk-aversion (Amihud & Lev, 1981), all of which can result in sub-optimal investment decisions (Roychowdhury et al., 2019). Financial disclosures allow shareholders to monitor managers' activities. Higher (lower) accounting quality reduces (increases) information asymmetry between the managers and shareholders by providing more (less) decision-relevant accounting numbers. This improves (deteriorates) shareholder monitoring of managers'

investment choices, thus lowering (increasing) moral hazard costs and increasing (decreasing) investment efficiency (Biddle et al., 2009; Gomariz & Ballesta, 2014).

Adverse selection problems originate from the information asymmetry between managers and capital providers (Roychowdhury et al., 2019). For example, adverse selection costs may arise if capital providers conclude from lack of relevant information that the firm is too risky to invest (Myers & Majluf, 1984). Higher (lower) accounting quality can reduce (increase) adverse selection costs in different ways. As accounting quality increases (decreases), the information asymmetry decreases (increases), improving (hampering) the capital allocation decisions of investors and creditors (Biddle et al., 2009). In addition, higher (lower) accounting quality can reduce (increase) information asymmetry between investors, thus increasing (decreasing) share price liquidity (Verrechia, 2001). In both cases, the firm's external financing costs are lowered (increased), increasing (decreasing) investment efficiency (Biddle et al., 2009; Roychowdhury et al., 2019).

Consistent with these arguments, empirical research documents a positive linkage between measures of accounting quality and investment efficiency. The first study to directly examine this link is Biddle and Hilary (2006), who employ first a cross-country sample and then compare samples of US and Japanese firms to find that higher accounting quality is associated with lower investment-cash flow sensitivity. They interpret this finding as evidence of a positive association between accounting quality and investment efficiency. McNichols and Stubben (2008) examine a sample of US public firms and find that firms which manipulate earnings are more likely to overinvest. Similarly, Verdi (2006) and Biddle et al. (2009) in samples of US public firms and Chen et al. (2011) in a cross-country sample of private firms demonstrate that financial reporting quality is negatively associated with both overinvestment and underinvestment. Subsequently, Gomariz and Ballesta (2014) document in a sample of Spanish firms that accounting quality mitigates the problem of overinvestment,

and that firms' use of short-term debt negatively moderates this relationship. Garcia Lara et al. (2016) examine a sample of US firms and find that increased accounting conservatism reduces the problem of both over-investment and under-investment. They additionally provide evidence that this association is stronger for firms with higher information asymmetry. Contemporary research frequently supports the findings of these studies in a variety of research settings (Bzeouich, Lakhal, & Dammak, 2019; Chung, Wynn, & Yi, 2013; Giao et al., 2023; Godsell, Jung, & Mescall, 2023; Ha & Feng, 2018; Volker & Korok, 2020).

2.2. Peer firms' financial disclosures and capital investments

Peer firms are competitors or rivals in an industry who sell substitutable products (Durnev & Mangen, 2020). Several studies argue that peer firms' financial disclosures are a source of information for managers to make investment decisions (Beatty et al., 2013; Dixit & Pindyck, 1994; Durnev & Mangen, 2009, 2020; Li, 2016; McNichols & Stubben, 2015; Roychowdhury et al., 2019). For instance, Durnev and Mangen (2009) argue that earnings restatements have incremental news content for peer firms' investment opportunities. They find that peer firms modify their investment decisions in response to firms' earnings restatements. Related to this, Gleason et al. (2008) find that when restatements adversely affect a firm's share prices, the share prices of non-restating peer firms also decrease. Beatty et al. (2013) provide evidence that in the periods when an industry-leader firm fraudulently overstates its earnings, its peers are also misled into overinvesting. Moreover, Li (2016) finds that firms' accounting misstatements have adverse effects for their peers' capital investment, research and development, advertising and pricing decisions. McNichols and Stubben (2015) examine the spillover effects of peer accounting quality during mergers and acquisitions. They find that when the target firms disclose higher-quality accounting information, acquirer firms are expected to make more profitable acquisitions. Durnev and Mangen (2020) find that

a firm's investment level and investment efficiency are positively associated with the tone of their peer firms' MD&A disclosures, suggesting that peer textual disclosures create externalities for outside managers. To summarize the learnings from these studies, peer disclosures improve (hamper) managerial decision-making when they report value-relevant (misleading) information.

Although the aforementioned papers examine the spillover effects of fraudulent financial reporting on various aspects of their peers' decision-making, they do not directly examine the association between peer accounting quality and firms' investment level and investment efficiency. Therefore, existing research is largely agnostic on how firms' investment decisions are related to its peers' discretionary accruals and conservatism. Our study attempts to fill this void. Related to this, we also examine the association between industry accounting quality and firms' capital investments. Our findings complement previous research on the externalities of peer disclosures for managers' investment decisions (e.g. Beatty et al., 2013; Durnev & Mangen, 2009; Li, 2016). To obtain a deeper understanding of our results, we then compare differences in the alignments of investment efficiency with our peer (and industry) accounting quality measures across the following groups – small vs large investment firms, high vs low leverage firms, non-financial vs financial firms, profit vs loss firms and dividend payer vs non-dividend payer firms.

2.2. Hypotheses development

Our first hypothesis examines the relationship between a firm's investment level and its peers' accounting quality. Investment level represents the incremental change in investment-related items in an accounting period, such as property, plant and equipment, intangible assets and research and development expenses (Beatty et al., 2013; Biddle et al., 2009; Gomariz & Ballesta, 2014). Managers have incentives to select an investment level that

maximizes their firm's profitability – to increase shareholder wealth and, in turn, their own compensation. To do this, managers need to carefully assess for each investment opportunity the net present value (NPV) of future expected cash flows (Beatty et al., 2013; Durnev & Mangen, 2020; Roychowdhury et al., 2019). Managers who lack information for adequately evaluating an investment opportunity are expected to look at peer firms' financial disclosures (Durnev & Mangen, 2020). Due to similarities in business operations, target markets, labour availability and input costs, peer firms are typically interested in similar investment opportunities (Bushman & Smith, 2001; Roychowdhury et al., 2019). Financial reporting regulation mandates firms to periodically disclose information such as sales revenue, cost of sales, inventories, profit margins, fixed and intangible assets, research and development expenses, and cash flows from investing/operating activities (Lundholm & Sloan, 2013; McNichols & Stubben, 2015). Firms also provide supplementary schedules and notes on re-valuations, additions and disposals of assets, depreciation/amortization and mergers and acquisitions (Dixit & Pindyck, 1994; Hutton et al., 2003; Roychowdhury et al., 2019). In addition, firms may voluntarily provide forward-looking guidance on sales, trading, earnings and investments (Hutton et al., 2003; Roychowdhury et al., 2019). As a result, peer firms' financial disclosures can provide relevant information to managers for estimating the NPV of an investment opportunity. This leads us to believe that peer accounting quality is related to managers' choice of investments. Therefore, we hypothesize:

H1a: A firm's investment level is associated with its peers' accounting quality.

For aforementioned reasons, we argue that a firm's investment level is also related to its industry's accounting quality. This provides us with an alternative approach to examine the externality described in H1a. An industry consists of peer firms that sell substitutable products (Bresnahan & Reiss, 1987; Durnev & Mangen, 2009; 2020; Roychowdhury et al.,

2019). The accounting quality of peer firms are expected to be influenced by common industry factors such the nature of business, competition, regulation, industry practices, agency relationships and corporate governance. From a firm's perspective, the industry comprises the firm in question and all its peers (Bresnahan & Reiss, 1987; Durnev & Mangen, 2020). Consistent with this, the industry accounting quality is the sum-total of accounting informativeness of the firm in question and each of its peers. This forms the basis of our second hypothesis. Managers provided with incomplete information from internal sources are expected to choose their investment level partly on the basis of their firms' accounting numbers and partly on the basis of peer firms' financial disclosures. For instance, managers may find their internal accounting numbers relevant for at least partially assessing the viability of an investment opportunity, as it sheds light on their firm's financial capability and prospects (Bushman & Smith, 2001; Roychowdhury et al., 2019). Thereafter, managers are expected to integrate this information with peer firms' accounting numbers to estimate the future cash flows of the investment. Given this, we argue that the industry accounting quality is related to managers' choice of investments and develop the following hypothesis:[3]

H1b: A firm's investment level is associated with its industry's accounting quality.

