

Accounting Conservatism in Private and Public Firms: European Evidence

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Abstract

We examine variation in public and private firm adoption of conservative accounting policies across eleven institutionally disparate European countries. While it is well-known that public firms operating in stronger institutional environments are more conservative reporters, we find that private firms oppositely exhibit higher conservatism in weaker institutional settings. Moreover, while conservatism relates positively to accrual quality in public firms, private firms with lower accrual quality report more conservatively. Our findings suggest private firms use conditional conservatism as a governance mechanism to mitigate perceived risk of self-dealing and improve credibility with stakeholders. Benefits of conservatism in these respects are increased in settings where there is greater ex-ante risk of agency conflict; where institutions protecting minority investors or outsiders are weak, or quality of accruals-based accounts is poor. Our findings are important as they demonstrate private firms, facing steeper trade-off between costs and benefits of financial reporting, are disproportionately likely to employ conservatism to facilitate governance and contracting efficiency in contexts where ex-ante agency costs are high.

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1. Introduction

Using a large sample of European public and private firms, we examine relations between conditional conservatism and the institutional environment in which firms operate. In principle, accounting conservatism can be defined as the tendency to hold recognition of good news in financial statements to a higher verification threshold than bad news (Basu, 1997); thereby bad news is reflected sooner and more completely in the accounts than good news.¹ Examples of conservative accounting policies include asymmetric treatment of loss versus gain contingencies, and accelerated depreciation or impairment of assets while requiring cash flows associated with gains to be realized before recognizing increases in asset value. Conservatism is expected to mitigate agency costs and increase the efficiency of performance-related-pay and debt contracts (Watts, 2003a, b), and is seen to soften the impact of negative events in some contexts (Andreou, Cooper, Louca, & Philip, 2017). On the other hand, conservatism, through e.g., postponing gain recognition, may reduce decision-usefulness of accounting information for valuation purposes – arguably most relevant in public firm contexts.

Prior literature on accounting quality in public and private firms, which conservatism is often considered a component, focuses predominantly on variations in demand for monitoring by firm stakeholders, typically equity and debt investors, and counteracting incentives of firm insiders to distort accounts. Because ownership of private firms is more closely held than public firms, capital providers generally have greater access to inside information and more direct communication with managers, consequently relying less on communication through financial statements (Berger & Udell, 1998). It stands to reason that, for some private firms, the marginal benefits of meeting stakeholder demand for high-quality financial statements do not outweigh

¹ Strictly speaking, the literature refers to this form of conservatism as conditional conservatism, or timely loss recognition.

the high costs incurred in doing so (Hope, Thomas, & Vyas, 2017).² Consistent with these arguments, most large-scale studies find that both accrual quality and conservatism are, on average, lower among private firms than public firms (Ball & Shivakumar, 2005; Nichols, Wahlen, & Wieland, 2009; Givoly, Hayn, & Katz, 2010; Hope, Thomas, & Vyas, 2013).

However, accounting quality also varies systematically within private and public firm samples as a consequence of how firm-specific (Hope et al., 2013; 2017) and institutional factors (Burgstahler, Hail, & Leuz, 2006) shape reporting objectives. For instance, Burgstahler et al. (2006) find higher earnings quality among public and private firms in countries with stronger legal systems, minority-investor protection, and more developed capital markets, albeit the effects of the latter appear most pronounced for public firms. Studies have also examined how conservatism levels of public firms are affected by institutions. For example, Ball, Kothari, and Robin (2000) show that conservatism is lower in code law countries (e.g., France, Germany) than in common law countries (e.g., the UK), and can also be affected by variation in legal framework, regulation, and taxation. There is also some evidence that conservatism in public firms increases with the strength of creditor (Peek, Cuijpers, & Buijink, 2010) and shareholder (Bushman & Piotroski, 2006; Francis & Wang, 2008) protections.

To date, this literature lacks a systematic comparison of how institutions shape accounting conservatism in public and private firms – addressing this gap is the principal objective of our study. While prior research in this area focuses mostly on public firms, research to test the generalisability of findings to private firms is important given the substantial role they play in most economies (Bar-Yosef, D’Augusta & Prencipe, 2019). Although individual private firms tend to be smaller than public companies, on aggregate private firms employ around four times

² In addition to direct accounting and auditing-related costs, there are also costs relating to revelation of proprietary information and increased information processing costs (ICAEW, 2015), as well as reduced discretion over accruals for signalling, tax, or finance purposes.

as many people, generate three times as much revenue, and hold twice the amount of assets (Berzins, Bøhren, & Rydland, 2008). The vast majority of firms in our sample are private companies, despite the exclusion of very small firms. Evidence derived from research on public firms may not be directly applicable to private firms due to structural differences (Hope, Langli, & Thomas, 2012), particularly in the context of financial reporting where there is clear heterogeneity in stakeholder demand, as discussed above. In enriching our understanding of how private firm financial reporting contrasts with public firms, this research should also help inform policymakers responsible for developing accounting standards for private firms, which run parallel to standards for public companies.

Similar to public firms, conservatism in the choice and application of accounting standards matters for private firms to the extent it alleviates perceived agency conflict.³ While greater separation of ownership and control is argued to cause more severe potential agency problems in public firms (Sheen, 2020), private firms are also subject to several sources of agency conflicts that can affect reporting choices (such as whether to have accounts audited) (Badertscher, Kim, Kinney Jr & Owens, 2022). Agency conflicts relevant in the private firm setting include those between firms and outside stakeholders, such as debtholders, suppliers, and customers, as well as conflicts among private firm insiders, i.e., between managers and owners, or between inside and minority shareholders. Although some private firm stakeholders (e.g., bank lenders) may have ‘insider access’ to information with which to monitor the firm,⁴ other stakeholders (e.g., minority investors) may still rely on financial statements for monitoring purposes, due to a dearth of other public information and relatively high costs of direct monitoring. Moreover, financial statement credibility can facilitate decision-making by insiders and outsiders and enables enforcement of stakeholders’ claims on the firm through

³ We would like to thank the associate editor for highlighting this point.

⁴ Erkens et al. (2014) report that lenders’ demand for conservatism is inversely related with insider access and monitoring through board representation or relationship lending.

contacting on ‘hard’ information (Hope, Thomas, & Vyas, 2011).⁵ For example, more timely incorporation of economic losses in accounting income (conservatism) triggers timelier violation of debt covenants (Zhong & Li, 2017), increases investment efficiency, and reduces risks of inappropriate bonus payments to executives.

Callen, Guan and Qiu (2014) argue that conditional conservatism is a particularly efficient monitoring mechanism to alleviate agency problems due to its flexibility and low implementation cost compared with adjusting other governance mechanisms. Indeed, Watts (1993) argues that the use of accounting conservatism is primarily driven by its contracting role in facilitating appropriate distribution of claims. Because of this, we posit that private firms may be more likely to employ conditional conservatism in contexts where ex-ante costs associated with agency conflict are greater. Complementary mechanisms to signal financial credibility in private firms (e.g., voluntary external audits) are shown to be more beneficial in reducing agency-related costs (e.g., financing constraints) in settings where agency conflicts and information asymmetry are more intense, such as in the presence of weak institutions (Hope et al., 2011).

Perceptions that private firm managers or controlling shareholders engage in the expropriation of minority investors are known to be exacerbated in countries with weaker investor protections (Faccio, Lang, & Young, 2010). Moreover, to the extent that private firm insiders use reporting discretion to signal private information or to meet tax, dividend, or insurance objectives (Ball & Shivakumar, 2005; Burgstahler et al., 2006), minority investors or other non-manager stakeholders may inadvertently perceive discretionary accruals as opportunistic (Louis & Robinson, 2005). In these situations, there are likely benefits to

⁵ In private firm settings, information asymmetry between stakeholders in private firms is more likely to be solved through individual contracting on verifiable information, as opposed to monitoring through financial statements (Bar-Yosef et al., 2019, p. 25). Conditional conservatism can facilitate such arrangements by improving contract efficiency and providing a visible and verifiable signal that ex-ante agency costs are mitigated.

improving financial statement credibility (Hope et al., 2011; Louis & Robinson, 2005), and adopt mechanisms that re-assure outsiders of the appropriateness of claims distribution. The efficiency and propensity of conditional conservatism to constrain insider self-dealing, including opportunistic accrual management, makes its use in such settings by private firms attractive.

Using a comprehensive dataset of public and private firms spanning eleven European countries, we obtain evidence supporting these predictions. While public firms report more conservatively in stronger institutional environments (i.e., more liberal markets with strong investor protection), we find that private firms exhibit more conservatism in *weaker* institutional environments. Furthermore, while we observe conservatism in public firms to be negatively associated with discretionary accruals, consistent with prior studies of public firm reporting (García Lara, García Osma, & Penalva, 2020), we observe conservatism to be *positively* associated with discretionary accruals in private firms. In additional tests, we also show how conditional conservatism in private firms varies predictably with proxies for severity of multiple forms of agency conflict. Taken together, our results are consistent with the prediction that private firms use conditional conservatism more when stakeholders require greater assurance regarding the stability of their claims, to extend benefits to the firm (e.g., access to external finance).

Our study makes three main contributions. First, we contribute to the literature contrasting financial reporting practices of public and private firms (Bar-Yosef et al., 2019) by highlighting structural differences in the way conditional conservatism in private firms varies with country institutions. Specifically, we evidence that, while conservatism in public firms increases with strength of institutions that reinforce demand by investors for monitoring through high-quality accrual-based accounts, conservatism in private firms is conversely higher in weaker institutional settings. Understanding why financial reporting choices of private firms vary so

markedly differently to public firms with institutional heterogeneity should be insightful to policymakers responsible for maintaining those institutions.

In theorizing an explanation for these differences, we draw on, and hence contribute to, a second literature – that on financial credibility, and the distinctive means by which private companies re-assure stakeholders that potential risks to their claims arising from agency conflict are mitigated. While Hope et al. (2011) posit that private firms in weaker institutional settings have incentives to signal financial credibility through appointing external auditors, to our knowledge, our study is the first to highlight apparently prevalent use of conditionally conservative accounting policies by private firms for this end. Accounting conservatism sends a plausible credibility signal because it is easy (and cheap) to verify and inherently constrains insider opportunism; the benefits are expected to increase with ex-ante agency costs.

Finally, our study also speaks to the literature on the relation between accounting conservatism and accrual quality. While García Lara et al. (2020) find conditional conservatism tends to relate positively with accrual quality in public firms, they argue the links are far from obvious or mechanical, in part because they are implemented through partially distinct sets of accounting choices. To our knowledge, ours is the first study to empirically examine this association in the context of private firms; our finding that they tend to be negatively related in this context is a novel contribution. Poor accrual quality creates an impression that insiders manipulate earnings for private benefit, even if discretionary accruals are not opportunistically managed. Because private firms face a steeper trade-off between costs and benefits of producing high quality accrual-based accounts, they face weaker incentives than public firms to enact broad improvement in financial reporting quality. However, agency costs associated with poor accrual quality appear to spur greater use of conditional conservatism to placate outside stakeholders.

