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Full length article

Stakeholder demand for accounting quality and economic usefulness of accounting in U.S. private firms ☆

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ABSTRACT

For some privately-held firms, the costs of providing high-quality accrual-based financial statements may outweigh the benefits of accommodating the demands of their stakeholders who may rely more on cash flows or have direct access to management. For other private firms, greater stakeholder demand for their financial information necessitates them providing higher-quality accounting. Using a large sample of U.S. private firms, we first confirm that accrual quality in private firms is associated with the ability of accruals to predict future cash flows. Next, we predict and find that accrual quality increases with the demand for monitoring by equity investors, lenders, and suppliers. Overall, our evidence suggests that accrual quality of private U.S. firms is useful, has economic consequences, and varies predictably with certain firm characteristics.

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1. Introduction

The U.S. Private Company Council (PCC) recently issued guidance on its private company accounting project, *Private Company Decision-Making Framework* (PCC, 2013), which suggests that not all private firms need to prepare financial statements under the same set of U.S. GAAP as do public firms and that exceptions and alternatives should be allowed. To determine which exceptions to certain aspects of accrual-based accounting should be allowed, the PCC intends to consider the value relevance of the information to users of private firm financial statements relative to the firm's cost of producing it. Furthermore, the Decision-Making Framework explicitly considers that the tradeoff between the value relevance and cost of certain accrual-based accounting estimates can vary across private firms. To provide information relevant to these standard setting deliberations, the purposes of our study are to understand (1) whether accrual quality in private firms is "useful" and (2) whether accrual quality varies across private firm characteristics. For the first purpose, we provide evidence of the effect of accrual quality on the ability of accruals to forecast future cash flows. For the second purpose, we examine whether accrual quality varies predictably with demand from a variety of stakeholders (equity investors, debt investors, and suppliers).

Private (or nonpublic) firms make up a significant portion of the economic activity in the U.S. and nearly all other countries, yet prior research focuses primarily on public firms. To illustrate the relative contribution of private firms to

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international economic activity, Berzins et al. (2008) show that, in the aggregate, nonlisted firms have about four times more employees than listed firms, three times higher revenues, and twice the amount of assets, and that these statistics are representative for most countries in the world. In fact, more than 99% of limited liability companies are not listed on a stock exchange (e.g., Pacter, 2004; Nagar et al., 2011). In the U.S., there are about 8 million private firms with paid employees, representing one-half of the nation's GDP.[1,2]

Recently there has been increased emphasis on private firms' accounting practices (Bradshaw et al., 2014). In 2007, the Financial Accounting Standards Board (FASB) established the Private Company Financial Reporting Committee (PCFRC) with the goal of improving the overall financial reporting environment. The PCFRC and other groups contended that the complex standards currently being set by the FASB had become too focused on public companies, had little relevance to smaller private companies, and should be modified by a separate standards-setting board. In 2010, the joint "Blue-Ribbon" Panel (BRP), established by the Financial Accounting Foundation (FAF) and the American Institute of Certified Public Accountants (AICPA), agreed to a separate reporting model for private companies. The BRP recommended an independent standard setting body for private firms, but the FAF in October 2011 suggested that the FASB retain oversight. The result of BRP's recommendations was the establishment of the PCC in 2012.[3]

The key insight from the discussion above is that there is a growing trend to reduce the cost and complexity of private companies' financial reporting. The implication is that the unique characteristics of private companies reduce the demand for financial reporting and therefore do not justify the preparation and auditing costs of providing complex GAAP-based financial statements, relative to public firms (Durak, 2013; Murphy, 2015). As a result, many accounting standards updates have been passed in recent years that allow exceptions or alternatives for private company reporting (e.g., subsequent measurement of goodwill).

The lower demand for (costly) accrual-based financial reporting of private firms often is attributed to these firms lack of the typical agency problems observed in public firms. For example, private firms have capital providers that often take a direct role in helping to manage the company (Chen et al., 2011), or often include firms with a single manager-owner. Private companies may also have personal ties with lenders, who often are local financial institutions (Vera and Onji, 2010; Cole and Wolken, 1995). Because capital providers of private firms often have direct access to inside information and continuous contact with management, they often rely less on formal communication through published accrual-based financial statements (Berger and Udell, 1998). As stated in the PCC's Basis for Conclusion to the *Private Company Decision-Making Framework*, "Many preparers of private company financial statements said that the preparation efforts and audit or review costs of complying with some accounting guidance that does not affect reported cash amounts or liquidity often are not justified considering the limited benefits of reporting that information to users" (PCC, 2013, paragraph BC13). Instead, private firms' financial reports could more likely reflect other objectives such as tax reporting, dividend policy, or insurance requirements (Ball and Shivakumar, 2005; Burgstahler et al., 2006).

One aim of the PCC's *Private Company Decision-Making Framework* is to recognize "differentiating features" of private firms (e.g., ownership structure and type of external financing) that can be used "to identify opportunities to reduce the complexity and costs of preparing financial statements in accordance with U.S. GAAP" (PCC, 2013, paragraph 8). The costs allude to both direct costs of preparing the statements as well as indirect information processing and other proprietary costs (ICAEW, 2015, page 4). We identify the characteristics of private firms that are associated with higher quality accruals. Those firms that face a higher demand for accrual-based financial statements are more likely to show evidence of higher quality accruals. Our sample period ends before the introduction of new regulations for private firms, further highlighting the importance of demand factors (relative to regulation) that would have an impact on accounting practices among private firms.

We use accounting data from the Sageworks database for a sample of private firms over the period 2002–2009.[4] We measure accrual quality using three widely used metrics: (1) abnormal total accruals from Kothari et al. (2005) performance-matched model; (2) abnormal working capital accruals from Dechow and Dichev's (2002) cash flow-based model, controlling for sales growth and property, plant, and equipment (McNichols, 2002); (3) abnormal accrued revenues from McNichols and Stubben's (2008) model. We investigate the impact of demand from both equity stakeholders (i.e., equity investors) and non-equity stakeholders (i.e., lenders and suppliers). Based on multivariate analyses, which contain controls for standard firm characteristics found to explain variations in accrual quality, our evidence suggests that accrual quality is strongly positively associated with demand for monitoring from equity investors (ownership dispersion), relatively powerful debt investors (senior debt), and suppliers (inventory intensity).