Our third hypothesis examines the relationship between a firm's investment efficiency and its peers' accounting quality. Investment efficiency signifies how well a firm uses its investments to generate revenue (Biddle & Hilary, 2006; Biddle et al., 2009; Garcia Lara et al., 2016; Giao et al., 2023; Gomariz & Ballesta, 2014; Verdi, 2006). When managers use peer firms' financial disclosures for assessing investment opportunities, the efficiency of their

[3] Our approach lends H1a and H1b as substitute hypotheses to the extent that our measure of peer accounting quality approximates the corresponding industry accounting quality measure, for e.g., in industries that contain a large number of peer firms. In such cases, the results of H1a and H1b should provide confirmation to each other. The same applies to H2a and H2b.

investment decisions is expected to be related to peer accounting quality. Peer disclosures that report value-relevant (misleading) firm-fundamentals can create positive (negative) externalities by improving (deteriorating) the overall information environment (Beatty et al., 2013; Li, 2016; Roychowdhury et al., 2019). Specifically, high (low) peer accounting quality can enhance (obfuscate) managers' understanding of peer performance and consequently facilitate (hinder) efficient decision-making (Durnev & Mangen, 2009; Roychowdhury et al., 2019). Consider a manager who, as Bushman and Smith (2001) suggest, uses the profit margins disclosed by peers as a basis for assessing the NPV of an investment opportunity. When peer accounting quality is high (low), the decision-relevance of the profit margins they report is increased (decreased). In turn, the manager's ability to estimate the NPV of the project is enhanced (hampered), increasing (decreasing) the efficiency of their investment decisions. Therefore, we hypothesize:

H2a: A firm's investment efficiency is associated with its peers' accounting quality.

As an alternative approach to examining the externality in H2a, our fourth hypothesis examines the relationship between a firm's investment efficiency and its industry's accounting quality. To explain, we re-iterate that the industry accounting quality signifies the sum-total accounting quality of all firms in the industry, including the firm in question. When managers base their investment decisions partly on their firms' and partly on their peer firms' financial disclosures, the efficiency of their decisions depends on the accounting quality of their firm and its peers. This leads us to believe that the industry accounting quality is associated with the firm's investment efficiency. Increased (decreased) industry accounting quality implies more (less) decision-relevant financial disclosures for the firm and its peers, which in turn improves (deteriorates) managers' ability to distinguish between profitable and

unprofitable investment opportunities improves, thus increasing (decreasing) investment efficiency. Accordingly, we hypothesize:

H2b: A firm's investment efficiency is associated with its industry's accounting quality.

3. Methodology

3.1. Sample selection

Table 1 presents the sample development and composition. Our sample period covers the fifteen years 2008 – 2022 inclusive. For variable calculations, we initially collect from *Refinitiv* the list of FTSE All-Share Index constituents over the period 2007 – 2022. We do not exclude financial firms from our sample because their information for measuring the variables relevant to this study are similar to non-financial firms.[4] This process yields 9403 firm-year observations from 673 unique firms. From this tally, we first delete all observations for the year 2007 after the variables are calculated. We then delete all observations from our sample for which the complete set of matching variable information are unavailable in *Refinitiv*. This approach leaves us with a final tally of 8310 observations for the years 2008 – 2022 corresponding to 667 unique firms. A breakdown of the sample by industry reveals that nearly half of our firm-year observations represent *Financials* (49.52%). Among non-financial firms, the largest industries are *Industrials* (16.35%) and *Consumer Services* (12.76%) while the smallest industries are *Telecommunications* (0.83%) and *Utilities* (1.35%). The representation of industries in our sample is consistent with their proportion in the FTSE All-Share Index. A breakdown of the sample by years indicates a steady, consistent increase in the number of firm-year observations in the first thirteen years, from 5.72% in 2008 to 7.44% in 2020. During this period, the mean (median) annual sample size was 557

[4] Subsample analysis of financial firms and non-financial firms yield results for both groups that are broadly consistent with the full sample results in Section 4. This subsample analysis is discussed in Section 5.2.

(571) firms, representing 6.70% (6.87%) of the sample. The sample representation declines slightly to 5.88% in 2021 but rebounds to 6.96% in 2022.

[**Table 1 near here**]

3.2. Measuring capital investments

3.2.1. Measuring investment level

Consistent with prior research (e.g., Biddle et al., 2009; Garcia Lara et al., 2016; Giao et al., 2023; Gomariz & Ballesta, 2014), we measure firm-specific investment level using two proxies: (i) *IVL[1]*, defined as the sum of the annual change in property, plant and equipment (scaled by total assets) and the annual research and development expense (scaled by total assets); and (ii) *IVL[2]*, defined as the annual change in the sum of property, plant and equipment and intangible assets, scaled by total assets. Higher values of *IVL[1]* and *IVL[2]* imply higher investment levels.

3.2.2. Measuring investment efficiency

We estimate firm-specific investment efficiency by investment turnover ratio, which measures a firm's efficiency in using its investments to generate revenue. Previous studies estimate investment efficiency by relatively complex measures such as investment-cash flow sensitivity (Biddle & Hilary, 2006) and residuals of regressions of the investment level on sales growth (Biddle et al., 2009; Garcia Lara et al., 2016; Gomariz & Ballesta, 2014). In comparison, the investment turnover ratio appears to be simple, intuitive and easy to replicate. It is also analogous to asset turnover ratios measuring the efficiency of assets in generating revenue, and thus useful in comparing the efficiency of firms cross-sectionally.[5] We use two proxies of investment turnover: (i) *IVEF[1]*, defined as the ratio of sales revenue

[5] Measuring investment efficiency by its turnover ratio is consistent with our hypotheses and research setting. In contrast, the approach by Biddle et al. (2009) seems to be more suitable for studies that estimate a normal and an abnormal level of investment.

to the sum of property, plant and equipment and research and development expense; and (ii) *IVEF[2]*, defined as the ratio of sales revenue to property, plant and equipment. For ease of interpretation, we scale both *IVEF[1]* and *IVEF[2]* by 10. Higher values of *IVEF[1]* and *IVEF[2]* indicate increased investment turnover and thus higher investment efficiency.

3.3. Measuring accounting quality

To improve the generalizability of our results, we measure accounting quality using two proxies: (a) conservatism and (b) accruals quality.

3.3.1. Measuring accounting conservatism

Accounting conservatism is the principle of adopting higher verification standards for recognizing good news as profits than bad news as losses (Basu, 1997; Watts, 2003; Garcia Lara et al., 2016; Khan & Watts, 2009). The assumption here is that earnings is more strongly associated with concurrent unexpected returns in loss firms than in profit firms. Conservatism is described as conditional (or ex-post) when managers adopt a higher standard of verification for reporting good news than bad news (Basu, 1997; Beaver & Ryan, 2005) or unconditional (or ex-ante) when managers recognize losses earlier than profits (Qiang, 2007; Beaver & Ryan, 2005; Iatridis, 2011). Unconditional conservatism may undermine accounting quality due to early recognition of difficult-to-verify losses. However, conditional conservatism provides high-quality accounting information by restricting reporting of difficult-to-verify good news (Basu, 2005; Iatridis, 2011). Therefore, we use conditional conservatism as our measure of accounting quality.

Consistent with Basu (1997), we first measure firm-level 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 divided by share price at the start of the year, R_{it} is annual returns divided 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, AQ_{CON}, is represented by the coefficient β_3 in Eq. (1). A higher value of AQ_{CON} suggests a higher level of firm-specific conditional conservatism, signalling higher accounting quality.

Subsequently, we develop our measures for peer and industry conservatism. For each firm-year, we measure peer conservatism, $AQPEER_{CON}$, as the average of AQ_{CON} in all firms in the industry, excluding the firm in question. Similarly, for each firm-year, we measure industry conservatism, $AQIND_{CON}$, as the average of AQ_{CON} in all firms in the industry. The similarity in our approach for measuring peer and industry variables suggest that $AQPEER_{CON}$ is a close substitute of $AQIND_{CON}$. Higher values of $AQPEER_{CON}$ and $AQIND_{CON}$ imply higher levels of peer and industry conservatism respectively.

3.3.2. Measuring accruals quality

Accruals are revenues and expenses that have been earnt or spent, but the cash for which have not yet been paid (DeAngelo, 1986; Sloan, 1996). The reporting of accrual items in specific accounting periods can either be mandatory or non-mandatory. Discretionary accruals represent unrealized, non-mandatory accruals that are recorded in the financial statements. Managers have the "discretion" to transfer these accruals across different accounting periods, thus reporting an earnings number that is consistent with their objectives (DeAngelo, 1986; Healy, 1985; Sloan, 1996). Therefore, discretionary accruals is a tool for accruals management, with lower values of absolute discretionary accruals implying higher accruals quality (Dechow, Sloan, & Sweeney, 1995; Dechow & Dichev, 2002; Teoh, Welch, & Wong, 1998; McNichols, 2000).

Following prior literature (Bharat, Sunder, & Sunder, 2008; Chen, Liu, Ma, & Martin, 2017), we first estimate four separate accruals quality measures: (i) *DAC[1]* – absolute value

of discretionary accruals based on Teoh et al. (1998), multiplied by –1; (ii) *DAC[2]* – absolute value of discretionary accruals based on Dechow et al. (1995), multiplied by –1; (iii) *DAC[3]* – absolute value of discretionary accruals based on Dechow and Dichev (2002), multiplied by –1; and (iv) *DAC[4]* – absolute value of discretionary accruals based on McNichols (2000), multiplied by –1. Each discretionary accrual measure is multiplied by –1 so that higher values represent higher accruals quality. We then develop our measure of firm-specific accruals quality, AQ_{DAC}, as the first principal component of *DAC[1]*, *DAC[2]*, *DAC[3]* and *DAC[4]*. Higher values of AQ_{DAC} signal higher firm-specific accounting quality.