The remainder of this paper is structured as follows: Section 2 presents relevant background and development of hypotheses. Data and method are discussed in Section 3, with results reported in Section 4. Last, in Section 5, we provide conclusions.

2. Hypotheses development

2.1. Accounting conservatism of public and private firms

Accounting conservatism is defined by Basu (1997) as the tendency to hold recognition of good news in financial statements to a higher verification threshold than recognition of bad news. This definition emphasizes the timeliness of loss recognition (conditional conservatism), and thus implies conservatism reflects the extent to which accounting income incorporates economic losses in a timelier fashion than economic gains (Ball et al., 2000). This property is argued to make reported earnings a more prudent predictor of cash flows, and consequently makes financial statements more useful in corporate governance contexts (Ball & Shivakumar, 2005), particularly in the presence of high ex-ante agency costs (Francis & Martin, 2010). It is widely considered that conditional conservatism acts as a governance mechanism that mitigates agency costs such as those associated with moral hazard (Mora & Walker, 2015) or investment inefficiency (García Lara, García Osma, & Penalva, 2016).

Research suggests that stakeholders demand conservative financial reporting because it is expected to mitigate agency problems. In particular, timely loss recognition disincentivizes managers from initiating or prolonging negative NPV projects (Ball & Shivakumar, 2005) since adverse outcomes are realized sooner in the accounts. Conservative accounting may also reduce scope for managerial rent extraction by limiting the impact of income-increasing earnings manipulation on performance-related pay. Consistent with this view, shareholders' demand for conservative financial reporting increases in the severity of underlying agency problems (LaFond & Roychowdhury, 2008). Because timely loss recognition results in swifter

breach of debt covenants, debtholders also demand accounting conservatism, since it facilitates better protection of their rights (Zhong & Li, 2017).

Several prior studies have compared accounting conservatism of public and private firms, documenting that public firms generally report more conservatively than private firms (Ball & Shivakumar, 2005; Givoly et al., 2010; Hope et al. 2013). This is consistent with lower demand for accrual-based financial reporting in the context of private firms (Burgstahler et al., 2006), because ownership concentration and insider ownership are generally higher (Brav, 2009). Where it is possible for private firm insiders to efficiently communicate with concentrated investors through private channels (the ‘insider access’ model), the benefits of providing high-quality accrual-based financial reports may not outweigh the costs involved (Hope et al., 2017).

However, there are arguments to suggest that accounting information may still play an important role in private firm settings, even in the face of lower financial reporting quality. In private firm contexts, the overall information environment is typically much weaker compared with listed firms, hence there are few competing sources of information available (Hope, 2013). Private firms also receive less analyst and media coverage which would otherwise support the decision making of outsiders, and smaller private firms are less likely to have separate management accounting systems, which may increase reliance on financial accounting in decision making of insiders (Chen, Hope, Li, & Wang, 2011). Finally, while the ‘insider access’ model predicts there is less demand for high-quality accruals-based accounts by large finance providers (e.g., controlling owners), there may be other external stakeholder groups, such as minority investors, lenders, suppliers, and customers, who do not benefit from the same

level of insider access to internal information and estimates, and so are more reliant on accounting information to monitor insiders.⁶

There are also arguments that outside stakeholders in private firms will particularly demand accounting conservatism given it facilitates efficient contracting and enables better enforcement of their claims on the firm. For example, as mentioned above, timelier incorporation of economic losses in accounting income results in swifter breach of debt covenants, which enables lenders to better enforce their claims (Zhong & Li, 2017). Similarly, suppliers and customers may require reliable ‘hard’ information regarding the firm’s credit quality and stability in order to extend certain benefits (e.g., trade credit or preferential trade terms) (Badertscher et al., 2022). Accounting conservatism may also benefit external claimants by reducing risks associated with managerial rent extraction, which may be more severe in contexts of private firms, where the information environment is generally less transparent.

More opaque public information exacerbates information asymmetry between insiders and outsiders in the private firm setting (Brav, 2009). Coupled with high ownership concentration, the risk of managers or controlling shareholders engaging in self-dealing behaviour, using the firm’s assets for private benefit at the expense of minority investors and other claimants is considered pronounced in this setting (Jensen & Meckling, 1976). Consequently, private firms face higher costs in raising minority equity and tend to rely more instead on debt financing (Brav, 2009). As a further consequence, creditors and other stakeholders in private firms may engage more with the firm through individual contracting on verifiable information (Bar-Yosef et al., 2019, p. 25) or more flexible contracts which permit the use of noncontractable (or “soft”) information (Peek et al., 2010).

⁶ We are thankful to the anonymous reviewer for highlighting this point. Formal tests of these alternative channels are also conducted and reported in Section 4.6.2.

Mechanisms which increase external stakeholders' confidence that information contracted against can be relied on to enforce their claims (i.e., financial credibility of internals' reports), including, for example, voluntary external auditor appointments (Clatworthy & Peel, 2013), can improve contracting efficiency and access to external resources on more favourable terms. The value of these mechanisms is expected to increase in the severity of agency conflicts between the firm and outsiders, and where there are fewer alternative mechanisms available for monitoring managers (Cano Rodríguez & Sánchez Alegría, 2012). Benefits of voluntary audits in reducing borrowing costs, for instance, are observed to be greater in countries with weaker legal institutions where ex-ante agency costs are pronounced (Hope et al., 2011). External stakeholders of private firms may then demand accounting conservatism for contracting reasons, even if they enjoy insider access to information, and have generally lower demand for informativeness of financial reports. Indeed, Watts (1993, abstract page) argues that accounting conservatism "evolved from accounting's contracting role", to avoid "inappropriate distributions to claim holders".

Based on the foregoing arguments, we form a prediction that conditional conservatism in private firm accounts may be greater in settings where ex-ante agency costs are high, due to contracting demands of external stakeholders. This may include situations where legal institutions that protect external claimants are weak, and where financial reporting quality (and corresponding ability of insiders to re-direct firm resources for private gain) is low (high).⁷

⁷ Conditional conservatism is expected to limit insiders' ability to engage in opportunistic accrual management (Ball, 2001; García Lara et al., 2020). As such, most public firms appear to employ accrual quality and conservatism as complements (García Lara et al., 2020). For example, prior research finds public firms re-establish financial credibility following restatements by increasing accounting conservatism (Ettredge et al., 2012) and improving (reducing) accrual quality (real earnings management) (Wiedman & Hendricks, 2013). Under the 'insider access' model for communication in private firms, however, simultaneous increase in conservatism and broader earnings quality may be sub-optimal.

On the other hand, while there may be benefits to private firms from catering to external stakeholders' demands for accounting conservatism,⁸ managers or controlling owners may prefer less timely incorporation of economic losses in accounting income if they derive greater personal benefit from hindering external monitoring and intervention (Haw, Hu, Hwang, & Wu, 2004). Less conservatism may also benefit managers through increasing their ability to meet executive compensation targets. There is also the question of whether conservatism is helpful to outsiders if institutions necessary to enforcing contracts (e.g., legal/judicial system) are otherwise weak. In the context of public firms, Bushman and Piotroski (2006) find levels of conditional conservatism are greater in the presence of stronger investor protections, with judicial system quality seemingly a prime factor. As a consequence, there is tension in whether accounting conservatism associates with, and in which direction, the severity of agency conflicts within private firms.

In order to distinguish these competing predictions, we develop in the following subsections testable hypotheses on how conditional conservatism in private and public firms varies with; (1) market orientation, (2) investor protections, and (3) accrual quality.

2.2. Market orientation

The European setting we study comprises a variety of jurisdictions in terms of market orientation. Nobes (1998, 2008) characterizes the UK, for example, as being commercially driven with strong equity markets, while Germany and France, on the other hand, possess weaker equity markets. This distinction is similar to that between liberal market economies (LMEs) and coordinated market economies (CMEs) drawn by Hall and Soskice (2001). In LMEs (e.g. the UK), firms principally coordinate with shareholders and other stakeholders on

⁸ Benefits may take the form of better access to external capital, more lenient borrowing terms, and more favourable commercial terms with suppliers and customers.

an arms-length basis through competitive market arrangements. As such, communication of outcomes via public channels, e.g., financial statements, plays a central role in coordinating with diffuse shareholders. By contrast, in CMEs (e.g. Germany), coordination occurs mainly via non-market interactions between firms and cross-shareholding networks that provide for the exchange of private information, and collaborative relationships among stakeholder groups (e.g. outside shareholders and debtholders).

As CME firms operate in weaker capital market settings than LME firms, and public disclosures are a less dominant form of communication in CMEs, there is reason to expect that CME firms face less capital pressure than LME firms to produce high quality financial reports. Hence, if the use of conservatism in private firms aligns with public firms, we may expect lower levels of conservatism by both types of firm in weaker market settings (i.e., CMEs), although potentially variation is less in the private firm case given demand for high quality formal accounts by private firms is generally lower. To the extent that greater market disciplining effects in LMEs facilitate more efficient contracting than is the case in CMEs,⁹ and consequently lower levels of agency conflict, LME firms may be more amenable to meeting stakeholders' demands for conservative accounts.

On the other hand, where financial reporting of CME private firms is less developed, due to lower demand by large shareholders, information-asymmetry-related problems from the perspective of minority finance providers are exacerbated. Moreover, weaker market discipline may result in greater levels of entrenchment in the CME setting. Perceived risks of self-dealing by managers or controlling shareholders, coupled with low financial credibility, may result in frustrated or costlier access to resources from outside stakeholders (e.g., bank loans or trade credit). As argued above, high ex-ante agency costs associated with these perceived conflicts

⁹ For instance, LMEs are argued to possess more fluid and competitive labour markets (Hall and Soskice, 2001).

may create incentives for private firm insiders to report more conservatively, given it is a relatively cost-effective means to signal financial credibility and provide outside stakeholders means to better enforce their claims on the firm.

Based on foregoing argumentation, we predict that while conditional conservatism in public firms is driven primarily by demand of outside stakeholders for high quality accruals-based accounts to monitor the firm (higher in LMEs), conservatism in private firms may also increase in the severity of agency conflicts and the perceived need to placate stakeholders regarding the security of their claims (we argue, higher in CMEs), a counter-effect which may turn out to dominate. Along these lines, we formulate the following hypothesis:

H1. *A country's degree of market liberty is positively associated with conditional conservatism in public firms but is less positively (or negatively) associated with conditional conservatism in private firms.*

2.3. Investor protection and disclosure regime

Through mitigation of agency problems between managers and outsiders, protection of investor rights can significantly impact financial reporting. In particular, investor protection mechanisms, e.g., disclosure regulation or director fiduciary duties, limit the scope for managers to engage in opportunistic reporting behaviour (Djankov, La Porta, Lopez-dos-Silanes, & Shleifer, 2008). Consistently, countries with strong investor protection and legal systems are associated with reduced levels of accruals-based earnings management (Leuz, Nanda, & Wysocki, 2003; Burgstahler et al., 2006) and less opportunistic non-GAAP accounting (Visani, Di Lascio, & Gardini, 2020). While Peek et al. (2010) observe no significant impact of a country's degree of investor protection on accounting conservatism of public, Francis and Wang (2008) observe a positive association, but only for firms with a Big 4 auditor; attributed to accounting choices being more heavily scrutinized. Bushman and

Piotroski (2006), examining a sample of public firms across 38 countries, find conditional conservatism to be facilitated by investor protections, particularly high-quality judicial systems, and strong public securities enforcement.

