CEO IQ and Accounting Conservatism in Private Firms

Daniel Kaiser
Umeå School of Business, Economics and Statistics, Umeå University, 90187 Umeå, Sweden
(daniel.kaiser@umu.se)

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JEL Classification:

April 2026

Acknowledgment: An earlier version of this paper benefited from valuable comments from the 2025 FIRE Conference.

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Abstract

This paper examines the impact of CEOs' cognitive ability (IQ) on accounting conservatism. Using comprehensive conscription data from Sweden, I find robust evidence that CEO IQ is positively associated with accounting conservatism in private firms. This result aligns with the argument that CEOs with higher IQs leverage their superior information-processing ability to anticipate and recognize negative economic outcomes, better understand the contracting relevance of conservatism, and are less susceptible to heuristic biases that impede decision-making. In cross-sectional analysis, I find that the documented effect is more pronounced among firms operating in a less stringent financial accounting regime, and those with greater debt intensity. Overall, this study underscores the role of CEOs' pre-labor-market intelligence in shaping financial reporting choices in private firms.

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* I thank the discussant and participants of the 2025 FIRE conference for their valuable comments.
† Umeå School of Business, Economics and Statistics, Umeå University. Email: daniel.kaiser@umu.se

1. Introduction

In this study, I examine whether CEOs' cognitive ability, measured as an individual's intelligence endowment, affects accounting conservatism in private firms[2]. A large stream of research focusing on public firms documents that managerial characteristics play a crucial role in influencing firms' financial reporting decisions in general, and their likelihood of adopting conservative financial reporting, in particular ((Huang et al., 2012; Ali and Zhang, 2015; Ho et al., 2015; Ham et al., 2017; Amin et al., 2024). A recent study linking firms' efficiency in converting resources into revenue to managerial ability finds that accounting conservatism increases with managerial ability (Haider et al., 2021). Qian et al. (2024) also show that award-winning CEOs engage in lower conservative reporting after the award-winning ceremony. While these studies capture a more endogenous form of managerial ability, an unresolved question that reechoes is whether and how managers' innate cognitive ability influences accounting conservatism. Using unique data on CEO cognitive ability, reflecting their pre-labor-market intelligence endowments, this study seeks to resolve this puzzle using a sample of private firms.

Accounting conservatism is a reporting practice that requires managers to apply stricter verification standards when recognizing good news, such as gains, than bad news, such as losses (Basu, 1997; Watts, 2003). It is a fundamental accounting principle that promotes prudence by discouraging managerial bias towards overstating earnings. Prior studies show that conservative accounting improves contracting efficiency in the capital market by facilitating the timely recognition of economic losses, allowing debtholders to detect deteriorations in firm value earlier and exercise their control rights more effectively (Watts, 2003; Ball and Shivakumar, 2006; Zhang, 2008). Further research documents the potency of conservative reporting in mitigating moral hazards, asymmetric information, and constraining managerial opportunism (Ahmed et al., 2002; Ahmed and Duellman, 2007; Lafond and Watts, 2008; Lafond and Roychowdhury, 2008; Lara et al., 2016; Hu et al., 2013). These studies emphasize the governance role of accounting conservatism, indicating that firms that systematically face higher uncertainty or agency problems are expected to adopt more conservative accounting practices (Kwon, 2005; Lafond and Roychowdhury, 2008; Dai and Ngo, 2021; Xie et al., 2025).

For private firms, the demand for accounting conservatism is particularly salient given their institutional and informational environments. Unlike public firms, which are highly

[2] In this paper, I use CEO cognitive ability and CEO IQ interchangeably.

regulated and scrutinized by capital markets, private firms face limited external checks and therefore suffer severe agency and asymmetric information problems. In addition, private firms rely heavily on debt financing from private lenders (banks) and trade credits from suppliers, both of which depend greatly on a credible financial reporting environment to access (García-Teruel et al., 2014; Haw et al., 2014; Li et al., 2021). Thus, these conditions make adopting conservative reporting an economic imperative for private firms to maintain credibility with external stakeholders and support efficient contracting relationships. Moreover, the inherently weak governance systems in private firms create a conducive environment for managerial opportunism. In this context, managerial characteristics, particularly those that shape their incentives and judgments in subjective situations, become crucial in shaping financial reporting policies. Despite the economic importance of high-quality financial reporting in private firms, little is known about how managers' cognitive ability, a trait that shapes complex information processing and decision-making under subjective conditions (Grinblatt et al., 2012; Kallunki et al., 2019), affects accounting conservatism.

A priori, the relationship between a CEO's cognitive ability and accounting conservatism is not necessarily straightforward. On the one hand, I hypothesize that CEOs with high IQs are more likely to adopt conservative accounting practices. Prior studies suggest that individuals with high IQ are skilled at navigating complex decision-making processes that require subjective judgments (Grinblatt et al., 2011, 2012, 2016; Kallunki et al., 2019; Eugster et al., 2021). In addition, highly cognitive individuals tend to be more risk-averse and less prone to heuristic biases, such as overconfidence (Dohmen et al., 2010; 2018; D'Acunto et al., 2019). I argue that, since conservatism relies on managers' ability to make accurate estimates and projections of economic events or transactions and to recognize losses promptly, CEOs with high IQs are likely to make fewer estimation errors, better anticipate adverse economic events, and are less likely to underestimate the risk associated with defying conservative practices. For example, such managers may be able to predict poorly performing investments (negative NPV projects) with greater precision and promptly recognize the associated losses, thereby leading to greater conservative financial reporting.

Conversely, I predict that CEO IQ may be negatively related to conservative financial reporting. Highly cognitive individuals often achieve high success and tend to set higher performance standards for themselves. When short-term performance pressures are high, such as debt renegotiations, close to covenant violations, and managerial career concerns, such CEOs can leverage their superior information-processing and forecasting skills to facilitate intertemporal shifting of recognition by delaying loss recognition or accelerating gains, thereby reducing accounting conservatism (Nikolaev, 2010; Li, 2013). These actions help them to present favorable earnings figures and maintain their reputation. Therefore, this hypothesis suggests a negative association between CEO IQ and accounting conservatism.

I test these empirical hypotheses by exploring unique data on IQ from the Swedish Armed Forces (SAF), which are highly reliable. First, the psychological test is administered to all Swedish males with sufficient physical and psychological conditions necessary to enlist in the SAF. Importantly, the professional psychologists involved in administering the IQ test double-checked each prospective conscript's background information, including school grades, to ensure the plausibility of the test scores. If an individual's test score deviates abnormally from what is expected based on historic academic performance, the individual is asked to retake the test. As a result, there was little incentive to "flunk" the test to avoid military service. Prior studies across various fields have relied on this dataset due to its quality and robustness (Lindqvist and Vestman, 2011; Kallunki et al., 2019; Eugster et al., 2021).

Using a sample of Swedish private firms from 2006 to 2017, I investigate the impact of CEO cognitive ability on accounting conservatism. I calculate the conservatism measure using Ball and Shivakumar's (2005) asymmetric timeliness of accruals model, indicating the extent to which economic losses are impounded in accruals. The explanatory variable is the scores obtained on the cognitive ability test. Using Ordinary Least Squares (OLS) regression with industry and year fixed effects, I find a positive and statistically significant association between CEO IQ and accounting conservatism, suggesting that high IQ managers' strong information-processing, prompt anticipation of negative economic events, and clear understanding of the contracting relevance of credible financial reports, and minimal heuristic tendencies engender sound judgment in subjective situations, resulting in higher conservative reporting in privately held firms. Furthermore, I find that the results are robust to an array of robustness checks (discussed in section 4.2).