For each firm-year, we measure peer accruals quality, $AQPEER_{DAC}$, as the average of AQ_{DAC} in all firms in the industry, excluding the firm in question. Additionally, for each firm-year, we measure industry accruals quality, $AQIND_{DAC}$, as the average of AQ_{DAC} in all firms in the industry. Higher values of $AQPEER_{DAC}$ and $AQIND_{DAC}$ represent higher levels of peer and industry accruals quality respectively.

3.4. Other variables

Following prior research (Beatty et al., 2013; Biddle et al., 2009; Gomariz & Ballesta, 2014; Giao et al., 2023; Garcia Lara et al., 2016), we measure several firm characteristic variables expected to be associated with capital investments. To begin, we control for firms' profitability by *EARN*, measured as net income after tax divided by total assets. We control for earnings variability by *STDEARN*, defined by the standard deviation of *EARN* over the past three years, and for the profitability status by *LOSS*, an indicator variable taking the value of 1 if operating income is negative, 0 otherwise. We control for firms' dividend payment status by *DIV*, an indicator variable taking the value of 1 if the firm pays cash dividends, 0 otherwise. We control for firm size, *SIZE*, defined as the natural logarithm of total assets and for financial leverage, *LEV*, defined as long term debt divided by total assets.

We control for firm growth opportunity, *TOBINSQ*, defined as equity market value divided by equity book value. We also control for firms' cash holdings level, *CASH*, defined as cash and marketable securities divided by total assets.

4. Main Results

4.1. Descriptive statistics

Table 2 reports the descriptive statistics of the variables used in this study, based on 8310 firm-year observations during the years 2008 – 2022. To begin, the means of both *IVEF[1]* and *IVEF[2]* (0.1442 and 0.1459) are greater than their corresponding third quartile values (0.0588 and 0.0607), suggesting right-skewness in the distribution of investment efficiency measures. Similarly, the means of AQ_{CON}, $AQPEER_{CON}$ and $AQIND_{CON}$ (0.0968, 0.0967 and 0.0972) are all higher than their corresponding medians (0, 0.0684 and 0.0701), implying right-skewness in the distribution of conservatism variables. In contrast, the means of AQ_{DAC}, $AQPEER_{DAC}$ and $AQIND_{DAC}$ (–0.1147, –0.1212 and –0.1208) are all lower than their corresponding medians (–0.0613, –0.1068 and –0.1063). This implies left-skewness in the distribution of accruals quality measures. By construction, the values of all conservatism (accruals quality) variables are higher (lower) than or equal to 0. As our peer and industry variables are both measured as averages of individual firm values, the distribution of $AQPEER_{CON}$ ($AQPEER_{DAC}$) is very similar to that of $AQIND_{CON}$ ($AQIND_{DAC}$). In addition, the mean of AQ_{CON} (AQ_{DAC}) [0.0968 (–0.1147)] is very similar to the means of both $AQPEER_{CON}$ ($AQPEER_{DAC}$) [0.0967 (–0.1212)] and $AQIND_{CON}$ ($AQIND_{DAC}$) [0.0972 (–0.1208)]. Our measurement approach also ensures that the standard deviations of AQ_{CON} and AQ_{DAC} (0.5842 and 0.1903) are considerably higher than their corresponding peer and industry variables ($AQPEER_{CON}$ = 0.1220; $AQIND_{CON}$ = 0.1213; $AQPEER_{DAC}$ = 0.0542; $AQIND_{DAC}$ = 0.0550), signifying greater variation of accounting quality at the firm-level than at the peer and

industry levels. Collectively, the similarity in descriptive statistics between $AQPEER_{CON}$ ($AQPEER_{DAC}$) and $AQIND_{CON}$ ($AQIND_{DAC}$) suggests a degree of substitutability between peer and industry conservatism (accruals quality).

With respect to the control variables, the mean values of *EARN*, *LEV* and CASH suggest that after-tax net income, long-term debt and cash and marketable securities are 5.24%, 13% and 8.04% of total assets respectively. In addition, the means of *EARN*, *LEV* and *CASH* are all higher than their corresponding medians, implying right-skewness in the distribution of profit, leverage and cash holding levels in our sample. The means of *DIV* and *LOSS* indicate that 80.5% of firms pay cash dividends while 18.8% of firms report an annual loss. Overall, these statistics are consistent with other studies that examine FTSE All-Share Index firms in similar periods (e.g., Rahman, 2023).

[**Table 2 near here**]

Table 3 presents the quintile mean distribution of our accounting quality variables, ranked by investment. Each quintile has 1662 firm-year observations. We calculate the quintile means of AQ_{CON}, $AQPEER_{CON}$, $AQIND_{CON}$, AQ_{DAC}, $AQPEER_{DAC}$ and $AQIND_{DAC}$, ranked alternatively by *IVL[1]*, *IVL[2]*, *IVEF[1]* and *IVEF[2]*. In all four cases, we find that all five quintile mean values of peer and industry conservatism (accruals quality) are very close to each other. This highlights that the peer and industry conservatism (accruals quality) variables have similar distributions and are likely substitutes of each other. When ranked by *IVL[1]* and *IVL[2]*, we find that the higher quintiles of $AQPEER_{CON}$ and $AQIND_{CON}$ generally have higher mean values. Similarly, we find that the mean values of $AQPEER_{DAC}$ and $AQIND_{DAC}$ increase consistently from the second quintile to the fifth quintiles. Arguably, these results constitute prima facie evidence of positive association between the investment level and (a) peer accounting quality and (b) industry accounting quality. When ranked by

IVEF[1] and *IVEF[2]*, we observe that the mean values of higher $AQPEER_{CON}$ and $AQIND_{CON}$ quintiles are not always higher. However, we continue to find that the mean values of $AQPEER_{DAC}$ and $AQIND_{DAC}$ are consistent higher from the first quintile to the fourth quintile. We believe this provides some preliminary evidence of positive association between investment efficiency and (a) peer accruals quality and (b) industry accruals quality.

[**Table 3 near here**]

4.2. Hypothesis testing

4.2.1. Test of H1a

H1a hypothesizes that a firm's investment level is associated with its peers' accounting quality. To test H1a, we develop multivariate regressions of investment level on accounting quality as follows (excluding industry and year fixed-effects):[6]

$$IVL[1]_{it} \text{ (or } IVL[2]_{it}) = \alpha + \beta_1 AQ_{it} + \beta_2 EARN_{it} + \beta_3 STDEARN_{it} + \beta_4 DIV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 TOBINSQ_{it} + \beta_8 LOSS + \beta_9 CASH + \varepsilon_{it} \quad (2a)$$

$$IVL[1]_{it} \text{ (or } IVL[2]_{it}) = \alpha + \beta_1 AQPEER_{it} + \beta_2 EARN_{it} + \beta_3 STDEARN_{it} + \beta_4 DIV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 TOBINSQ_{it} + \beta_8 LOSS + \beta_9 CASH + \varepsilon_{it} \quad (2b)$$

$$IVL[1]_{it} \text{ (or } IVL[2]_{it}) = \alpha + \beta_1 AQ_{it} + \beta_2 AQPEER_{it} + \beta_3 EARN_{it} + \beta_4 STDEARN_{it} + \beta_5 DIV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 TOBINSQ_{it} + \beta_9 LOSS + \beta_{10} CASH + \varepsilon_{it} \quad (2c)$$

Eq. (2a) examines the relationship between investment level and firms' accounting quality. Eqs. (2b) and (2c) examine the relationship between investment level and peer accounting quality, without and with controlling for the firm's accounting quality. In Eqs. (2a) – (2c) and subsequent regressions we include the following explanatory variables

[6] We do not claim a direct causal link between the regrassand and regressors in this study. Consistent with our hypotheses, the regression models are designed only to test associations between the regressand and regressors.

expected to be associated with capital investments – *EARN*, *STDEARN*, *DIV*, *SIZE*, *LEV*, *TOBINSQ*, *LOSS* and *CASH*. For H1a to hold, the coefficients of *AQPEER* in Eqs. (2b) and (2c) need to be either positive or negative and statistically significant.

Panel A of Table 4 presents the full sample regression results of Eq. (2) using conservatism variables to proxy for accounting quality (AQ_{CON} and $AQPEER_{CON}$). Columns (1) – (2) report the results for Eq. (2a). In both columns, we find that the coefficients of AQ_{CON} are statistically non-significant, providing no evidence of a link between a firms' investment level and conservatism. Columns (3) – (4) and (5) – (6) report the results for Eqs. (2b) and (2c) respectively. Across Columns (3) – (6), we find that the coefficients of $AQPEER_{CON}$ are positive and statistically significant at the 1% level. This is consistent with H1a and suggests that a firm's investment level is positively associated with its peers' conservatism. Between Columns (3) – (6), the coefficients of $AQPEER_{CON}$ in their respective *IVL[1]* and *IVL[2]* models remain very similar in size with or without controlling for AQ_{CON}. For instance, in Columns (3) and (5), the coefficients of $AQPEER_{CON}$ in *IVL[1]* models excluding and including AQ_{CON} respectively is 0.0617. To gauge the economic significance of this result, a one standard deviation increase in $AQPEER_{CON}$ (0.1220) is associated with an increase in *IVL[1]* by [0.1220 × 0.0617] 0.75%. To put this into perspective, the coefficients of *EARN* in both Columns (3) and (5) are –0.0487 ($p<0.01$). A one standard deviation increase in *EARN* (0.1520) is associated with a decrease in *IVL[1]* by 0.74%. Therefore, a one standard deviation increase in peer conservatism is associated with a slightly larger change in *IVL[1]* (albeit in the opposite direction) than an equivalent increase in earnings. The coefficients of AQ_{CON} in Columns (5) – (6) remain statistically non-significant when controlled with $AQPEER_{CON}$.