The reporting choices of public firms are generally more heavily scrutinized than those of private firms. Moreover, investor protections are primarily designed to protect minority shareholders within public markets. Therefore, if conservatism of public and private firms is explained by investors' ability to demand high quality accruals accounts, we expect both public and private firms to employ more conservatism in strong investor protection regimes, but this effect is likely more pronounced for public firms. On the other hand, if conservatism in private firms is also driven by imperative to mitigate agency costs, we may expect greater levels of conditional conservatism in private firms situated in weaker investor protection regimes. This is because institutions in these countries are less equipped to curb costs associated with insider self-dealing, so perceived agency problems and information risk are pronounced; consequently, more value is attached to internal governance mechanisms that help safeguard stakeholders' claims (Hope et al., 2011). Based on the above argumentation, we construct the following hypothesis:

H2. *The strength of a country's investor protection and disclosure regime is positively associated with conditional conservatism in public firms but less positively (or negatively) associated with conditional conservatism in private firms.*

2.4. Accrual quality

In addition to examining how conservatism of private and public firms varies with country institutions, we seek additional insight by testing relations between conservatism and accrual quality. Prior studies posit that accounting conservatism constrains insiders' ability to engage in opportunistic accrual management (Ball, 2001; Chen, Hemmer & Zhang, 2007) and as such

relates positively with accrual quality. This is supported by empirical evidence that conservatism in public firms is associated with lower discretionary accruals, as managers switch from accrual management (AEM) to real earnings management (REM) (García Lara et al., 2020). While conservatism imposes limits on AEM, it increases the benefits of earnings management to managers (Caskey & Laux, 2017), hence triggering substitution to REM. García Lara et al. (2020, p. 2) are careful to note that “the links between conditional conservatism and accrual earnings management are far from obvious or mechanical”.

While prior studies have established the existence of a generally positive relation between conservatism and accrual quality in public firms, to our knowledge, no studies have examined if this also holds for private firms. On the one hand, the fact that both accrual quality and conditional conservatism are, on average lower in private firms compared with public firms (Ball & Shivakumar, 2005; Givoly et al., 2010; Hope et al., 2013) might suggest that it does. On the other hand, low accrual quality associates with higher information risk and, in turn, increased agency costs, such as the cost of outside finance (Francis, Reichelt, & Wang, 2005), which we argue above could increase incentives for conditional conservatism in private firms. High levels of discretionary accruals, for example, might be regarded as opportunistic, though insiders may not actually be managing earnings opportunistically;¹⁰ in this situation, there may be pronounced incentives to signal financial credibility (Louis & Robinson, 2005).

Private firm insiders may use reporting discretion to signal private information or in order to meet tax, dividend, or insurance objectives (Ball & Shivakumar, 2005; Burgstahler et al., 2006), rather than to opportunistically benefit managers or controlling shareholders. Improving accrual quality in this context would be costly to all parties through deviation from these

¹⁰ Greater insider entrenchment, for example, may increase opportunities for, and outsider suspicion of, earnings management, although evidence suggests entrenchment actually associates with less earnings management due to reduced managerial myopia and pressure to meet short-term financial reporting goals (Di Meo et al., 2017).

reporting objectives, as well as increases in other direct and indirect accounting costs (ICAEW, 2015). Since (unverifiable) public accounts play a lesser role in decision-making in the private firm context, costly efforts to improve accrual quality may also provide limited benefit in terms of facilitating external monitoring. As we discuss above, conditional conservatism, on the other hand, may be a cost-effective way for private firms to mitigate against perceived agency problems and enhance credibility of financial communications by insiders. Given that conditional conservatism is specifically shown to limit opportunistic earnings management by insiders (Chen et al., 2007; García Lara et al., 2020), we argue the governance benefits of conditional conservatism increase with discretionary accruals, and hence suspicion of AEM, in private firm contexts.

Under the assumption that conditional conservatism in public firms is predominantly driven by investor demand for high-quality accrual-based accounts for monitoring, whereas private firms also make distinct use of conservatism to improve the credibility of verifiable information for contracting, the information risk of which varies inversely with accrual quality, we formulate a final hypothesis as follows:

H3. *Conditional conservatism is positively associated with accrual quality in public firms, but less positively (or negatively) associated with accrual quality in private firms.*

3. Data and method

3.1. Data collection and sample selection

We employ Bureau van Dijk's Amadeus database as our primary source of financial data, which provides financial statements data in standardized form for public and private firms across Europe. The Amadeus database provides extensive coverage of privately held firms, making it particularly amenable for our study. We begin by constructing an initial sample

comprising all private and public firms domiciled across eleven ‘pre-2004’ EU member states.¹¹ We focus on Western Europe as it provides a unique setting to examine the role of country-level institutions in reporting decisions given considerable institutional disparity, despite similarities in terms of economic development and a harmonized reporting environment.¹²

Firm-year data for the period 2006 to 2018 are collected from Amadeus, where necessary data are available. We begin our sample period in 2006 to avoid any confounding effects due to the introduction of mandatory IFRS standards for EU public firms. Some private firms listed on Amadeus are extremely small – the inclusion of these would impede our ability to meaningfully compare between public and private firms.¹³ We therefore retain only private firms that conform with two or more of the following criteria: (i) total assets greater than €2.5 million; (ii) greater than €5 million in sales; and (iii) employs more than 50 employees.¹⁴ We also exclude financial companies, including banks and insurance companies (SIC 6000 to 6799), public administration organizations (SIC 4311 and above 9000), and firms operating in regulated industries (SIC 4400 to 5000), consistent with prior studies (Burgstahler et al., 2006; Van Tendeloo, & Vanstraelen, 2008). The final sample consists of 355,449 firm-year observations between 2006 and 2018, including 337,640 private firm observations and 17,809 public firm observations.

3.2. Measures

3.2.1. Measuring accounting conservatism

¹¹ We do not include all 15 pre-2004 EU member states due to incomplete data, thus Ireland, Denmark, Austria and Luxembourg are excluded. Our sample comprises firms domiciled in the following jurisdictions: Belgium, Finland, France, Germany, Greece, Italy, Netherlands, Portugal, Spain, Sweden, and United Kingdom.

¹² We later document these variations in Panel C of Table 1.

¹³ It has been shown that reporting quality varies significantly with firm size.

¹⁴ These criteria are based on the definitions in Article 11 of the Fourth Council Directive 78/660/EEC (1978) of the Council of the European Communities, as amended by its Council Directive 94/8/EC (1994).

While several alternative conditional conservatism measures are adopted in prior literature, most model earnings conservatism by some reference to stock returns or other information frequently unavailable in the context of private firms. Two common approaches that are applicable to measuring conditional conservatism in private firms are described in Ball and Shivakumar (2005).

The first is a test for ‘transitory’ time-series components in net income based on the Basu (1997) method. Distinguishing between deferred and timely recognition of economic gains and losses, the test is based on the expectation that more timely recognition has greater propensity to be reversed. Deferred, or untimely, recognition, i.e., waiting until cash flows are realized before recognizing economic gains or losses in the accounts, is expected to result in more persistent accounting income. As such, greater reversal of income decreases, compared with income increases, indicates conditional conservatism. As noted by Ball & Shivakumar (2005), the method is potentially noisy, given it is not possible to subsequently verify timeliness in transitory income through correlations with stock returns in private firms. On the other hand, derivation of the model in changes creates advantages in terms of identifying conditional conservatism through transitory income components, and mitigation of survivorship bias.

The second test suggested by Ball & Shivakumar (2005) is based on the extent to which accruals map into cash-flows, and identifies conditional conservatism related to ‘persistent’ cash streams. Specifically, the test predicts conditional conservatism if accruals associate more strongly with negative operating cash flows than positive cash flows. The intuition is that, assuming cash flow streams from durable assets (i.e., ongoing production processes) exhibit persistence, lower current period cash flow implies lower expected cash flow in future periods, and under conditional conservatism, timely recognition of these anticipated future losses is made within accruals. In this way, asymmetric recognition of predictable implications of current cash flows facilitates the information role of accounts for monitoring and valuation.

We argue, however, the form of conservatism which benefits relations with stakeholders in private firms, in the context of high information risk, is more likely that implemented instead through transitory income components.

As discussed above, in the context of high information asymmetry, financial statements of private firms play a relegated information role, and stakeholders revert to engaging with firms through individual contracting on verifiable information. We argue that conditional conservatism enhances credibility with these stakeholders, not through improving accounting quality, but through visibly restraining agency problems – this is more effectively done through transitory income components. For example, timely recognition of expected losses from a new venture may be plausibly unrelated to cash flows from existing operations and will be somewhat reversed if recognition results in due project abandonment. More broadly, accounting policies accommodating more timely recognition of expected losses, in sufficient time for mitigations (i.e., before full cash-flow realization), provide a more effective credibility signal. Another disadvantage of the accrual method for our tests relates to our hypothesis that conservatism in private firms increases (decreases) with information risk (accrual quality). That information risk is conceivably related to the extent that accruals map cash-flows impairs interpretability of the accrual method in our context.

We therefore follow the approach based on net income to measure conditional conservatism, as follows:¹⁵

$$\frac{\Delta NI_t}{Assets_{t-1}} = \alpha_0 + \alpha_1 \frac{\Delta NI_{t-1}}{Assets_{t-1}} + \alpha_2 \frac{D\Delta NI_{t-1}}{Assets_{t-1}} + \alpha_3 \frac{D\Delta NI_{t-1} \times \Delta NI_{t-1}}{Assets_{t-1}} + \varepsilon_t \quad (1)$$

¹⁵ While we favor the net income approach for our analyses, our main conclusions are insensitive to this methodological choice. Qualitatively consistent results are obtained using the accruals method of Ball & Shivakumar (2005), which are available from the authors on request.

where ΔNI is the year-on-year change in net income and $D\Delta NI$ is an indicator variable equal to 1 when ΔNI is negative, and 0 otherwise. All variables in the model are deflated by lagged total assets ($Assets_{t-1}$). Note that eq. (1) models changes in net income as an autoregressive function while discriminating between positive and negative past earnings innovations; α_1 thus reflects persistence in positive ΔNI , while α_3 measures any differential persistence in negative ΔNI . A higher verification threshold for gains (i.e. conditionally conservative reporting) results in more reliable recognition of gains versus losses. Therefore, negative ΔNI will be expected to be relatively less persistent than positive ΔNI under more conservative reporting; i.e. conservatism is indicated by a significantly negative α_3 .