Next, I examine the cross-sectional variation of the positive association between CEO IQ and accounting conservatism. First, building on insights from prior studies that principled-based accounting framework introduces much discretionary powers that impairs conservatism and the governance role of debt financing, external monitoring, and credible financial reporting in debt contracting (Chi et al., 2009; Xia and Zhu, 2009; Cano-Rodríguez, 2010; Haw et al., 2014; André et al., 2015), I conjecture that the documented effect is contingent on the financial reporting frameworks under which firms operate, their debt intensity, and quality of auditors.

Consistent with my reasoning, I find that the documented effect is pronounced in firms operating under a rule-based, simplified accrual accounting system (the K2 and K1 Swedish accounting frameworks), those with high debt intensity, and those with .

My study adds to the literature in two key ways. First, it expands the growing body of research that explores the influence of managers' innate traits on financial reporting choices. Previous studies indicate that managers' characteristics, such as facial masculinity (Jia et al., 2014), narcissism (Ham et al., 2017), extraversion (Eugster et al., 2024), and ability (Demerjian et al., 2013; Haider et al., 2021), impact financial reporting quality. Although studies such as Demerjian et al. (2013) and Haider et al. (2021) link FRQ to managerial ability, measured through the optimization model, this method primarily captures operational efficiency, which may reflect managerial output and be endogenously determined. By focusing on CEOs' cognitive ability (IQ), I examine a more direct and arguably exogenous variable reflecting managers' innate ability[3].

Second, my study contributes to the accounting conservatism literature by highlighting a crucial determinant that underpins managerial accounting choices amid subjectivity—cognitive ability. More importantly, the setting of this study offers valuable insights for two reasons. I consider private firms that face greater agency and information asymmetry problems and that rely on credible financial reporting to systematically enhance efficient contracting relationships. My study, therefore, shines light on the role of CEO IQ in supplying conservatism for efficient contracting. Second, I focus on the role of cognitive ability in shaping financial reporting within a traditionally male-dominated sample. Prior studies show that male executives are prone to overconfidence and lower risk aversion, traits strongly linked with less conservatism (Francis et al., 2015; Faccio et al., 2016; Chen et al., 2019). In contrast, Ho et al. (2015) document that female CEOs tend to engage in more conservative reporting due to their unique traits of risk aversion and ethical sensitivity. Using psychological test scores from Swedish male conscripts, my findings suggest that cognitive ability offsets the behavioral biases, such as overconfidence, typically attributed to the male gender and its associated impact on accounting conservatism.

[3] The psychological tests were administered before individuals attained higher education or professional experience, thus capturing their pre-labor market intelligence. As a result, the scores are less likely to be influenced by external factors such as career events, later life experiences, firm performance, or other confounding factors. Therefore, the cognitive ability measure used in this study is less prone to endogeneity concerns

The remainder of the study is organized as follows: Section 2 discusses the relevant literature and hypotheses development. Section 3 presents the research design. Section 4 discusses the empirical results. Finally, section 5 concludes the paper.

2. Relevant literature and hypotheses development

2.1 Accounting conservatism

Accounting conservatism refers to the practice of applying more stringent verification standards when recognizing good news (e.g., gains) than when recognizing bad news (e.g., losses) (Basu, 1997). It requires that losses be recognized in a timely manner, whereas the recognition of gains is deferred until sufficient verification is available. This asymmetry in the timeliness of gain and loss recognition often results in an understatement of net assets and cumulative reported earnings, thereby constraining firms' ability to pay excessive dividends to shareholders (Ahmed et al., 2002; Watts, 2003). Prior research finds that accounting conservatism facilitates *ex ante* efficient contracting between managers and shareholders by reducing agency conflicts and enhancing managerial monitoring (Ball and Shivakumar, 2006). Specifically, by requiring the timely recognition of losses, conservatism reduces managers' incentives to withhold negative information, pursue overly risky investments, or inflate earnings (Watts, 2003; Kravet, 2014). Thus, accounting conservatism is widely recognized for mitigating the deadweight losses associated with asymmetric information and agency problems (Watts, 2003; Ahmed and Duellman, 2007).

Previous research suggests that, beyond the influence of governance mechanisms, managers' personal characteristics significantly influence firm-level accounting conservatism[4]. For instance, Haider et al. (2021) find that highly able managers engage in conservative financial reporting to improve contract efficiency and build a reputation. Shen et al. (2024) show that narcissistic CEOs exhibit higher levels of accounting conservatism, attributing this to their ability to cope with and willingness to report bad news. Regarding gender differences, Ho et al. (2015) document that firms with female CEOs are more conservative in the financial reporting, attributing this to women's greater risk aversion and ethical sensitivity. Building on

[4] Prior studies show that legal and political systems, product market competition and corporate boards influence firms' conservative financial reporting (see, Beekes et al., 2004; Bushman and Piotroski, 2006 Dhaliwal et al., 2014).

this literature, the present study extends the literature by investigating the impact of managers' cognitive abilities on accounting conservatism.

2.2 Information environment of private firms and the demand for accounting conservatism

The demand for accounting conservatism in private firms stems from the quality of information environments inherent in private settings. Unlike public firms, which are strongly scrutinized by capital market participants, private firms face less scrutiny and are subject to limited disclosure requirements, resulting in a relatively opaque information environment that exacerbates information asymmetry between insiders and outsiders (Brav, 2009). In addition to the inherently opaque environment, private firms are characterized by high ownership concentration, which encourages managers or controlling shareholders to engage in self-dealing and use corporate resources for private benefits at the expense of minority shareholders and other claimants (Jensen & Meckling, 1976). Consequently, private firms tend to rely on costly private debt financing rather than public debt as private lenders are considered effective monitors, and informal financing options such as trade credits, which are information-sensitive (Diamond, 1984; Brav, 2009; García-Teruel et al., 2014; Li et al., 2021).

Prior studies suggest that accounting conservatism serves as a strong governance mechanism that mitigates agency and asymmetric information problems (Francis and Martin, 2010; Lara et al., 2016). Particularly, the encouragement of timely recognition of losses could discourage excessive risk-taking and investment in negative NPV projects (Ball and Shivakumar, 2005; Kravet, 2014), encourage the flow of more firm-specific information from corporate insiders to outsiders, resulting in a more transparent information environment (Hu et al., 2014), leading to improved contract efficiency (Watts, 2003; Zhang, 2008).

Despite the extensive focus on conservatism in public firms, the weaker information environment in private firms suggests accounting conservatism may play an equally critical role in such contexts. Prior studies comparing conservatism across public and private firms document lower conservatism in private firms (Ball and Shivakumar, 2005; Hope et al., 2013). These findings are driven by the notion that, because outside stakeholders of private firms obtain information through private channels, there may be limited demand for accrual-based financial reporting, as the benefits may not outweigh the costs (Hope et al., 2017). Notwithstanding, the demand for accounting conservatism in private firms could still be reasonably high as stakeholders, especially debt providers and suppliers, may demand high-quality financial information (Bharath et al., 2008; Hope et al. 2013; Li et al., 2021). In private firm settings where debt financing is a dominant source of external capital, the demand for conservatism is crucial to protect debt providers. In support of this claim, Haw et al. (2014) find that private firms with debt financing exhibit greater conservatism in financial reporting. However, this effect is more pronounced among firms with public debt, suggesting that bondholders demand greater conservatism than loan providers. Similarly, Cano-Rodríguez (2010) finds that clients of Big Auditors exhibit greater conditional conservatism. These findings suggest that in private firm settings, credible financial reporting through conservative practices might play greater stewardship and contracting roles rather than a valuation role.