Panel B of Table 4 presents the results of Eq. (2) using accruals quality variables (AQ_{DAC} and $AQPEER_{DAC}$). The results of Eq. (2a) in Columns (7) – (8) show that the

coefficients of AQ_{DAC} are positive ($p<0.01$), suggesting a positive alignment between the firm's investment level and accruals quality. The results of Eq. (2b) and (2c) are presented in Columns (9) – (10) and (11) – (12) respectively. These results are very similar to the corresponding results in Panel A. Across Columns (9) – (12), we find that the coefficients of $AQPEER_{DAC}$ are positive and statistically significant at the 1% level. Consistent with H1a, these results suggest that a firm's investment level increases with increased levels of peer accruals quality. The coefficients of AQ_{DAC} in Columns (11) – (12) remain positive ($p<0.01$) after the models are controlled with $AQPEER_{DAC}$. In Column (11), the coefficients of AQ_{DAC} and $AQPEER_{DAC}$ are 0.0210 and 0.1735 respectively. A one standard deviation increase in AQ_{DAC} (0.1903) and $AQPEER_{DAC}$ (0.0542) are associated with an increase in *IVL[1]* by 0.40% and 0.94% respectively. Hence the economic significance of a one standard deviation change in peers' accruals quality for *IVL[1]* is 2.35 times greater than an equivalent change in the firm's own accruals quality. Overall, based on our findings in Panels A and B, we conclude that a firm's investment level is positively associated with its peers' accounting quality.

The control variables provide similar results across Panels A and B. We observe that *EARN*, *SIZE* and *CASH* are negatively associated with the investment level while *STDEARN* and *TOBINSQ* are positively associated with the investment level in some of the models. These findings are in typically line with prior research. The explanatory power of each *IVL[1]* model in this table is marginally higher than its corresponding *IVL[2]* model.

[**Table 4 near here**]

4.2.2. Test of H1b

H1b hypothesizes that a firm's investment level is associated with its industry's accounting quality. To test H1b we develop the following regression (excluding industry and year fixed-effects):

$$IVL[1]_{it} \text{ (or } IVL[2]_{it}) = \alpha + \beta_1 AQIND_{it} + \beta_2 EARN_{it} + \beta_3 STDEARN_{it} + \beta_4 DIV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 TOBINSQ_{it} + \beta_8 LOSS + \beta_9 CASH + \varepsilon_{it} \quad (3)$$

Eq. (3) examines the relationship between investment level and industry accounting quality. For H1b to hold, the coefficient of *AQIND* in Eq. (3) need to be either positive or negative and statistically significant.

Columns (1) – (2) of Table 5 report the regression results of Eq. (3) for conservatism ($AQIND_{CON}$). We observe in both columns that the coefficients of $AQIND_{CON}$ are positive and statistically significant at the 1% level. This is consistent with H1b and suggests that a firm's investment level increases with higher levels of industry conservatism. Columns (3) – (4) of Table 5 report the results of Eq. (3) for accruals quality ($AQIND_{DAC}$). We notice in both columns that the coefficients of $AQIND_{DAC}$ are positive and statistically significant at the 1% level. This affirms H1b and implies that as a firm's investment level goes up, the industry accruals quality also increases. Taken together, the results across Columns (1) – (4) suggest that a firm's investment level is positively associated with its industry's accounting quality. We also assess the economic significance of these results. In Columns (1) and (3), the coefficients of $AQIND_{CON}$ and $AQIND_{DAC}$ are 0.0656 and 0.2586 respectively. This suggests that a one standard deviation increase in $AQIND_{CON}$ (0.1213) and $AQIND_{DAC}$ (0.0550) is associated with an increase in *IVL[1]* by 0.80% and 1.42% respectively. Comparing these results with Table 4 suggest that changes in industry accounting quality for a firm's investment level are greater than comparable changes in peer accounting quality. The results of the remaining variables are very similar to the results reported in Table 4.

[**Table 5 near here**]

4.2.3. Test of H2a

H2a hypothesizes that a firm's investment efficiency is associated with its peers' accounting quality. To test H2a, we develop the following regressions of investment efficiency on accounting quality (excluding industry and year fixed-effects):

$$IVEF[1]_{it} \text{ (or } IVEF[2]_{it}) = \alpha + \beta_1 AQ_{it} + \beta_2 EARN_{it} + \beta_3 STDEARN_{it} + \beta_4 DIV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 TOBINSQ_{it} + \beta_8 LOSS + \beta_9 CASH + \varepsilon_{it} \quad (4a)$$

$$IVEF[1]_{it} \text{ (or } IVEF[2]_{it}) = \alpha + \beta_1 AQPEER_{it} + \beta_2 EARN_{it} + \beta_3 STDEARN_{it} + \beta_4 DIV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 TOBINSQ_{it} + \beta_8 LOSS + \beta_9 CASH + \varepsilon_{it} \quad (4b)$$

$$IVEF[1]_{it} \text{ (or } IVEF[2]_{it}) = \alpha + \beta_1 AQ_{it} + \beta_2 AQPEER_{it} + \beta_3 EARN_{it} + \beta_4 STDEARN_{it} + \beta_5 DIV_{it} + \beta_6 SIZE_{it} + \beta_7 LEV_{it} + \beta_8 TOBINSQ_{it} + \beta_9 LOSS + \beta_{10} CASH + \varepsilon_{it} \quad (4c)$$

The variables on the right-hand side in Eqs. (4a) – (4c) are the same as those in Eqs. (2a) – (2c). Eq. (4a) examines the relationship between investment efficiency and firm's accounting quality. Eqs. (4b) and (4c) examine the relationship between investment efficiency and peer accounting quality, excluding and including the control for firm's accounting quality respectively. For H2a to hold, the coefficients of *AQPEER* in Eqs. (4b) and (4c) need to be either positive or negative and statistically significant.

Panel A of Table 6 presents the regression results of Eq. (4) for conservatism. Columns (1) – (2), (3) – (4) and (5) – (6) report the results for Eqs. (4a), (4b) and (4c) respectively. In Columns (1) – (2), we observe that the coefficients of AQ_{CON} are positive ($p<0.05$), suggesting that a firm's investment efficiency increases with more conservative reporting. These results remain unchanged in Columns (5) – (6) after the addition of $AQPEER_{CON}$. This is consistent with prior research. Across Columns (3) – (6), we find that

the coefficients of $AQPEER_{CON}$ are positive and statistically significant at the 5% level. This supports H2a and suggests that a firm's investment efficiency is positively associated with its peers' conservatism. In Column (5), the coefficients of AQ_{CON} and $AQPEER_{CON}$ are 0.0177 and 0.1554 respectively. The economic significance of this result is such that a one standard deviation increase in AQ_{CON} and $AQPEER_{CON}$ is associated with an increase in *IVEF[1]* by 1.03% and 1.90% respectively. Hence the economic significance of a one standard deviation change in peer conservatism for *IVEF[1]* is 1.84 times greater than a similar change in the firm's own conservatism.

Panel B of Table 6 presents the results of Eq. (4) for accruals quality. Columns (7) – (8), (9) – (10) and (11) – (12) report the results for Eqs. (4a), (4b) and (4c) respectively. In Columns (7) – (8) and (11) – (12), we find that the coefficients of AQ_{DAC} are statistically non-significant. This suggests that a firm's accruals quality and investment efficiency are not associated, with or without controlling for peers' accruals quality. Across Columns (9) – (12), we find that the coefficients of $AQPEER_{DAC}$ are positive and statistically significant at the 5% level. This is consistent with H2a. This implies that a firm's investment efficiency increases with higher levels of peer accruals quality. In Column (11), the coefficient of $AQPEER_{DAC}$ when controlled with AQ_{DAC} is 0.3338. A one standard deviation increase in $AQPEER_{DAC}$ is associated with an increase in *IVEF[1]* by 1.81%. Comparing this result with Column (5) in Panel A, the economic significance of a one standard deviation increase in peer accruals quality for *IVEF[1]* is 4.97% smaller than an equivalent increase in peer conservatism. Overall, the results in Panels A and B lead us to conclude that a firm's investment efficiency is positively associated with its peers' accounting quality.

Across Panels A and B, we find that several control variables are associated with investment efficiency. In nearly all models, *DIV*, *SIZE*, *LEV*, *LOSS* and *CASH* are positively associated with investment efficiency whereas *STDEARN* is negatively associated with

investment efficiency. The explanatory power of the models in this table are higher than in Tables 4 and 5. The *IVEF[1]* models have slightly higher explanatory power than the corresponding *IVEF[2]* models.