To test how conservatism varies with each institutional factor and accrual quality, we augment eq. (1) to include each factor in turn, as well as a suite of interactions, as in eq. (2), below. In this case, if a positive relationship exists between the factor and increases in conservatism, then α_7 is expected to be negative.

$$\begin{aligned} \Delta NI_t = & \alpha_0 + \alpha_1 \Delta NI_{t-1} + \alpha_2 D\Delta NI_{t-1} + \alpha_3 D\Delta NI_{t-1} \times \Delta NI_{t-1} + \alpha_4 FACTOR \\ & + \alpha_5 \Delta NI_{t-1} \times FACTOR + \alpha_6 D\Delta NI_{t-1} \times FACTOR \\ & + \alpha_7 D\Delta NI_{t-1} \times \Delta NI_{t-1} \times FACTOR + \varepsilon_t \end{aligned} \quad (2)$$

3.2.2. Measuring accrual quality

We include a measure of accrual quality since we are interested in examining its relation with conditional conservatism. The accrual quality measure we employ is based on performance-adjusted discretionary accruals, as described in Kothari, Leone, and Wasley (2005). Specifically, our accrual quality measure ($|DA_Koth|$) is estimated as the absolute value of residuals from the following cross-sectional regression model:

$$\frac{TA_t}{Assets_{t-1}} = \alpha_1 \frac{1}{Assets_{t-1}} + \alpha_2 \frac{(\Delta Sales_t - \Delta Rec_t)}{Assets_{t-1}} + \alpha_3 \frac{PPE_t}{Assets_{t-1}} + \alpha_4 ROA_t + \varepsilon_t \quad (3)$$

where TA_t is total accruals in year t ; $\Delta Sales_t$ and ΔRec_t are the change in sales and receivables since the previous year-end, respectively; PPE_t is gross property, plant and equipment; and ROA_t is the return on assets ratio. Eq. (3) is estimated on an industry-year basis.

3.2.3. Cross-country institutional factors

Our analyses also incorporate factors reflecting market orientation and the strength of investor protection and disclosure requirements of each country of our sample. First, we include the coordination index (*CINDEX*) described in Hall and Gingerich (2009) as a measure of market orientation. The *CINDEX* ranges from 0 to 1, where country-values close to 0 indicate approximation to LME (i.e., strong market orientation), whereas values closer to 1 indicate approximation to CME (i.e., weak market orientation). Second, we include a factor which proxies for the strength of investor protections (*INVPR*). We operationalize *INVPR* as a composite investor protection index, calculated as the product of two individual investor protection measures: (i) the rule of law index of La Porta, Lopez-de-Silanes, Shleifer, & Vishny (1998);¹⁶ and (ii) the revised anti-director rights index reported in Djankov et al. (2008).¹⁷ Finally, we employ as a measure of the strength of reporting regulation the disclosure index (*DISCIN*) of La Porta, Lopez-de-Silanes, and Shleifer (2006).¹⁸ Higher values of *INVPR* and *DISCIN* indicate stronger investor protections and disclosure requirements, respectively.

3.3. Control variables

¹⁶ The rule of law index reflects how strong the tradition for law and order is in the country (ranging from 0 to 10).

¹⁷ The anti-director rights index provides an approximation of how well the country's legal system protects minority shareholders against decisions by managers or dominant shareholders (ranging from 0 to 5).

¹⁸ The disclosure requirements index is calculated as the arithmetic mean of six indices capturing the strength of disclosure regulation relating to: (i) prospectus; (ii) compensation; (iii) shareholders; (iv) inside ownership; (v) irregular contracts; and (vi) transactions. The index and each of its constituents range from 0 to 1. Although the index is measured based on strength of disclosure requirements in a country relating to equity offerings (i.e., IPOs), we consider it is likely a reasonable proxy for the broader institutional environment impacting ongoing disclosures of listed companies and (to a lesser extent) private companies.

We include the following vector of firm-specific control variables in each of our empirical models: firm size (*SIZE*), measured as the natural logarithm of total assets; profitability, using the return on equity ratio (*ROE*); the cumulative proportion of loss years (*LOSS*), i.e., the proportion of years in which a loss was reported since the start of the sample period; earnings volatility (*E_vol*), defined as the standard deviation of return on assets over the preceding five years; financial leverage (*LEV*), measured as the ratio of total debt to total assets; growth in operations (*GROWTH*), calculated as the proportional increase in total assets since the previous year-end; the firm's operating cycle in days (*OP_CYCLE*); assets accounted for by inventory, in proportional terms (*INV*); and bankruptcy risk, using Taffler's (1983) z-score as a proxy (*ZSCORE*). We also include year and industry fixed effects in all models. Appendix 1 sets out and defines each of the variables described in this section.

4. Empirical Results

4.1. Descriptive statistics

Table 1 presents summary statistics for our study. In Panel A, we present descriptive statistics for the study's variables, shown separately for public and private firms. In general, we observe statistically significant differences between the European public and private firms in our sample, in terms of firm-level financial variables, though the magnitude of differences is relatively small with the exception of variables capturing profitability (*ROE* and *LOSS*), earnings volatility (*E_vol*), and firm growth (*GROWTH*). In general, public firms tend to display higher growth rates, are less profitable, and have more volatile earnings.

[Insert table 1 here]

Panel B of Table 1 displays the distribution of public and private firms and firm-year observations on a country-by-country basis. The panel shows that significant numbers of observations accrue from each of the eleven Western European countries in our sample. As

expected, the UK contributes the largest number of public firms to our sample (32% of public firms), while Italy contributes the largest number of private firms (36% of private firms). Finally, Panel C presents our country-level variables. We observe a reasonable level of cross-country variation in each of the institutional factors we employ.

4.2. Baseline results

We present our baseline results on conditional conservatism of public and private European firms in Table 2. We observe that both public and private firms display signs of conditional conservatism, on average, as evidenced by a significantly negative α_3 coefficient ($\Delta NI_{t-1} \times D\Delta NI_{t-1}$) in models 1 and 2. Although we observe a somewhat more negative α_3 for public firms, consistent with greater average levels of conservatism among public companies, the difference is insignificant. Insignificant difference in the results may be due to the fact they are pooled across heterogeneous European settings. While the models in Table 2 include firm-level control variables, these baseline results do not account for the systematic cross-country differences we hypothesize. We incorporate these omitted factors in the next section.

[Insert Table 2 here]

4.3. Impact of country-level institutional factors

We proceed to examine how differences in conservatism of public and private firms vary across institutional settings. As discussed previously, we expect differences in conservatism levels of public and private firms to vary with: (1) market orientation; (2) levels of investor protection; and (3) disclosure requirements. We explore each of these dimensions, in turn, below.

First, we examine moderating effects of market orientation on conditional conservatism in Table 3. To do so, we include the CINDEXT measure of market orientation in our models, as

well as a suite of interactions. Countries with CINDE_X values closer to 0 approximate an LME (more liberal market settings), while countries with CINDE_X values closer to 1 approximate a CME (weaker markets). Thus, $\alpha_3 (\Delta NI_{t-1} \times D\Delta NI_{t-1})$ provides a measure of conservatism for LME firms (CINDE_X = 0), while $\alpha_7 (\Delta NI_{t-1} \times D\Delta NI_{t-1} \times CINDE_X)$ reflects the average difference in conservatism for CME firms (CINDE_X = 1), compared with LME firms. We observe significant conservatism, on average, among public and private firms in LMEs (significantly negative α_3 in models 1 and 2), with LME public firms displaying significantly more conservatism than LME private firms. However, a significantly positive α_7 in model 1, but a significantly negative α_7 in model 2, suggests that this difference narrows, and seemingly inverts at higher CINDE_X values. In other words, while public companies in weaker markets are *less* conservative than those in stronger market settings (consistent with weaker ability of stakeholders to demand high-quality accruals accounts), private companies in weaker markets display *more* conservatism. The evidence is therefore supportive of H1 and the notion that higher perceived agency conflicts in weaker markets incentivizes private firms to report more conservatively, to enhance relations with stakeholders.

[Insert Table 3 here]

Next, we explore how conditional conservatism varies with investor protection levels in Table 4, by instead employing *INVPR* as the moderating factor. In this case, we place less emphasis on the results for α_3 since there are no instances in our sample where *INVPR* equals 0 (note the minimum of *INVPR* is 12.36 – Table 1, Panel C).¹⁹ Instead, we focus on $\alpha_7 (\Delta NI_{t-1} \times D\Delta NI_{t-1} \times INVPR)$ as the estimated difference in conservatism associated with a unit increase

¹⁹ However, to aid with interpretation, we note the marginal effects of $\alpha_3 + \alpha_7$ for public firms is an insignificant -0.119 at the minimum value of *INVPR* (12.36), whereas at the maximum value of *INVPR* (42.85) it is -0.418, significant at the 1% level. For private firms, the corresponding marginal effects are -0.483 at minimum *INVPR*, and -0.222 at the maximum, significant at 1% in both cases.

in the investor protection index, *INVPR*. The results for α_7 indicate that greater levels of investor protection are indeed associated with more conservative reporting in public firms (significantly negative α_7 in model 1). On the other hand, private firms in stronger investor protection regimes appear to report less conservatively; the difference between public and private firms being significant at the 1% level. Overall, we obtain evidence broadly supporting H2, and the notion that weaker protection of outside stakeholders incentivizes private firms to report more conservatively.

[Insert Table 4 here]

Finally, tests of the moderating effects of disclosure requirements on conditional conservatism of public and private European firms are presented in Table 5. We similarly observe some evidence that more stringent disclosure requirements are associated with more conservative reporting by public companies (significant at 10%) but observe insignificant evidence of the opposite for private firms. As the observed differences between public and private firms are weakly significant, thus the results lend some further support to H2. One possible explanation for the insignificant result on private firms is that higher disclosure requirements in some jurisdictions may apply mainly to public firms and correlate only weakly with information risk of private firms.