2.3 The effect of managerial traits on corporate decisions and outcomes

In their seminal paper, Hambrick and Mason (1984) propose the upper echelon theory that posits that executives' cognitive bases, experience, and values influence corporate decisions and outcomes. To corroborate, Bertrand and Schoar (2003) find that managers' fixed effects, capturing the unique role of individual managers' characteristics, have higher explanatory power for corporate decisions in areas such as investing, financing, and organizational activities.

Building on the findings of Bertrand and Schoar (2003), studies in accounting provide evidence that CEO/CFO fixed effects play a role in explaining significant differences in firms' tax avoidance (Dyreng et al., 2010), information disclosures (Bamber et al., 2010), and financial reporting quality (Ge et al., 2011; Davis et al., 2015). A major drawback of these studies is that they do not explicitly state the specific managerial traits driving the outcomes of interest; thus, they draw general conclusions.

Existing studies go beyond this limitation and focus on the effect of several specific managerial traits on financial reporting quality[5]. For example, Eugster et al. (2023) find that CEOs' and CFOs' extraversion is positively related to corporate voluntary disclosures. Ham et al. (2017) document that firms with narcissistic CFOs are associated with more earnings management, less conservative reporting, more restatements, and weaker internal controls, indicating poor financial reporting quality. Francis et al. (2008) find that CEO reputation is associated with poorer discretionary and total earnings quality, suggesting that reputable CEOs hide behind their status to extract rent from their firms. Hsieh et al. (2014) document that overconfident CEOs engage in more earnings management post the Sarbanes-Oxley Act of

[5] Prior studies suggest that financial accounting choices can be considered as a crucial strategic decision due to the possibility of several available alternatives and their attendant consequences (Demski, 1974; Dye, 1985)

2002 (SOX), suggesting that such CEOs are less likely to be constrained by the corporate governance regulatory regime. Using operational efficiency as a proxy for managerial ability, Demerjian et al. (2013) find that able managers are positively related to higher earnings quality. The authors' key argument is that able managers have higher knowledge and exercise better judgment on the estimates used to form earnings. While these studies highlight the effects of managerial characteristics on firms' reporting, little is known about how individual managers' cognitive ability—a trait which directly shapes managers' cognitive capacity and decision-making quality amid uncertainty—influences reporting quality.

Prior studies in psychology, economics, and management, building on the upper echelon theory, suggest that due to bounded rationality in decision-making processes, managers rely heavily on their cognitive abilities to interpret complex phenomena better and exercise good judgment (Hambrick and Mason, 1984; Simon, 1955; Hilton, 2001; Jordão et al., 2020). Although accounting processes are highly regulated through formal structures like accounting standards, their implementation requires managers' prudence and judgment. For instance, specific circumstances such as impairment testing, doubtful-debt provisions, inventory valuation, contingent liabilities, and revenue recognition are subjective and require managers' judgment in applying conservative principles. Although some studies have relied on indirect proxies of managerial ability such as education (Call et al., 2017), financial expertise (Ngo and Nguyen, 2022), and operational efficiency (Demerjian et al., 2013; Haider et al., 2021) to establish a link with financial reporting quality, this study enhances this inquiry by focusing on a more direct and arguably exogenous measure reflecting a manager's innate mental capacity—CEO's cognitive ability (IQ).

2.4 Impact of CEO cognitive ability on accounting conservatism

The existing literature suggests that the effect of CEO IQ on accounting conservatism is theoretically ambiguous. On the one hand, I posit that CEOs with higher cognitive ability are more likely to engage in conservative financial reporting. Prior research demonstrates that individuals with high cognitive abilities excel in navigating complex tasks and exercise sound judgment, especially in settings characterized by uncertainty and subjectivity (Grinblatt et al., 2012; Grinblatt et al., 2016; Kallunki et al., 2019). Accounting conservatism is inherently a complex process that demands prudent and cautious estimates and judgments and timely recognition of losses, often under uncertainty. For instance, managers are expected to estimate the net realizable value when applying the "lower of cost or market" rule for inventory valuation, and the timely recognition of asset impairments necessitates not only a nuanced understanding of accounting standards but also the capacity for disciplined judgment in anticipating future economic outcomes. Thus, I argue that CEOs with higher cognitive ability, by virtue of their superior understanding of their firms' operations and associated risks, are better equipped to anticipate adverse outcomes (losses) and thus more likely to incorporate conservatism into financial reporting. More importantly, because private firms rely heavily on debt contracting, which hinges on credible financial reports (Bharath et al., 2008; Hope et al., 2013; Haw et al., 2014), I argue that high-IQ CEOs might have a better understanding of the contracting relevance of credible financial reports, and hence be incentivized to use greater accounting conservatism.

Furthermore, prior studies document a strong association between cognitive ability and risk preferences. For instance, Dohmen et al. (2018) assert that individuals with high cognitive ability exhibit greater risk aversion in harmful situations and are more willing to accept risk in advantageous circumstances. Relatedly, studies suggest that overconfident managers, who tend to overestimate future returns and underestimate the likelihood and impact of risk, are less likely to practice conservative financial reporting (Malmendier and Tate, 2008; Ahmed and Duellman, 2013). Building on this, I argue that since highly cognitive CEOs are less likely to exhibit heuristic biases such as overconfidence (Czerwonka, 2017; Dohmen et al., 2010), they are more likely to assess risks and losses accurately. Consequently, they are less likely to downplay the risks associated with ignoring conservative accounting practices and more likely to recognize losses promptly[6]. Based on this reasoning, I predict a positive relationship between CEO IQ and accounting conservatism. The hypothesis is formally stated as follows:

H1a: CEOs with high cognitive ability engage in more conservative financial reporting.

On the other hand, CEOs with high cognitive abilities may engage in less conservative financial reporting. Prior research suggests that debt contracts often includes covenants tied to accounting metrics, such as the current ratio, leverage, and net worth, violation of which could accelerate dire consequences such as financial distress, litigation, and reputational damages for both the firm and manager (Smith and Warner, 1979; Bhaskar et al., 2017; Gao et al., 2017; Stice, 2018). As previously discussed, highly cognitive individuals are top performers (Grinblatt et al., 2012; Eugster et al., 2021) and might hold themselves to higher performance standards. This implies that such managers are most likely to be triggered by poor firm

[6] Studies show that firms that defy conservative accounting face greater litigation risk, face greater underpricing of their IPOs, and higher cost of capital (Garcia Lara et al., 2011; Kronenberger and Laux, 2022; Lin and Tian, 2012)

performance. I argue that in a private firm setting where monitoring is relatively weak, high IQ CEOs may be incentivized to adopt accounting practices that overstate earnings, such as delaying loss recognition when firms face short-term performance pressures, triggering debt renegotiation, covenant violations, and managers' career concerns. This action helps alleviate any covenant-induced financial distress and litigation risk that threatens their career and personal and professional reputations. Thus, in a quest to maintain their "reputational premium", CEOs with higher cognitive abilities may strategically avoid conservative reporting to overcome covenant-induced financial distress. This argument is consistent with recent evidence showing that award-winning CEOs are associated with less conservative financial reporting (Qian et al., 2024). Based on this reasoning, I state the alternative hypothesis as follows:

H1b: CEOs with high cognitive ability engage in less conservative financial reporting.

3. Research design

3.1 Data sources and sample construction

I collect data from multiple sources in this study. First, I obtain data on CEOs of private firms in Sweden from Bolagsverket (the Swedish Companies Registration Office). I then obtain data on cognitive ability (IQ) scores from the Swedish Armed Forces[7]. The IQ scores are obtained from a battery of psychological tests administered by the military service that cover logical, verbal, spatial, and technical skills. Furthermore, I obtain managers' personal information (e.g., age and education) from Statistics Sweden. After merging the datasets, I obtain an initial sample of 3,658,738 firm-year observations consisting of Swedish private firms[8]. To obtain the final sample, I exclude female IQ data, financial and real estate firms, missing observations for dependent, independent, and control variables, and firms classified as inactive according to Serrano (Refer to Table 1 for details). These operations yield a final sample comprising 152,131 firm-year observations from 49,904 private firms from 2006 to 2017.

3.2 Measurement of key variables

[7] Since only Swedish males are mandated by law to serve in the Swedish Armed Forces, I do not obtain the scores non-Swedes CEOs and deleted women CEOs with IQ scores.
[8] Due to the substantial differences between public and private firms in terms of their financial reporting environment (Ball and Shivakumar, 2005; Hope et al., 2013), I dropped public firms before arriving at the initial sample.

3.2.1 CEO IQ.

The measure of a CEO's cognitive ability (IQ score) is obtained from psychological tests administered by the Swedish Armed Forces. Armed service was compulsory for Swedish males until 2010[9]. The enlistment process usually lasted two days and consisted of tests of medical status, physical fitness, cognitive ability, and an interview with a psychologist to ascertain an individual's personality traits. The cognitive ability scores obtained from the Swedish Armed Forces are a composite score of four different subtests (i.e., logical, verbal, spatial, and technical) graded on a stanine scale (one to nine). According to Carlstedt (2000), which provides the history of the psychometric testing in the Swedish Armed Forces, the cognitive ability measure is a good measure of an individual's general intelligence (Spearman et al., 1904). The measure most likely captures pre-labor-market intelligence endowments, since the cognitive ability test scores were taken before an individual's higher education or professional experience.

Following Kallunki et al. (2019) and Eugster et al. (2021), I measure the CEO's cognitive ability (CEO_IQ) as equal to the CEO's IQ score, ranging from one (the lowest score) to nine (the highest score).

3.2.2 Accounting conservatism.

The empirical analysis relies on an accrual-based conditional conservatism measure following Ball and Shivakumar (2005). This method builds on Basu's (1997) model of asymmetric timeliness, which advocates timelier recognition of economic losses, relative to economic gains. Drawing from this intuition, this model captures the relationship between operating accruals and operating cash flows. Normally, cash flows and accruals exhibit a negative correlation. However, under conditional conservatism, where losses are impounded into cash flows in a timely manner, accruals decrease, leading to a positive correlation between cash flows and accruals (Ball and Shivakumar, 2005)[10]. I focus on ex-post conditional accounting conservatism because it provides timely information that reflects current economic conditions and relies directly on managers' discretion in recognizing economic losses; thus, it is more sensitive to individual cognitive traits, such as CEO IQ. Conversely, ex-ante

[9] According to the Swedish Act on Liability for Total Defense Service, all Swedish males around the age of 18 had to complete an enlistment test.

[10] For example, a sale of goods on credit increases accruals. Settlement of the amount due increases cash flows while reducing accruals. However, if the amount becomes obviously irrecoverable, conditional conservatism requires that the loss be recognized in earnings. Recognition of this loss reduces accruals and reduces cash flow expectations, thus inducing a positive correlation.

unconditional conservatism relates more to firm-level accounting policy choices, which are often mechanical, relatively static, and less sensitive to managers' cognitive capacity.

The model below corresponds to Ball and Shivakumar's (2005) model, indicating the asymmetric timeliness of accruals:

$$Accruals_{i,t} = \beta_0 + \beta_1 D_{i,t} + \beta_2 CF_{i,t} + \beta_3 DCF_{i,t} + \varepsilon_{i,t} \tag{1}$$

where subscripts *i* and *t* denote firm and year, respectively. *Accruals* denote operating accruals measured as the change in non-cash current assets minus the change in current non-interest-bearing liabilities, minus depreciation and amortization expense for firm i in year t, scaled by total assets in year *t-1* (Hope et al., 2013). *CF* is cash flows from operations in period *t* deflected by total assets in year *t-1*. *D* is an indicator variable that equals 1 if $CF_{i,t}$ is negative, and 0 otherwise. From equation (1), the coefficient of *CF* (β_2) measures the asymmetric timeliness of earnings with respect to good news, and it is expected to be negative. The coefficient of *DCF* (β_3) measures the incremental timeliness of accruals with respect to bad news. Under conditional conservatism, accruals and cash flows are positively correlated (Ball and Shivakumar, 2005), therefore a positive coefficient of β_3 indicates conservative reporting.

3.3 Regression model

To test the hypotheses, I expand equation (1) and construct the following regression model:

$$\begin{aligned} Accruals_{i,t} = {} & \alpha_0 + \alpha_1 D_{i,t} + \alpha_2 CF_{i,t} + \alpha_3 DCF_{i,t} + \alpha_4 CEO\_IQ_{i,t} + \alpha_5 CEO\_IQ_{i,t} {*} D_{i,t} + \\ & \alpha_6 CEO\_IQ_{i,t} {*} CF_{i,t} + \alpha_7 CEO\_IQ_{i,t} {*} DCF_{i,t} + \alpha_8 CEO\_age_{i,t} + \alpha_9 CEO\_age_{i,t} {*} D_{i,t} + \\ & \alpha_{10} CEO\_age_{i,t} {*} CF_{i,t} + \alpha_{11} CEO\_age_{i,t} {*} DCF_{i,t} + \alpha_{12} CEO\_tenure_{i,t} + \\ & \alpha_{13} CEO\_tenure_{i,t} {*} D_{i,t} + \alpha_{14} CEO\_tenure_{i,t} {*} CF_{i,t} + \alpha_{15} CEO\_tenure_{i,t} {*} DCF_{i,t} + \\ & \alpha_{16} CEO\_edu_{i,t} + \alpha_{17} CEO\_edu_{i,t} {*} D_{i,t} + \alpha_{18} CEO\_edu_{i,t} {*} CF_{i,t} + \alpha_{19} CEO\_edu_{i,t} {*} DCF_{i,t} + \\ & \alpha_{20} Size_{i,t} + \alpha_{21} Size_{i,t} {*} D_{i,t} + \alpha_{22} Size_{i,t} {*} CF_{i,t} + \alpha_{23} Size_{i,t} {*} DCF_{i,t} + \alpha_{24} Lev_{i,t} + \alpha_{25} Lev_{i,t} {*} D_{i,t} + \\ & \alpha_{26} Lev_{i,t} {*} CF_{i,t} + \alpha_{27} Lev_{i,t} {*} DCF_{i,t} + \alpha_{28} Salesgr_{i,t} + \alpha_{29} Salesgr_{i,t} {*} D_{i,t} + \alpha_{30} Salesgr_{i,t} {*} CF_{i,t} \\ & + \alpha_{31} Salesgr_{i,t} {*} DCF_{i,t} + \text{Industry FE} + \text{Year FE} + \varepsilon_{i,t} \end{aligned} \tag{2}$$

where *i* and *t* index firm and year, respectively. Model (2) extends model (1) by including the explanatory variable (*CEO_IQ),* CEO- and firm-level controls, and their interactions. From model (2), if firms with CEOs with high IQ exhibit asymmetric loss recognition in accruals, then α_7 is expected to be positive.

Following prior studies, I control for firm characteristics that influence conservatism (Lafond and Roychowdhury, 2008; Khan and Watts, 2009; Ahmed and Duellman, 2013).

Specifically, I control for firm size (*Size*), as small firms are associated with higher information asymmetry, necessitating more conservative accounting (LaFond and Watts, 2008). Next, I control for leverage (*Leverage*). Prior studies suggest that accounting conservatism increases with higher leverage, as firms with higher leverage face greater conflicts between debt holders and shareholders (Ahmed et al., 2002; Zhang, 2008). I also control for sales growth (*Salesgrowth*) because large increases in sales can raise firms' expectations of future cash flows and potentially affect conservatism measures (Ahmed et al., 2002; Ahmed and Duellman, 2007). In addition to firm controls, I include CEO age (*CEO_age*), CEO tenure (*CEO_tenure*), and CEO education (*CEO_edu)* as controls, as CEO age, tenure, and education can affect their risk preferences and affect conservative accounting policies (Atwa et al., 2023). I winsorize all continuous variables at the 1st and 99th percentiles. Finally, I include industry- and year-fixed effects to control for characteristics that are invariant across industries and years. Details of all variables are reported in the Appendix.

3.4 Descriptive Statistics

Table 1 presents the sample distribution. Panel A presents the sample selection. Panel B presents the sample description by industry, and Panel C presents summary statistics for the variables used in the baseline analysis, including the mean and standard deviation. Panel B shows that the IT and Electronic sector has the highest average CEO IQ score (6.64), followed by CEOs in Health and Education (6.04) and Telecom and Media (6.02). It further shows that CEOs in the Construction and Shopping Goods sectors have the lowest average IQ score (4.57). In terms of observations, the Corporate Services, Industry Goods, and Construction sectors dominate, contributing more than 50% of the total sample. Panel C of Table 1 shows that the mean and median values for accruals (operating cash flows) are 0.049 and 0.046 (0.037 and 0.018), respectively. The average IQ score of CEOs is 5.33, and about 26.6% of CEOs have a university education. On average, firms have a size of 8.61, a leverage of 0.10, and an annual sales growth of 8.9%.

[Insert Table 1 about here]

Table 2 presents the Pearson correlation matrix for the key variables used in my analysis. Consistent with theory, accruals are negatively correlated with cash flows (Dechow, 1994). In addition, I observe a negative correlation between accruals and cash flows, and a further negative relationship between accruals and negative cash flows, albeit weaker than that between accruals and cash flows, which indicates the presence of conditional conservatism (despite the negative sign). The correlation matrix also suggests that CEOs with high IQs, years of service, and university education generate higher cash flows than accruals. Larger firms, and high-leverage firms are positively (negatively) correlated with accruals (cash flows).

[Insert Table 2 about here]

4. Empirical results

4.1 Baseline results

In Table 3, I report the results of the relationship between CEO IQ and accounting conservatism using equation (2). I estimate this model using Ordinary Least Squares (OLS). Column (1) shows the results of the association between CEO IQ and accounting conservatism without control variables. In column (2), I augment the regression model used in column (1) by adding CEO-level control variables. In column (3), I present the estimation results of my baseline model, including CEO- and firm-level control variables. In all three columns, the coefficients for *CEO_IQ*DCF* load positively and significantly at the 1% level, suggesting that CEOs with high IQ engage in more conservative financial reporting. These results lend credence to my hypothesis that precise prediction of negative economic events, better understanding of the contracting effect of credible financial information, and reduced heuristic bias among high-IQ CEOs can foster sound judgment in subjective situations, leading to more conservative accounting.

Regarding control variables, I observe that the coefficients are largely consistent with prior literature. For instance, CEO tenure and age are negative and significant, indicating that in private firms, younger managers are more likely to engage in conservative reporting, consistent with the career concerns and reputational incentives argument (Muttakin et al., 2019; Atwa et al., 2023). Further, I observe that consistent with prior studies (Ahmed, 2012; Ahmed and Duellman, 2007), the coefficients for size (α_{23}), leverage (α_{27}), and salesgrowth (α_{31}) are positive, suggesting that larger firms, highly leveraged firms, and firms experiencing higher growth rates exhibit greater accounting conservatism.

[Insert Table 3 about here]

4.2 Robustness checks

To test the robustness of the baseline results, I conduct a series of sensitivity tests. Specifically, I examine whether the baseline results are sensitive to the following: (1) an alternative measure of accounting conservatism; (2) alternative measures of CEO IQ; (3) alternative clustering; (4) alternative samples.

I start my analyses by gauging the sensitivity of the results to an alternative measure of accounting conservatism. Following Ahmed and Duellman (2013), I use the persistence of negative accruals (*Con_Accr*). The intuition of this measure is premised on the notion that in the presence of conditional conservatism, accruals become persistently negative. Thus, the more negative accruals persist, the more conservative a firm is (Ahmed and Duellman, 2013). I calculate *Con_Accr* as the average of three-year accruals multiplied by -1. I rerun equation (2), replacing the dependent variables with *Con_Accr* with *CEO_IQ* as explanatory variables, with the CEO- and firm-level controls (without the interactions). I report the results in Column 1 of Table 4. As shown, the coefficient estimate for *CEO_IQ* remains positive and statistically significant (0.002, p-value < 0.01), indicating that cognitive ability is associated with greater conservatism.

Next, I gauge the sensitivity of the baseline results to alternative measures of IQ. First, I use standardized IQ (*Stand_IQ*) scores (mean of 0 and standard deviation of 1) for CEOs. Second, I use an industry-adjusted measure, *IndAdjIQ,* calculated as the CEO IQ score minus the mean industry IQ score for a given year. I report this result in Columns (2) and (3) of Table 4. The results show that the coefficient estimates for these measures (*Stand_IQ*DCF* and *IndAdjIQ*DCF*) are positive and significant, in support of my hypothesis (H1a).

In addition, I run my baseline model using an alternative clustering method. First, I rerun the model, adjusting for two-way clustered standard errors at the firm and year levels (Petersen, 2009). I also cluster standard errors by industry to control for possible residual correlations across industries. Columns (4) and (5) of Table 4 present my findings on firm-year and industry clustering, respectively. I document a positive, statistically significant result for the key variable of interest (*CEO_IQ*DCF*), indicating greater conservative accounting.

To further validate my results, I consider alternative samples. First, I test the sensitivity of the results to the 2008 financial crisis. Prior studies indicate that firms tend to become more conservative in extreme conditions (Dai and Ngo, 2021; Ding et al., 2024). To achieve this, I exclude observations for 2008 and 2009 from the sample. The result, presented in Column (6) of Table 4, corroborates my empirical results, suggesting that the 2008 financial crisis does not significantly affect the relationship between CEO IQ and accounting conservatism. Second, I note from the descriptive statistics in Table 1 that the Corporate services, Industry goods, and Construction sectors contribute more than 50% of the final sample. To mitigate the plausibility that the empirical findings are driven by these industries, I sequentially drop them and rerun the baseline results. Columns (7)-(9) of Table 4 present the results. The results corroborate my empirical findings.

[Insert Table 4 about here]

4.3 Cross-sectional analyses

Next, to better understand the contextual variation of the impact of CEO cognitive ability on accounting conservatism, I conduct a series of cross-sectional analyses. Specifically, I investigate the role of the financial reporting regulatory environment and the firm's debt intensity.

4.3.1 The role of the financial reporting regulatory environment

First, I investigate how the financial reporting framework under which Swedish firms operate affects the relation between CEO IQ and accounting conservatism. Swedish private firms operate under different regulatory regimes that determine the degree of managerial discretion, the financial disclosure burden, and the level of regulatory oversight. Specifically, firms operating under the K3 accounting framework issued by The Swedish Accounting Standard Board (*Bokföringsnämnden*) are considered as larger private firms that meet two out of three of the following criteria for two consecutive years: (1) 50 employees, (2) SEK 40 million in total assets, and (3) SEK 80 million in sales. These firms are associated with higher financial reporting standards (BFNAR 2012:1), detailed disclosures, and stricter oversight[11].

Prior studies document that the mandatory adoption of principle-based accounting frameworks, such as IFRS, reduces conditional conservatism in European firms, as the significant discretionary powers granted by the standard make conservative practices, such as valuation models, fair value estimate procedures, and impairment testing, susceptible to managerial manipulation (André et al., 2015). In addition, in line with conservatism's role in contracting efficiency, previous research suggests that conservatism serves as an alternative

[11] K3 accounting framework is a principle-based accounting framework similar to IFRS in structure.

mechanism that mitigates agency conflicts between lenders and shareholders in settings characterized by weak governance and regulatory oversight (Chi et al., 2009; Xia and Zhu, 2009). Consistent with this substitution perspective of corporate governance and conservatism, it is expected that firms with a weaker monitoring environment may exhibit higher degree of conservative reporting for contracting purposes (Lara et al., 2016). Following these discussions, I argue that the K3 reporting environment presents a formalized, principled-based regime that encourages greater disclosures and stricter audit scrutiny. These institutionalized features should foster greater information transparency and mitigate agency conflicts of debt, hence induce lesser demand for conservatism.

To investigate the role of reporting environment, I partition the sample by accounting framework (i.e. *K3_firms vs Non-K3_firms*). Panel A of Table 5 reports this analysis. I find that the documented positive relationship between CEO IQ and accounting conservatism is concentrated in non-K3 firms. This is consistent with the contracting perspective that creditors in settings such as firms operating in non-K3 regimes face greater contracting frictions due to severe information and agency problems and therefore may demand greater accounting conservatism (Watts, 2003; Zhang, 2008; Francis and Martin, 2010). More importantly, the results suggest that high IQ CEOs can anticipate these contracting needs and report conservatively. In contrast, I find a negative and statistically insignificant result for K3 firms, suggesting that in such a thorough and disciplined regulatory environment, managerial cognitive ability is less likely to induce any effect on conservatism.

4.4.2 The role of debt intensity

Next, I examine the impact of a firm's debt intensity on the relation between CEO IQ and accounting conservatism. Prior studies suggest that in debt markets, accounting conservatism improves contracting efficiency by mitigating conflicts of interest between debtholders and shareholders (Watts, 2003; Haw et al., 2014). Consistent with this view, studies show that demand for accounting conservatism is higher when firms rely on debt financing (Haw et al., 2014). In line with this reasoning, I predict that the need for highly cognitive CEOs to supply greater conservative reporting will be greater in subsample firms that rely heavily on external debt.

To achieve this prediction, I first calculate each firm's debt ratio, calculated as long-term debt divided by total debt. I then partition the sample into two groups based on their debt intensity. Specifically, I construct *High_Debt* as a dummy variable that equals 1 if a firm's debt ratio exceeds the annual industry median and 0 otherwise. Firms with a debt ratio below the annual industry median constitute *Low_Debt.* Panel B of Table 5 reports this analysis. Consistent with my prediction, the documented positive association is amplified in subsample firms that rely greatly on external debt. Our results suggest that conservative reporting is crucial in enhancing contracting efficiency.

[Insert Table 5 about here]

4.4 Addressing potential endogeneity

I acknowledge that the documented positive relationship between CEO IQ and accounting conservatism could be susceptible to endogeneity concerns. For instance, there is the possibility of reverse causality, given that private firms that demand high financial reporting quality through conservative reporting may inadvertently hire CEOs with higher cognitive profiles, such as high analytical skills, during the interview process. Additionally, it is plausible that some omitted variables correlated with both CEO IQ and accounting conservatism could spuriously drive the observed relationship. To allay these concerns, I conduct three tests, namely: (1) Internal instrumental variables, (2) Propensity score matching and entropy balancing, and (3) Difference-in-differences (DID) around CEO turnovers.

In the First test, I strengthen the causal inference by estimating an internal instrumental variable technique developed by Lewbel (2012). This method differs from conventional instrumental variables, which rely on external instruments, in that it uses the heteroskedasticity of the error term in the first-stage regression model to generate internal instruments. This estimation approach is particularly important when theory provides little guidance for identifying valid external instruments (Lewbel, 2012), and has been widely applied in recent accounting and finance research to address endogeneity problems (Hasan et al., 2022; Chen et al., 2023; Ferdous et al., 2024). I present this result in Column 1 of Table #. [**explain results**]

Next, given the plausibility of systematic differences across sample firms, I conduct propensity score matching (PSM). Specifically, I first estimate the propensity that a firm has a high-IQ CEO using a logit model with all baseline control variables. I classify high-IQ CEOs as those with IQ scores 5 or above (treatment) and classify those with IQ scores below 5 as low-IQ CEOs (control)[12]. I then match firms with high-IQ CEOs to those with low-IQ CEOs based on propensity score using the nearest-neighbor matching method. To confirm the robustness of

[12] Five (5) represents the average IQ score on the Swedish military cognitive ability test, corresponding to an IQ score of about 100.

the matching, I run a *t-test* of the covariates for the matched (treatment vs. control) groups and find that the means of the covariates are insignificant, indicating no systematic differences between the two groups. I then re-run the baseline regression model using the matched samples. I present the results for the PSM samples in Column 2 of Table #. [**explain the result**].

A key limitation of the PSM method is the loss of observations due to imperfect matching. To address this concern, I re-estimate the baseline using an entropy-balanced sample (Hainmueller, 2012). Entropy balancing is a reweighting technique that constructs weights for the control group so that the covariate distribution properties (i.e., mean, variance, and skewness) match those of the treatment group. This construction ensures covariate balance without discarding observations. I report the results from the entropy-balanced sample in Column 3 of Table # [**explain result**].

Finally, to further lend credence to the causal inferences from my findings, I perform a difference-in-differences (DiD) analysis around CEO turnover to assess the impact of replacing a low-IQ CEO with a high-IQ CEO on conservative reporting. In this analysis, I define the treatment group as firms that have a high-IQ CEO replacing a low-IQ CEO (*LIQ2HIQ*). The control group comprises firms that have either a low-IQ CEO replacing a high-IQ CEO or replacing another low-IQ CEO. Due to limited sample size, I classify high-IQ CEO as those with an IQ score of 5 or above, and low-IQ CEOs as those with an IQ score below 5. In my definition for CEO turnover, I follow (Lin et al., 2020; Chen et al., 2023) and include all CEO turnover events in the analysis[13]. I define the post-turnover period (*Post_turn*) as an indicator variable that equals 1 for the first 3 years following a CEO's turnover and 0 for the three years before the turnover. The variable of interest, *Post_turn*LIQ2HIQ,* captures the treatment effect of replacing a low-IQ CEO with a high-IQ CEO on accounting conservatism. I report the results of this analysis in Column 4 of Table #. [**explain result**].

[Regressions for endogeneity to be done later]

4.5 Additional analyses

[To be done later]

5. Conclusion

[13] Due to the small sample of exogenous turnover events, I consider all turnover events.

In this study, I investigate the impact of CEO cognitive ability on accounting conservatism in Swedish private firms. Prior studies suggest that individuals with high cognitive ability are adept at processing information, forecasting, and making sound judgments in subjective contexts (Grinblatt et al., 2012; Grinblatt et al., 2016; Kallunki et al., 2019). Using Swedish conscription data, I find robust evidence of a positive relation between CEO cognitve ability and accounting conservatism. The results of cross-sectional analyses show that the documented positive effect is amplified in firms operating under the Swedish K2/K1 accounting regulation framework and in those that rely more on external debt financing.

My study adds to the accounting conservatism literature by showing that CEOs' pre-labor-market intellectual endowments (cognitive ability) shape financial reporting choices in private firms. The research setting, which focuses on Swedish male citizens, also sheds light on the role of cognitive ability in offsetting behavioral biases such as overconfidence typically associated with the male gender, and how this influences conservative reporting. Furthermore, the study adds to the literature on the association between CEO traits and financial reporting. Overall, the findings suggest that CEOs' intellectual capacity wields important stewardship and contracting implications in private firm settings.

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Table 1: Sample Selection, descriptive statistics and summary statistics

Panel A: Sample selection

	Sample attrition	Firm-year obs
Firm-year observations of private firms with financial data		3,658,738
Excluding observations for financial and real estate firms	-600,319	3,058,419
Excluding missing observations for accruals	-41,017	3,017,402
Excluding missing observations for controls	-826,035	2,191,367
Excluding missing observations for IQ	-1,929,487	261,880
Excluding observations for female IQ data	-81,514	180,366
Excluding inactive firms (Firms with total assets and sales less than 500,000 SEK and 10000 SEK, respectively)	-28,235	152,131
Final sample		**152,131**

Panel B: Sample distribution by industry

	Obs.	Percentage	Average IQ	Average accruals
Energy & Environment	1,248	0.82	4.805	0.066
Materials	3,631	2.39	4.791	0.081
Industry goods	28,449	18.7	5.014	0.049
Construction industry	26,368	17.33	4.569	0.051
Shopping goods	25,314	16.64	5.029	0.044
Convenience goods	3,196	3.03	4.807	0.056
Health & Education	3,309	2.69	6.04	0.05
IT & Electronics	15,308	8.76	6.644	0.039
Telecom & Media	2,342	1.64	6.021	0.047
Corporate services	39,555	25.16	5.714	0.053
Other	3,411	2.25	5.589	0.047
Total/Average	**152,131**	**100**	**5.325**	**0.493**

Panel C: Summary statistics

Variables	Obs.	Mean	S.D	p25	p50	p75
Accruals	152,131	0.049	0.179	-0.033	0.046	0.136
D	152,131	0.451	0.498	0.000	0.000	1.000
CF	152,131	0.037	0.233	-0.081	0.018	0.14
DCF	152,131	-0.067	0.256	-0.008	0.000	0.000
CEO_IQ	152,131	5.331	1.917	4.000	5.000	7.000
CEO_age	152,131	48.872	8.773	42.000	49.000	55.000
CEO_tenure	152,131	5.762	3.988	1.000	4.000	8.000
CEO_edu	152,131	0.266	0.442	0.000	0.000	1.000
Size	152,131	8.608	1.458	7.503	8.421	9.457
Lev	152,131	0.100	0.170	0.000	0.000	0.147
Salesgr	152,131	0.089	0.348	-0.073	0.040	0.178

Table 2: Pearson correlation matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) *Accruals*	1.000										
(2) *D*	0.504*	1.000									
(3) *CF*	-0.680*	-0.665*	1.000								
(4) *DCF*	-0.533*	-0.554*	0.728*	1.000							
(5) *CEO_IQ*	-0.039*	-0.074*	0.071*	-0.008*	1.000						
(6) *CEO_age*	-0.034*	-0.013*	0.004*	0.072*	-0.007*	1.000					
(7) *CEO_tenure*	-0.031*	-0.033*	0.014*	0.109*	-0.015*	0.364*	1.000				
(8) *CEO_edu*	-0.037*	-0.061*	0.065*	-0.021*	0.277*	-0.050*	-0.076*	1.000			
(9) *Size*	0.011*	0.027*	-0.047*	0.039*	-0.064*	0.092*	0.062*	0.106*	1.000		
(10) *Lev*	0.125*	0.287*	-0.259*	-0.171*	-0.145*	-0.015*	-0.004	-0.139*	0.063*	1.000	
(11) *Salesgr*	0.003	-0.094*	0.139*	0.009*	0.004*	-0.125*	-0.176*	0.024*	0.012*	-0.013*	1.000

The table presents the correlation coefficients for the variables used in the regression analyses. All variables are defined in the Appendix. Superscripts * indicate statistical significance at the 5% level.

Table 3: Impact of CEO cognitive ability and accounting conservatism

Dep. Variable =	*Accruals*		
	(1)	(2)	(3)
D	0.011***	0.046***	0.051***
	(3.566)	(6.633)	(5.301)
CF	-0.524***	-0.502***	-0.547***
	(-36.046)	(-17.024)	(-12.559)
DCF	-0.208***	0.044	0.136*
	(-8.444)	(0.848)	(1.886)
CEO_IQ	-0.000	-0.000	-0.001**
	(-1.283)	(-0.905)	(-2.021)
*CEO_IQ*D*	0.003***	0.002***	0.002***
	(5.279)	(4.334)	(4.142)
*CEO_IQ*CF*	0.011***	0.008***	0.008***
	(4.290)	(3.064)	(2.984)
CEO_IQ*DCF	**0.020***	**0.015***	**0.015***
	(4.569)	**(3.439)**	**(3.319)**
CEO_age		-0.000***	-0.001***
		(-5.217)	(-5.534)
*CEO_age*D*		-0.000***	-0.000**
		(-3.327)	(-2.469)
*CEO_age*CF*		-0.000	-0.000
		(-0.846)	(-0.324)
*CEO_age*DCF*		-0.002**	-0.003***
		(-2.378)	(-3.010)
CEO_tenure		-0.001***	-0.001***
		(-2.802)	(-3.115)
*CEO_tenure*D*		-0.003***	-0.003***
		(-9.978)	(-8.415)
*CEO_tenure*CF*		0.000	0.002*
		(0.045)	(1.682)
*CEO_tenure*DCF*		-0.031***	-0.034***
		(-12.001)	(-13.507)
CEO_edu		-0.000	-0.002
		(-0.092)	(-1.367)
*CEO_edu*D*		0.002	-0.001
		(0.675)	(-0.421)
*CEO_edu*CF*		0.036***	0.037***
		(3.161)	(3.260)
*CEO_edu*DCF*		0.033	0.022
		(1.560)	(1.019)
Size			0.001
			(1.502)
*Size*D*			-0.001
			(-0.949)
*Size*CF*			-0.001
			(-0.153)
*Size*DCF*			0.002
			(0.357)
Lev			-0.064***
			(-12.267)
*Lev*D*			-0.047***
			(-6.912)
*Lev*CF*			-0.746***
			(-10.647)

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Table 3 (continued)

*Lev*DCF*			0.430***
			(5.377)
Salesgr			0.026***
			(10.518)
*Salesgr*D*			0.065***
			(15.543)
*Salesgr*CF*			0.022
			(0.683)
*Salegr*DCF*			0.061***
			(4.650)
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Constant	0.051***	0.078***	0.083***
	(23.857)	(16.375)	(12.287)
Observations	152,131	152,131	152,131
Adjusted R-squared	0.503	0.507	0.524

This table presents the results on the impact of CEO cognitive ability on accounting conservatism. The regression model includes constant, industry, and year fixed effects. The key variable of interest, *CEO_IQ*DCF*, is an interaction between incremental timeliness of accruals when operating cash flows are negative (*DCF*) and CEO IQ. A positive coefficient indicates high conservatism. Robust standard errors in parentheses are clustered at the firm level. Superscripts *; **, *** indicate significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in the Appendix.

Table 4: Robustness checks

Dep. Variables =	***Con_Accr***	***Accruals***							
	Alternative conservatism	*Alternative IQ measures*		*Cluster SE at firm-year*	*Cluster SE at industry*	*Exclude financial crisis period*	*Exclude corporate services*	*Exclude corporate service &industry goods*	*Exclude corporate service, industry goods&Construction*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
D		0.060***	0.064***	0.064***	0.048***	0.048***	0.049***	0.050***	0.038**
		(6.714)	(7.181)	(7.181)	(5.277)	(3.395)	(4.671)	(4.648)	(2.471)
CF		-0.512***	-0.500***	-0.500***	-0.554***	-0.554***	-0.527***	-0.511***	-0.508***
		(-12.624)	(-12.340)	(-12.340)	(-13.952)	(-10.244)	(-11.188)	(-9.899)	(-6.996)
DCF		0.199***	0.214***	0.214***	0.142**	0.142**	0.131*	0.155*	0.079
		(2.997)	(3.240)	(3.240)	(2.106)	(2.579)	(1.671)	(1.849)	(0.679)
CEO_IQ	**0.002*** **			-0.001***	-0.001	-0.001	-0.001***	-0.001**	-0.001
	(8.003)			(-2.749)	(-1.436)	(-1.479)	(-3.291)	(-2.398)	(-1.322)
*CEO_IQ*D*				0.003***	0.003**	0.002***	0.003***	0.003***	0.003***
				(4.697)	(2.866)	(3.722)	(4.618)	(3.977)	(2.800)
*CEO_IQ*CF*				0.009***	0.009**	0.007**	0.010***	0.010***	0.005
				(3.832)	(2.707)	(2.447)	(3.274)	(2.885)	(1.144)
CEO_IQ*DCF				**0.013*** **	**0.013** **	**0.016*** **	**0.015*** **	**0.018*** **	**0.021*** **
				(3.077)	**(2.990)**	**(3.244)**	**(2.860)**	**(2.970)**	**(2.874)**
Stand_IQ		-0.003***							
		(-3.059)							
*Stand_IQ*D*		0.008***							
		(6.210)							
*Stand_IQ*CF*		0.022***							
		(3.881)							
Stand_IQ*DCF		**0.040*** **							
		(3.933)							
IndAdjIQ			-0.000						
			(-1.023)						

(*continue on next page*)

Table 4 (continued)

*IndAdjIQ*D*			0.002***						
			(3.813)						
*IndAdjIQ*CF*			0.001						
			(0.238)						
IndAdjIQ*DCF			**0.018*** **						
			(3.310)						
Baseline controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-0.071***	0.080***	0.079***	0.085***	0.085***	0.089***	0.075***	0.081***	0.090***
	(-17.106)	(12.568)	(12.373)	(13.624)	(7.754)	(11.992)	(9.841)	(8.898)	(8.121)
Observations	152,131	152,131	152,131	152,131	152,131	127,255	112,576	84,127	57,759
Adjusted R-squared	0.039	0.525	0.524	0.524	0.524	0.515	0.538	0.526	0.490

This table presents the results of the robustness checks. The regression model includes constant, industry, and year fixed effects. The key variables of interest are highlighted. Robust standard errors in parentheses are clustered at firm level except for columns (4) and (5). Superscripts *; **, *** indicate significance at the 10%, 5%, and 1% levels, respectively. All variables are defined in the Appendix.

. **Table 5: Cross-sectional analyses**

Panel A: The role of financial reporting regulatory framework		
Dep. variable	***Accruals***	
	K3_Firms	*Non-K3_Firms*
	(1)	(2)
D	0.043	0.025**
	(0.995)	(2.156)
CF	-0.417***	-0.649***
	(-2.658)	(-13.014)
DCF	0.375	0.048
	(1.402)	(0.581)
CEO_IQ	-0.000	-0.001**
	(-0.209)	(-2.001)
*CEO_IQ*D*	-0.002	0.003***
	(-1.241)	(4.128)
*CEO_IQ*CF*	0.009	0.008***
	(0.973)	(2.777)
CEO_IQ*DCF	**-0.018**	**0.016*** **
	(-1.195)	**(3.397)**
Baseline controls	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Constant	0.166***	0.073***
	(6.489)	(9.149)
Observations	11,204	140,927
Adjusted R-squared	0.637	0.520

Panel B: The role of debt intensity		
Dep. Variable =	***Accruals***	
	High_Debt	*Low_Debt*
	(1)	(2)
D	0.054***	0.044**
	(4.865)	(2.377)
CF	-0.554***	-0.487***
	(-11.749)	(-4.755)
DCF	0.115	0.138
	(1.394)	(0.931)
CEO_IQ	-0.001*	-0.001
	(-1.941)	(-1.146)
*CEO_IQ*D*	0.002***	0.002**
	(3.529)	(2.140)
*CEO_IQ*CF*	0.008***	0.010
	(2.660)	(1.288)
CEO_IQ*DCF	**0.013** **	**0.016**
	(2.511)	**(1.636)**
Baseline controls	Yes	Yes
Industry FE	Yes	Yes
Year FE	Yes	Yes
Constant	0.084***	0.077***
	(10.935)	(5.833)
Observations	120,091	32,040
Adjusted R-squared	0.507	0.585

Appendix: Variable Definitions and Data Sources

Conservatism Variables:

Accruals: Change in operating non-cash assets minus changes in operating non-interest-bearing liabilities minus depreciation and amortization for the year, scaled by the lagged total assets. *Source:* Serrano

D: An indicator variable equal to 1 if operating cash flow for the year is negative and zero, otherwise. *Source:* Serrano

CF: Net profit minus accruals scaled by the lagged value of total assets. *Source:* Serrano

Cons_Accr: Accruals scaled by the lagged value of total assets, averaged over the last three years, multiplied by -1. *Source:* Serrano

CEO IQ variables:

CEO_IQ: The cognitive ability scores of the CEO. A composite score of arithmethic, verbal, spatial, and logical reasoning skills scored on a Stanine scale ranging from 1 to 9. *Source:* Swedish Armed Forces

Stand_IQ: Standardized values of CEOs' IQ scores. *Source:* Swedish Armed Forces

IndAdjIQ: CEO IQ scores adjusted for the industry mean IQ score for a given year. *Source:* Authors' calculation

CEO-level controls:

CEO_age: The age of a CEO for a given year. *Source:* Bolagsverket

*CEO_tenure:*The number of years since the CEO first assumed the CEO position. *Source:* Bolagsverket

CEO_edu: An indicator variable equal to 1 if a CEO has university education, and 0 otherwise. *Source:* Bolagsverket

Firm-level controls:

Size: The natural logarithm of total assets. *Source:* Serrano

Lev: The sum of short- and long-term debts scaled by total assets. *Source:* Serrano

Salesgr: The change in sales from year *t-1* to year *t* scaled by sales in year *t-1*. *Source:* Serrano

High_Debt: A dummy variable that takes the value of 1 if firms long-term debt ratio exceeds the annual industry median, and 0 otherwise. *Source:* Serrano

Low_Debt: A dummy variable that takes the value of 1 if firms long-term debt ratio is less than the annual industry median, and 0 otherwise. *Source:* Serrano

K3_firms: Firms that meet two out of three of the following criteria in a given year: (1) 50 employees, (2) SEK 40 million in total assets, and (3) SEK 80 million in sales. *Source:* Serrano

Non-K3_firms: Firms that do not meet the criteria. *Source:* Serrano