[**Table 6 near here**]

4.2.4. Test of H2b

H2b hypothesizes that a firm's investment efficiency is associated with its industry's accounting quality. To test H1b we develop the following regression (excluding industry and year fixed-effects):

$$IVEF[1]_{it} \text{ (or } IVEF[2]_{it}) = \alpha + \beta_1 AQIND_{it} + \beta_2 EARN_{it} + \beta_3 STDEARN_{it} + \beta_4 DIV_{it} + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 TOBINSQ_{it} + \beta_8 LOSS + \beta_9 CASH + \varepsilon_{it} \quad (5)$$

Eq. (5) examines the relationship between investment efficiency and industry accounting quality. For H2b to hold, the coefficient of *AQIND* in Eq. (5) need to be either positive or negative and statistically significant.

Columns (1) – (2) and (3) – (4) of Table 7 report the regression results of Eq. (5) for conservatism and accruals quality respectively. We observe that the results in Columns (1) – (2) are consistent with the results in Columns (3) – (4). In Columns (1) – (2), we find that the coefficients of $AQIND_{CON}$ are positive and statistically significant at the 5% level. This supports H2b. It suggests that as a firm's investment efficiency increases, the level of industry conservatism also increases. Similarly, in Columns (3) – (4), we find that the coefficients of $AQIND_{DAC}$ are positive and statistically significant at the 5% level. This affirms H2b and implies that investment efficiency increases with higher levels of industry accruals quality. In Columns (1) and (3), the coefficients of $AQIND_{CON}$ and $AQIND_{DAC}$ are 0.1602 and 0.2833 respectively. This suggests that if $AQIND_{CON}$ and $AQIND_{DAC}$ increase by one standard deviation, *IVEF[1]* increases by 1.94% and 1.55% respectively. On the basis of

our findings in Columns (1) – (4), we conclude that a firm's investment efficiency is positively associated with its industry's accounting quality. The remaining variables exhibit very similar results to the corresponding variables in Table 6.

[**Table 7 near here**]

5. Additional Analysis

5.1. Investment efficiency and accounting quality: comparing small and large investments

As additional analysis, we first compare the relationships between investment efficiency and peer conservatism vis a vis peer accruals quality in small-sized and large-sized investments. The motivation behind this analysis is as follows. Conservatism and accruals quality affect the decision-usefulness of accounting information in different ways (Garcia Lara et al., 2020). As peer conservatism increases, it restricts the reporting of positive NPV projects that are difficult to verify (Basu, 1997, 2005; Iatridis, 2011; Qiang, 2007). Most of these difficult-to-verify NPV projects are expected to be small investments as they are subject to lower visibility and less transparent reporting (Rahman, 2023; Schleicher & Walker, 2015). Hence as peer conservatism increases, small investments that are reported tend to have more reliable NPVs, allowing managers to assess similar projects for their firm more efficiently. This leads us to believe that the association between peer conservatism and investment efficiency is more pronounced for small investments than large investments.

Financial reporting regulation requires firms to disclose price-sensitive investments more extensively, to improve reporting transparency (Schleicher & Walker, 2015). As large investments are often deemed to be more price-sensitive than small investments, firms disclose them in greater detail, sometimes with supporting schedules (Rahman 2023; McNichols & Stubben, 2008). This makes it easier for outside managers to assess the NPV of large investments. With increased accruals quality, the numbers reported provide a fairer

representation of the relevant transactions, improving the decision-relevance of managerial assessments, thus increasing investment efficiency. This leads us to believe that the association between peer accruals quality and investment efficiency is more pronounced for large investments than small investments.

To examine this, we rank our full sample of 8310 firm-year observations by the investment level proxy *IVL[1]* and then alternatively by *IVL[2]*. We adopt two subsampling approaches to improve the generalizability of our results. For the first approach, we divide the full sample into three groups of 2770 observations each representing small, medium and large investments. We exclude the medium subsample and categorize the small and large investment subsamples as S and L respectively. For the second approach, we divide the full sample into two groups of 4155 observations representing small and large investments and categorize them as S and L respectively.

We then repeat the regressions in Eq. (4) for each of our S and L subsamples. Table 8 presents the summaries of these regressions. Specifically, we present the coefficients of *AQ* for Eq. (4a), *AQPEER* for Eq. (4b) and *AQ* and *AQPEER* put together for Eq. (4c) and the number of observations (OBS) in the subsample. Panel A presents the regression summaries for conservatism. In all S subsamples, we find a positive association between investment efficiency and $AQPEER_{CON}$ ($p<0.01$). However, none of the L subsamples exhibit a statistically significant association between investment efficiency and $AQPEER_{CON}$. Panel B presents the regression summaries for accruals quality. In the S subsample, we find no evidence of a statistically significant association between investment efficiency and $AQPEER_{DAC}$. Nevertheless, all L subsamples exhibit a positive association between investment efficiency and $AQPEER_{DAC}$ ($p<0.10$).

[**Table 8 near here**]

We posit the aforementioned arguments can be extended to industry accounting quality. This motivates us to examine the relationship of investment efficiency with our industry accounting quality proxies for small and large investments. For this, we repeat the regressions in Eq. (5) on all our S and L subsamples. Table 9 presents the summaries of these regressions. Akin to Table 8, for each regression, we report the coefficient of *AQIND* and number of observations (OBS) in the subsample. Panel A demonstrates that investment efficiency is positively associated with $AQIND_{CON}$ in all S subsamples ($p<0.01$). However, investment efficiency exhibits no associations with $AQIND_{CON}$ in any of the L subsamples. Panel B depicts that investment efficiency is positively associated with $AQIND_{DAC}$ in all L subsamples ($p<0.10$) but it exhibits no association with $AQIND_{DAC}$ in any S subsample.

[**Table 9 near here**]

The results in Tables 8 and 9 reveal a difference in the alignments of conservatism and accruals quality with investment efficiency. On the one hand, peer and industry conservatism exhibit a stronger positive association with the efficiency of small investments than the efficiency of large investments. On the other hand, peer and industry accruals quality display a stronger positive association with the efficiency of large investments than the efficiency of small investments.

5.2. Subsample analysis

We repeat the regressions in Eq. (4) on several other subsamples to achieve a better understanding of the link between peer accounting quality and investment efficiency. First, we divide our full sample into financial and non-financial firms, as nearly half of our sample are financial firms. The financials subsample contains 4115 firm-year observations and the

non-financials subsample contains 4195 observations.[7] In the non-financials subsample, investment efficiency exhibits positive associations with both investment peer conservatism ($p<0.01$) and peer accruals quality ($p<0.05$). In the financial subsample, investment efficiency is positively associated with peer conservatism ($p<0.10$) but exhibits no statistically significant association with peer accruals quality.

Next, we segregate our full sample into profit firms and loss firms, and alternatively into dividend payer firms and non-dividend payer firms. This is because the motivations for capital expenditure are expected to vary across these groups (Koo, Ramalingegowda, & Yu, 2017; Li, 2016; Ramalingegowda, Wang, & Yu, 2013). The number of observations for profit firms and loss firms subsamples are 6746 and 1564 while for dividend payer firms and non-dividend payer firms subsamples are 6686 and 1624 respectively. The regression results of the profit (loss) firm subsample are qualitatively similar to that of dividend (non-dividend) payer subsample. In the profit firm and dividend payer firm subsamples, investment efficiency is positively associated with peer accruals quality ($p<0.01$) but exhibits no association with peer conservatism. However, in the loss firm and non-dividend payer firm subsamples, investment efficiency is positively associated with peer conservatism ($p<0.05$) but depicts no association with peer accruals quality.

Finally, we segregate our full sample into two equal groups of 4155 observations based on leverage, naming them high leverage and low leverage firms respectively. This is because the capital investment motivations for firms with high and low debt levels are expected to be different (Garcia Lara et al., 2016; Gomariz & Ballesta, 2014). In high leverage firms, investment efficiency is positively associated with both peer conservatism ($p<0.05$) and peer accruals quality ($p<0.01$). However, in low leverage groups, investment

[7] We do not directly compare the results of the financial and non-financial subsamples because the regressions for the two subsamples have different number of industry fixed-effects.

efficiency does not exhibit a statistically significant association with either peer conservatism or peer accruals quality.

For completeness, we repeat the industry accounting quality regressions in Eq. (5) on each of the above subsamples. In all cases, the results are qualitatively similar to the results of the corresponding peer accounting quality regressions, providing confirmation to our findings.

6. Conclusion

This study contributes to the literature on the externalities of firms' financial reporting on their peer firms' investment decisions. Managers who use peer firms' financial disclosures for assessing the NPV of an investment are expected to be benefited more from peer firms that disclose decision-relevant information as opposed to peer firms that disclose misleading information (Beatty et al., 2013; Durnev & Mangen, 2009; Li, 2016; Roychowdhury et al., 2019). Consistent with our hypotheses, we find that firms' investment level and investment efficiency both increase with higher levels of peer accounting quality. We measure industry accounting quality as an alternative for examining this externality and find that firms' investment level and investment efficiency both increase with increased industry accounting quality. As additional analysis, we compare our two accounting quality measures – conservatism and discretionary accruals, by examining differences in their alignments with investment efficiency. We argue that peer conservatism and peer accruals quality affects managers' ability to evaluate the profitability of small and large investments differently. Accordingly, we find that peer conservatism (accruals quality) is more strongly associated with the efficiency of small (large) relative to large (small) investments. Our results are consistent across alternative variable measurement proxies.