[Insert Table 5 here]

4.4. Conditional conservatism and accrual quality

Taken together, results in the previous section suggest that weaker institutional and regulatory environments associate with less conservative accounting in public firms, but more conservatism in private firms. At first glance, this may appear to contradict findings of Burgstahler et al. (2006), also applied to the European setting, that public and private firms form consistent reporting choices in exhibiting higher (lower) earnings quality in presence of

stronger (weaker) institutions. However, a noteworthy difference between Burgstahler et al.'s study and ours is a focus on a substantively different dimension of financial reporting.²⁰ Burgstahler et al. study variation in earnings informativeness with particular emphasis on opacity created by earnings management, which are arguably driven by outsiders' use of financial statements for monitoring and valuation purposes. Our study, on the other hand, focuses on conditional conservatism, which private firm stakeholders may also demand for contracting purposes. As we argue in Section 2, poor accrual quality and/or weak institutions that protect outside stakeholders may associate with greater benefits to accounting conservatism in private firms, through mitigating agency costs.²¹

Therefore, to shed further light, we next turn to examining the interplay between conditional conservatism and accrual quality. In Panel A of Table 6, we first compare discretionary accruals of European public and private firms, as well as how public-private firm differences in accrual quality vary with market orientation, investor protections, and disclosure requirements. In general, we observe that European public firms exhibit higher accrual quality (lower absolute discretionary accruals) than European private firms (model 1), consistent with prior studies (Hope et al., 2013). The gap between accrual quality of public and private firms, however, appears muted in weaker markets, compared with more liberal markets, as indicated by the significantly positive coefficient on *PUBLIC × FACTOR* in model 2. On the other hand, significantly negative coefficients on *PUBLIC × FACTOR* in models 3 and 4 indicate that the magnitude of the public-private difference in accrual quality increases with stronger investor

²⁰ We emphasise the Burgstahler et al. (2006) study here given it is among the most authoritative in this area, and among the most closely related studies to ours. Further points of difference between the Burgstahler et al. study and ours are the different, non-overlapping sample periods (1997-2003, versus 2006-2018), as well as different units of analysis (Burgstahler et al. contrast public and private firms observed at the industry-country level, while our analyses feature firm-year level observations).

²¹ Given large stakeholders in private firms benefit from insider access to information for valuation and monitoring purposes, there may be few benefits to improving earnings informativeness broadly. However, where credibility of financial information provided by management is poor, or where there is greater perceived risk of agency conflict (exacerbated, among other things, by risk of earnings management), outside stakeholders (e.g., lenders) will particularly demand governance mechanisms that better enable them to contractually assert their claims.

protections and disclosure requirements. Taken together, the results Panel A of Table 6, in conjunction with Tables 3 to 5, seemingly provide indirect evidence of a positive relationship between conservatism and accrual quality for public firms; both higher conservatism and lower AEM by public firms, on average, particularly in the presence of strong markets (LMEs), investor protections, and disclosure requirements.

[Insert Table 6 here]

In Panel B of Table 6, we examine directly the relationship between accrual quality and conditional conservatism by employing absolute discretionary accruals ($|AEM_Koth|$) as the moderating factor in our conditional conservatism model. We identify significant levels of conservatism when discretionary accruals approximately zero, as is indicated by a significantly negative α_3 ($\Delta NI_{t-1} \times D\Delta NI_{t-1}$) coefficient for both public and private firms. However, we also observe that public firms report less conservatively when displaying higher absolute levels of discretionary accruals, according to the significantly positive α_7 ($\Delta NI_{t-1} \times D\Delta NI_{t-1} \times |AEM_Koth|$) in model 1, indicating a positive relationship between accrual quality and conditional conservatism in public firms. However, for private firms (model 2), we find the opposite effect; a significantly positive α_7 in model 2 suggesting that accrual quality and conservatism of private firms are negatively related. The results in Table 6 are therefore broadly supportive of H3, that higher information risk from lower quality accruals increases incentives for conditional conservatism in private firms, to mitigate perceptions that insiders are expropriating resources through opportunistic earnings management.

Overall, we find that public firms report more conservatively in stronger markets, and when accrual quality is high, consistent with prior literature on public firms (Bushman & Piotroski, 2006; García Lara et al., 2020), but private firms display more accounting conservatism in weaker markets, and when accrual quality is low. Our results therefore support the conjecture

that private firms, differently to public firms, employ conditional conservatism as a governance mechanism to enhance financial credibility – the benefits of which increase, rather than decrease, with perception that managers or controlling shareholders may be expropriating minority stakeholders, facilitated by weak market discipline or minority investor protections, or high discretion for opportunistic accrual accounting. Where external stakeholders have significant concerns of governance problems, private firms face high costs and reduced ability of raising external finance and other outside resources. Conditional conservatism may reduce these barriers by enhancing financial credibility.

4.5. Robustness tests

4.5.1. Propensity score matching

We acknowledge that the results reported above may be influenced, to an extent, by the systematically different characteristics of public and private firms. We are also conscious that our private firm sample is substantially larger, and likely more diverse, than our public firm sample, which may also affect our comparisons. Therefore, we employ propensity score matching (PSM) to perform one-to-one matching of public firms to private firms based on firm characteristics, thus addressing the concern that our results are driven by confounding factors.

Our PSM procedure involves first estimating a logit model predicting firms being public, based on *SIZE*, *LEV*, *ROE*, and *GROWTH*. We then employ caliper matching (without replacement) to match public firms with private firms that have the closest propensity score, within a caliper of 0.1%. A narrow caliper is used to ensure that firm characteristics are closely balanced between our public firm and private firm samples. The results following re-estimation of the accrual quality and conservatism model using the propensity score matched sample are reported in Panel A of Table 7. We note that these results, using the matched sample, are

qualitatively similar to the results in Table 6 Panel B, based on the full sample. Therefore, we consider our main inferences to be robust.

[Insert Table 7 here]

4.5.2. *Alternative accrual quality measure*

We also acknowledge that our findings may be contingent on our choice of accrual quality measure; the prior literature extends a host of alternative techniques to measure accrual quality. In the preceding analyses, we employ the measure described in Kothari et al. (2005) which incorporates an adjustment for firm financial performance, however it is possible that our results are influenced by this choice. We therefore re-estimate the models using the alternative Modified-Jones method to estimate discretionary accruals. We follow the Modified-Jones method as it provides a parsimonious measure that is among the most widely used in the literature. The results are presented in Panel B of Table 7 and are seen to be broadly consistent.

4.6. *Additional analyses*

4.6.1. *Conservatism and AEM across institutional environments*

We report in Table 8 results from additional estimations of our accrual quality-conservatism models for the following sub-samples, separately for public and private firms: (Panel A) low versus high CINDEXT; (Panel B) high versus low investor protection; and (Panel C) high versus low disclosure requirements. For the sake of brevity, we report results only for α_7 , our coefficient of interest, in each case. As expected, we observe a significantly negative relationship between conservatism and discretionary accruals of public firms in strong markets (column 1: $\alpha_7 > 0$ across Panels A to C). A somewhat weaker relationship is observed for public firms operating in weak markets (column 3); indeed, the coefficient estimate becomes insignificant for public firms in low investor protection regimes (column 3; Panel B); although the differences are not found to be statistically significant. We also find (contrasting columns

2 and 4; Panels A to C) some evidence that the inverse conservatism-accrual quality relation among private firms is stronger in low investor protection regimes, lending further support to our hypothesis that private firms rely on conservatism to mitigate perceived agency conflicts.

[Insert Table 8 here]

4.6.2. Agency conflicts and conservatism in private firms

Results so far suggest the degree of accounting conservatism in private firms varies inversely with the strength of institutions protecting interests of outsiders, and with accrual quality. Together, the findings suggest indirectly a channel whereby accounting conservatism is used by private firm insiders to mitigate ex-ante agency costs. In this section, we test more directly the association between accounting conservatism levels of private firms and several sources of agency conflict.

First, the presence of a controlling shareholder is argued to affect the degree of conflict between firm insiders and outsiders, in two possible ways. On the one hand, controlling owners may face incentives to expropriate resources from other stakeholders for private gain. In this case, a controlling shareholder may prefer less timely incorporation of economic losses into accounting income in order to hinder outside stakeholders' ability to monitor insiders (Haw et al., 2004). Moreover, as the presence of a controlling owner reduces the role of minority shareholders, firms may be less sensitive to their demands for conservatism (Bona-Sánchez et al., 2011). On the other hand, a controlling owner may provide for more efficient and effective monitoring of managerial actions, while the perception that controlling ownership may increase risks of insider self-dealing creates an additional incentive for a private firm to adopt mechanisms to reassure outsiders of the stability of their claims. Consistent with the latter, Hope et al. (2011) find the benefits of voluntary external audits in reducing financing

constraints associated with agency costs are more pronounced when there is a controlling owner.

The second form of agency conflict examined is that between the firm and outside debtholders. Accounting conservatism is argued to improve the efficiency of debt contracting because it helps to trigger more timely violation of debt covenants (Peek et al., 2010), and as such is thought to reduce this form of agency conflict. Following Badertscher et al. (2022), we proxy this form of agency conflict using the level of a firm's bank debt scaled by assets. To the extent that agency conflict also exists between the firm and other outside stakeholders, such as suppliers and customers, accounting conservatism may help to provide assurance regarding the financial stability and credit worthiness of the firm. This can benefit the firm through more advantageous commercial terms, including more lenient trade credit, customer or supplier investment in specialist equipment, labour, or processes, or preferential access over competitors.²² We proxy this form of agency conflict using the scaled value of accounts payable.

The final form of agency conflict examined is between the firm's managers and other insiders, including shareholders and employees. In particular, managers may exercise discretion over the financial accounts to divert company resources for their own private benefit, through masking poor performance or fraud, artificially inflating the book value of vanity projects, or through maximising pay-outs from executive compensation contracts. We proxy this form of agency conflict using the scaled value of intangible assets, which is known to associate with earnings management incentives and employee fraud (Badertscher et al., 2022; Jones, 2011). Again, there are established reasons to believe that timely incorporation of

²² Similar to lenders, suppliers and customers may be particularly interested in downside risks associated with financial distress, and therefore may particularly value timely disclosure of expected losses.

economic losses in the accounts reduces risks associated with this form of agency conflict (Watts, 2003a, b).

[Insert Table 9 here]

Table 9 presents results from additional analyses that incorporate the agency conflict proxies mentioned above, applied to sampled private firms. In column 1, we simultaneously include *ControllingShare*, *BankDebt*, *Payables*, and *Intangibles* as factors in our conservatism model, noting significant negative estimated coefficients on $\Delta NI_{t-1} \times D\Delta NI_{t-1} \times FACTOR$ in each case. These results are consistent with use of conservatism being associated with ex-ante agency costs in relation to the various forms of agency conflict discussed above. We note particularly that the presence of a controlling owner associates with more conservative accounting, consistent with the notion that insiders use conservatism to mitigate costs associated with perceived risk of self-dealing by controlling owners. In models 2-3 (4-5) we present results for sub-samples of private firms with (without) a controlling owner, noting that conservatism remains sensitive to the alternative forms of agency conflict in each case, although there is more sensitivity to lenders' and suppliers' demands in the absence of a controlling owner. In these cases, presumably firms are more reliant on external resources, and there is an enhanced role for external monitoring.

We go on to test the extent to which the alternative governance mechanisms may explain the cross-institutional heterogeneity in conservatism of private firms. To do so, we re-estimate model 3 (model 5) of Table 9, for a sample of private firms with (without) a controlling owner, then further sorting on low (below median) versus high (above median) values of the institutional factors *CINDEX*, *INVPR*, and *DISCIN*, reporting results in Panel A (Panel B) of Table 10, respectively. We note particularly that in both panels the coefficient on $\Delta NI_{t-1} \times D\Delta NI_{t-1} \times BankDebt$ is significantly more negative in the context of weaker institutions,

supporting the notion that the benefits of conservatism, in terms of placating lenders, increase with ex-ante agency costs associated with weak institutional environments. We find mixed or opposite findings in relation to the other forms of agency conflict. It is also noteworthy that coefficients on $\Delta NI_{t-1} \times D\Delta NI_{t-1}$ remain significantly more negative for private firms in weaker institutional contexts, unconditional on values of bank debt, payables, and intangibles, suggesting a higher baseline level of conservatism in these settings which may not be wholly explained by the factors examined.