Although our primary focus is on how accrual estimates are shaped by demand factors, we also assess the economic consequences of accrual quality for these firms. If accruals are less useful for private firms, we would not expect accrual quality to have economic consequences. However, there exist strong arguments that accruals "matter" for private firms (see

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[1] http://www.aicpa.org/PRESS/PRESSRELEASES/2010/Pages/CouncilAdoptsResolutionSupportingBRP.aspx

[2] Another interesting aspect of the U.S. private firm market is that it is less regulated than in many other jurisdictions, (for example in many European countries) where private firms have to follow the same accounting (and legal) regulations as public firms (subject to firm size thresholds). In this respect, the U.S. has been an outlier in the worldwide regulatory landscape (Hope et al., 2012).

[3] Private firms and their financial reporting practices have also received increased attention from accounting standard setters elsewhere in the world. For example, the International Accounting Standards Board has developed a separate set of financial reporting requirements for small and medium enterprises (SMEs). In Canada, private firms must choose between using either International Financial Reporting Standards or Private Enterprise GAAP beginning in 2011.

[4] 2009 is the last year with firm-level data made available by Sageworks. Since then, Sageworks has ceased making firm-level data available. However, Sageworks continues to make industry-level data commercially available.

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Section 4.2. for further discussion). Our evidence supports the idea that accruals are indeed important for U.S. private firms. Specifically, we find that accrual quality positively affects the ability of accruals to forecast future cash flows. These tests also help us address questions regarding the construct validity of our accrual-quality measures in a private firm setting. Our results are not tautological. In our view, the tension comes from the fact that despite the possibility of accessing internal (and perhaps even non-accounting) information, these external stakeholders find accounting reports useful and that the quality of these reports varies predictably with stakeholder demand.

We add new evidence to the literature by providing a within-private firm analysis of firm characteristics that contribute to high-quality financial statements. Accounting estimates for these firms should be relatively less affected by regulation than for publicly listed and regulated firms. Given that private firms have important stakeholders beyond shareholders, we assess the importance of both lenders and suppliers. Several recent studies compare the accrual quality of private firms versus public firms, but there has been comparatively limited research examining *variation within private firms* in the U.S.[5] This is surprising, given both the economic importance of private firms and the substantial diversity among them along many dimensions.

We also contribute to the debate on whether accounting is important for private firms by documenting significant effects for cash-flow predictability. Our focus on cash-flow prediction is directly motivated by the practitioner literature. For example, in his comment letter to FASB on the accounting and reporting standards for non-public companies, James Catty of the International Association of Consultants, Valuators, and Analysts, wrote that "We suggest the emphasis in financial statements for private companies should be on the entity's cash-generation capability" (Cheney, 2012, page 13).

Our results are also directly relevant to regulators and standard setters. The FASB and PCC are in the process of identifying alternatives and exceptions to U.S. GAAP for private companies.[6] A major initiative of the PCC has been to gather feedback from constituents as to which private firms should be allowed these alternatives and exceptions. Making these decisions requires an understanding of the needs of users of private company financial statements and the ability of firms to supply costly accounting information (i.e., the typical cost-benefit tradeoff in financial reporting). The PCC's decision-making framework identifies some specific firm characteristics that likely differentiate private firms along these lines, but it also acknowledges that others could exist. We provide empirical support to some of those factors identified in the framework and also explore new ones.

2. Hypotheses development and research design

As discussed in Section 1, relatively little is known about financial reporting by private firms in the U.S. despite their economic importance and likely differences from publicly listed and regulated companies. Accordingly, in Section 2.1 we provide a literature review of the limited domestic and international private company research.

2.1. Literature review

Several studies compare the accrual quality of private and public firms. The tension in these studies is that the "demand" hypothesis and the "opportunistic behavior" hypothesis lead to opposite predictions. That is, most prior research argues that there is greater demand for quality financial reporting among publicly traded firms due to the more dispersed ownership in such firms. As a result, public firms are predicted to have higher accrual quality. In contrast, public firms also face greater capital-market pressures (e.g., to meet or beat analysts' forecasts or to report an increase in earnings) and tend to have equity-based compensation packages, resulting in a greater incentive to manipulate reported earnings, therefore leading to lower accrual quality.

Whereas some studies using either data from specialized industries (e.g., Beatty and Harris, 1998, and Beatty et al., 2002) or very small samples (Penno and Simon, 1986) report that private firms have higher accrual quality than public firms, studies with large samples of public and private firms and that span a number of different industries over a relatively long period of time conclude that public firms have higher accrual quality.[7] Specifically, Ball and Shivakumar (2005) use a large sample of U.K. firms and find that public firms exhibit a higher tendency for timely loss recognition (their proxy for accrual quality). Similarly, Peek et al. (2010) examine data from 13 European countries during 1993–2000 and show that public firms exhibit greater conditional conservatism, which they attribute to public firms' creditors relying more on publicly reported financials. In the banking industry context, Nichols et al. (2009) also report that U.S. public banks exhibit greater conditional conservatism than their private counterparts. Burgstahler et al. (2006) use broader measures of accrual quality for a pan-European data set and demonstrate that public firms do better in terms of earnings quality. Hope et al. (2013) also employ several measures of earnings quality and show that U.S. public firms dominate in the quality of accruals-based accounting estimates. Other studies that document higher FRQ of publicly listed firms include Goncharov and Zimmerman (2006) in Russia, and Liu and Skerratt (2015) in the U.K. The overall conclusion drawn in this literature is that FRQ is higher for public companies (i.e., the demand effect dominates the opportunistic behavior effect). The finding of lower demand for financial reporting for private companies brings into question whether and how FRQ will vary within private firms. In our hypotheses below, our primary focus is on demand from various stakeholders.

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[5] Limitations on archival data have also constrained researchers' ability to study private firms in the U.S.

[6] In recent years, the FASB has issued many new accounting rules that simplify the accounting for private firms (e.g., subsequent accounting for goodwill, simplified hedge accounting, and alternative variable interest entity consolidation guidelines).

[7] For example, Beatty et al. (2002) compare 707 public banks and 1160 private banks.

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The literature on variation *within* private firms examines primarily the role of auditing in private firms. For example, employing a sample of 2035 U.S. private firms with data from the National Survey of Small Business Finances, Allee and Yohn (2009) find that audited firms have easier access to credit and obtain financing at lower cost (see also Minnis 2011). Similarly, Hope et al. (2011) show across 68 countries that private firms with audited financials face lower financing costs and constraints. A recent study by Kausar et al. (2016) shows that voluntary choice of an audit by private firms conveys incremental information about the firm's type to external capital providers. Clatworthy and Peel (2013) find that audited U. K. accounts of private firms are less likely to contain accounting errors. Other studies on auditing in a private-firm setting include Carey et al. (2000), Blackwell et al. (1998), Allee and Yohn (2009), Hope and Langli (2010), Lennox and Pittman (2011), Chen et al. (2011), Lennox and Pittman (2011), Dedman and Kausar (2012), Karjalainen (2011), and Hope et al. (2012). We control for auditing in our empirical analyses.

Other research on variation in FRQ within private firms has been conducted nearly exclusively in a non-U.S context. Bigus et al. (2016) examine the effect of organizational legal form on earnings quality of German private firms. They report that unincorporated firms have a lower incentive to use financial reporting as a means of maintaining their relationship with the lenders compared to their incorporated counterparts. This result is attributed to the fact that lenders of unincorporated firms have an additional layer of security via recourse to owner's assets. Liu and Skerratt (2015) use income smoothing as an inverse proxy for earnings quality and offer the surprising finding that small and micro-sized private firms show higher FRQ than do large private firms. They offer no rationale for this result.

In the context of debt financing, Gassen and Fuelbier (2015) show that firms with higher debt have greater income smoothing, and this relation is stronger in European countries with higher bankruptcy and contract enforcement costs. The results are consistent with creditor incentives affecting FRQ. In the Belgian context, Van Caneghem and Van Campenhout (2012) and Vander Bauwhede et al. (2015) report accounting quality reduces borrowing costs. Chi et al. (2013) exploit an interesting institutional change, the voluntary filing of financial statements by Taiwanese private companies in 2001. Private companies that continued to file their financial statements voluntarily were the ones that exhibited superior ex ante FRQ and corporate governance.[8]

In the U.S., the PCC recognizes that variation among private firms could affect the need for FRQ. In addition, factors that affect accounting in public firms may not affect accounting in private firms in the same way. The PCC's decision-making framework (PCC, 2013) specifically identifies five factors that are expected to explain "how the cost-benefit considerations of financial reporting may vary." These five factors include: (I) number of primary users and their access to management, (II) investment strategies of primary users, (III) ownership and capital structure, (IV) accounting resources, and (V) learning about new financial reporting guidance. In the following section, we exploit variation in private firm characteristics to make predictions on the demand for FRQ. As we explain above and in additional detail below, the inability to generalize the results of public firms or private firms in non-U.S. settings necessitates empirical evidence.

2.2. Hypotheses

2.2.1. Equity investor demand

Separation of management and ownership induces agency costs to the extent that managers' actions are not in the best interest of owners (e.g., managers use the company's resources for personal consumption or they make suboptimal decisions). Because managers understand that their actions are not perfectly observable by the owner (i.e., information asymmetry), managers have the ability to hide unfavorable performance by manipulating reported performance. However, to the extent that owners take actions to directly observe (or monitor) the activities of the manager, any manipulative reporting would be evident, limiting the manager's opportunities for opportunistic reporting behavior.

Demand-side arguments suggest that separated ownership may positively affect private firms' accrual quality. A controlling shareholder may have the ability to extract resources from the firm for personal consumption. In the context of private companies, Hope et al. (2012) argue that major shareholders are often family members of the founder/CEO. These controlling shareholders may attempt to hide these activities from other stakeholders (e.g., minority shareholders and creditors) by manipulating reported performance. Such activities would lead to a demand for higher quality accounting estimates from dispersed minority investors (Morck et al., 1988; see also Hope, 2013 for a detailed literature review of the role of large shareholders in firm financial reporting). Accordingly, we predict a positive relation between ownership dispersion and accrual quality. More generally, the more dispersed the ownership, the less likely the owners are to obtain information directly from management (or to be represented in management positions), suggesting that financial reporting information is key information for monitoring performance and management activity. Again, this line of argument suggests a positive relation between ownership dispersion and accrual quality.

The Sageworks database does not provide ownership data per se for our sample of private firms. It does, however, provide information on private firms' legal organizational form. We test for the impact of shareholder demand related to ownership dispersion on accrual quality by focusing on organizational form. Specifically, we compare C corporations (*C-Corp*) with other

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[8] A related stream of literature documents the effect of tax-related incentives on financial reporting behavior by private firms in Europe (e.g., Garrod et al., 2008; Kosi and Valentincic 2013, and Szczensy and Valentincic, 2013). Other studies have examined the impact of family ownership. For example, Prencipe et al. (2014) suggest that family ownership is generally found to be associated with higher FRQ. However, we do not delve into this literature in detail as family firms could include both listed and privately held entities.

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organizational forms (i.e., sole proprietorships or LLCs, partnerships or LLPs, and S corporations). The PCC explicitly discusses the role of C corporations in their discussion of the relative costs and benefits of accounting information in private firms. C corporations are more likely to be managed by non-owners and are allowed to have an unlimited number of shareholders, increasing the need for managers to communicate through financial information. Providing additional support for our use of organizational form as a proxy for ownership concentration, Ang et al. (2000) find that among private firms, agency costs increase as firms move from simple ownership structures, such as being owned by a single individual, to complicated ownership structures, such as being owned by multiple individuals. Accordingly, our first hypothesis is:

H1: Accrual quality relates positively to being organized as a C corporation (equity investor demand for monitoring).

Arguments also exist to support a negative relation (i.e., we are not testing for a mechanical relation). That is, owners are willing to incur monitoring costs only to the extent that the benefits outweigh the costs. As Shleifer and Vishny (1986) discuss, the benefits of monitoring by any individual owner are proportional to that owner's percentage of shares owned. As the percentage of ownership by an individual owner increases (i.e., dispersion decreases), the more willing the individual owner is to incur necessary monitoring costs. When ownership is widely dispersed, the benefit to any individual owner from incurring costly monitoring activities is minimal. If these arguments dominate the demand arguments, then when ownership dispersion is high, managers' activities are less likely to be closely monitored and therefore manipulation of reported performance is more likely to occur.

2.2.2. Debt investor demand

In addition to investigating the effect of monitoring by shareholders, we also consider the role of debtholders. Prior research has examined the link between accrual quality and price- and non-price debt contractual terms for public firms (e.g., Francis et al., 2005; Bharath et al., 2008). Supporting the notion that better quality accounting estimates reduce information risk faced by lenders in forecasting future operating cash flows, Bharath et al. (2008) find that accrual quality measures not only are associated with lower loan spreads but also lead to advantageous non-price terms such as maturity and collateral. In other words, lenders are likely to demand high quality accounting reports from borrowers to reduce their information risk (and the borrowers would be willing to supply such reports to obtain attractive debt contractual terms).

Lenders' demand for high-quality accounting information may also stem from equally important contracting efficiency reasons. Lenders often rely upon covenants to mitigate the conflicts of interest between equity holders and managers by preventing excessively risky activities, limiting cash-flow diversions to equity holders, and preserving the relative priority of debtholders' claims (e.g., Jensen and Meckling, 1976; Myers, 1977; Smith and Warner, 1979; Aghion and Bolton, 1992; Haugen and Senbet, 1988). These restrictions imposed by bank lenders often include "maintenance" covenants, requiring the borrower to comply with financial ratios on an ongoing basis. More often than not, these financial ratios are based on GAAP compliant accounting numbers. As argued in Christensen et al. (2016), the role of accounting quality in enhancing debt-contracting efficiency is related to the ability of accounting-based covenants to appropriately allocate state-contingent control rights. Low quality accounting metrics that do not correlate sufficiently positively with the underlying state may be an indication of opportunistic behavior by managers to circumvent covenant violation.[9] Note that these arguments are not predicated on the stock listing status of the borrower and apply equally to publicly- and privately-held firms. In fact, Niskanen and Niskanen (2004) document that the inclusion of covenants is not infrequent even in loans to very small firms. Accordingly, we argue that lenders demand high-quality accruals to enhance debt-contracting efficiency.

Relative to public firms, debt financing is especially important in private firms (Brav, 2009), and demand from suppliers of debt financing could be a primary driver of variations in accrual quality.[10] We hypothesize that firms obtaining debt financing will signal credible financial information to lower their cost of capital. As a result, these firms are expected to provide higher quality financial reporting. In addition, private firms with existing debt financing may face ongoing obligations to produce high quality financial information due to the existence of financial covenants. As a result, these firms are also expected to provide higher quality financial statements.

Note that creditors can also rely on non-accounting information. In fact, some prior research asserts that non-accounting information is "more important" for lenders than is accounting information (Berger and Udell, 1998). We consider this to be a potentially interesting research question that has not been well tested. Note, however, that there is a large body of research documenting the role of accounting information for lending decisions (see Costello and Wittenberg-Moerman, 2011 for a review of this literature). More importantly, as long as creditors demand quality accounting information as part of their overall assessment of the firm, we would expect a positive relation between creditor demand and accrual quality (regardless of what other information lenders also seek).

To proxy for demand from debtholders, our primary metric is *SeniorDebtRatio*, which is measured as the ratio of senior debt to total debt. The motivation behind using this measure is that senior debt holders should have relatively greater bargaining power vis-à-vis management and should thus be in a better position to influence the firm's practices, including its

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[9] This characterization of accounting quality usage in loan covenants is based on Aghion and Bolton's (1992) interpretation of the association between the signal and the state as "the degree of incompleteness of the ex-ante contract."

[10] In general, external financing constraints are particularly acute for private firms that are typically smaller in size and have relatively less well-established funding sources (Hubbard, 1998).

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financial reporting choices (Welch, 1997). Senior debt most often includes borrowing from financial institutions (such as banks) that is secured by collateral, and it is more often required by lenders in higher agency cost settings (Park, 2000). Thus, we expect a higher ratio of senior debt to total debt to be a setting in which agency costs are higher and where debt investors (i.e., those with senior debt) are more likely to demand *and* have the negotiation leverage to require higher quality financial reporting. Our second hypothesis is thus:

H2: Accrual quality relates positively to the ratio of senior debt to total debt (debt investor demand for monitoring).

2.2.3. Supplier demand

The majority of the earnings quality (or earnings-management) literature assesses incentives to manage earnings in response to shareholder or debtholder objectives, with far fewer studies focusing on earnings management as a response to other stakeholder objectives. As discussed earlier, private firms typically face greater financing constraints due to relatively more concentrated shareholder base and greater reliance on debt financing. As a result and similar to lenders, suppliers too are exposed to the counterparty credit risk of the firm.

The firm and its suppliers are interested in long-term purchase relationships for efficiency reasons. By maintaining long-term relationships with its suppliers, the firm receives a reputational "premium" (MacLeod, 2007). The premium could be received in future business transactions through preferred price and/or other trading terms. Thus, suppliers have an interest in assessing the quality of the firm and the extent to which they are able to do this depends in part on the quality of the external financial reporting information. That is, if the quality of the financial statements is poor, the supplier will put less weight on them in its decisions; in contrast, with high quality financial reporting the supplier can be more certain that the information is useful for purposes such as assessing the viability of the client firm for future transactions.[11] Consequently we predict higher accrual quality for firms for which supplier relationships are particularly important.

To quantify supplier demand we use inventory intensity (*InventoryIntensity*). Specifically, we compute the ratio of total inventory to total assets as a proxy for the importance of inventories and consequently suppliers to the company's operations. Our third hypothesis is:

H3: Accrual quality relates positively to the ratio of total inventory to total assets (supplier demand for monitoring).

2.3. Research design

To test the three hypotheses above, we estimate the following model:

$$AQ_{i,t} = \beta_0 + \alpha_1 C\text{-}Corp_{i,t} + \alpha_2 SeniorDebtRatio_{i,t} + \alpha_3 InventoryIntensity_{i,t} + \beta_n Controls_{n,i,t} + YearFixedEffects + \varepsilon_{i,t} \quad (1)$$

AQ is accrual quality, measured using three common metrics in the literature: (1) abnormal total accruals (*AbnAccr*) from Kothari et al. (2005) performance-matched model; (2) abnormal working capital accruals (*AbnWCAccr*) from Dechow and Dichev's (2002) cash flow-based model, controlling for sales growth and property, plant, and equipment (McNichols, 2002); (3) abnormal accrued revenues (*AbnRev*) from McNichols and Stubben's (2008) model. Our procedures for estimating *AQ* with these models are similar to prior research (e.g., Chen et al., 2011) and explained in detail in Appendix A. All variable definitions are provided in Appendix B. *C-Corp* is an indicator variable for C corporations, and *SeniorDebtRatio* is the ratio of senior debt to total debt, *InventoryIntensity* is the ratio of total inventory to total assets. Consistent with the three hypotheses, α_1 through α_3 are expected to be positive.

We include five control variables that have been used widely in accrual quality research, including whether the private firm is audited or not (*Audit*),[12] total assets as a proxy for firm size (*LnAssets*), fixed assets as percent of total assets (*Tangible*),[13] asset growth (*AssetGrowth*), and operating cycle (*OperatingCycle*).[14] We employ an indicator variable for firms in high-litigation industries (*LitigiousIndustry*).[15] We also include year fixed effects in all regression analyses.

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[11] The alternative is that firms may engage in earnings management to assure suppliers that the business is stable, for example through smoothing reported earnings (see Bowen et al., 1995 and Dou et al., 2013 for further discussion). As with the other demand factors discussed above, it is ultimately an empirical question whether the demand effect dominates the potential for opportunistic behavior.

[12] *Audit* indicates an audit or review by an external auditor. Although only a control variable in our study, to mitigate endogeneity concerns with this variable, we use the fitted value of a probit regression of audit on variables indicating the legal organizational form of the firm. No inferences are affected if we instead use the raw value of *Audit*.

[13] To mitigate potential measurement error, *Tangible* is bounded below and above by 0 and 1 respectively.

[14] While we include these variables as standard "controls" for accrual quality while testing our hypotheses, it is possible to view these as additional interesting determinants. For example, as we show below, we find that larger firms provide higher accrual quality. This finding relates to PCC's Framework discussion of the costs of providing accrual quality. In particular, large firms have greater resources (e.g., qualified accounting staff) and accordingly the costs of providing high-quality accruals should be lower for these firms.

[15] The link between litigation costs and financial reporting practices has been well-examined in the accounting literature (e.g., Skinner, 1994; Kasznik and Lev, 1995). However, evidence on the impact of litigation risk on financial reporting quality has been mixed. On one hand, papers such as Kinney and McDaniel (1989), Palmrose and Scholz (2004), and Cao and Narayanamoorthy (2012) document positive associations between both ex-post and ex-ante litigation risk and certain financial reporting quality indicators. On the other hand, some studies (e.g., Lys and Watts, 1994) find no significant association between litigation risk and financial reporting quality. Note that all of the above-mentioned research pertains to publicly-listed firms for which litigation concerns are likely to be especially pertinent (e.g., Badertscher et al., 2013).

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3. Data and sample

3.1. Data source

We obtain our data from the Sageworks database that has financial data on nearly 100,000 private firms. This database contains comprehensive accounting data plus other fields such as NAICS industry codes and zip codes for geographic location. However, sample firms are not identified in the dataset, making it impossible to link to other databases for firm-level data, nor are note disclosures included in the database. The findings in this paper should thus be interpreted with these limitations in mind.[16]

3.2. Sample and descriptive statistics

We have data from 2002 to 2009 and focus only on annual accounting reports. Table 1 shows our sample selection criteria for private firms. We begin with a total of 99,178 firms and 302,264 firm-year observations. We first remove Canadian firms from the sample. Second, we take out financial firms, utilities, and firms missing industry data. Third, we exclude the very smallest firms, defined as firms with less than $1 million in total assets, observations with negative sales, observations with a discontinuity in reporting in the form of more than a one-year gap between accounting reports, and observations with negative book value of equity. Firms with negative book values are likely in financial distress, and both reporting incentives and financial measures are likely to differ significantly from the typical observation. The resulting sample comprises 130,033 firm-year observations. All of the private firms in our sample provide accrual-based financial information. Further requirements of control and test variable availability reduce the sample to range from 19,714 to 66,152 across our three accrual quality measures.

Table 2 provides the descriptive statistics for the main variables used in our tests, and Table 3 provides Pearson correlations. The average firm in our sample has totals assets of $8.8 million, whereas the median total assets are $4.1 million (descriptive statistics for logarithm of total assets are reported in Table 2). Approximately 40% of the firms in our sample are organized as C corporations, while 67% of the firms have their financial statements formally audited or externally reviewed. Approximately 5% of total debt is designated as "senior" for the average firm. Fixed assets are 34% of total assets on average, inventories represent 20% of total assets, and 14% of the firms are in industries with high litigation risk. A quick look at the standard deviations compared to the means of the variables used in our analyses indicates considerable variation in firm characteristics.

4. Results

4.1. Usefulness of accrual quality

One purpose of our study is to provide evidence on whether (accrual-based) accounting is "useful" for U.S. private companies. As a necessary condition for different users to demand accrual quality, accruals must have usefulness in some context. To operationalize our tests of the usefulness of accrual quality, we investigate in the next section whether accrual quality affects the ability of accruals to forecast year-ahead cash flows.[17]

There is tension to the prediction that accruals of private firms are useful. First, several prior studies question the usefulness of accruals for *public* firms in a variety of contexts (e.g., Lev and Zarowin, 1999; Francis and Schipper, 1999; Battalio et al., 2012; Bradshaw et al., 2003). Combined with the conclusion from prior research that private firms have lower accrual quality (see discussion in Section 2.1), the usefulness of accruals for private companies is in question.

Furthermore, the survey evidence on the usefulness of reporting of private companies in a non-U.S. context is mixed. For example, while Collis et al. (2000) find that statutory accounting reports are useful for internal management purposes for a sample of small companies, Collis and Jarvis (2000) conclude that the statutory accounting reports for medium-sized companies are not useful for internal management purposes. However, a follow-up paper by the same authors — Collis and Jarvis (2002) — finds that statutory accounting reports are useful for maintaining relationships with banks. With regards to bank financing, Collis (2008) surveys directors of small private companies and found that a majority (56%) considered published accounts to be useful to users such as creditors; however, it is noteworthy that the number of respondents who did not

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[16] Sageworks obtains its data from national mid-market and smaller audit firms. In practice this implies that, although our sample size is large, compared with the universe of U.S. private companies, our data set has a relatively greater number of larger companies. This suggests that we cannot generalize to the entire population of private firms, many of which are very small. In addition, while Sageworks includes data on several key financial variables, other potentially important variables (e.g., firm age, debt covenants, credit rating, etc.), often available for public companies on Compustat and other databases, are not available.

[17] We recognize that our test of accrual usefulness using cash flow forecasts is one of many possible tests. Indjejikian and Matejka (2009) highlight the importance of accounting information for private firms in compensation contracts. McNichols and Stubben (2008) focus on the role that accounting information plays in internal decision making. Private firms are less likely to have sophisticated management-accounting systems that are separate from financial accounting (e.g., Drury and Tayles, 1995), potentially enhancing the role of financial accounting in *internal* decision making. In sum, even if the accrual quality on average is lower than that of public firms, it is conceivable that financial accounting information makes up a relatively larger component of the overall information set used for decision making by insiders or outsiders (Chen et al., 2011). In other words, accounting information could play an important role in private firms because there are fewer competing sources of information.

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Table 1
Sample selection.

	# of firms	# of firm-years
Observations with annual accounting reports	99,178	302,264
Observations *minus* Canadian firms	89,774	274,080
Observations *minus* financials, utilities, and missing industry	86,539	264,642
Observations *minus* firms with total assets <$1 million	47,433	144,069
Observations *minus* firms with Sales <0	47,427	144,040
Observations *minus* firms with Equity <0	43,797	130,033
Private firm observations with available control variables used in Table 5 regression analyses		19,714 to 66,152

Table 2
Descriptive statistics.

Variable	N	Mean	Median	Std Dev	25%	75%
AbnAccr	66,152	−0.113	−0.074	0.121	−0.147	−0.033
AbnWCAccr	19,714	−0.067	−0.046	0.067	−0.089	−0.020
AbnRev	66,152	−0.093	−0.052	0.113	−0.120	−0.020
C-Corp	66,152	0.402	0	0.49	0	1
SeniorDebtRatio	66,152	0.048	0	0.148	0	0
InventoryIntensity	66,152	0.197	0.106	0.227	0	0.334
LitigiousIndustry	66,152	0.14	0	0.347	0	0
Audit	66,152	0.672	1	0.469	0	1
Total Assets ($ mill.)	66,152	8.79	4.079	14.593	2.188	8.738
LnAssets	66,152	1.559	1.406	0.996	0.783	2.168
Tangible	66,152	0.343	0.245	0.306	0.091	0.525
AssetGrowth	66,152	0.1	0.044	0.282	−0.056	0.19
OperatingCycle	66,152	103.59	81.56	98.29	52.16	122.39

Variables are defined in Appendix B.

express that opinion (44%) is not insignificant and suggests considerable heterogeneity in perceptions about the usefulness of accounting information among stakeholders of private firms. Kitching et al. (2015) also report on the average usefulness of accounting reports to creditors; however, they found no evidence of incremental usefulness among small company respondents. This latter observation is consistent with CAN Interpreta (2011) pan-European survey which suggests that information other than accounting reports — such as commercial reports and banking information — were found to be more useful among the respondents. Finally, there is some anecdotal evidence such as that reported in Howorth and Moro (2012) that suggests that bank managers did not consider statutory financial reporting information to be useful at all as such information was heavily influenced by tax strategy and other extraneous considerations.

4.1.1. Forecasting cash flows

We estimate the following equation to test whether accrual quality enhances the ability of accruals to forecast year-ahead operating cash flows:

$$OCF_{i,t+1} = \alpha_0 + \alpha_1 OCF_{i,t} + \alpha_2 Accr_{i,t} + \alpha_3 AQ_{i,t} + \alpha_4 CFO_{i,t} \times AQ_{i,t} + \alpha_5 Accr_{i,t} \times AQ_{i,t} + Controls_{i,t} + \varepsilon_{i,t} \tag{2}$$

where, *OCF* is net income before extraordinary items minus total accruals (*Accr*), and *Accr* is 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* at year *t*. *OCF* and *Accr* are scaled by lagged total assets. *AQ* is one of the three accrual quality measures described in Appendix A. Control variables are those in Eq. (1), as well as the four determinants of accrual quality tested in our hypotheses. The magnitude and significance of α_5 captures whether accrual quality affects the ability of accruals to forecast cash flows. We consider accrual quality to be useful if it enhances the ability of accruals to forecast year-ahead cash flows.

Results are reported in Table 4. First, we note that the coefficient on *Accr* is positive and significant in all specifications, reflecting the idea that accruals-based earnings help in forecasting future cash flows even in a sample that consists purely of private firms. In other words, accruals-based earnings are "useful" for private firms. Further, directly relevant for our study, the coefficient on $Accr \times AQ$ is positive and significant at the 0.01 level (using two-sided tests) in two out of three specifications, indicating that earnings that are based on higher quality accrual estimates are even more useful in forecasting future cash flows. We also note that the coefficient on $OCF \times AQ$ is significant. These results are consistent with firms with high accrual quality having more sustainable cash flows. Most importantly, we control for this important firm characteristic, and we are able to document the incremental effects of AQ. From a standard-setting perspective, our results suggest that accounting is indeed important for private firms and that there is merit in taking into account the considerable heterogeneity in private firm characteristics.[18]

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[18] Note that continuous variables used in our regressions are winsorized above and below by 1%, unless otherwise stated.

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Table 3
Pearson correlations.

	Abn Accr	Abn WCAccr	AbnRev	C-Corp	Senior DebtRatio	Litigious Industry	Inventory Intensity	Tangible	LnAssets	AssetGrowth	Operating Cycle
AbnWCAccr	0.2922*										
AbnRev	0.4298*	0.2472*									
C-Corp	0.0397*	0.0262*	0.0914*								
SeniorDebtRatio	0.0223*	0.0624*	0.0178*	−0.0188*							
LitigiousIndustry	0.0206*	0.1070*	0.0490*	0.0261*	−0.0148*						
InventoryIntensity	0.0479*	0.2135*	0.0880*	0.0267*	−0.0491*	0.3509*					
Tangible	0.0986*	0.2011*	0.0807*	−0.0111*	0.0510*	−0.0964*	−0.2130*				
LnAssets	0.0352*	0.1014*	0.0485*	−0.0230*	0.0948*	−0.0163*	0.0482*	−0.0277*			
AssetGrowth	−0.2894*	−0.2842*	−0.2446*	−0.0225*	−0.007	−0.0387*	−0.0574*	−0.0878*	0.1507*		
OperatingCycle	−0.0029	0.0600*	0.0308*	0.0382*	−0.0072	0.0683*	0.4761*	−0.1617*	0.0915*	0.0559*	
Audit	−0.0079*	−0.0599*	−0.0091	−0.0242*	0.0445*	−0.1192*	−0.1115*	−0.1003*	0.2282*	0.003	−0.0446*

Variables are defined in Appendix B.
* Indicates significance at the 10% level.

Table 4
Usefulness of accrual quality within private firms – forecasting cash flows.

	Dep Var = CFO_{t+1}		
	(1)	(2)	(3)
AQ =	AbnAccr	AbnWCAccr	AbnRev
OCF_t	0.634***	0.716***	0.611***
	[43.82]	[31.56]	[43.69]
$Accr_t$	0.487***	0.787***	0.569***
	[24.07]	[26.82]	[33.92]
AQ	−0.099***	−0.222***	−0.071***
	[−6.71]	[−5.36]	[−4.44]
$OCF_t \times AQ$	0.536***	1.196***	0.580***
	[8.06]	[8.39]	[8.00]
$Accr_t \times AQ$	**0.114**	**1.556*****	**0.299*****
	[1.37]	**[9.32]**	**[3.66]**
C-Corp	−0.041***	−0.034***	−0.043***
	[−17.32]	[−9.63]	[−17.83]
SeniorDebtRatio	−0.030***	−0.015	−0.031***
	[−4.35]	[−1.40]	[−4.36]
InventoryIntensity	−0.069***	−0.073***	−0.070***
	[−11.96]	[−8.44]	[−11.78]
LitigiousIndustry	0.002	0.007	0.002
	[0.52]	[1.52]	[0.78]
Audit	−0.140**	−0.043	−0.149**
	[−2.27]	[−0.44]	[−2.34]
LnAssets	−0.005***	−0.004***	−0.006***
	[−4.65]	[−2.64]	[−5.08]
Tangible	0.053***	0.069***	0.057***
	[13.99]	[12.19]	[14.72]
AssetGrowth	−0.088***	−0.087***	−0.084***
	[−15.46]	[−10.18]	[−14.41]
OperatingCycle	−0.000***	−0.000	−0.000***
	[−3.51]	[−1.27]	[−3.61]
Constant	0.170***	0.098	0.182***
	[4.19]	[1.54]	[4.37]
Year Fixed Effects	Yes	Yes	Yes
Observations	29,298	12,685	29,298
Adjusted R^2	0.246	0.264	0.243

This table reports coefficient estimates from a regression of year-ahead operating cash flows ($OCF_{i,t+1}$) on the interaction between accruals ($Accr_{i,t}$) and three measures of accrual quality for a sample of U.S. private firms. The regressions control for year fixed effects. Robust t-statistics (clustered at the firm level) are in brackets.
*** Indicates significance at the 1% level.
** Indicates significance at the 5% level.
* Indicates significance at the 10% level, respectively. Variables are defined in Appendix B.

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Table 5
Determinants of accrual quality within private firms.

Variables	(1) AbnAccr	(2) AbnWCAccr	(3) AbnRev
C-Corp (H1)	**0.011**[***]	**0.013**[***]	**0.006**[***]
	[9.60]	**[12.26]**	**[5.99]**
SeniorDebtRatio (H2)	**0.016**[***]	**0.008**[**]	**0.042**[***]
	[5.10]	**[2.57]**	**[17.03]**
InventoryIntensity (H3)	**0.024**[***]	**0.020**[***]	**0.116**[***]
	[7.73]	**[6.83]**	**[44.60]**
LitigiousIndustry	**0.000**	**0.004**[***]	**0.012**[***]
	[0.22]	**[2.73]**	**[9.41]**
Audit (predicted)	0.137[***]	0.079[***]	0.104[***]
	[5.07]	[3.10]	[5.37]
LnAssets	0.010[***]	0.007[***]	0.016[***]
	[20.11]	[14.15]	[34.77]
Tangible	0.031[***]	0.019[***]	0.083[***]
	[18.69]	[11.29]	[53.69]
AssetGrowth	−0.127[***]	−0.070[***]	−0.110[***]
	[−48.34]	[−23.72]	[−45.77]
OperatingCycle	−0.000	0.000	−0.000[***]
	[−0.66]	[1.02]	[−3.20]
Constant	−0.262[***]	−0.130[***]	−0.248[***]
	[−13.02]	[−7.85]	[−16.68]
Year Fixed Effects	Yes	Yes	Yes
Observations	66,152	19,714	66,152
Adjusted R^2	0.103	0.101	0.196

This table reports coefficient estimates from a regression of three measures of accrual quality on *C-Corp*, *SeniorDebtRatio*, *InventoryIntensity*, and control variables for a sample of U.S. private firms. The regressions control for year fixed effects. Robust t-statistics (clustered at the firm level) are in brackets.
[***] Indicates significance at the 1% level.
[**] Indicates significance at the 5% level.
[*] indicates significance at the 10% level, respectively. Variables are defined in Appendix B.

4.2. Test of Hypotheses: factors explaining variations in accrual quality

In Table 5, we test our three hypotheses by estimating Eq. (1) to examine the determinants of accrual quality within private firms. Consistent with our predictions, the coefficient on *C-Corp* is positive and significant for all three accrual-quality proxies (at the 0.01 level, using two-sided tests), indicating a positive influence of dispersed ownership or equity investor demand on the quality of accounting estimates. Positive and significant coefficients on *SeniorDebtRatio* (at the 0.05 level or better) and *InventoryIntensity* (at the 0.01 level) similarly reflect the demand for higher accrual quality from powerful debtholders and suppliers, respectively.[19] In terms of economic significance, the results in column 1 indicate that C corporations exhibit 9.09% higher accruals quality (measured as *AbnAccr*), while a standard deviation increase in inventory intensity and senior debt ratio increases accounting quality by 4.5% and 1.9% respectively. Overall, we conclude that there is systematic variation in accrual quality among U.S. private firms and that this variation relates to stakeholder demand.

Among the control variables, perhaps the most relevant finding for standard setters, preparers, and auditors is that firm size is positive and significant. Larger firms are likely to have greater resources available, such as a more qualified accounting staff. In other words, the *cost* of providing high-quality accounting information is lower for large firms (directly addressing the cost-benefit issue discussed by the PCC). Other control variables generally load in line with prior research; firms with more tangible assets, with audited financial statements, or in more litigious industries have greater accrual quality, while firms with higher asset growth exhibit lower accrual quality.

5. Concluding remarks

This is one of the first studies to examine variations in accrual quality within U.S. private firms. Prior research on U.S. firms focuses primarily on comparing private and public firms, thus implicitly treating all private firms as the same. In practice, private firms exhibit significant heterogeneity, and we explore such heterogeneity in our empirical analyses.

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[19] In robustness tests, we replace *SeniorDebtRatio* by an indicator variable for the existence of senior debt and obtain consistent results for two out of three FRQ measures.

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Some question whether private firms need external financial reports that are based on estimates (i.e., accruals) or whether they should just report cash-basis financial statements. We document the benefits of having high-quality accrual estimates within private firms and also show that the quality of these estimates varies predictably with firm characteristics and have economic consequences.

Relative to U.S. public firms and relative to private firms in some other jurisdictions, we posit that U.S. private firms' accounting practices should be especially influenced by demand factors (i.e., there is comparatively less financial reporting regulation of private U.S. firms). We additionally predict that stakeholders beyond merely equity investors care about accrual quality in private firms. Accordingly, we examine whether firms' accrual quality is shaped by demand from several stakeholders – equity investors, debt investors, and suppliers.

Our empirical analyses are based on a relatively large sample of firms with data obtained from Sageworks. We acknowledge, however, that our empirical analyses are limited to the data that are available from Sageworks. For example, we are unable to link the Sageworks data to other databases as the firm identities are kept anonymous. Our empirical findings should be interpreted with this caveat in mind.

We first show that accrual quality is positively associated with the ability of accruals to forecast year-ahead cash flows. These results suggest that accrual quality of private firms is useful and has economic consequences. To test our hypotheses, we then document that accrual quality increases with the demand for monitoring by equity investors, debt investors, and suppliers.

Overall, the results contribute to an active policy debate on the form and substance of accounting requirements for privately-held firm across the world. Recent policy papers (e.g., ICAEW, 2015) call for more substantial research on private company accounting requirements and our paper attempts to partially address this research gap identified by standard setters and policy makers. Further, our findings that accrual quality within private firms responds predictably to stakeholder demand suggest the need for standard setting caution in terms of mandating a diluted set of standards for private firms.

Appendix A. Estimation of accrual quality

(1) Abnormal total accruals from Kothari et al. (2005) performance-matched model.
We estimate the following model for each industry-year that has at least 20 observations:

$$Accr_{i,t} = \alpha_0 + \alpha_1(1/Assets_{i,t-1}) + \alpha_2\Delta Rev_{i,t} + \alpha_3 PPE_{i,t} + \alpha_4 ROA_{i,t} + \varepsilon_{i,t} \tag{3}$$

where *Accr* is total 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* at year *t*, scaled by lagged total assets (*Assets*); *ΔRev* is the annual change in revenues scaled by lagged total assets; *PPE* is property, plant, and equipment for firm *i* at year *t*, scaled by lagged total assets; *ROA* is return on assets for firm *i* at year *t*. The residuals from Eq. (3) are abnormal total accruals. In our tests, we use the absolute values of abnormal accruals multiplied by −1 as a proxy for accrual quality (*AbnAccr*). Thus, higher values of *AbnAccr* represent higher accrual quality.

(2) Abnormal working capital accruals from Dechow and Dichev's (2002) cash flow-based model, controlling for sales growth and property, plant and equipment (McNichols, 2002). We estimate the following model for each industry-year that has at least 20 observations:

$$WCA_{i,t} = \alpha_0 + \alpha_1 OCF_{i,t-1} + \alpha_2 OCF_{i,t} + \alpha_3 OCF_{i,t+1} + \alpha_4\Delta Rev_{i,t} + \alpha_5 PPE_{i,t} + \alpha_6 DOCF_{i,t} + \alpha_7 OCF_{i,t} \times DOCF_{i,t} + \varepsilon_{i,t} \tag{4}$$

where *WCAccr* is working capital accruals, measured as the change in non-cash current assets minus the change in current non-interest bearing liabilities, scaled by lagged total assets. *OCF* is cash flow from operations, measured as net income before extraordinary items minus total accruals (*Accr*), scaled by lagged total assets. *DOCF* is an indicator variable for negative operating cash flows. Other variables are defined above. The residuals from Eq. (4) represent abnormal working capital accruals.[20] We multiply the absolute values of abnormal working capital accruals by −1 (*AbnWCAccr*). Thus, higher values of *AbnWCAccr* represent higher accrual quality.

(3) Abnormal accrued revenues from McNichols and Stubben's (2008) model. We use the following regression for each industry-year that has at least 20 observations:

$$\Delta AR_{i,t} = \alpha_0 + \alpha_1\Delta Rev_{i,t} + \varepsilon_{i,t} \tag{5}$$

where *ΔAR* represents the annual change in accounts receivable and *ΔRev* is the annual change in revenues, each scaled by lagged total assets. Abnormal accrued revenues are the residuals from Eq. (5). We multiply the absolute values of the residuals by −1 (*AbnRev*). Thus, higher values of *AbnRev* represent higher accrual quality.

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[20] Given the short longitudinal time frame in our study, we follow Srinidhi and Gul (2007) and Chen et al. (2011) and use the absolute value of this residual as a proxy for accrual quality.

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Appendix B. Variable definitions

Variables	Definitions
AbnAccr	Abnormal total accruals from Kothari et al. (2005) performance-matched model. See Appendix A
AbnWCAccr	Abnormal working capital accruals from Dechow and Dichev's (2002) cash flow-based model, controlling for sales growth and property, plant, and equipment (McNichols 2002). See Appendix A
AbnRev	Abnormal accrued revenues from McNichols and Stubben's (2008) model. See Appendix A
C-Corp	Indicator variable that takes on a value of 1 if the private firm is organized as a C corporation, zero otherwise. Other organizational forms include sole proprietorships or LLCs, partnerships or LLPs, and S corporations for which C-Corp assumes a value of zero
SeniorDebtRatio	The ratio of senior debt to total debt
InventoryIntensity	The ratio of total inventory divided by total assets.
LitigiousIndustry	Litigation risk based on industry membership in SIC codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370
LnAssets	Natural logarithm of total assets
Audit	Indicator variable that takes on a value of 1 if the firm was audited or reviewed by an external auditor
AssetGrowth	Growth rate in total assets in the current year compared with the previous year
OperatingCycle	Operating cycle of the firm, measured as:[Inventory/(Cost of Sales/365)] + [Receivables/(Sales/365)]
OCF	Net income before extraordinary items minus total accruals (Accr), scaled by lagged total assets
Accr	The change in non-cash current assets minus the change in current non-interest bearing liabilities, minus depreciation and amortization expense, scaled by lagged total assets
Tangible	Ratio of net fixed assets to total assets, bounded below and above by 0 and 1

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