There are a few caveats to interpreting our results. First, our research design only examines associations between peer accounting quality and firms' investment. As such, we remain cautious about making any direct claims of causation between peer accounting quality and firms' investments. Second, we conceptualize industry accounting quality as an approximation of peer accounting quality, and accordingly, measure it by attributing equal weights of accounting quality for all firms in the industry. If a firm's accounting numbers are considered as more decision-relevant than that of the average peer firm, the corresponding weights would be different. Third, while simple to measure and interpret, the investment turnover ratio is limited in its application for estimating normal and abnormal investment levels. As a result, we are cautious in extending our findings to contexts that require such measurements.

There are several avenues for future research. There is extensive literature that examines the capital market implications of voluntary relative to mandatory reporting (Dye, 1985; Beyer, Cohen, Lys, & Walther, 2010; Beyer & Guttman, 2012). In this connection, future research can compare the externalities of voluntary and mandatory peer disclosures on firms' investment decisions. Similarly, future research can compare the externalities of disclosing proprietary relative to non-proprietary information on peer firms' decision-making. A growing stream of research also examines the link between accounting quality and linguistic features of firm's financial disclosures (Li, 2008; Huang, Teoh, & Zhang, 2014). Arguably, managers use both textual and numerical information from peer disclosures in their investment evaluations (Durnev & Mangen, 2020). Therefore, it would be interesting if future research examines the role of textual features, such as the tone, on the relationship between peer accounting quality and firms' investment decisions. Future research can also further our analysis of the alignments of conservatism vis a vis accruals quality on firms' investments by

introducing contexts related to the nature of competition, corporate governance, agency relationships, mergers and acquisitions, debt and equity issuance, etc.

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Declaration of Interests

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

Declaration of Generating AI and AI-assisted Technologies in the Writing Process

During the preparation of this work the authors used no AI or AI-assisted technologies in the writing process.

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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.

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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 – 2022)	673	9403
Data of FTSE All-Share Index constituent used in analysis (years 2008 – 2022)	667	8310
Panel B: Industry Composition of Sample	**OBS**	**%**
ICB 0001 Oil and Gas	189	2.27%
ICB 1000 Basic Materials	342	4.12%
ICB 2000 Industrials	1359	16.35%
ICB 3000 Consumer Goods	606	7.29%
ICB 4000 Healthcare	187	2.25%
ICB 5000 Consumer Services	1060	12.76%
ICB 6000 Telecommunications	69	0.83%
ICB 7000 Utilities	112	1.35%
ICB 8000 Financials	4115	49.52%
ICB 9000 Technology	271	3.26%
Total	**8310**	100.00%
Panel C: Year Composition of Sample	**OBS**	**%**
2008	475	5.72%
2009	480	5.78%
2010	483	5.81%
2011	503	6.05%
2012	529	6.37%
2013	552	6.64%
2014	571	6.87%
2015	591	7.11%
2016	600	7.22%
2017	603	7.26%
2018	615	7.40%
2019	623	7.50%
2020	618	7.44%
2021	489	5.88%
2022	578	6.96%
Total	**8310**	100.00%

Notes: This table presents the sample development and composition. The sampling period covers the years 2008 – 2022. Panel A presents the sample summary for 8310 firm-year observations of FTSE All-Share Index firms. Panel B breaks down the sample by industries. Panel C breaks down the sample by years. OBS = number of firm-year observations.

Table 2
Descriptive statistics.

Variables	Mean	Std. Dev	1st Pct	1st Qrt	Median	3rd Qrt	99th Pct
IVL[1]	0.0061	0.1265	–0.3860	0.0000	0.0000	0.0164	0.3127
IVL[2]	–0.0001	0.1261	–0.4026	–0.0063	0.0000	0.0117	0.3036
IVEF[1]	0.1442	0.4748	0.0000	0.0000	0.0090	0.0588	2.1603
IVEF[2]	0.1459	0.4763	0.0000	0.0000	0.0101	0.0607	2.1652
AQ_{CON}	0.0968	0.5842	0.0000	0.0000	0.0000	0.0379	1.5229
$AQPEER_{CON}$	0.0967	0.1220	0.0000	0.0399	0.0684	0.1036	0.4389
$AQIND_{CON}$	0.0972	0.1213	0.0008	0.0398	0.0701	0.1051	0.4370
DAC[1]	–0.0613	0.1131	–0.4628	–0.0659	–0.0319	–0.0160	–0.0006
DAC[2]	–0.0610	0.1035	–0.4635	–0.0660	–0.0316	–0.0158	–0.0006
DAC[3]	–0.0604	0.0904	–0.4352	–0.0667	–0.0347	–0.0185	–0.0007
DAC[4]	–0.0598	0.0908	–0.4368	–0.0664	–0.0333	–0.0174	0.0000
AQ_{DAC}	–0.1147	0.1903	–0.9258	–0.1256	–0.0613	–0.0280	0.0000
$AQPEER_{DAC}$	–0.1212	0.0542	–0.3145	–0.1306	–0.1068	–0.0886	–0.0461
$AQIND_{DAC}$	–0.1208	0.0550	–0.3204	–0.1291	–0.1063	–0.0881	–0.0457
EARN	0.0524	0.1520	–0.4102	0.0059	0.0483	0.1005	0.3712
STDEARN	0.0665	0.0896	0.0004	0.0129	0.0348	0.0871	0.4229
DIV	0.8046	0.3966	0.0000	1.0000	1.0000	1.0000	1.0000
SIZE	13.027	3.1664	0.0000	12.265	13.304	14.465	18.419
LEV	0.1519	0.1843	0.0000	0.0000	0.0895	0.2487	0.7290
TOBINSQ	1.9632	14.225	0.0000	0.7187	0.9445	1.7271	12.223
LOSS	0.1882	0.3909	0.0000	0.0000	0.0000	0.0000	1.0000
CASH	0.0804	0.1075	0.0000	0.0149	0.0447	0.1019	0.5185
						Number of Observations = 8310 (all variables)	

Notes: This table reports descriptive statistics of variables used in the study from 8310 firm-year observations during the period 2008 – 2022. Std. Dev = Standard Deviation. OBS = number of firm-year observations. All variables are defined as in Appendix.

Table 3
Distribution of mean peer and industry accounting quality by investment level and efficiency.

		Quintile Mean (OBS = 1662 per quintile)					
Variable	Quintile	AQ_{CON}	$AQPEER_{CON}$	$AQIND_{CON}$	AQ_{DAC}	$AQPEER_{DAC}$	$AQIND_{DAC}$
IVL[1]	1st	0.1070	0.0891	0.0898	–0.1002	–0.1073	–0.1069
	2nd	0.0594	0.0972	0.0971	–0.1177	–0.1427	–0.1417
	3rd	0.1003	0.0919	0.0920	–0.1456	–0.1431	–0.1436
	4th	0.1153	0.0925	0.0938	–0.0991	–0.1060	–0.1052
	5th	0.1021	0.1129	0.1136	–0.1109	–0.1069	–0.1067
IVL[2]	1st	0.1037	0.0848	0.0856	–0.1074	–0.1057	–0.1058
	2nd	0.0468	0.0945	0.0943	–0.1016	–0.1298	–0.1286
	3rd	0.0976	0.0949	0.0949	–0.1517	–0.1482	–0.1492
	4th	0.1309	0.0895	0.0910	–0.1093	–0.1125	–0.1117
	5th	0.1050	0.1199	0.1204	–0.1035	–0.1097	–0.1088
IVEF[1]	1st	0.0611	0.0927	0.0926	–0.1302	–0.1448	–0.1448
	2nd	0.1108	0.0878	0.0880	–0.1514	–0.1397	–0.1406
	3rd	0.1063	0.1031	0.1035	–0.1060	–0.1082	–0.1075
	4th	0.1050	0.1040	0.1048	–0.0856	–0.0981	–0.0972
	5th	0.1010	0.0959	0.0974	–0.1003	–0.1151	–0.1140
IVEF[2]	1st	0.0605	0.0936	0.0934	–0.1312	–0.1453	–0.1453
	2nd	0.1111	0.0878	0.0880	–0.1506	–0.1397	–0.1405
	3rd	0.1110	0.1020	0.1025	–0.1067	–0.1079	–0.1072
	4th	0.1013	0.1051	0.1059	–0.0839	–0.0976	–0.0967
	5th	0.1001	0.0951	0.0965	–0.1010	–0.1155	–0.1144

Notes: This table reports the mean values of peer accounting quality and industry accounting quality per quintile of investment level and investment efficiency for 8310 firm-year observations during the period 2008 – 2022. OBS = number of firm-year observations. OBS per quintile = 1662. All variables are defined as in Appendix.

Table 4
Investment level and peer accounting quality.

	$IVL[1]_{it}$	$IVL[2]_{it}$	$IVL[1]_{it}$	$IVL[2]_{it}$	$IVL[1]_{it}$	$IVL[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.	(5) Coeff.	(6) Coeff.
Panel A: Accounting Quality - Conservatism						
$INTERCEPT_{it}$	–0.0432***	–0.0252***	–0.0461***	–0.0279***	–0.0461***	–0.0281***
AQ_{CONit}	–0.0000	0.0006			0.0000	0.0006
$AQPEER_{CONit}$			0.0617***	0.0625***	0.0617***	0.0625***
$EARN_{it}$	–0.0479***	–0.0174	–0.0487***	–0.0182	–0.0487***	–0.0182
$STDEARN_{it}$	0.0221	0.0053	0.0223	0.0057	0.0223	0.0055
DIV_{it}	–0.0023	0.0041	–0.0026	0.0038	–0.0026	0.0039
$SIZE_{it}$	0.0003	–0.0009	0.0003	–0.0009*	0.0003	–0.0009*
LEV_{it}	–0.0047	0.0024	–0.0048	0.0023	–0.0048	0.0023
$TOBINSQ$	0.0002*	0.0001	0.0002*	0.0001	0.0002*	0.0001
$LOSS_{it}$	0.0050	0.0037	0.0050	0.0037	0.0050	0.0037
$CASH_{it}$	–0.0119	–0.0751***	–0.0114	–0.0746***	–0.0114	–0.0746***
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
F-VALUE	9.12***	6.40***	9.46***	6.74***	9.16***	6.53***
ADJ R-SQ	0.0294	0.0197	0.0306	0.0210	0.0305	0.0209
OBS	8310	8310	8310	8310	8310	8310
Variable	(7) Coeff.	(8) Coeff.	(9) Coeff.	(10) Coeff.	(11) Coeff.	(12) Coeff.
Panel B: Accounting Quality – Discretionary Accruals						
$INTERCEPT_{it}$	–0.0435***	–0.0254***	–0.0215**	–0.0028	–0.0270**	–0.0040
AQ_{DACit}	0.0239***	0.0252***			0.0210**	0.0222***
$AQPEER_{DACit}$			0.1814***	0.1854***	0.1735***	0.1770***
$EARN_{it}$	–0.0527***	–0.0225*	–0.0509***	–0.0205*	–0.0550***	–0.0248**
$STDEARN_{it}$	0.0427**	0.0274	0.0287*	0.0123	0.0467**	0.0313*
DIV_{it}	–0.0019	0.0046	–0.0024	0.0041	–0.0020	0.0045
$SIZE_{it}$	0.0003	–0.0009*	0.0003	–0.0009*	0.0003	–0.0009*
LEV_{it}	–0.0049	0.0022	–0.0021	0.0051	–0.0024	0.0048
$TOBINSQ$	0.0003**	0.0002	0.0002*	0.0001	0.0003**	0.0002
$LOSS_{it}$	0.0055	0.0042	0.0057	0.0044	0.0061	0.0048
$CASH_{it}$	–0.0062	–0.0692***	–0.0098	–0.0730***	–0.0050	–0.0679***
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
F-VALUE	9.38***	6.68***	9.79***	7.08***	9.68***	7.08***
ADJ R-SQ	0.0303	0.0208	0.0317	0.0222	0.0323	0.0229
OBS	8310	8310	8310	8310	8310	8310

Notes: This table reports regressions of firm-specific investment level on firm accounting quality and peer accounting quality for 8310 firm-year observations during the period 2008 – 2022. Accounting quality in Panel A is based on conservatism and in Panel B is based on discretionary accruals. *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
Investment level and industry accounting quality.

	$IVL[1]_{it}$	$IVL[2]_{it}$	$IVL[1]_{it}$	$IVL[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.
$INTERCEPT_{it}$	–0.0467***	–0.0284***	–0.0136	0.0049
$AQIND_{CONit}$	0.0656***	0.0658***		
$AQIND_{DACit}$			0.2586***	0.2605***
$EARN_{it}$	–0.0486***	–0.0181	–0.0567***	–0.0263**
$STDEARN_{it}$	0.0221	0.0055	0.0441**	0.0276
DIV_{it}	–0.0026	0.0038	–0.0021	0.0044
$SIZE_{it}$	0.0003	–0.0009*	0.0003	–0.0009*
LEV_{it}	–0.0048	0.0023	–0.0014	0.0057
TOBINSQ	0.0002*	0.0001	0.0002**	0.0002
$LOSS_{it}$	0.0050	0.0036	0.0060	0.0047
$CASH_{it}$	–0.0114	–0.0746***	–0.0065	–0.0696***
INDUSTRY FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
F-VALUE	9.50***	6.77***	10.53***	7.81***
ADJ R-SQ	0.0307	0.0211	0.0343	0.0248
OBS	8310	8310	8310	8310

Notes: This table reports regressions of firm-specific investment level on industry accounting quality (represented by earnings conservatism and discretionary accruals) for 8310 firm-year observations during the period 2008 – 2022. *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
Investment efficiency and peer accounting quality.

	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.	(5) Coeff.	(6) Coeff.
Panel A: Accounting Quality - Conservatism						
$INTERCEPT_{it}$	0.0316	0.0297	0.0295	0.0274	0.0243	0.0223
AQ_{CONit}	0.0177**	0.0175**			0.0177**	0.0175**
$AQPEER_{CONit}$			0.1550**	0.1580**	0.1554**	0.1584**
$EARN_{it}$	–0.0114	–0.0200	–0.0150	–0.0237	–0.0133	–0.0219
$STDEARN_{it}$	–0.2161***	–0.2062***	–0.2090***	–0.1992***	–0.2155***	–0.2056***
DIV_{it}	0.0315**	0.0277*	0.0299**	0.0261*	0.0307**	0.0269*
$SIZE_{it}$	0.0070***	0.0072***	0.0067***	0.0069***	0.0070***	0.0073***
LEV_{it}	0.6984***	0.6928***	0.6979***	0.6923***	0.6980***	0.6924***
TOBINSQ	0.0000	0.0001	0.0001	0.0001	0.0001	0.0001
$LOSS_{it}$	0.0282*	0.0276*	0.0289*	0.0283*	0.0281*	0.0275*
$CASH_{it}$	0.0668	0.0847*	0.0689	0.0869*	0.0680	0.0859*
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
F-VALUE	31.44***	30.53***	31.47***	30.57***	30.63***	29.75***
ADJ R-SQ	0.1020	0.0993	0.1021	0.0994	0.1024	0.0997
OBS	8310	8310	8310	8310	8310	8310
Variable	(7) Coeff.	(8) Coeff.	(9) Coeff.	(10) Coeff.	(11) Coeff.	(12) Coeff.
Panel B: Accounting Quality – Discretionary Accruals						
$INTERCEPT_{it}$	0.0368	0.0349	0.0763**	0.0761**	0.0769**	0.0768**
AQ_{DACit}	–0.0055	–0.0064			–0.0111	–0.0122
$AQPEER_{DACit}$			0.3296**	0.3439**	0.3338**	0.3485**
$EARN_{it}$	–0.0121	–0.0205	–0.0186	–0.0275	–0.0165	–0.0251
$STDEARN_{it}$	–0.2145***	–0.2054***	–0.1976***	–0.1873***	–0.2071***	–0.1977***
DIV_{it}	0.0305**	0.0267*	0.0305**	0.0267*	0.0303**	0.0265*
$SIZE_{it}$	0.0067***	0.0069***	0.0067***	0.0070***	0.0068***	0.0070***
LEV_{it}	0.6983***	0.6927***	0.7030***	0.6976***	0.7032***	0.6978***
TOBINSQ	0.0000	0.0001	0.0001	0.0001	0.0000	0.0001
$LOSS_{it}$	0.0289*	0.0283*	0.0303*	0.0297*	0.0301*	0.0295*
$CASH_{it}$	0.0665	0.0842*	0.0714	0.0895*	0.0689	0.0867*
INDUSTRY FE	YES	YES	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES	YES	YES
F-VALUE	31.29***	30.39***	31.47***	30.59***	30.49***	29.63***
ADJ R-SQ	0.1015	0.0988	0.1021	0.0994	0.1020	0.0993
OBS	8310	8310	8310	8310	8310	8310

Notes: This table reports regressions of firm-specific investment efficiency on firm accounting quality and peer accounting quality for 8310 firm-year observations during the period 2008 – 2022. Accounting quality in Panel A is based on conservatism and in Panel B is based on discretionary accruals. *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
Investment efficiency and industry accounting quality.