[Insert Table 10 here]

5. Conclusion

This paper examines differences in accounting conservatism practices of public and private firms, taking into account how variations in the institutional environment and accrual quality help shape the adoption of conservative accounting policies. While conservative accounting in public firms is well evidenced, currently little is known about incentives of private firms to employ accounting conservatism. Our findings indicate that, in terms of adoption of conservative accounting practices, public and private firms respond very differently to nuances in the institutional environment. In particular, we find lower (greater) conservatism among public (private) firms: situated in weaker capital markets; situated in weaker investor protection regimes; and exhibiting lower accrual quality.

Our findings are important, primarily, as they highlight that the conventional understanding of conservatism motives garnered from public firm samples does not seem to generalize to private firms. In fact, while our findings regarding public firms are uncontroversial, we find opposite impacts of market orientation, investor protections, and accrual quality on conservatism of private firms. Our study therefore offers valuable insights to investors,

policymakers, and other interested parties on the implications of accounting conservatism for stakeholders of private firms, in particular.

Our study is subject to some limitations. Firstly, given the context of our study, we are restricted in our choice of methodology to measure accounting conservatism; alternative conservatism proxies are common in the literature, however they typically employ stock market values so are not applicable to private firms. Secondly, we examine only a few institutional dimensions that are likely to affect accounting conservatism practices. Future studies could examine the impact of a broader range of institutional variables, e.g., legal enforcement, system of taxation. Thirdly, we consider the relation between accounting conservatism and only one property of earnings, magnitude of discretionary accruals. Examining how other facets of accounting which correlate with information risk, e.g., indicators of REM or classification shifting, relate with conditional conservatism in private firms is another potentially fruitful research avenue.

References

- Andreou, P.C., Cooper, I., Louca, C., Philip, D., (2017). Bank loan loss accounting treatments, credit cycles and crash risk. *The British Accounting Review*, 49(5), 474-492.
- Badertscher, B.A., Kim, J., Kinney Jr, W.R., Owens, E. (2022). Assurance level choice, CPA fees, and financial reporting benefits: Inferences from US private firms. *Journal of Accounting and Economics*, Forthcoming.
- Ball, R., Shivakumar, L. (2005). Earnings quality in UK private firms: comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), 83-128.
- Ball, R. (2001). Infrastructure requirements for an economically efficient system of public financial reporting and disclosure. In: *Brookings-Wharton Papers on Financial Services*, 127-169.
- Ball, R., Kothari, S.P., Robin, A. (2000). The effect of international institutional factors on properties of accounting earnings. *Journal of Accounting and Economics*, 29(1), 1-51.
- Bar-Yosef, S., D'Augusta, C., Prencipe, A. (2019). Accounting research on private firms: state of the art and future directions. *The International Journal of Accounting*, 54(2), 1950007.
- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings¹. *Journal of Accounting and Economics*, 24(1), 3-37.
- Berger, A. N., Udell, G. F. (1998). The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle. *Journal of Banking & Finance*, 22(6-8), 613-673.
- Berzins, J., Bøhren, Ø., Rydland, P. (2008). Corporate finance and governance in firms with limited liability: Basic characteristics. *Centre for Corporate Governance Research, Norwegian Business School*.
- Bona-Sánchez, C., Pérez-Alemán, J., Santana-Martín, D. J. (2011). Ultimate ownership and earnings conservatism. *European Accounting Review*, 20(1), 57-80.
- Brav, O. (2009). Access to capital, capital structure, and the funding of the firm. *The Journal of Finance*, 64(1), 263-308.
- Burgstahler, D.C., Hail, L., Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review*, 81(5), 983-1016.
- Bushman, R. M., Piotroski, J. D. (2006). Financial reporting incentives for conservative accounting: The influence of legal and political institutions. *Journal of Accounting and Economics*, 42(1-2), 107-148.
- Callen, J. L., Guan, Y., Qiu, J. (2014). The market for corporate control and accounting conservatism. *Available at SSRN: 2411368*.
- Cano Rodríguez, M., Sánchez Alegría, S. (2012). The value of audit quality in public and private companies: evidence from Spain. *Journal of Management & Governance*, 16, 683-706.

- Caskey, J., Laux, V. (2017). Corporate governance, accounting conservatism, and manipulation. *Management Science*, 63(2), 424-437.
- Chen, Q., Hemmer, T., Zhang, Y. (2007). On the relation between conservatism in accounting standards and incentives for earnings management. *Journal of Accounting Research*, 45(3), 541-565.
- Chen, F., Hope, O. K., Li, Q., Wang, X. (2011). Financial reporting quality and investment efficiency of private firms in emerging markets. *The Accounting Review*, 86(4), 1255-1288.
- Clatworthy, M. A., Peel, M. J. (2013). The impact of voluntary audit and governance characteristics on accounting errors in private companies. *Journal of Accounting and Public Policy*, 32(3), 1-25.
- Di Meo, F., García Lara, J.M., Surroca, J.A. (2017). Managerial entrenchment and earnings management. *Journal of Accounting and Public Policy*, 36(5), 399-414.
- Djankov, S., La Porta, R., Lopez-de-Silanes, F., Shleifer, A. (2008). The law and economics of self-dealing. *Journal of Financial Economics*, 88(3), 430-465.
- Erkens, D. H., Subramanyam, K. R., Zhang, J. (2014). Affiliated banker on board and conservative accounting. *The Accounting Review*, 89(5), 1703-1728.
- Ettredge, M., Huang, Y., Zhang, W. (2012). Earnings restatements and differential timeliness of accounting conservatism. *Journal of Accounting and Economics*, 53(3), 489-503.
- Faccio, M., Lang, L.H. and Young, L., 2010. Pyramiding vs leverage in corporate groups: international evidence. *Journal of International Business Studies*, 41(1), 88-104.
- Francis, J. R., Martin, X. (2010). Acquisition profitability and timely loss recognition. *Journal of Accounting and Economics*, 49(1-2), 161-178.
- Francis, J.R., Wang, D. (2008). The joint effect of investor protection and Big 4 audits on earnings quality around the world. *Contemporary Accounting Research*, 25(1), 157-191.
- Francis, J. R., Reichelt, K., Wang, D. (2005). The pricing of national and city-specific reputations for industry expertise in the US audit market. *The Accounting Review*, 80(1), 113-136.
- García Lara, J.M., García Osma, B., Penalva, F. (2016). Accounting conservatism and firm investment efficiency. *Journal of Accounting and Economics*, 61(1), 221-238.
- García Lara, J.M., García Osma, B., Penalva, F. (2020). Conditional conservatism and the limits to earnings management. *Journal of Accounting and Public Policy*, 39(4), 106738.
- Givoly, D., Hayn, C.K., Katz, S.P. (2010). Does public ownership of equity improve earnings quality?. *The Accounting Review*, 85(1), 195-225.
- Hall, P.A., Gingerich, D.W. (2009). Varieties of capitalism and institutional complementarities in the political economy: An empirical analysis. *British Journal of Political Science*, 39(3), 449-482.
- Hall, P. A., Soskice, D. (2001). *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.
- Haw, I. M., Hu, B., Hwang, L. S., Wu, W. (2004). Ultimate ownership, income management, and legal and extra-legal institutions. *Journal of Accounting Research*, 42(2), 423-462.

- Hope, O. K. (2013). Large shareholders and accounting research. *China Journal of Accounting Research*, 6(1), 3-20.
- Hope, O. K., Langli, J. C., Thomas, W. B. (2012). Agency conflicts and auditing in private firms. *Accounting, Organizations and Society*, 37(7), 500-517.
- Hope, O. K., Thomas, W., Vyas, D. (2011). Financial credibility, ownership, and financing constraints in private firms. *Journal of International Business Studies*, 42(7), 935-957.
- Hope, O.K., Thomas, W.B., Vyas, D. (2013). Financial reporting quality of US private and public firms. *The Accounting Review*, 88(5), 1715-1742.
- Hope, O. K., Thomas, W. B., Vyas, D. (2017). Stakeholder demand for accounting quality and economic usefulness of accounting in US private firms. *Journal of Accounting and Public Policy*, 36(1), 1-13.
- ICAEW. (2015). SME accounting requirements: Basing policy on evidence. *Public policy paper, Institute of Chartered Accountants in England and Wales*. Available at: <https://www.icaew.com/technical/financial-reporting/information-for-better-markets/ifbm-reports/sme-accounting-requirements-basing-policy-on-evidence>
- Jensen, M.C., Meckling, W. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305-360.
- Jones, S. (2011). Does the capitalization of intangible assets increase the predictability of corporate failure?. *Accounting Horizons*, 25(1), 41-70.
- Kothari, S.P., Leone, A.J., Wasley, C.E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163-197.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., Vishny, R.W. (1998). Law and finance. *Journal of political economy*, 106(6), 1113-1155.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. (2006). What works in securities laws?. *The Journal of Finance*, 61(1), 1-32.
- LaFond, R., Roychowdhury, S. (2008). Managerial ownership and accounting conservatism. *Journal of Accounting Research*, 46(1), 101-135.
- Leuz, C., Nanda, D., Wysocki, P.D. (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69(3), 505-527.
- Louis, H., Robinson, D. (2005). Do managers credibly use accruals to signal private information? Evidence from the pricing of discretionary accruals around stock splits. *Journal of Accounting and Economics*, 39(2), 361-380.
- Mora, A., Walker, M. (2015). The implications of research on accounting conservatism for accounting standard setting. *Accounting and Business Research*, 45(5), 620-650.
- Nichols, C.D., Wahlen, J.M., Wieland, M.M. (2009). Publicly traded versus privately held: implications for conditional conservatism in bank accounting. *Review of accounting studies*, 14(1), 88-122.
- Nobes, C. (1998). Towards a general model of the reasons for international differences in financial reporting. *Abacus*, 34(2), 162-187.