	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.
$INTERCEPT_{it}$	0.0284	0.0263	0.0692**	0.0691**
$AQIND_{CONit}$	0.1602**	0.1634**		
$AQIND_{DACit}$			0.2833**	0.2994**
$EARN_{it}$	–0.0148	–0.0234	–0.0227	–0.0319
$STDEARN_{it}$	–0.2096***	–0.1998***	–0.1856***	–0.1744***
DIV_{it}	0.0299**	0.0261*	0.0309**	0.0271*
$SIZE_{it}$	0.0068***	0.0070***	0.0067***	0.0070***
LEV_{it}	0.6979***	0.6922***	0.7018***	0.6964***
TOBINSQ	0.0001	0.0001	0.0001	0.0001
$LOSS_{it}$	0.0287*	0.0281*	0.0300*	0.0295*
$CASH_{it}$	0.0689	0.0869*	0.0737	0.0919*
INDUSTRY FE	YES	YES	YES	YES
YEAR FE	YES	YES	YES	YES
F-VALUE	31.48***	30.58***	31.43***	30.54***
ADJ R-SQ	0.1021	0.0994	0.1020	0.0993
OBS	8310	8310	8310	8310

Notes: This table reports regressions of firm-specific investment level on industry accounting quality (represented by earnings conservatism and discretionary accruals) for 8310 firm-year observations during the period 2008 – 2022. *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 8
Investment efficiency and peer accounting quality – small and large investment level subsamples.

Subsamples	IVL[1]S	IVL[1]S	IVL[2]S	IVL[2]S	IVL[1]L	IVL[1]L	IVL[2]L	IVL[2]L
	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.	(5) Coeff.	(6) Coeff.	(7) Coeff.	(8) Coeff.
Panel A: Accounting Quality - Conservatism								
AQ_{CONit}	0.0056	0.0056	0.0016	0.0016	0.0084	0.0062	0.0440	0.0421
OBS	2770	2770	2770	2770	2770	2770	2770	2770
$AQPEER_{CONit}$	0.5115*	0.5122*	0.4179*	0.4216*	0.0453	0.0516	0.0734	0.0771
OBS	2770	2770	2770	2770	2770	2770	2770	2770
AQ_{CONit}	0.0067	0.0067	0.0023	0.0024	0.0077	0.0054	0.0428	0.0409
$AQPEER_{CONit}$	0.5136*	0.5142*	0.4184*	0.4222*	0.0444	0.0509	0.0671	0.0711
OBS	2770	2770	2770	2770	2770	2770	2770	2770
AQ_{CONit}	0.0072	0.0072	0.0059	0.0060	0.0451‴	0.0441‴	0.0587^	0.0577^
OBS	4155	4155	4155	4155	4155	4155	4155	4155
$AQPEER_{CONit}$	0.4671*	0.4676*	0.4087*	0.4128*	0.0234	0.0288	0.0274	0.0302
OBS	4155	4155	4155	4155	4155	4155	4155	4155
AQ_{CONit}	0.0082	0.0081	0.0064	0.0066	0.0449‴	0.0437‴	0.0584^	0.0573^
$AQPEER_{CONit}$	0.4693*	0.4698*	0.4098*	0.4140*	0.0159	0.0214	0.0183	0.0212
OBS	4155	4155	4155	4155	4155	4155	4155	4155
Variable	(9) Coeff.	(10) Coeff.	(11) Coeff.	(12) Coeff.	(13) Coeff.	(14) Coeff.	(15) Coeff.	(16) Coeff.
Panel B: Accounting Quality - Discretionary Accruals								
AQ_{DACit}	–0.0375	–0.0432	0.0813	0.0820	–0.0287	–0.0383	–0.0058	–0.0224
OBS	2770	2770	2770	2770	2770	2770	2770	2770
$AQPEER_{DACit}$	0.1697	0.1704	0.4045	0.4204	1.1370*	1.1890*	1.1721*	1.2010*
OBS	2770	2770	2770	2770	2770	2770	2770	2770
AQ_{DACit}	–0.0407	–0.0465	0.0826	0.0834	–0.0271	–0.0367	–0.0032	–0.0198
$AQPEER_{DACit}$	0.1813	0.1837	0.4088	0.4248	1.1365*	1.1884*	1.1720*	1.2005*
OBS	2770	2770	2770	2770	2770	2770	2770	2770
AQ_{DACit}	–0.0844‴	–0.0870^	–0.0588	–0.0578	–0.0894‴	–0.0928‴	–0.0990^	–0.1059^
OBS	4155	4155	4155	4155	4155	4155	4155	4155
$AQPEER_{DACit}$	–0.2049	–0.2052	–0.0473	–0.0391	0.7660*	0.7980*	0.6152*	0.6331*
OBS	4155	4155	4155	4155	4155	4155	4155	4155
AQ_{DACit}	–0.0799‴	–0.0825‴	–0.0583	–0.0575	–0.1062^	–0.1104^	–0.1207*	–0.1283*
$AQPEER_{DACit}$	–0.1555	–0.1542	–0.0191	–0.0112	0.7962*	0.8294*	0.6701*	0.6914*
OBS	4155	4155	4155	4155	4155	4155	4155	4155

Notes: This table reports the regression summaries, for small and large investment level subsamples, of investment efficiency on firm and peer accounting quality during the period 2008 – 2022. Accounting quality in Panel A is based on conservatism and in Panel B is based on discretionary accruals. Only the coefficients of firm and peer accounting quality variables in the subsample regression models are reported. All other variables are included in the respective subsample regressions but un-reported 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
Investment efficiency and industry accounting quality – small and large investment level subsamples.

Subsamples	IVL[1]S	IVL[1]S	IVL[2]S	IVL[2]S	IVL[1]L	IVL[1]L	IVL[2]L	IVL[2]L
	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$	$IVEF[1]_{it}$	$IVEF[2]_{it}$
Variable	(1) Coeff.	(2) Coeff.	(3) Coeff.	(4) Coeff.	(5) Coeff.	(6) Coeff.	(7) Coeff.	(8) Coeff.
Panel A: Accounting Quality - Conservatism								
$AQIND_{CONit}$	0.4953*	0.4960*	0.3953*	0.4013*	0.0602	0.0668	0.0905	0.0939
OBS	2770	2770	2770	2770	2770	2770	2770	2770
$AQIND_{CONit}$	0.4538*	0.4543*	0.3921*	0.3988*	0.0357	0.0417	0.0456	0.0481
OBS	4155	4155	4155	4155	4155	4155	4155	4155
Variable	(9) Coeff.	(10) Coeff.	(11) Coeff.	(12) Coeff.	(13) Coeff.	(14) Coeff.	(15) Coeff.	(16) Coeff.
Panel B: Accounting Quality - Discretionary Accruals								
$AQIND_{DACit}$	0.1430	0.1412	0.4838‴	0.5016‴	0.9685*	1.0207*	1.0191*	1.0464*
OBS	2770	2770	2770	2770	2770	2770	2770	2770
$AQIND_{DACit}$	–0.2370	–0.2384	–0.0731	–0.0620	0.6460*	0.6803*	0.4936*	0.5123*
OBS	4155	4155	4155	4155	4155	4155	4155	4155

Notes: This table reports the regression summaries, for small and large investment level subsamples, of investment efficiency on industry accounting quality during the period 2008 – 2022. Accounting quality in Panel A is based on conservatism and in Panel B is based on discretionary accruals. Only the coefficients of industry accounting quality variables in the subsample regression models are reported. All other variables are included in the respective subsample regressions but un-reported 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
IVL[1]	The sum of the annual change in property, plant and equipment (scaled by total assets) and the annual research and development expense (scaled by total assets).
IVL[2]	The annual change in the sum of property, plant and equipment and intangible assets, scaled by total assets.
IVEF[1]	The ratio of sales revenue to the sum of property plant and equipment and research and development expense (scaled by 10).
IVEF[2]	The ratio of sales revenue to property plant and equipment (scaled by 10).
AQ_{CON}	Firm-level conditional earnings conservatism coefficient based on Basu (1997).
$AQPEER_{CON}$	Average of AQ_{CON} for all peer firms in the industry in a given firm-year. Industries are identified by the ICB Classification Codes.
$AQIND_{CON}$	Average of AQ_{CON} for all firms in the industry in a given year. Industries are identified by the ICB Classification Codes.
DAC[1]	Absolute value of discretionary accruals based on Teoh et al. (1998), multiplied by –1.
DAC[2]	Absolute value of discretionary accruals based on Dechow et al. (1995), multiplied by –1.
DAC[3]	Absolute value of discretionary accruals based on Dechow and Dichev (2002), multiplied by –1.
DAC[4]	Absolute value of discretionary accruals based on McNichols (2010), multiplied by –1.
AQ_{DAC}	First principal component of *DAC[1]*, *DAC[2]*, *DAC[3]* and *DAC[4]*.
$AQPEER_{DAC}$	Average of AQ_{DAC} for all peer firms in the industry in a given firm-year. Industries are identified by the ICB Classification Codes.
$AQIND_{DAC}$	Average of AQ_{DAC} for all firms in the industry in a given year. Industries are identified by the ICB Classification Codes.
EARN	Net income after tax divided by total assets.
STDEARN	Standard deviation of EARN over the past three years.
DIV	Indicator variable taking the value of 1 if the firm paid cash dividends, 0 otherwise.
SIZE	Natural logarithm of total assets.
LEV	Long-term debt divided by total assets.
TOBINSQ	Equity market value divided by equity book value.
LOSS	Indicator variable taking the value of 1 if operating income is negative, 0 otherwise.
CASH	Cash and marketable securities divided by total assets.

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