- Nobes, C. (2008). Accounting classification in the IFRS era. *Australian Accounting Review*, 18(3), 191-198.
- Peek, E., Cuijpers, R., Buijink, W. (2010). Creditors' and shareholders' reporting demands in public versus private firms: Evidence from Europe. *Contemporary Accounting Research*, 27(1), 49-91.
- Sheen, A. (2020). Do public and private firms behave differently? An examination of investment in the chemical industry. *Journal of Financial and Quantitative Analysis*, 55(8), 2530-2554.
- Taffler, R.J. (1983). The assessment of company solvency and performance using a statistical model. *Accounting and Business Research*, 13(52), 295-308.
- Van Tendeloo, B., Vanstraelen, A. (2008). Earnings management and audit quality in Europe: Evidence from the private client segment market. *European Accounting Review*, 17(3), 447-469.
- Visani, F., Di Lascio, F.M.L., Gardini, S. (2020). The impact of institutional and cultural factors on the use of non-GAAP financial measures. International evidence from the oil and gas industry. *Journal of International Accounting, Auditing and Taxation*, 40, 100334.
- Watts, R. L. (1993). A proposal for research on conservatism. University of Rochester. Available at SSRN: 6044.
- Watts, R.L. (2003a). Conservatism in accounting part I: Explanations and implications. *Accounting Horizons*, 17(3), 207-221.
- Watts, R. L. (2003b). Conservatism in accounting part II: Evidence and research opportunities. *Accounting Horizons*, 17(4), 287-301.
- Wiedman, C. I., Hendricks, K. B. (2013). Firm accrual quality following restatements: A signaling view. *Journal of Business Finance & Accounting*, 40(9-10), 1095-1125.
- Zhong, Y., Li, W. (2017). Accounting conservatism: A literature review. *Australian Accounting Review*, 27(2), 195-213.

Appendix 1

Variable definitions.

Variables	Definitions
Δ NI	Year-on-year change in net income
D Δ NI	Indicator variable equal to 1 when Δ NI is negative, and 0 otherwise.
AEM	Accruals earnings management measure, as defined in Section 3.2.
SIZE	Firm size, calculated as the natural logarithm of total assets.
ROE	Return on equity ratio, calculated as net income before extraordinary items divided by average total assets.
LOSS	Cumulative proportion of years in which a loss was reported since the beginning of the sample period.
E_vol	Earnings volatility, calculated as the standard deviation of ROA, estimated for each firm over the whole sample period, provided a minimum of three years of observations is available.
LEV	Financial leverage, calculated as total debt divided by total assets.
GROWTH	Proportion change in total assets since the previous year.
OPCYCLE	The operating cycle of the firm, being the average time between the outlay of cash required to produce goods and the ultimate cash receipt from customers, calculated as: (inventory/cost of sales + receivable/sales)/365.
INV	The proportion of assets represented by inventory, calculated as inventory divided by total assets.
ZSCORE	The Taffler (1983) Z-score, calculated as: $3.2+12.18*\text{profit before tax/current liabilities}+2.5*\text{current assets/total liabilities}-10.68*\text{current liabilities/total assets}+0.029*(\text{quick assets} - \text{current liabilities})/\text{daily operating expenses}$.
PUBLIC	Dummy variable where values 1 identifies public firms, 0 identifies private firms.
CINDEX	Country-level coordination index of Hall & Gingerich (2009), whereby values closer to 0 (1) indicate the firm's country of incorporation more closely approximates an LME (CME).
LAW	Country-level rule of law index, as per La Porta et al. (1998).
ANTDIR	Country-level anti-director rights index of La Porta et al. (1998) as revised by Djankov et al. (2008).
INVPR	Country-level investor protection index, calculated as the product of LAW and ANTDIR.
DISCIN	Country-level disclosure index of La Porta et al. (2006).

Table 1. Sample summary statistics

Panel A: Full sample descriptive statistics

Variables	Public firms N = 17,809					Private firms N = 337,640				
	Mean	Std.dev.	25 th Pct.	Median	75 th Pct.	Mean	Std.dev.	25 th Pct.	Median	75 th Pct.
Δ NI	0.032	0.201	-0.031	0.004	0.041	0.009***	0.084	-0.012	0.003	0.024
D Δ NI	0.440	0.496	0.000	0.000	1.000	0.420***	0.494	0.000	0.000	1.000
DA_Koth	-0.019	0.161	-0.078	-0.020	0.036	-0.008***	0.136	-0.067	-0.007	0.049
DA_Koth	0.105	0.124	0.026	0.060	0.128	0.091***	0.101	0.025	0.058	0.116
SIZE	9.631	3.508	7.567	10.322	12.249	9.839***	1.143	9.022	9.630	10.399
ROE	-0.030	0.598	-0.074	0.068	0.158	0.119***	0.460	0.021	0.096	0.215
LOSS	0.346	0.360	0.000	0.250	0.625	0.190***	0.293	0.000	0.000	0.333
E_vol	0.084	0.103	0.018	0.042	0.101	0.039***	0.056	0.010	0.022	0.044
LEV	0.190	0.194	0.022	0.146	0.288	0.196***	0.212	0.005	0.133	0.323
GROWTH	0.254	0.708	-0.054	0.042	0.190	0.088***	0.266	-0.032	0.043	0.149
OPCYCLE	201.47	410.34	66.22	116.31	185.77	172.91***	329.31	66.81	114.68	176.75
INV	0.121	0.143	0.005	0.073	0.193	0.173***	0.180	0.014	0.123	0.271
ZSCORE	2.917	14.301	-3.113	2.425	8.725	1.932***	13.855	-3.748	0.574	6.631

Note to Panel A: *, **, *** denote significant difference in means as between public and private firms at the 10%, 5%, and 1% levels, respectively.

Table 1 (continued)

Panel B: Distribution of observations by country and listing status

Country		Firms		Firm-year observations			%
		Private	Public	Private	Public	Total	
IT	Italy	27,731	294	150,993	1,257	152,250	42.8%
GB	UK	14,146	928	51,423	5,587	57,010	16.0%
FR	France	14,956	426	52,162	3,141	55,303	15.6%
ES	Spain	6,824	119	32,336	885	33,221	9.3%
DE	Germany	4,061	396	13,636	2,862	16,498	4.6%
BE	Belgium	2,394	38	10,569	259	10,828	3.0%
SE	Sweden	1,900	384	7,664	2,037	9,701	2.7%
GR	Greece	1,522	154	7,546	684	8,230	2.3%
PT	Portugal	1,336	21	6,577	112	6,689	1.9%
FI	Finland	1,003	98	3,547	784	4,331	1.2%
NL	Netherlands	527	58	1,187	201	1,388	0.4%
Total		76,400	2,916	337,640	17,809	355,449	100%

Panel C: Cross-country institutional factors

Country		CINDEX	LAW	ANTDIR	INVPR	DISCIN
IT	Italy	0.87	8.33	2.0	16.66	0.67
GB	UK	0.00	8.57	5.0	42.85	0.83
FR	France	0.68	8.98	3.5	31.43	0.75
ES	Spain	0.62	7.80	5.0	39.00	0.50
DE	Germany	0.93	9.23	3.5	32.31	0.42
BE	Belgium	0.60	10.00	3.0	30.00	0.42
SE	Sweden	0.62	10.00	3.5	35.00	0.58
GR	Greece	NA	6.18	2.0	12.36	0.33
PT	Portugal	0.66	8.68	2.5	21.70	0.42
FI	Finland	0.65	10.00	3.5	35.00	0.50
NL	Netherlands	0.60	10.00	2.5	25.00	0.50

Notes to Panel C: CINDEX is coordination index (LME vs CME) (Hall & Gingerich, 2009); LAW is rule of law (La Porta et al., 1998); ANTDIR is anti-director rights index (revised by Djankov et al., 2008); INVPR is investor protection index (LAW x ANTDIR); DISCIN is disclosure index (La Porta et al., 2006).

Table 2. Baseline regressions: conditional conservatism of public and private firms

Variables	Expected sign	Dependent variable: ΔNI_t		
		Public (1)	Private (2)	Difference (1) – (2)
ΔNI_{t-1}		-0.062*** (-3.51)	-0.144*** (-26.77)	0.082*** (20.06)
$D\Delta NI_{t-1}$		-0.001 (-0.46)	-0.004*** (-10.57)	0.002 (0.73)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	–	-0.338*** (-6.99)	-0.313*** (-24.74)	-0.025 (0.25)
Control variables		Yes	Yes	–
Industry FE		Yes	Yes	–
Year FE		Yes	Yes	–
Observations		17,809	337,640	–
R-squared		0.30	0.19	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 3. Conservatism and market orientation

Variables	Dependent variable: ΔNI_t		
	Public (1)	Private (2)	Difference (1) – (2)
ΔNI_{t-1}	-0.045** (-2.15)	-0.136*** (-15.35)	0.091*** (15.67)
$D\Delta NI_{t-1}$	-0.014*** (-2.58)	-0.001 (-1.22)	-0.013** (5.27)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.455*** (-6.67)	-0.230*** (-10.85)	-0.225*** (9.99)
CINDEX	-0.002 (-0.49)	0.008*** (9.73)	-0.011** (5.09)
$\Delta NI_{t-1} \times CINDEX$	-0.036* (-1.83)	-0.014 (-1.05)	-0.023 (0.91)
$D\Delta NI_{t-1} \times CINDEX$	0.024*** (2.99)	-0.004*** (-2.87)	0.028*** (11.84)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times CINDEX$	0.228*** (2.59)	-0.162*** (-5.29)	0.390*** (17.53)
Control variables	Yes	Yes	–
Year FE	Yes	Yes	–
Industry FE	Yes	Yes	–
Observations	17,125	330,094	–
R-squared	0.30	0.19	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 4. Conservatism and investor protection

Variables	Dependent variable: ΔNI_t		
	Public (1)	Private (2)	Difference (1) – (2)
ΔNI_{t-1}	-0.154*** (-3.41)	-0.159*** (-8.93)	0.004 (0.01)
$D\Delta NI_{t-1}$	0.029*** (3.25)	-0.010*** (-10.04)	0.039*** (18.55)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	0.002 (0.01)	-0.589*** (-16.50)	0.591*** (14.37)
INVPR	-0.000* (-1.90)	-0.000*** (-13.49)	0.000 (0.00)
$\Delta NI_{t-1} \times INVPR$	0.003** (2.13)	0.000 (0.93)	0.002 (2.59)
$D\Delta NI_{t-1} \times INVPR$	-0.001*** (-3.32)	0.000*** (5.58)	-0.001*** (16.22)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times INVPR$	-0.010** (-2.32)	0.009*** (8.09)	-0.018*** (17.85)
Control variables	Yes	Yes	–
Year FE	Yes	Yes	–
Industry FE	Yes	Yes	–
Observations	17,809	337,640	–
R-squared	0.30	0.19	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 5. Conservatism and disclosure requirements

Variables	Dependent variable: ΔNI_t		
	Public (1)	Private (2)	Difference (1) – (2)
ΔNI_{t-1}	-0.089*** (-2.85)	-0.173*** (-9.18)	0.084** (5.33)
$D\Delta NI_{t-1}$	0.030*** (2.87)	-0.002 (-1.18)	0.032*** (9.28)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.131 (-1.04)	-0.341*** (-7.00)	0.210 (2.45)
DISCIN	0.008 (0.90)	-0.003 (-1.52)	0.011 (1.35)
$\Delta NI_{t-1} \times DISCIN$	0.042 (1.01)	0.042 (1.56)	0.000 (0.00)
$D\Delta NI_{t-1} \times DISCIN$	-0.048*** (-3.02)	-0.002 (-0.77)	-0.046*** (8.02)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DISCIN$	-0.321* (-1.75)	0.041 (0.58)	-0.362* (3.40)
Control variables	Yes	Yes	–
Year FE	Yes	Yes	–
Industry FE	Yes	Yes	–
Observations	17,809	337,640	–
R-squared	0.30	0.19	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 6. Accrual quality and conservatism in public and private firms

Panel A: Accrual quality and institutional factors				
FACTOR =	Dependent variable: DA_Koth			
	.	CINDEX	INVPR	DISCIN
	(1)	(2)	(3)	(4)
PUBLIC	-0.020*** (-21.82)	-0.025*** (-17.94)	-0.009*** (-3.16)	-0.008*** (-2.59)
FACTOR	.	-0.006*** (-9.95)	0.001*** (19.69)	0.001 (0.69)
PUBLIC × FACTOR	.	0.010*** (4.70)	-0.001*** (-4.85)	-0.019*** (-4.30)
Control variables	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Observations	355,449	347,219	355,449	355,449
R-squared	0.15	0.16	0.16	0.15

Panel B: Conservatism model with accrual quality			
Variables	Dependent variable: ΔNI_t		
	Public	Private	Difference
	(1)	(2)	(1) – (2)
ΔNI_{t-1}	-0.020 (-1.09)	-0.182*** (-27.35)	0.162*** (66.91)
$D\Delta NI_{t-1}$	0.002 (0.66)	-0.002*** (-3.11)	0.004 (1.13)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.531*** (-9.57)	-0.228*** (-14.43)	-0.303*** (27.68)
DA_Koth	0.225*** (7.36)	-0.022*** (-6.74)	0.247*** (64.84)
$\Delta NI_{t-1} \times DA_Koth $	-0.327*** (-2.82)	0.287*** (6.53)	-0.614*** (24.56)
$D\Delta NI_{t-1} \times DA_Koth $	-0.049 (-0.99)	-0.026*** (-4.77)	-0.022 (0.20)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DA_Koth $	1.332*** (4.40)	-0.688*** (-7.37)	2.020*** (40.73)
Control variables	Yes	Yes	–
Year FE	Yes	Yes	–
Industry FE	Yes	Yes	–
Observations	17,809	337,640	–
R-squared	0.31	0.19	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 7. Robustness tests

Panel A: Conservatism model with accrual quality using PS-matched sample			
Variables	Dependent variable: ΔNI_t		
	Public (1)	Private (2)	Difference (1) – (2)
ΔNI_{t-1}	-0.036** (-1.97)	-0.200*** (-6.85)	0.164*** (22.61)
$D\Delta NI_{t-1}$	0.001 (0.40)	-0.006** (-2.10)	0.007 (2.52)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.479*** (-8.70)	-0.209*** (-3.34)	-0.270*** (10.54)
$ DA_Koth $	0.190*** (6.42)	-0.051*** (-3.67)	0.241*** (54.52)
$\Delta NI_{t-1} \times DA_Koth $	-0.226** (-2.01)	0.441*** (3.12)	-0.668*** (13.66)
$D\Delta NI_{t-1} \times DA_Koth $	-0.041 (-0.87)	0.007 (0.29)	-0.048 (0.83)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DA_Koth $	1.082*** (3.55)	-0.934*** (-3.63)	2.016*** (25.65)
Control variables	Yes	Yes	–
Year FE	Yes	Yes	–
Industry FE	Yes	Yes	–
Observations	17,663	17,663	–
R-squared	0.34	0.24	–

Panel B: Alternative accrual quality measure			
Variables	Dependent variable: ΔNI_t		
	Public (1)	Private (2)	Difference (1) – (2)
ΔNI_{t-1}	-0.024 (-1.30)	-0.181*** (-27.27)	0.157*** (62.46)
$D\Delta NI_{t-1}$	0.003 (0.93)	-0.001** (-2.07)	0.004 (1.47)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.527*** (-9.64)	-0.228*** (-14.45)	-0.299*** (27.72)
$ DA_MJ $	0.151*** (5.06)	-0.029*** (-8.70)	0.180*** (36.22)
$\Delta NI_{t-1} \times DA_MJ $	-0.290** (-2.53)	0.269*** (6.27)	-0.559*** (20.88)
$D\Delta NI_{t-1} \times DA_MJ $	-0.061 (-1.27)	-0.032*** (-5.55)	-0.030 (0.37)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DA_MJ $	1.203*** (4.20)	-0.671*** (-7.36)	1.874*** (38.95)
Control variables	Yes	Yes	–
Year FE	Yes	Yes	–
Industry FE	Yes	Yes	–
Observations	17,809	337,640	–
R-squared	0.30	0.19	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 8. Additional analyses: Institutional differences in accrual quality and conservatism

Panel A: Market orientation								
Variables	Low CINDEX		High CINDEX		Differences			
	Public	Private	Public	Private	(1) – (2)	(3) – (4)	(1) – (3)	(2) – (4)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DA_{Koth} $	1.683*** (3.11)	-0.503*** (-2.74)	1.150*** (3.17)	-0.681*** (-6.22)	2.186*** (14.78)	1.830*** (23.44)	0.533 (0.67)	0.177 (0.40)
Panel B: Investor protection								
Variables	High investor protection		Low investor protection		Differences			
	Public	Private	Public	Private	(1) – (2)	(3) – (4)	(1) – (3)	(2) – (4)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DA_{Koth} $	1.423*** (4.47)	-0.494*** (-4.40)	0.051 (0.05)	-1.123*** (-6.56)	1.916*** (32.42)	1.174 (1.36)	1.372 (1.73)	0.629*** (9.47)
Panel C: Disclosure requirements								
Variables	High disclosure requirements		Low disclosure requirements		Differences			
	Public	Private	Public	Private	(1) – (2)	(3) – (4)	(1) – (3)	(2) – (4)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times DA_{Koth} $	1.627*** (3.55)	-0.528*** (-3.85)	1.082*** (2.70)	-0.845*** (-6.59)	2.154*** (20.45)	1.927*** (21.09)	0.545 (0.81)	0.317* (2.85)

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 9. Additional analyses: Alternative governance mechanisms

Variables	All		Controlling shareholder		No controlling shareholder		Differences	
	Private	Private	Private	Private	Private	Private	(2) – (4)	(3) – (5)
	(1)	(2)	(3)	(4)	(5)			
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.169*** (-6.79)	-0.370*** (-21.48)	-0.294*** (-11.15)	-0.256*** (-11.03)	-0.075** (-2.25)	-0.114*** (15.54)	-0.219*** (26.85)	
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{ControllingShare}$	-0.079*** (-3.34)							
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{BankDebt}$	-0.048* (-1.77)		-0.030 (-0.69)		-0.185*** (-2.96)		0.155** (4.15)	
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{Payables}$	-0.501*** (-6.76)		-0.331*** (-3.57)		-0.796*** (-6.53)		0.465*** (9.20)	
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{Intangibles}$	-0.208** (-2.21)		-0.216* (-1.80)		-0.145 (-0.96)		-0.072 (0.14)	
Applicable first-order terms	Yes	Yes	Yes	Yes	Yes	Yes	–	–
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	–	–
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	–	–
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	–	–
Observations	294,761	174,625	174,625	120,136	120,136		–	–
R-squared	0.19	0.18	0.19	0.21	0.21		–	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 10. Additional analyses: Institutions and alternative governance mechanisms

Panel A: Sub-sample of private firms WITH a controlling owner									
Variables	CINDEX			Investor protection			Disclosure requirements		
	Low	High	Difference	Low	High	Difference	Low	High	Difference
	(1)	(2)	(1) – (2)	(3)	(4)	(3) – (4)	(5)	(6)	(5) – (6)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.232*** (-6.75)	-0.371*** (-9.02)	0.138*** (6.68)	-0.354*** (-7.98)	-0.260*** (-7.88)	-0.094* (2.88)	-0.286*** (-8.51)	-0.294*** (-7.00)	0.008 (0.02)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{BankDebt}$	-0.024 (-0.50)	-0.242** (-2.36)	0.218* (3.72)	-0.258*** (-2.68)	-0.027 (-0.54)	-0.231** (4.55)	-0.098 (-1.38)	-0.029 (-0.54)	-0.069 (0.59)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{Payables}$	-0.304** (-2.47)	-0.337** (-2.35)	0.033 (0.03)	-0.303** (-2.12)	-0.260** (-2.10)	-0.043 (0.05)	-0.435*** (-3.56)	-0.192 (-1.35)	-0.243 (1.67)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{Intangibles}$	-0.161 (-1.04)	-0.340* (-1.89)	0.179 (0.57)	-0.213 (-1.10)	-0.201 (-1.32)	-0.012 (0.00)	-0.100 (-0.62)	-0.344* (-1.93)	0.243 (1.03)
First-order terms	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Control variables	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Year FE	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Industry FE	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Observations	73,664	100,961	–	99,017	75,608	–	123,857	50,768	–
R-squared	0.19	0.20	–	0.20	0.19	–	0.20	0.18	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.

Table 10. (continued)

Panel B: Sub-sample of private firms WITHOUT a controlling owner									
Variables	CINDEX			Investor protection			Disclosure requirements		
	Low	High	Difference	Low	High	Difference	Low	High	Difference
	(1)	(2)	(1) – (2)	(3)	(4)	(3) – (4)	(5)	(6)	(5) – (6)
$\Delta NI_{t-1} \times D\Delta NI_{t-1}$	-0.003	-0.316***	0.313***	-0.287***	-0.008	-0.279***	-0.053	-0.088*	0.035
	(-0.07)	(-4.13)	(13.70)	(-4.08)	(-0.21)	(12.42)	(-1.12)	(-1.93)	(0.28)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{BankDebt}$	-0.059	-0.674***	0.615***	-0.402***	-0.038	-0.364**	-0.310***	0.038	-0.348***
	(-0.94)	(-4.86)	(16.40)	(-3.03)	(-0.60)	(6.11)	(-3.32)	(0.45)	(7.69)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{Payables}$	-0.751***	-0.645***	-0.106	-0.675***	-0.802***	0.127	-0.883***	-0.780***	-0.103
	(-5.27)	(-2.79)	(0.15)	(-3.30)	(-5.35)	(0.25)	(-5.42)	(-4.61)	(0.19)
$\Delta NI_{t-1} \times D\Delta NI_{t-1} \times \text{Intangibles}$	-0.396**	0.507	-0.903**	0.785**	-0.420***	1.205***	-0.062	-0.392**	0.330
	(-2.35)	(1.46)	(5.46)	(2.09)	(-2.67)	(8.76)	(-0.26)	(-2.03)	(1.16)
First-order terms	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Control variables	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Year FE	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Industry FE	Yes	Yes	–	Yes	Yes	–	Yes	Yes	–
Observations	63,138	56,998	–	61,094	59,042	–	81,929	38,207	–
R-squared	0.24	0.22	–	0.22	0.24	–	0.21	0.24	–

Notes: Variables are defined in Appendix A. *t*-statistics shown in parentheses based on robust standard errors. *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively.