Private Firms and the Economic Role of Accounting: A Review of Empirical Research[*]

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Abstract

We review the empirical accounting literature on private firms. Recent advances in data gathering provide new openings to examine private firms which, despite driving half of private sector economic activity, have historically been challenging to study. We provide a conceptual framework to organize the literature, centering on information production, information verification, and information dissemination. Four key takeaways emerge from our review. First, private firm settings offer unique advantages for understanding the economic role of accounting. Because private firms face less regulation than public firms, their accounting choices can shed light on economic tradeoffs that public firm choices cannot. Second, there is limited descriptive evidence on many fundamental accounting choices, including the extent to which private firms follow US GAAP, obtain an audit, or use various managerial accounting practices. Third, studies jointly modeling private and public firms provide more complete, robust analyses of the economy, regulation in particular. Fourth, private and public firms differ on many central dimensions, which raises difficulties related to conducting empirical analysis and assessing generalizability.

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1. Introduction

> *[Researchers] adopt baselines that are a small perturbation to the existing regime, such as more or less frequent reporting, more or less use of fair value accounting, more or less globalization of standards and enforcement, or with and without an individual new accounting standard or auditing mandate. By setting limited baselines, we can lose sight of accounting's complete economic role and of the magnitude of its contribution to welfare. Consequently, it can be helpful for educators, researchers, regulators, and standard setters to contemplate—however briefly—a world with no accounting* (Ball 2024).

An overarching objective of accounting research is to understand how accounting affects the allocation of scarce resources, which we refer to as the "economic role of accounting." Publicly listed firm ("public firm") research advances this objective, but there are limits to what we can learn about the economic role of accounting by studying firms operating under a mandate to disclose audited GAAP financials. For private firms facing less regulation, choices about whether to use GAAP, produce various types of management accounting information, verify financial statements, or disseminate financial information reveal tradeoffs that are otherwise difficult to observe. Similarly, assurance and disclosure mandates affecting private firms provide perspective on how fundamental shifts in the accounting environment affect operations and financing.

We survey the empirical accounting literature involving private firms, covering both US and international evidence. Multiple developments make our review timely. Foremost, the Ball (2024) quote highlights renewed demand for evidence on the economic role of accounting. This demand stems in part from recent technological advances creating some new accounting processes but also displacing many old ones. Private firm settings offer unique advantages for generating such evidence, in part, because they have variation in accounting choices unavailable in other contexts. Second, there is growing awareness that regulation based on ownership or size can lead to spillovers and unintended consequences, many of which affect private firms. Research on these spillovers and unintended consequences inform analyses of ongoing securities, environmental, and

tax reforms. Third, firms increasingly achieve scale without accessing public capital markets, and accounting is used in fundamentally distinct ways in private markets.[1] Last, private firms are understudied compared to their role in the economy, as observing them has historically been challenging. However, modern data gathering tools provide new openings to observe, contact, and study private firms. Collectively, these developments create an opportunity to synthesize the literature, highlighting how private firms help us understand accounting's role in today's economy.

We begin in Section 2 by defining private firms, distinguishing them from public firms, and documenting their heterogeneity and economic importance. In brief, the share of private sector employment, GDP, and innovation driven by private firms is roughly half in the US and greater in many other developed countries. Private capital and alternative financing markets have also grown considerably and by some measures now rival traditional public markets. In addition, the literature illustrates that private firms are not merely the smaller twin of their public firm counterparts, such that observing public firm behavior is sufficient to draw inferences about all firms. For example, important relations such as between competition and disclosure hinge on the inclusion of private firms (Ali, Klasa, and Yeung 2009, 2014).

Section 3 provides our conceptual framework, which organizes and defines the scope of our survey. Our framework characterizes private firm accounting choices as equilibrium outcomes involving information production, information verification, or information dissemination—familiar categories that also reflect the dominant forms of accounting regulation. Many economic theories underlying our framework are also familiar (e.g., Watts and Zimmerman 1983), as they often motivate studies of public firm accounting practices. What is new about our framework is its

[1] Goldman Sachs CEO David Solomon recently advised private companies to take "great caution" before going public, and said "Today you can get capital privately, at scale... you can also get liquidity in the private markets. So the reasons to go public, when you really reach an incredible scale, are getting pushed out" (Hammond 2025).

emphasis on the wider array of accounting choices available to private firms, the different sources of demand, and the unique frictions shaping managers' decisions.

Figure 1 provides a summary for representative public and private firms. Whereas public firms face securities regulation and enforcement that considerably restrict accounting choice, private firms operate in regulatory and capital market environments that tend to allow for substantial flexibility and bargaining. This opens the door to information production, verification, and dissemination tools spawned by new technologies that can substitute for accounting in ways that simply do not apply to public firms and were not envisioned in early theory work. Likewise, private firm accounting choices can be shaped by unique supply-side factors, such as a lack of financial sophistication or distinct concerns about public disclosure. Thus, private firm studies can speak to the economic role of accounting in ways that public firm studies often do not.

Our review of the literature follows from our conceptual framework: we focus on information production, verification, and dissemination choices and their relation to the economic role of accounting. As such, we do not provide an extensive overview of research on initial public offerings (IPOs), private firm valuation, or venture capital/private equity (VC/PE), but do cover work in these areas insofar as it sheds light on accounting choices. Similarly, while we cover numerous international studies, our objective naturally leads us to the US, where accounting decisions are largely unconstrained by regulation. In this respect, our review contrasts with Beuselinck et al. (2023), who also survey the literature on private firms but focus on data issues and institutional features relevant to studies in European settings. We organize each section using subsections dedicated to reasonably self-contained areas of work, focusing on key themes and pointing to promising topics for future research.

Section 4 covers information production. In the absence of regulation, many private firms produce only limited financial information and only sometimes follow GAAP. Business complexity and financing needs tend to correlate with more and higher quality information production (e.g., Allee and Yohn 2009; Cassar, Ittner, and Cavalluzzo 2015). Properties of earnings differ between private and public firms, reflecting the relative importance of agency costs, regulatory scrutiny, and other factors (Ball and Shivakumar 2005, 2008). Moreover, differences in earnings properties reflect differences in how public and private firms rely on financial information for contracting. Collectively, this work explores how firm, institutional, and other factors shape the production of financial and managerial accounting information, thereby shedding light on how such information can, for example, aid financing and operations.

Section 5 focuses on information verification. Although there is substantial heterogeneity in private firms' assurance decisions, the tradeoffs of different assurance levels are not well-understood. Audits help improve access to financing (e.g., Blackwell, Noland, and Winters 1998; Minnis 2011; Badertscher et al. 2023), even though private firm audits are subject to less litigation risk or external monitoring than public firm audits. As with production decisions, verification decisions in largely unregulated environments provide novel evidence on the economic role of accounting. For example, regulation imposing audit requirements can be used to understand the signaling value as well as the real effects of audits (Lennox and Pittman 2011; Kausar, Shroff, and White 2016). The literature also addresses audit market structure (Chaney, Jeter, and Shivakumar 2004) and reveals interactions with tax systems and other enforcement mechanisms, reinforcing the need to understand private firm assurance decisions in their particular institutional context.

Section 6 covers information dissemination—both public disclosure and private reporting (e.g., to banks). Like public firms, private firms communicate financial information to potential

and existing capital providers, and proprietary costs weaken disclosure incentives. However, private firms have more discretion in how they disseminate information, and the competitive concerns and frictions relevant to private firms when they weigh public disclosure are often distinct (e.g., Gassen and Muhn 2025). Disclosure mandates have a variety of effects on firm operating and financing decisions, for instance, decreasing intra-industry profit dispersion and undermining innovation incentives (Breuer 2021; Breuer, Leuz, and Vanhaverbeke 2025). Moreover, recent research documents public firm regulatory and information spillovers to private firm investment and financing. For example, the compliance burdens of securities regulation affect the choice to go public, which in turn affects capital formation, the endogenous development of alternative financing markets, and the visibility of firm choices and outcomes to researchers, regulators, and the public. These spillovers are relevant to understanding disclosure, tax, and environmental regulation, which are often based on ownership type, firm size, or both.

As the recent expansion of data availability underlies the growth of private firm research, we devote Section 7 to practical issues associated with studying private firms. Our aim is not to list datasets; after all, vendors regularly get acquired or fail, and specific products get updated or discontinued. Instead, we highlight creative empirical *approaches* to overcome barriers to studying firms that choose private ownership in part to remain opaque. One overarching observation is that, given limited direct sources of private firm data, researchers often glean information from incidental sources, and we expect these sources will fuel continued growth of the field. With the growing availability of private firm data, researchers can select the firm-type setting (public, private, or both) best suited for their research question more easily than ever before.

Four main takeaways emerge from our survey. Foremost, because private firms face little securities regulation, their information production, verification, and dissemination choices provide

unique insights into the economic role of accounting. Efforts to document a role in public firm settings may fail not because of deficiencies in theory, but because public firms are a poor match for the theory given the lack of variation necessitated by the research question (Leuz and Verrecchia 2000; Zimmerman 2013). This limited variation can undermine tests of canonical disclosure, audit, and banking questions. Further, accounting choices in public firm settings can conflate economic and regulatory or enforcement considerations. Of course, private firm studies can lack power or variation for some questions, such as in equity markets topics. But researchers' tendency to default to the public firm setting, while rarely questioned, can widen the gap between theory and empirics and beget conclusions that understate the economic role of accounting.

Second, descriptive evidence on private firm accounting choices can be the starting point for empirical or theoretical work, inform research on and debate about accounting and audit standards, and is useful for understanding the implications of ongoing technological change. Descriptive evidence is especially useful given the inherent opacity and heterogeneity of private firms. However, for accounting choices including whether to use GAAP, undergo an audit, or adopt various management accounting practices, existing evidence is scattered and often dated. This is true in general but especially salient in the specific case of private capital markets that have become increasingly important to financing private firms.

Third, the unintended consequences that private firms face related to regulation and enforcement based on public ownership or firm size are understudied. These consequences can take the form of avoidance behavior or leakage that undermines the intent of the regulation (Leuz, Triantis, and Wang 2008; Christensen et al. 2024), spillovers via shared resource markets, information externalities, or investment and competitive distortions. Given these consequences can be economically meaningful, they are important to the design and analysis of regulation.

Fourth, private firm accounting choices depend on factors, frictions, and potential substitutes that have less relevance in the public firm setting. These differences underscore the partial generalizability across settings—in both directions—but also give rise to an array of research opportunities. For example, although studies typically focus on competitive and financing motivations for dissemination choices, factors related to privacy and cultural preferences are also important for many private firms. Private firms' limited use of audited GAAP financial statements highlights the importance of understanding alternative (or complementary) mechanisms to prepare, verify, and credibly convey information. Recent evidence also raises questions about how well private firm managers understand tradeoffs behind certain accounting choices. This opens the door not only to novel research but also to real-world impact—for instance, field research that examines effects of improving accounting knowledge or access to accounting resources.

2. Private firms

2.1. A definition of private firms

For the purposes of our survey, we characterize firms as commercial enterprises seeking to earn a profit. We characterize firms as private if they are not controlled by a governmental entity and their equity securities are not listed and traded on a major public exchange. The former condition distinguishes private firms from state-owned enterprises and other entities operating as an extension of a national or regional government. The latter condition implies that we deem all unlisted firms to be private firms, and 'public firms' are strictly publicly listed firms.[2]

[2] This approach conforms to common usage of the term 'public firm' in the literature, which focuses on publicly listed firms. Even so, we caveat that the terms 'public', 'listed', 'quoted', and 'traded' take different meanings across countries and sometimes even within countries depending on the legal context, resulting in, as an example, some 'public unlisted' firms in the UK. We therefore encourage readers to see our terminology as a simplifying convenience.

Our definition encompasses a wide array of private firms, which meaningfully differ in the financing sources they rely upon, whether they have limited or unlimited liability, and their size, among other characteristics. Private firms range from sole proprietors with no employees and facing minimal accounting regulation, to midsize firms with securities traded over-the-counter or in other marketplaces that entail compliance with some reporting or governance mandates (Bushee and Leuz 2005; Watts 2020), to large firms with publicly-traded bonds filing financial statements with the SEC. Our definition also recognizes that private firms encompass many organizational forms including various types of corporations, partnerships, and others.

Akin to the typical treatment of public firms, we take the view that private firms are legal fictions that can encompass multiple subsidiaries, establishments, and reporting entities. This perspective implies that subsidiaries, establishments, and reporting entities are not wholly distinct firms. However, whether researchers treat subsidiaries, establishments, and reporting entities of a parent entity as independent units of analysis for empirical purposes depends on the research question, nature of the setting, and degree of autonomy (Hurst and Pugsley 2011), regardless of whether the firm is private or public. For example, in a dataset of parent entities and their subsidiaries, the natural unit of analysis is the collective/parent in cases where the accounting decision is made at the parent and applies to all entities within the group. An example is group audits, if the subsidiaries have no discretion in the audit decision. However, researchers may focus on the individual subsidiaries as the unit of analysis in cases where each has sufficient variation and autonomy. An example is the adoption of managerial accounting practices, if the subsidiaries are decentralized operating entities. Ultimately, it is up to researchers to determine the correct unit of analysis for their question, make appropriate research design choices (e.g., clustering), and provide clear definitions.

Our characterization of private firms has three implications that are relevant for understanding the remainder of our survey. First, all private firms cannot be viewed through the same lens: their characteristics and institutional environment are critical context to understand their accounting choices. Although our survey refers to private firms generically for expositional convenience, it is crucial for readers to reflect on the nature of the firms and institutional context in any given paper. In this spirit, throughout the review we briefly describe the firms in the setting of each study (e.g., their size and location) where it is important to keep this heterogeneity front of mind. It is also important to appreciate that the lines between public and private firms are sometimes blurred. For example, a large UK private firm with hundreds of shareholders, international operations, a Big 4 auditor, and detailed financial reports in some ways more closely resembles a representative public firm than a representative private firm.

Second, commonly cited differences between public and private firms are derivative of their differences in ownership structure, which is what ultimately delineates public from private firms. Private firms avoid capital market pressures that can lead to short-termism because of the absence of dispersed public investors who lack access to management. At the same time, private firm owners do not enjoy the liquidity and visibility of public ownership; rather, they tend to be relatively undiversified and thus exhibit different risk preferences than public firm owners (e.g., Ang 1992; Bodnaruk et al. 2008).[3] Managers of private firms are often the primary owners or family members of the primary owners (Ang, Cole, and Lin 2000; Lee and Persson 2016), reflecting in part the private benefits of control that tend to accompany concentrated ownership. Even differences in regulation faced by public and private firms are often derivative of variation in ownership structure, as many areas of regulation such as securities laws hinge on ownership

[3] For example, compared to public firms, trade credit and credit cards are particularly important sources of financing for private firms (Petersen and Rajan 1997; Akcigit et al. 2025).

dispersion. Likewise, enforcement differences can arise because regulators often deal with resource constraints by targeting larger firms, which are more visible and capable of complying with their requirements.

Finally, given the differences in ownership structure, the main information problems facing private firms are often inherently different from those facing public firms, both in type and extent. Concentrated insider ownership reduces monitoring frictions and incentives for value-destroying decisions (e.g., Brickley, Linck, and Smith 2003; Gao, Harford, and Li 2013), suggesting that moral hazard considerations are generally less severe for existing equity holders in private firms.[4] In contrast, creditors face significant information asymmetries with new private firm borrowers due to their opacity and limited borrowing history. Opacity and adverse selection problems likewise can make it difficult for private firms to raise capital from new equity investors. Given the scope of accounting mandates in public markets, these information asymmetries are rarely as material for public firms. In addition, private firm managers face relatively high operating uncertainty, both because private firms tend to be younger and earlier in their life cycle than public firms and because the lack of accounting mandates raises the marginal costs of investing in information systems that can also inform internal decision-making.

2.2. Assessing the economic importance of private firms

Assessing the role of private firms in the US economy is challenging because these firms generally do not publicly report financial information, and it can be difficult identifying ultimate owners in some datasets. But we can triangulate across different government agency and other

[4] Of course, even small private firms exhibit substantial variation in the types and extent of agency problems. Ang et al. (2000) examine 1,700 small firms from the Federal Reserve Board's National Survey of Small Business Finances and find that almost 30% of firms owned and controlled by a single shareholder employ an outside manager—who therefore has zero ownership stake in the firm. Our survey emphasizes that the substantial variation among private firms in agency costs (among other characteristics, such as exposure to accounting regulation or financing constraints) is a key opportunity for researchers.

researcher estimates, with the caveat that some use data that permits identification of private and public firms, whereas others use data that does not identify firm ownership and instead focuses on firm size (e.g., less than 500 employees or $10 million of assets). Given the high correlation between ownership type and size, both types of estimates are useful for developing a broad sense of private firms' importance to the economy.[5]

Table 1 shows the number of firms and aggregate employment of firms of various sizes based on US Census data, and Table 2 summarizes several estimates of the relative importance of public and private firms (see Appendix A for detail on the source and construction of the figures, as well as additional estimates). More than 99% of US firms have under 500 employees. Firms with fewer than 500 employees account for about 100 million employees in aggregate, consistent with a 2021 EY report estimate that over 77% of private sector workers are employed at private firms (Carroll 2021). Small businesses drove over 60% of net new job creation from 1995-2023 (SBA 2024). In terms of GDP, small businesses contributed 43.5% (SBA 2024), approximately half of the private-sector total (governments are responsible for around 12%) (Bhutada 2023). Thirty-seven percent of net income reported to the IRS in 2019 was from firms with less than $10 million of assets (Tax Policy Center 2024).

Figure 2 (updated from Minnis 2022) shows that in every year in the US since 2000, PE funds raised exceeded amounts raised through IPOs, and the gap has been growing. Ewens and Farre-Mensa (2020) trace a decline in IPOs to reduced regulation for late-stage startups seeking private equity, and Kang (2025) details the growth of the Regulation D market. While there is a positive correlation between size and being public, the US has private firms with over $30 billion

[5] Where possible, we follow the convention of expressing economic variables (e.g., private firm payrolls) as a share of private sector activity (SBA 2024). This basis removes the government and non-profits from the denominator and focuses on the relative importance of the two key types of profit-seeking enterprises: private firms and public firms.

of annual revenue including Cargill, Koch Industries, Publix Supermarkets, and Mars. Forbes counts over 250 private firms with more than $2 billion of revenue (Murphy 2024), and more than 87% of firms with over $100 million of revenue are private (Sløk 2024). The rise of private equity and alternative financing markets is one reason many private firms have become so large.

Similar patterns emerge internationally. According to the European Commission, SMEs in the EU account for over 99% of businesses and 50% of GDP, employ 100 million people, and rely heavily on debt financing (European Commission 2020, 2024). About 50% of SMEs are engaged in innovative activities. In Japan, SMEs contribute more than 50% of added value, make up about a third of capital investment, and employ 70% of workers (METI 2019). World Bank estimates show that the ratio of stock market capitalization to GDP (a measure of public firm importance to the economy) for the US is about 25-75% greater than that for Australia, Japan, or Canada and several-fold greater than that for most European countries, including Germany, Italy, and Spain.[6] Thus, while estimates indicate that private firms are responsible for roughly half of the private sector economic activity in the US, private firms appear to make up a similar or even greater proportion of economic activity in other developed nations.

2.3. The importance of private firms for more complete measurement

Private firms clearly play a significant role in the economy. But how important is the private-public firm distinction to understanding a given market, or the economy as a whole? Are private firms merely the smaller twin of their public firm counterparts, such that observing public firm behavior provides a reliable signal of what all firms are doing?

Ali et al. (2009, 2014) provide notable explorations of this issue, with a focus on concentration measures that are central to work exploring the disclosure effects of competition.

[6] See: https://databank.worldbank.org/source/global-financial-development/Type/TABLE/preview/on.

They measure industry concentration using two approaches: one based on Compustat data containing only US public firms, and a second based on US Census data containing both private and public US firms. As a first order observation, they find that the correlation between the two measures is only 13%, indicating that Compustat measures are often a poor proxy for industry concentration. Then, they show that several well-known results surrounding the role of concentration in (a) stock returns, (b) bankruptcy information spillovers, (c) voluntary disclosure choices, and (d) CEO turnover hinge critically on whether the concentration measure is calibrated based only on public firm presence. Ali et al. trace this to a mechanical bias related to growth patterns—shrinking industries are left with very few public firms.

The ability to observe both private and public firms is pertinent to other areas of accounting research as well. As one example, Shivakumar and Urcan (2025) contribute to the literature that uses earnings to predict macroeconomic variables. They show that the aggregate earnings of private firms are related to subsequent GDP growth, but the aggregate earnings of public firms are not. They trace much of the difference to capital market pressures facing public firms. A second example involves audit settings where researchers are interested in an auditor's portfolio. There is considerable interest in the degree to which auditor workload can harm audit quality (e.g., Maksymov et al. 2024; PCAOB 2024). Although some prior work finds no relation between the number of clients in an auditor's portfolio and their audit quality (Burke, Hoitash, and Hoitash 2019; Goodwin and Wu 2016), due to data limitations this work studies only public firm clients. However, auditors commonly have many nonpublic clients, such as private firms, charities, hospital systems, universities, and municipalities. Cameran et al. (2024) examine a UK setting where both private and public audit clients are observable and note that private clients make up

nearly 90% of the typical auditor's client relationships.[7] They show that the number of private clients predicts the likelihood of misstatements and clients reporting small profits, suggesting workload matters. Such findings motivate the use of settings where the auditor's full set of clients (or at least more than just public clients) is observable. With more complete measures, researchers can more robustly examine theories related to auditor specialization, reputation, and workload.

Overall, private firms' role in the economy is significant, and public firm activity is not necessarily representative of private firm activity. As a result, the relative pervasiveness of public firms in archival literature is not representative of their role in the economy, and studying public firms alone does not lead researchers to clearer portrayals of the economy. Instead, their disproportionate emphasis is in part due to historic data availability advantages *that are diminishing* (see Section 7).

3. Conceptual Framework

In this section, we describe our conceptual framework (see Figure 1 for a summary). The framework characterizes the primary contextual factors that shape private firm accounting choices, contrasts these factors with those that shape public firm choices, and illustrates how the choices themselves help us understand the distinct economic roles of accounting. Much of the underlying theory we rely on is covered in positive accounting and related research (Watts 1977; Watts and Zimmerman 1983; Jensen and Meckling 1976; Frankel, Kothari, and Zuo 2024), classic theories of information problems (Akerlof 1970; Grossman 1981), and other analytical work outlined in DeFond and Zhang (2014) and Beyer et al. (2010). Thus, the framework is meant not to reinvent established theory, but rather to distill and organize key features and frictions of the private firm accounting environment to help illuminate the empirical work we survey in subsequent sections.

[7] See also Sundgren and Svanström (2014).

As an example, the framework highlights the growing role of alternative information sources and verification tools. The key tradeoff in many audit choice models weighs incremental costs of verification (e.g., direct costs and management attention) against capital market and operational benefits associated with higher quality financial information. However, the recent proliferation of alternative information sources and verification tools has amplified the importance of considering the outside option—forgoing the audit altogether and relying on information generated outside the accounting system. In other words, even holding constant incremental verification costs and the capital market and operational benefits of verification, audit choices can change as the set of non-accounting information sources change (Minnis, Sutherland, and Vetter 2024). Although not foreseen in early analytical work, these new technologies and information sources are clearly relevant not only to audit choices, but also to production and dissemination choices.

3.1. Private firm accounting choices

Managers at private firms face three sets of accounting choices: a) information production, b) information verification, and c) information dissemination. Our goal for this section is to describe these choices and their related tradeoffs, grounding our discussion in both existing theory and the institutional realities facing private firms. We focus our discussion on private firms operating in a largely unregulated accounting environment (e.g., most US private firms), acknowledging that jurisdictions such as the UK and EU require some preparation, verification, and dissemination of financial information for private firms. For simplicity, we envision a firm with 20-49 employees, as all of the accounting choices we cover are meaningful for them. An additional benefit is that Table 1 shows that this category of firms has the greatest employment.

3.1.1. Information production

The main, but not only, accounting choice related to information production is whether to prepare financial statements. As the SEC explains, financial statements demonstrate "where a company's money came from, where it went, and where it is now" (SEC 2007). We specifically define financial statements as records summarizing a firm's financial activities, performance, and health over a given period of time, as captured in an income statement, balance sheet, cash flow statement, statement of shareholders' equity, and accompanying notes. This definition is rooted in the *properties and composition* of a given type of financial information, not necessarily in the ways that the information *can be used beyond its primary purpose.* This definition also follows conventions used in the literature (e.g., Allee and Yohn 2009) and by regulators.

One implication of our definition is that financial statements are conceptually distinct from corporate tax returns. Tax returns might sometimes be used in lieu of financial statements (e.g., in debt contracting), but they are prepared in accordance with tax laws and have a different composition. In practice, there are circumstances that can blur distinctions between financial statements and tax returns, such as when tax rules closely map to local accounting standards (as in Japan). In these cases, the firm's decision to prepare financial statements can become moot, given the information is already prepared for tax compliance reasons.[8] Similar logic applies to other types of information including management accounting reports, ESG reports, and bank statements. Such information types have distinct properties relating to their primary reason for preparation. Although they may rely on the same inputs and information systems as financial statements, and

[8] Tax filings contain information that partially overlaps with financial statements. However, the widespread preparation and use of financial statements, distinct from tax returns, suggests they often serve a distinct economic role. For example, even in countries where private firms are required to prepare and disclose annual accounts, a distinct set of requirements apply to the preparation of the corporate tax return. See, for example: https://www.gov.uk/prepare-file-annual-accounts-for-limited-company.

like tax returns can be a substitute for assessing performance or financial health, we do not consider them financial statements. Nevertheless, work studying tax returns and management accounting reports are included in our survey because they are forms of accounting information, and considerable research addresses their role in allocating scarce resources.

Financial statement preparation choices can be understood by considering the marginal benefits and costs relevant to each firm (Feltham 1968). Whereas public firms' preparation costs are reduced by pre-existing investments in infrastructure necessary to meet extensive regulatory mandates, many private firms' preparation costs are reduced only by investments in infrastructure necessary for tax reporting. In terms of costs, preparing financial statements entails recording and organizing transactions. Both labor (i.e., a manager at the firm and/or an external accountant) and technology (spreadsheet, software program, and record-keeping processes) can be involved. As such, preparation can be more appealing to larger firms, as employing accounting personnel, contracting with a CPA firm, or acquiring and implementing technology can entail fixed costs (AICPA 2004). Likewise, preparing statements entails some degree of financial sophistication that managers at smaller firms may lack. In terms of benefits, financial statements can help the firm track performance, forecast cash flow needs, and inform external stakeholders.

Once a firm decides to prepare financial statements, it must decide whether to follow the local accounting standard. In many cases, the "outside option" is a cash-basis statement, where revenues and expenses are tracked in terms of cash flows rather than accruals. Following a local standard can have several benefits. First, in most cases the local standard is accrual-based. Accrual-based accounting systems generate smoother income numbers with temporal matching of revenues and expenses, which can be more contractable and provide more informative performance signals (Dechow 1994; Choi 2021). Second, following a common standard makes it easier for the firm to

compare itself to peers and for capital providers to understand and monitor the firm (De Franco, Kothari, and Verdi 2011).

However, following the local standard can entail costs that make other bases more appealing. Standards typically apply to all firms regardless of size or ownership type, yet are often designed with public firms in mind. This creates complexity because the standards need to cover the vast array of activities that public firms engage in, as well as their complicated capital structures and contracting relationships. Additionally, standards evolve continuously, which creates costs associated with tracking changes and restating prior results. To address this complexity, some jurisdictions (e.g., the EU) have developed a simplified reporting standard for smaller firms. Firms also have the option to follow standards on an "except-for" basis and obtain assurance on this basis.

Within each accounting basis, firms also have discretion over the quality of their statements—for example, the extent to which reported numbers reflect economic reality (Dichev et al. 2013). Demand for quality statements can stem from both external and internal users, and interacts with the firm's information environment. For example, private firm financial reporting typically informs a narrow audience, including illiquid and long-term shareholders, and tends to be complementary to stakeholders' direct access to management.

In tandem with the decision to produce financial statements, firms also decide what other financial information to produce. Beyond financial statements and tax returns, firms often produce profitability analyses, budgets, variance analyses, and cost allocation reports. We view such management accounting tools as distinct from the financial statements, though they typically use or are generated from the same underlying accounting processes and systems. Such management accounting information can help with investment decisions, compensation, and strategic planning,

but as with financial statements, entail production costs. These costs can be significant when the firm does not already have the internal information systems, technological capabilities, and skilled workforce required to collect, store, and analyze information.

In the simplest case, firms invest in record-keeping functions, personnel, and control systems to generate financial information internally. In practice, external services help many private firms overcome the fixed costs associated with information production. These external services often include accountants, who use data provided by the firm to compile financial statements and produce other financial and managerial information. However, new technologies are creating opportunities for alternative approaches. For example, third-party information services such as business intelligence platforms are increasingly common (see Ain et al. 2019 for a review). Some services construct live data feeds from clients' systems, which allow them to transform raw information into reports and dashboards that are then made available to the clients. In the extreme, if such information can be used to support internal decision-making or even be used in external contracting (e.g., with lenders), it may obviate the need for more traditional accounting information such as financial statements.[9]

3.1.2. Information verification

If a firm produces financial statements, it must choose the level of verification to obtain. An audit, the statement with the highest verification, provides positive assurance that the financial statements are reported in accordance with a given accounting standard. By contrast, review statements provide only negative assurance and compilations provide no assurance. In terms of assurance benefits, audited statements are more contractible because the underlying financial information is more reliable (Watts and Zimmerman 1983). Audited statements also contain more

[9] For example, Toast offers loans to restaurants that also use its point-of-sale system. This access to customers' systems reduces information asymmetries that can otherwise impede lending. See: https://pos.toasttab.com/products/capital.

information, as they include all four financial statements and complete footnote disclosures. Additionally, audits improve the firm's information environment by reducing reporting noise, improving controls, and informing decision making (Hemmer and Labro 2008). Finally, audits can mitigate agency costs, for example, by uncovering misstatements and increasing the likelihood of fraud detection.

Verification also provides signaling benefits, as audits can serve as a mechanism that allows firms to convey their type (e.g., Spence 1973; Titman and Trueman 1986). Similarly, stopping an audit conveys negative information, such that audits can serve as a bonding mechanism (Jensen and Meckling 1976; Watts 1977). Both assurance and signaling benefits of verification can depend on characteristics of the auditor, including their size (DeAngelo 1981; Dye 1993), specialization (Dopuch and Simunic 1982), and reputation (Weber and Willenborg 2003; Causholli and Knechel 2012).

As a result of both assurance and signaling benefits, audits can reduce the cost of capital and lead to improved profitability. However, the magnitude of these benefits depends in part on institutional context. If the firm is subject to high levels of scrutiny from regulators or tax authorities, the incremental benefits of an audit may be lower. Of course, firms must also pay for audits, and like financial statement production, there is a fixed cost component. Further, there are indirect and incidental costs involved: managers spend significant time preparing statements and interacting with the auditor and may require technological investments in their reporting systems.

Given these costs, alternative information sources become important to consider. For example, whereas financial statements were the primary information source for lenders in the early 2000s (Berger and Udell 2006), technological advances have created newer, timelier, and less costly alternatives. Credit scores and reports are more comprehensive (World Bank 2019), and

lenders can now directly access a firm's payment system and ledger via APIs. Besides technological tools, lenders can also employ contracting mechanisms (e.g., covenants or collateral) to mitigate information asymmetries. More broadly, alternative capital markets can arise when compliance costs make it difficult for traditional financiers (e.g., banks) to serve smaller firms (Gopal and Schnabl 2022), leading to innovation in screening and monitoring tools and approaches (Buchak et al. 2018; Minnis et al. 2024).

3.1.3. Information dissemination

If a firm produces financial statements, it must also choose the parties to share them with. Firms can privately *report* their financial statements to a given party (e.g., to their bank as part of the screening process) or *disclose* their financial statements publicly (e.g., by posting them on a website). Given this distinction, throughout this survey we refer to private reporting and public disclosure as distinct dissemination options.[10] However, this distinction is less meaningful for firms that would privately report to many external parties, since wide dissemination often leads to information leaking into the public domain.

Reporting and disclosure can produce capital market benefits. Financial statements reduce information asymmetries between the firm and capital providers, by increasing awareness of the firm (Merton 1987) and reducing adverse selection problems (Easley and O'Hara 2004). This can result in a lower cost of capital and higher firm value (Leuz and Verrecchia 2000). Verification can enhance these benefits (Grossman 1981), but in some instances so-called cheap talk disclosures can be meaningful (Farrell and Rabin 1996). Additionally, dissemination can confer externalities to investors in peer firms (Foster 1980).

[10] Of course, firms also choose between private reporting and public disclosure for financial information other than financial statements. For example, some firms now allow suppliers live access to internal company data (e.g., sales data) to facilitate inventory management.

Disclosure in particular entails costs, however. Management must prepare and disseminate the disclosure. Disclosure can expose the firm to litigation risk (Skinner 1994). Competitors, suppliers, and customers can observe and use the disclosed information to their advantage, resulting in proprietary costs for the disclosing firm (Verrecchia 1983; Dye 1986; Wagenhofer 1990). Friends, family, and neighbors may be able to use financial disclosures to infer the owner-manager's wealth. And although the firm's employees might be able to improve operations with more financial information, disclosure can complicate bargaining with them (Bova 2013).

3.2. Comparing public firm and private firm accounting choices

Public firm financial reporting informs a general audience, requires substantial investment in assurance, systems, and controls, and is intended to meet objectives related to investor protection, valuation, stakeholder monitoring, and so on. In this context, public firms have significantly more limited accounting choices than private firms. A public firm does not get to choose a) whether to produce financial statements, and if so, whether to use the local accounting standard; b) whether to have any financial statements verified by an external accountant, if so, what level of assurance to obtain; and c) whether to report or disclose any financial statements to external parties. This is because major securities exchanges in most developed countries specify that listed firms must produce financial statements according to the local standard, have these statements audited by an independent CPA, and publicly disclose them on a periodic basis.

That public firms do not get to make these fundamental accounting choices does not mean the choices available to them are inconsequential. They still choose their accounting quality within the confines of the standard they are subject to, which auditor to engage (though in practice this usually entails selecting among Big N firms), whether to voluntarily adopt new standards before they are mandated, or whether to provide disclosures beyond financial statements (e.g., forecasts).

3.3. Implications for understanding the roles of accounting

The differences between private and public firm accounting choices are pertinent not only to comparisons of these firms, which are a large part of the literature, but also to understanding the various roles of accounting. Private firm settings can tell us much about the economic role of accounting, because private firms have a wide range of accounting choices and these choices are largely guided by cost-benefit tradeoffs around operating and financing effects. Of course, such effects can be relevant to public firms as well, but identifying them is challenging because they are conflated with regulatory effects. In other words, compliance is a second motive at play for public firm accounting practices (e.g., Dichev et al. 2013), as regulators impose financial statement preparation, auditing, and disclosure requirements to protect (unsophisticated) investors.[11]

As a result, researchers using public firm settings to test hypotheses about accounting choices are often forced to study less meaningful forms of variation—for example, the choice to engage one Big N auditor over another or to provide particular types of forecasts. Such choices can shed light on certain tradeoffs behind verification and disclosure, but there are generalizability issues related to the limited variation. After all, the US has a strict audit firm oversight regime and is considered by many to have the most transparent capital markets in the world.[12] And less meaningful variation implies less statistical power, which reduces the amount of belief revision from statistical tests (e.g., Burgstahler 1987).

A related issue is what to make of weak or null findings in the public firm setting. Researchers must be careful in matching their theory or hypothesis to the firm type setting (private,

[11] In this way, the private firm setting is instructive for many of the same reasons as historical evidence of accounting practices before the introduction of the 1934 Securities Exchange Act in the US. See, for example, Chow (1982), Sivakumar and Waymire (2003), Barton and Waymire (2004), and Bourveau et al. (2025).

[12] In 2007, Treasury Secretary Hank Paulson described US capital markets as "the deepest, most efficient, and most transparent in the world." See: https://home.treasury.gov/news/press-releases/hp174.

public, or both) that provides necessary variation for testing. One of the most cited accounting studies of the past quarter-century illustrates this idea. Leuz and Verrecchia (2000) discuss the mixed empirical support for what many would consider sound theory on the link between disclosure and the cost of capital. Among others, they point to one specific limitation of the empirical work attempting to test the theory:

> Aside from the difficulties of measuring the cost of capital directly and estimating this relation, *one potential explanation for the mixed empirical results* among studies using data from firms publicly registered in the United States is that, under current U.S. Generally Accepted Accounting Principles (U.S. GAAP), *the disclosure environment is already rich*. Consequently, commitments to increased levels of disclosure in the United States are largely incremental, *thereby leading to economic consequences that are difficult to substantiate empirically* (p. 92; emphasis added).

Leuz and Verrecchia's point illustrates how matching the theory to the empirical setting with the necessary variation is crucial to drawing valid inferences, and more broadly, limits what we can learn about fundamental accounting choices from public firm settings.[13] In other words, when studying accounting choices in public firm settings, researchers risk underestimating the economic role of accounting because the underlying constructs often fail to map to the empirical proxies.[14]

A similar point applies to well-cited research studying audit markets, auditor characteristics, and audit quality. Challenges associated with measuring audit quality and auditor specialization are well known (DeFond and Zhang 2014; Minutti-Meza 2013). A separate issue is

[13] As another example, a bank's information advantage is central to theories of relationship lending (Sharpe 1990; Rajan 1992). Although public firm lending relationship data are readily available, borrowers in this market often disclose extensive information, provide forward-looking guidance, and attract considerable analyst and media attention. This results in limited identifying variation in information asymmetry to explore relationship lending theories.

[14] Zimmerman (2013) makes a related point, arguing that the external financial reporting quality (EFRQ) of public firms is unlikely to be a first-order determinant of firm value: "GAAP, SEC, and exchange-listing reporting rules and regulations, and external auditing by independent accountants establish a floor, or minimum required level of EFRQ, on U.S. publicly traded firms… In light of this reporting quality "floor," future research on reporting quality must do a much better job articulating why the marginal benefits from moving beyond it warrant the incremental costs."

that the Big N audit firms that tend to dominate samples of audit studies are not so distinct, rendering it rather difficult to test seminal theories of auditor size, specialization, or reputation. This sample selection issue arises largely from studies focusing on sizable public firms whose audit demand in effect limits them to the biggest audit firms and a minimum financial reporting quality threshold. As with the disclosure and cost of capital example discussed above, the lack of identifying variation can contribute to mixed findings (e.g., Francis, Reichelt, and Wang 2005), inadequate corrections for econometric problems (see e.g., Chaney et al. 2004), and researchers understating the economic role of accounting.

Another way that public firm settings conflate economic and regulatory roles of accounting relates to the sunk cost nature of information production and verification choices. Firms' external and internal information environments are linked: new accounting standards compel firms to collect and analyze new forms of information (Hemmer and Labro 2008). This creates a generalizability issue because a significant portion of the compliance costs that public firms incur are fixed—for example, having an external audit, a robust information system, and internal audit team. Having already incurred these expenditures, the marginal cost of adopting a given management accounting practice can be small. The sunk costs due to regulation conceal the tradeoffs behind these adoption decisions and make public firms' decisions inherently different from private firms' decisions. Hence, there are also challenges associated with assessing the economic role of accounting from studying public firms' management accounting practices.

4. Information Production

4.1. Many US private firms produce only limited financial information

Several studies provide descriptive evidence on information production by US private firms. Using data from the Federal Reserve Survey of Small Business Finances (SSBF), Allee and

Yohn (2009) find that only 20% of small businesses (defined as those with fewer than 500 employees or shareholders and less than $10 million in assets) claim to use financial statements. Of these, half use accrual accounting. Casual discussions with managers of smaller private firms reinforce that financial statement production is limited—many do not maintain more comprehensive records than what is required for tax compliance.

Preparation of financial statements and GAAP use are more common for larger firms. A 2004 AICPA survey finds that for firms with between $5 million and $25 million of revenue, 89% prepare, issue, or release financial statements for external use (AICPA 2004). GAAP is by far the leading accounting basis for those issuing financial statements to external users (87%), but about one-quarter use exceptions to specific requirements (e.g., for deferred taxes). Lisowsky and Minnis (2020) examine US tax returns for firms with at least $10 million of assets and find that 79% use GAAP. Cassar (2009) studies a sample of US entrepreneurs covered by the Panel Survey of Entrepreneurial Dynamics. He finds that 41% claim to have developed projected financial statements at the start-up's inception, and even more claim to *intend* to prepare financial information. For example, he finds that about 60% intend to prepare monthly income statements, balance sheets, and cash flow statements and 32% intend to prepare monthly sales forecasts.

Although the US is often characterized as free from financial reporting regulation for private firms, some are in fact subject to requirements to produce financial information. Some US states require private firms to furnish financial reports to their shareholders upon request (Zeff 2013), and firms in industries such as healthcare, utilities, insurance, and banking are often subject to financial reporting requirements by state agencies or industry regulators regardless of ownership

type (e.g., Ke 2001).[15] In addition, the SEC requires unlisted firms to report if they have more than $10 million in total assets and more than 2,000 accredited (or 500 unaccredited) shareholders.

Notwithstanding these exceptions, a significant amount of financing and trade is conducted without reliance on financial statements or using financial statements that are quite different from those that public firms produce. This contrasts with most developed countries outside of the US, where regulators impose more extensive requirements related to the preparation of financial statements under a prescribed set of accounting standards.[16]

We see ample room for more descriptive evidence on information production by private firms, particularly work that prioritizes the use of representative samples and updates estimates from the early 2000s. This evidence helps speak to the nature of the costs of information production, as well as the statements and parts of GAAP that private firms perceive as most useful. In turn, this evidence informs the debate around the design of GAAP standards (e.g., Botosan et al. 2006; Bradshaw et al. 2014) and securities regulation more broadly. In this respect, it is also worthwhile investigating the alternative statement types, GAAP exceptions, and information sources that firms use if they do not prepare financial statements according to the local standard.

We find it instructive that, despite the US economy effectively doubling in size since the 1980s, there are half as many public US firms, and those that remain are rather large (Doidge et al. 2025). Recent work traces various aspects of information production and compliance costs to firms' decisions to go public, remain public, or go private (e.g., Bushee and Leuz 2005; Engel,

[15] State-level reporting requirements that target firms in specific industries can vary dramatically. See, for instance, the National Academy for State Health Policy's summary of hospital financial transparency laws: https://www.nashp.org/wp-content/uploads/2020/03/snapshot-of-state-hospital-financial-transparency-laws-1.pdf.

[16] In the UK, the Companies House requires private limited companies (with few exceptions) to prepare annual accounts following IFRS or UK Generally Accepted Accounting Practice. Requirements in EU countries are similar. Elsewhere, requirements for account preparation often depend on size. For example, in Australia, proprietary companies that exceed size thresholds related to assets, sales, and employee count must prepare financial statements following Australian Accounting Standards.

Hayes, and Wang 2007; Dambra, Field, and Gustafson 2015; Barth, Landsman, and Taylor 2017; Chaplinsky, Hanley, and Moon 2017), and we view this work as informing ongoing debates about the design of accounting standards. At a high level, these debates would benefit from more evidence of the tradeoffs between compliance burdens and investor protection: what information production choices are firms making, and what are the cost-benefit considerations behind these choices? Further, is technology changing these tradeoffs and, in turn, the propensity to create financial information? For example, more work could examine the role of software and artificial intelligence tools in producing financial statements (Choi and Xie 2025; Kim, Sutherland, and Vetter 2025).

4.2. Size, age, ownership dispersion, and trade credit use predict the wide range of private firm financial information production, but much remains unexplained

The AICPA (2004) survey finds that firms not preparing financial statements cite engaging in little or no debt financing as a leading reason for their choice. Allee and Yohn (2009) find that US firms preparing financial statements are larger, are more likely to have limited liability ownership, and have more trade credit than firms not preparing financial statements. They also find that the decision to use accrual accounting is positively associated with firm age, limited liability form, number of owners, and use of trade credit. Cassar (2009) finds that preparation frequency is positively associated with the degree of competition and fundamental uncertainty, with cross-sectional variation related to industry and the importance of intangible assets. Cassar and Ittner (2009) study the decision to retain an external accountant in the same dataset and find complexity and financing activity to be important drivers.

Future research can investigate a broader set of factors to help improve the understanding of production decisions. The Adjusted-R^2 from firm-level accounting choice determinants models

rarely exceeds 0.25 (e.g., Lisowsky and Minnis 2020), suggesting there is much unmodeled variation to explore. Some of the heterogeneity in financial information production decisions across private firms naturally derives from size differences, as the costs associated with many accounting choices are fixed. Industry-specific factors and external demand from lenders are important drivers of accounting choice (AICPA 2004), but there is little understanding of the role of other users such as suppliers, customers, and regulators. Similarly, evidence on the perceived tradeoffs between tax filings and GAAP financial statements among private firm managers is limited. For example, what specific features of the tax code deter managers from using tax returns to satisfy internal and external information demands, given most large firms are required to use accrual accounting for tax purposes (albeit with adjustments)? There is also little work examining private firm manager-specific influences on practices; the public firm literature indicates such influences can be meaningful (Hanlon, Yeung, and Zuo 2022).

Another opportunity for future work is to link accounting basis choice and other information production decisions to financing outcomes. Cassar et al. (2015) study the SSBF and find that accrual accounting and other accounting basis users have similar loan approval rates, but accrual accounting users receive lower interest rates. They show this interest rate effect is particularly strong for firms with lower credit scores and short banking relationships, suggesting accrual accounting can substitute for alternative methods of addressing information asymmetries between lenders and borrowers.[17] Because Cassar et al. is among the few papers in this space, there are many other financing outcomes to explore, including those associated with equity investment.

[17] These findings complement the literature on public firms that examines whether non-US firms that voluntarily adopt IFRS enjoy financing benefits. Although each setting has its own tradeoffs, one benefit of the private firm setting is that accrual accounting choice is less obviously confounded by securities enforcement than is voluntary IFRS adoption (Barth, Landsman, and Lang 2008; Christensen, Hail, and Leuz 2013).

Evidence on potential mechanisms would be informative as well. For example, does preparing financials or using a higher-quality basis credibly signal management sophistication?

We also see opportunity to examine financial information production decisions in developing market settings. Aguilar, Lind, and Ramesh (2025) examine informal microenterprises' voluntary adoption of accounting systems in Latin America. Tomy and Wittenberg-Moerman (2025) examine the use of accounting in trade in an Indian bazaar and find that reliability concerns (though not financial sophistication) limit the use of accounting information in credit allocation decisions. Such settings arguably fit the Ball (2024) paradigm of "a world with no accounting" and generally lack confounding reporting and audit mandates. While the development economics literature is large and includes compelling experimental evidence that management practices matter, studies often introduce multiple interventions at once, making it difficult to isolate the role of accounting practices (Bloom et al. 2013a; Bruhn, Karlan, and Schoar 2018). Hence, we view targeted work on accounting-related interventions as particularly promising.[18] A related direction for future research is to understand how the features of the institutional environment interact with the role of accounting.

Finally, new evidence could speak to how innovation affects incentives to produce financial information. Conventional wisdom holds that growing, innovative private firms have the least incentive to prepare financial statements, given their value is captured in intangibles, human capital, and future growth opportunities—sources of value that reporting standards often struggle to capture. However, some research undermines this notion, motivating further inquiry, particularly in the VC/PE space. Using a sample of US biotechnology firms that subsequently IPO, Hand (2005) shows that financial statement information is highly value-relevant for VC valuations.

[18] See also Chang and Christensen (2023), who study the effectiveness of a supply chain audit system at reducing conflicts at audited mines in the Eastern DRC.

Armstrong, Davila, and Foster (2006) find similar evidence for a broader set of industries. Lisowsky and Minnis (2020) find that small, young, high-growth firms traditionally associated with innovation are *more* likely to have audited GAAP financial statements.

4.3. Private firms' financial reporting exhibits less conditional conservatism and is more influenced by income tax issues than public firms' reporting, but conclusions differ about whether public or private firms engage in more earnings management

A large literature compares the "earnings quality" of public and private firms. The underlying tension of studies in this area stems from the mixed implications of differential capital market incentives, litigation risk, scrutiny of stakeholders (e.g., regulators, information intermediaries), and agency costs for financial reporting. Two non-mutually exclusive hypotheses in this space are the "demand hypothesis" and the "opportunistic behavior hypothesis." The demand hypothesis largely focuses on general reporting attributes such as conditional conservatism (i.e., timely loss recognition), and posits that public firm managers are incentivized to prepare financial reports in ways that meet these objectives (e.g., to improve access to capital and meeting contracting demands). The opportunistic behavior hypothesis emphasizes that demands for reporting incentivizes public firm managers to mislead, naturally leading researchers to specific settings where such incentives are heightened. Both hypotheses predict that key features of public and private firm financial reporting differ, implying that the overall "quality" of financial reports may differ as well.

Ball and Shivakumar (2005) emphasize the positive effects of market demand and regulatory scrutiny on public firm financial reports. Comparing UK public and private firms, they find that UK public firms exhibit substantially more conditional conservatism, consistent with the idea that dispersed stakeholders demand asymmetric recognition of losses to facilitate monitoring.

Nichols, Wahlen, and Wieland (2009), Givoly, Hayn, and Katz (2010), Hope, Thomas, and Vyas (2013), and Sletten et al. (2018) corroborate and extend the findings in Ball and Shivakumar. For example, Craig Nichols et al. (2009) show that public banks exhibit greater conditional conservatism (e.g., in recognizing loan loss provisions) than private banks.

Ball and Shivakumar (2008) examine the financial reporting of UK IPO firms, comparing properties of reports for the same firm and same year as originally prepared (when the firm was private) to the reports as restated years later (when the firm is going public). They show that many IPO firms restate their financials with *lower* book value of assets and retained earnings. They also find that IPO firms have more conditionally conservative reporting than private or public firms, consistent with elevated regulatory scrutiny and market demand driving better reporting quality.

A corollary of the demand from dispersed stakeholders for high-quality information is that public firm executives care more about financial reporting outcomes than private firm executives. The tax literature illustrates this point—whereas public firm executives emphasize the financial reporting aspects of income taxes, private firm executives upweight cash effects. Based on responses to an experimental instrument, Cloyd, Pratt, and Stock (1996) conclude that private firms are more likely to choose a financial accounting treatment that conforms to a favorable tax treatment to increase the probability the IRS allows the treatment. They also show that private firm managers are more likely to report making tax decisions *before* reporting decisions and believe cash flow is more important in determining firm value than income. Beatty and Harris (1998) show that the sensitivity of US banks' realized gains on the sale of securities to income taxes is greater for private firms than public firms. Coles et al. (2022) find that US private firms exhibit a high sensitivity of taxable income to their expected marginal tax rate, and most of this response is attributable to accounting transactions.

Examining survey responses from US tax executives, Graham, Hanlon, and Shevlin (2011) show that private firm managers give less weight to financial accounting tax considerations (incremental to cash effects) in deciding whether to locate operations or reinvest earnings outside the US. Graham et al. (2014) similarly find that public firm tax executives are more concerned about the financial reporting effects of tax planning (e.g., the effect on the firm's GAAP ETR) than private firm executives. In contrast, private firms care more about cash taxes paid.

Evidence from studies that examine differences in proxies for earnings management is less conclusive. Some empirical studies suggest that private firms engage in less earnings management than public firms. Beatty, Ke, and Petroni (2002) find that US private banks have more small earnings decreases than US public banks and that public banks avoid earnings decreases in part by opportunistically managing security gain realizations and loan loss provisions. Beaver, McNichols, and Nelson (2003) show that US private property-casualty insurers are less likely than their public peers to understate loss reserve accruals to avoid reporting losses. Givoly et al. (2010) compare US firms with publicly-traded debt and publicly-traded equity to US firms with publicly-traded debt and privately-traded equity. They find that firms with privately-traded equity have (marginally) greater accrual persistence, exhibit less accrual variability, and are less likely to have positive unexpected accruals that help them to beat earnings benchmarks. Beatty and Harris (1998) provide similar evidence, finding that US private banks are less likely than US public banks to use realizations of gains and losses on security sales to manage earnings. However, they conclude that the earnings management behavior of public banks is informative—not misleading—given that these realized gains or losses predict future earnings.

Other papers find that public firms have better accruals quality and engage in less earnings management than private firms. Using a sample of firms from 13 European countries, Burgstahler,

Hail, and Leuz (2006) calculate averages of earnings management proxies at the country-industry-year level. They conclude that earnings management is more pervasive for private firms. Hope et al. (2013) use a US sample. They find that public firms have lower discretionary accruals, though the better reporting qualities of public firms are weaker in settings where managers have greater incentives to manipulate earnings. In an experiment with corporate controllers and CFOs, Clor-Proell and Maines (2014) compare the cognitive effort and bias of public firm executives against private firm executives in estimating a (hypothetical) contingent liability. They find that public firm executives exert more cognitive effort and exhibit less bias when the liability is recognized versus when it is disclosed. In contrast, placement has relatively little effect on the effort and bias of private firm executives.

A couple conclusions about the relative earnings quality of private versus public firms strike us as uncontroversial—namely, that private firms exhibit less timely loss recognition and give less attention to the financial reporting effects of taxes. These findings conform to survey evidence that public firm managers care more than private firm managers about how financial reporting output affects the company's valuation (e.g., Graham, Harvey, and Rajgopal 2005). However, many conclusions comparing the quality of private and public firm reporting hinge on specifics of the setting and the proxies used. The relative quality of financial reporting output seems to depend on sample selection (e.g., are small private firms included?), scope (which measures of reporting are examined?), institutional context (is there a public disclosure requirement for the private firms?), and interpretation (is earnings smoothing indicative of high or low earnings quality?). Some of these issues underscore a classic tradeoff between generalizability and identification. Because private firms exhibit substantial heterogeneity and can differ so sharply from public firms, researchers are often forced to (a) compare representative (i.e., small, unaudited,

opaque) private firms to public firms or (b) compare unrepresentative private firms to public firms, better controlling for features of private firms that could otherwise confound the test. Of course, this tradeoff is not unique to public and private firm comparisons, but it is acute and has no simple answer—it is ultimately a subjective decision that hinges on each study's motivation and research question. Consider, for instance, that only some papers even attempt to control for the self-selection of public listing (e.g., Ball and Shivakumar 2005; Hope et al. 2013).[19]

One research opportunity is to focus more on settings and variables that help separate reporting quality choices from business model shocks. For example, researchers can employ *input-based* reporting quality measures focused on the financial statement verification level (audit, review, compilation, or self-prepared statement) as the length, content, substantiation, and independence systematically vary across levels. Another opportunity is to explore real earnings management tactics. Hall (2016) provides one study in this space; he finds that US public banks are more likely than US private banks to reduce labor costs to avoid earnings declines.[20] Focusing on real earnings management may limit studies' ability to speak to differences in financial reporting quality but still sheds light on factors that motivate public and private firm comparisons, including capital market pressures, regulatory scrutiny, and agency problems. Future work that focuses on financial reporting quality could explore alternatives to standard accruals-based

[19] Comparisons of public and private firm reporting face another challenge. Even in countries where private and public firms share many institutional features (e.g., tax rules), private and public firm reporting still have material differences. For instance, even the largest UK private firms do not report earnings per share. Thus, whereas public firms might manage earnings or share count to opportunistically round earnings per share up (e.g., Das and Zhang 2003), private firms do not. This makes broad statements about differences in overall earnings quality difficult, given some metrics are disclosed (and thus potentially subject to manipulation) by only one group.

[20] Relatedly, Dierynck, Landsman, and Renders (2012) examine the labor cost behavior of Belgian private firms, which must meet the zero earnings benchmark to pay dividends, issue bonuses, and avoid adverse consequences from auditors and creditors. They provide evidence of real earnings management related to labor cost adjustments to meet the benchmark.

measures, given such measures are noisy and lack construct validity even among public firms (e.g., Nezlobin, Sloan, and Zha Giedt 2022).

4.4. Performance against financial reporting metrics affects executive compensation less at private firms than at public firms

Many of the factors that drive differential reporting quality across public and private firms also affect the usefulness of financial information for contracting. For example, if private firms prioritize tax minimization and deprioritize features of reporting like timely loss recognition that arguably facilitate efficient contracting, then it is reasonable to expect private firms are less likely to use (the same) financial information to evaluate and compensate managers.

Several papers provide evidence along these lines. Ke, Petroni, and Sa (1999) compare the relation between CEO compensation and accounting performance measures for public and private insurance companies. They find that, in the cross-section of public firms, higher return-on-assets correlates with higher CEO compensation. They do not find a similar relation for private insurers. They also find that salary (bonuses) is a larger (smaller) percent of compensation for private firms.

Ittner, Larcker, and Pizzini (2007) examine member-owned US medical practices. Their setting is unusual in that physicians act as both principals (i.e., partners) and agents (i.e., employees); thus, the private firms they examine have significant minority interests. They show that these firms' compensation practices reflect agency considerations such as the extent of goal congruence and mutual monitoring, as well as the informativeness of performance measures.

Using data from an AICPA survey, Indjejikian and Matějka (2009) find that bonus plans for public firm CFOs assign more weight to compliance and control (e.g., clean audit outcomes) and short-term financial management (e.g., forecasting) and less weight to the efficiency of reporting or internal decision support than private firm CFO bonus plans. Private firm CFOs report

that they expect to earn a significantly higher portion of their bonus based on subjective evaluations. They also find that, relative to private firms, public firms reduced the weight of financial performance measures in CFO bonuses more from 2003 to 2007, suggesting that public firms deemphasized financial metrics post-SOX to minimize misreporting incentives.

Together, these papers provide a helpful complement to the larger literature that compares public and private firm financial reporting quality. Our interpretation is that the evidence is consistent with private firm financial reporting generally being of lower quality, but this outcome is not sub-optimal. The lower quality reflects an equilibrium outcome of supply and demand forces including weaker contracting needs and fewer (on average) agency problems at private firms. Regardless, the results leave room for more evidence on the roles of financial metrics in the governance of private firms. As one example, work can explore how directors use accounting information to monitor and advise private firms.

4.5. Because external reporting requirements and internal information production are linked, private firms provide a unique setting to understand the "market" for managerial accounting practices

Accounting can improve economic outcomes not only by helping firms obtain financing and communicate with external parties, but also by aiding internal decision-making. Firms develop and verify financial information to use in capital budgeting, forecasting, profitability analysis, cost allocation, and pay and monitoring. Private firms provide a useful setting for investigating this decision-making role: external reporting requirements and the internal information environment are inextricably linked (Hemmer and Labro 2008; Shroff 2017), so the choices of private firms facing limited requirements provide insights into the economic tradeoffs behind various management accounting practices.

Several themes from this work emerge. First, improving internal decision-making is a first-order motivation for information production. The 2004 AICPA survey reports that "management use" was the second leading response to the question "who does your company prepare GAAP financial statements for?", with 76% of participants with between $5 million and $25 million of revenue choosing this option (AICPA 2004). Even so, private firms often struggle to adopt practices that are common in their public counterparts (Davila and Foster 2005; Lavia López and Hiebl 2015). As with financial statement preparation, these challenges mainly relate to fixed costs of adoption: implementing can require financial resources and scale (Jarillo 1989), technological sophistication (Mitchell and Reid 2000), and accounting expertise (Davila and Foster 2007; Carraher and Van Auken 2013) that many private firms lack.[21] Due to these fixed costs, as well as the absence of mandates to, for example, develop internal controls, private firms often employ just a subset of the management accounting practices that public firms use, opt for pared-down versions that are less costly, or leverage complementarities with existing systems (Sandino 2007).

Second, as with financial statement preparation choices, management accounting practices are shaped by environmental factors. Pressure from competitors or trading partners can influence the firm's adoption decisions (Amat, Carmona, and Roberts 1994; Hopper, Koga, and Goto 1999; Labro and Stice-Lawrence 2020), as can financing conditions and other contingencies (Reid and Smith 2000). The wide range of potential determinants can make it challenging to study consequences of adoption using archival methods, especially if data availability is limited. For example, Ittner, Lanen, and Larcker (2002) find that use of activity-based costing (ABC) has no significant association with return on assets, though it has some relation to manufacturing quality and cycle time improvements. However, the pseudo R^2 of their model explaining use of ABC is

[21] The Financial Accounting Standards Board Private Company Council (PCC) explicitly identifies a lack of accounting resources as a feature that distinguishes private firms from public firms (FASB 2013).

0.07, suggesting substantial room to improve our understanding of factors that drive adoption.

Finally, there is some evidence that verification enhances the usefulness of management accounting practices. Carraher and Van Auken (2013) survey 312 small US firms and find that owners are more likely to use financial statements for decision-making when the statements are externally-prepared. Call et al. (2025) survey 646 US private firm CFOs and find evidence of a complementarity between financial and management accounting: firms undergoing GAAP audits are more likely to produce and disseminate more management accounting information, and they report improved budgeting, forecasting, and profitability assessments from using GAAP. These findings are in line with theory illustrating how auditing helps managers separate good and bad investments and facilitate monitoring (Bushman and Smith 2001). That said, much work remains before we fully understand the linkages between the quality of a firm's financial statements (of which audit status is one dimension) and management use of financial information for decision-making.

Overall, we view this line of work as having significant potential, as technology has reduced the barriers that have prevented researchers from collecting data on management accounting practices from a large set of firms. There are fruitful avenues for both descriptive evidence and hypothesis testing. First, given the fixed costs associated with adoption, how do firms choose among practices, and how do these choices evolve over a firm's life cycle? Second, because adoption decisions often leverage existing systems, it is important to document the interactive role of financial reporting and complementary internal capabilities and tools. For example, Bernard et al. (2025) examine how managers of US and Canadian retail cannabis dispensaries learn from managerial information processed and summarized by an external business intelligence service. Future work might use revealed preference to infer the types of information most useful to private

firm managers by examining dashboards and reporting tools that arise in unregulated environments. Researchers could also explore the credibility of such information; for example, is the information prepared by third-party information services for clients useful for contracting? Third, private firm settings can contribute evidence on the consequences of managerial accounting practices for outcomes such as performance, contracting practices, organizational design. For instance, Labro, Lang, and Omartian (2023) use Census data to link US firms' use of predictive analytics to the centralization of authority and emphasis on formal performance-based incentives. The literature would benefit from more evidence in this spirit. Finally, VC/PE ownership has grown considerably in recent decades, and research can build on early studies that explore the ways in which VC/PE firms advise and monitor portfolio firms, including their management accounting practices, performance metrics, and investment decisions (Gompers, Kaplan, and Mukharlyamov 2016; Gompers et al. 2020; Call et al. 2025).

5. Information Verification

5.1. There is rich heterogeneity in financial statement assurance decisions, and the tradeoffs behind different assurance levels are not well-understood

Using US SSBF data, Allee and Yohn (2009) find that 27% of the firms with financial statements obtain an audit. Lisowsky and Minnis (2020) document that 37% of US firms with at least $10 million of assets obtain a GAAP audit. In terms of determinants, Allee and Yohn find that older firms with higher headcount are more likely to obtain an audit, review, or compilation, while Lisowsky and Minnis show that much of the variation in the decision to obtain a GAAP audit is explained by raising equity or debt capital and trade credit reliance. Dedman, Kausar, and Lennox (2014) find voluntary audits are more common among riskier UK firms and those seeking to raise external financing.

Firms above certain size thresholds in the EU, Australia, South Korea, and elsewhere face statutory audits, but even small firms below these thresholds often choose to be audited (e.g., Kim et al. 2011). Lennox and Pittman (2011) find that many UK private firms choose to be voluntarily audited after they are no longer subject to an audit mandate. Those that retain an audit enjoy upgrades to their credit ratings, consistent with a signaling, not just assurance, benefit. Using the same setting, Kausar et al. (2016) show that this signaling results in greater investment and superior operating performance. Survey work shows that managers are aware of such benefits of audits. In their survey of European private firms, Minnis and Shroff (2017) report that 39% of respondents agree with the statement "[a]n audit is required by law, but the company would voluntarily purchase an audit anyway." An additional 26% agree with the statement "[a]n audit is not required by law, but the company has decided to purchase an audit anyway." Overall, there is ample, worldwide evidence of an interior solution with respect to private firm audits: many but not all firms obtain them in the absence of mandates, and many obtain external financing without an audit.

Many private firms select intermediate assurance levels, such as reviews or compilations. Using US data from Sageworks and a CPA firm, Badertscher et al. (2023) find that about 45% of firm-years in their sample have reviews, 32% have compilations, and 22% have audits. Audits are more common for larger firms (e.g., more than 50% of firms in their highest size decile have audits). Whatever level of assurance firms obtain, their choice tends to be sticky—Badertscher et al. find that only 4% of firms in their sample change their assurance level from year to year.

Badertscher et al. also find evidence suggesting that reviews are sufficient for firms to obtain most of the financial reporting quality benefits from assurance. They conclude that "a review captures 94% of the overall improvement in financial reporting quality between company-

prepared statements and audited financial statements" (p. 11), and "a review captures 77% of the cost of debt benefits between company-prepared and audited financial statements" (p. 16).

Several other papers examine costs and benefits of different assurance levels. Studying the US SME setting, Minnis (2011) finds that voluntary audits reduce average interest rates and that lenders use audited information more intensively to set loan terms. However, he does not find a significant difference in financial reporting quality or average interest rates between firms with reviews and firms with compilations. Similarly, Blackwell et al. (1998) find little interest rate difference for firms with reviews, compilations, and company-prepared financial statements in their sample from six US banks. Allee and Yohn (2009) do not find a significant effect of reviews or compilations on either the probability of loan denial or interest rates on recent debt at US SMEs.

By contrast, several papers from the US crowdfunding setting find lending outcome effects for firms obtaining intermediate assurance levels. Bogdani, Causholli, and Knechel (2022) find that voluntary assurance from a CPA (either a review or audit) is associated with raising more funds and attracting more investors. Gong, Krishnan, and Liang (2022) show that crowdfunding outcomes are significantly better for firms that voluntarily obtain reviews than those that obtain mandatory reviews (consistent with a signaling benefit), and those with mandatory reviews have better fundraising outcomes than those without a review (consistent with an assurance benefit).

In terms of assurance pricing, Badertscher et al. (2023) find that fees roughly double for each increment in assurance level in their sample of US firms. Using client-level data from all auditors of firms in the UK FAME dataset, Chaney et al. (2004) find that private firm audit fees increase in firm size, asset turnover, and foreign sales, and decrease in the quick ratio and return on assets. Most private firms do not choose a Big N auditor, and Chaney et al. do not find a Big N premium for private clients. They see their results as evidence of audit market segmentation with

respect to ownership type: many private firms face little external pressure to engage a larger auditor and instead seek to minimize audit costs, while Big N auditors invest in technology, training, and facilities required to conduct engagements for large public firms.[22]

This verification work motivates several areas of future research. First, there is room to update descriptive evidence on assurance choices (many of the above studies use data from two decades ago) and further explore the determinants of these choices. For example, external users are important drivers of assurance choice (AICPA 2004), but, as with financial information production decisions, there is little understanding of the role of many non-lender users such as suppliers or customers.[23] We also expect life cycle considerations matter since, for example, firms considering an IPO or sale may obtain GAAP audits to match the financial statement sophistication of public firms or mitigate information asymmetries with potential acquirers (Ball and Shivakumar 2008; Jansen 2020). More generally, research can shed further light on the tradeoffs between audits and other assurance levels that are common in practice but have received limited attention. New financing markets and financial innovations are a fruitful setting for such research (Bourveau et al. 2021; Bogdani et al. 2022; Bourveau, Brendel, and Schoenfeld 2024).

Second, private firm fraud and audit outcomes in general are understudied, given numerous recent high-profile cases (e.g., Madoff, Theranos, FTX) and considerable research interest in the consequences of and contributing factors to fraud. And while much of the debate surrounding Sarbanes-Oxley focused on the burdens of internal controls requirements for smaller firms,

[22] However, it is also not rare for private firms to hire Big N auditors. For example, Hope and Langli (2010) find that 29% of their sample of Norwegian private firms employ a Big N auditor. Oxera (2006) reports that the Big N audited 79% of the top 100 UK private firms in 2005.

[23] For example, there is little understanding of the credence that non-lender users put in mandatory unaudited financial statements filed with national registers. The UK Companies House, for one, explicitly warns users that they do not verify the accuracy of the information that firms file. Future work could explore how and to what extent users correctly calibrate their expectations about the reliability of private firm financial information, given the limited scope of enforcement in European countries that mandate public disclosure.

archival work on private firm internal control choices is limited. What controls do firms maintain absent securities regulation, what external and internal parties influence these control decisions, and how do these financial controls interact with the firm's operating environment?

Third, how should we interpret financing benefits to those, for example, voluntarily obtaining an audit? One interpretation is that audits belong in the set of management practices that help explain productivity differences across firms (Bloom and Van Reenan 2007). Adoption of such practices can be explained by management quality, awareness costs, or learning. For example, Cheynel et al. (2025) examine how managerial myopia could affect voluntary audit decisions among Chinese private firms. EU experimental evidence from Gassen and Muhn (2025) and Christofferson et al. (2025) suggest awareness costs drive accounting choices and management practices. These studies point to so-called behavioral factors that are worthy of more attention in private firm research. An alternative perspective is that selection concerns are important to the audit-financing outcome relationship, and there are unmodeled costs driving certain firms' choices to go unaudited (and possibly, measurement issues that lead to overestimation of the benefits). Research attempting to decipher between the two classes of interpretations is worthwhile, considering a significant portion of private firms do not find it worthwhile to obtain an audit, even though agency and contracting frameworks suggest an audit could be beneficial (e.g., Dedman et al. 2014; Vanstraelen and Schelleman 2017). For example, thousands of firms with dispersed ownership and considerable debt do not have audited GAAP statements, while many smaller, closely held firms with no leverage do (Minnis and Lisowsky 2020). In addition, audits can generate both operating benefits (e.g., superior information quality that aids profitability analysis) and costs (management time), and we see an opportunity for future work to more fully explore the role of operating tradeoffs in assurance decisions.

Fourth, how is the recent proliferation of third-party data sources and observational techniques (e.g., credit card data) that substitute for financial statement information (e.g., Minnis et al. 2024) affecting the assurance market? We see promise in both empirical and theoretical work on this agenda. When third-party data sources increase data coverage of opaque firms, do firms tend to adjust along the extensive margin (e.g., dropping assurance altogether) or the intensive margin (merely switching to a lower assurance level)? Do new data sources enable new firms to enter the capital market? How do contracting parties choose between accounting versus alternative information sources? How does the value of an audit and audit market competition evolve when financial information can be verified by alternative sources? What properties of alternative sources determine whether they complement versus substitute for accounting information? How does the expansion of alternative data sources affect financing markets and competition between firms?

5.2. Private firm audits are subject to lower litigation risk and less external monitoring than public firm audits

Most studies on audit pricing examine public firm clients and focus on publicly observable attributes of engagements (see Hay, Knechel, and Wong 2006 for a review). As a result, these studies rarely speak to audit pricing for private firm clients of public accounting firms, even though these firms make up a large portion of revenue for accounting firms. For example, Chaney et al. (2004) find that over 50% of audit fees for UK companies in their sample are attributable to private firms.[24] O'Keefe, Simunic, and Stein (1994) rely on survey responses from audit partners at a Big N public accounting firm, and 80% of their final sample consists of private firms. They also note that a large portion of surveyed partners lead engagements for review and compilation services, which consist exclusively of nonpublic companies.

[24] Evidence from Continental Europe is similar. See, for example, Freiberg et al. (2024).

Notwithstanding the importance of private clients to public accounting firms, few studies make direct comparisons between the audits of public and private firms. Those that do provide several key conclusions. First, even after controlling for client fundamentals such as complexity, private firm audits are less expensive. Like O'Keefe et al. (1994), Bell, Doogar, and Solomon (2008) use proprietary data from a Big N public accounting firm to examine determinants of audit engagement labor usage and fees. Both studies find that, relative to otherwise similar private firm audit clients, public firm audit clients require significantly more labor hours (especially partner and manager hours) and as a result pay significantly higher total fees. Badertscher et al. (2014) compare the fees of US audit clients with publicly-traded debt and publicly-traded equity to those of US audit clients with publicly-traded debt and privately-held equity. They find that, again holding other observable differences constant, firms with publicly-traded equity have total fees about 20% larger than private firms. However, the literature does not suggest that public firms pay more *per hour*. For example, neither Bell et al. (2008) nor Bell, Causholli, and Knechel (2015) find a significant difference in fees per audit hour between US public and private firms.

Second, lower litigation risk is likely a major factor that helps to explain the lower fees for private firms. Drawing on proprietary data from a Big N firm, Bell et al. (2015) report that auditors' perceived business risk is significantly higher for public clients than private clients. Badertscher et al. (2014) emphasize litigation risk as an explanation for their results, citing evidence from the Center for Audit Quality that most litigation damages paid by Big N audit firms relate to audits of public firms. They also provide evidence that audit fees increase (decrease) substantially for firms going public (private). Chaney et al. (2004) note that lower litigation risk is a possible explanation for the lack of evidence of a Big N audit fee premium in their sample of private UK audit clients.

Third, in addition to litigation risk, the strength of external monitoring and enforcement differs substantially between public and private audit clients. This variation has both positive and negative implications for audit quality. Bell et al. (2015) find that non-audit services and long auditor tenure relate to lower internal assessments of audit quality for private firm clients but not public firm clients. They interpret the results as evidence that regulatory forces and market demand discipline audits of public firm clients. Stuber and Hogan (2021) find that, contrary to the expectation that PCAOB scrutiny improves the accuracy of accounting estimates, public banks' allowance for loan losses become more conservative and less accurate following PCAOB inspections compared to the allowances of private banks, which are not subject to inspections. They conclude that public firms manage inspection risk to the detriment of audit quality.

We view research on auditor choice and the costs and quality of private firm audits as holding considerable promise, either with or without explicit comparisons to public firm audits. More descriptive statistics could help establish the importance of the private firm assurance market—for example, what portion of US public accounting firm revenues come from private firm clients versus public firm clients?[25] Another particularly valuable avenue could be to explore how private firms select an auditor. For instance, does industry specialization, proximity, and size play a similar role as in the public firm setting? How important are non-audit services to audit relationships? More broadly, how do auditors compete in this market, and what interdependencies exist across client types in auditors' portfolios?[26]

[25] The PCAOB has proposed requiring more disaggregated disclosure of fee information, but stakeholders have resisted. See: https://assets.pcaobus.org/pcaob-dev/docs/default-source/rulemaking/docket-055/2024-013-firm-reporting.pdf?sfvrsn=1e072ad1_2.

[26] The audit markets for regulated and unregulated firms are interdependent, as regulation targeting public firms can generate spillovers to private firms via shared resource markets. To illustrate, new reporting or audit requirements can increase demand for CPAs by public firms and their auditors. In the short run, the supply of CPAs is inelastic, given the lengthy licensing process and time it takes to train other accounting employees. Then, because many CPAs serve both public and nonpublic clients, significant disclosure and audit regulation (e.g., the Sarbanes-Oxley Act or

5.3. Tax system design and enforcement interacts with financial statement assurance, with different effects for public and private firms

There are at least two ways in which the design and enforcement of the taxation system differentially affect public and private firms. First, because private firms have less sophisticated reporting environments, when the tax system assesses taxes based on accounting income (e.g., an alternative minimum tax based on accounting income by design is more likely to affect public firms given their size), or when enforcement is based on book-tax conformity (Hanlon and Shevlin 2005), private firms often have more flexibility to report in a way that reduces their tax burden. Essentially, the absence of an audit requirement and the lower scrutiny of private firms' accounting numbers can help private firms avoid tax.[27]

The second way that tax regulation can differentially affect public and private firms is via externalities of enforcement. Guedhami and Pittman (2008) show that private firms' interest costs decrease in the probability of a face-to-face IRS audit, which they argue reduces outside investors' expropriation risk. Gallemore and Jacob (2020) argue that corporate tax enforcement facilitates growth in commercial lending by improving the creditworthiness of borrowers (e.g., by reducing agency costs) and improving the information used in lending decisions. Exploiting variation in the organizational structure of the IRS, they find that commercial lending growth for US regional banks increases with the probability of tax return audits of local SMEs. They show this result is at least partly attributable to the effects of IRS enforcement on information quality.

establishment of the PCAOB) can influence the availability and cost of CPA services in the US (Duguay, Minnis, and Sutherland 2020) and the markets that auditors choose to serve (DeFond and Lennox 2011).

[27] Hoopes et al. (2024) find that, compared to US public firms, US private firms engage more in some forms of conforming tax planning, but interestingly are not more aggressive planners. Beuselinck, Deloof, and Vanstraelen (2015), in contrast, provide some evidence that private European multinationals are more likely to shift income outcome out of the parent country than public multinationals.

Corporate taxation remains hotly debated, with a range of tradeoffs related to cross-jurisdiction coordination, minimum rates, and book-tax differences. One debate particularly relevant to our survey involves the unintended consequences of alternative minimum taxes on public and private firms. To illustrate, if alternative minimum tax regimes reduce the incentives for public firms to participate in research and investment tax credits and deductions (e.g., Hanlon 2021), then it can alter the nature of competition between public and private firms. Ongoing reform efforts involving alternative minimum tax rates provide an opportunity to test this prediction.

6. Information Dissemination

6.1. Private firm information dissemination choices reflect considerations related to capital providers and competitors, but the exact tradeoffs, frictions, and outcomes differ from those of public firms

Information dissemination helps capital providers assess the returns on investment opportunities. Given private firms are often capital constrained, it is not surprising that they rely on dissemination channels—public disclosure or private reporting—to communicate with current and potential shareholders and lenders. Although many considerations behind private firms' dissemination choices are similar to those behind their public firm counterparts' decisions, what makes them novel is the variety of forms, frequencies, and approaches that surface in a largely unregulated setting.

Kang (2025) uses a multi-method research approach to investigate private firms' dissemination choices in the US Regulation D private capital market.[28] She finds that public filings by firms in this market often contain more aggregate figures than what is found in public firm

[28] Regulation D provides exemptions under the Securities Act, permitting companies to raise capital from accredited investors under certain conditions without registering with the SEC.

filings, and options to withhold certain information are commonly chosen. Similarly, Barth et al. (2017) study the JOBS Act and find that many firms elect to withhold compensation information and confidentially file their registration statements. Such choices are associated with underpricing and post-IPO volatility (see also Leone, Rock, and Willenborg 2007 and Boone, Floros, and Johnson 2016), suggesting that in some cases, opacity could reflect efforts to evade monitoring (i.e., an agency problem) rather than a pure cost-benefit tradeoff of investors' considerations.

Beyond financial statements and registration filings, private firms seeking to enhance visibility with prospective investors can rely on other public disclosure tools. Damba, Schonberger, and Wasley (2024) find that US firms operating in the pre-IPO prospectus filing stage commonly use press releases and conference attendance, and that these efforts translate into increased investor awareness. Bourveau, Breuer, and Muhn (2022) show that US private firms promote awards (e.g., fastest growing company or industry recognition) via their websites, job postings, and financial news, and that these efforts translate into better outcomes including more equity financing, more hiring, and fewer failures. Breuer, Hombach, and Müller (2022) find that mandatory disclosures by regulated German firms can crowd out voluntary disclosures by smaller unregulated German firms. Together, these studies suggest that public disclosures (from either the firm itself or related firms) can help with reaching potential investors and counterparties.

Kang's (2025) survey and interview evidence point to *private reporting* channels being quite active for US private firms attempting to attract prospective investors: 97% of the Regulation D respondents in her sample report providing information privately to a prospective investor, and the most common information includes business descriptions, management background and experiences, and intended use of proceeds. Sixty-nine percent report providing financial statements. Financial statements are the most common information type provided in the *post-*

investment stage (67% of respondents), but there is a wide variety of information provided including changes in capital structure or the management team and proxy statements. Information is regularly provided on a more frequent basis (e.g., monthly) than what public firms are required to report. Larger firms and those raising more capital are more likely to provide financial statements (and have these statements audited or reviewed), while statements are less likely to be provided to venture capitalists (see also Baik, Berfeld, and Verdi 2024).

Of course, disclosure entails costs, particularly related to the revelation of proprietary information to non-transacting parties such as product market rivals. Dedman and Lennox (2009) study a novel disclosure setting in the UK, where medium-sized private firms have the option to withhold certain information from their publicly available financial statements but must provide complete statements to their shareholders (and their banks likewise can privately access the complete statements upon request). They find that more profitable firms and those with higher current or potential competition are more likely to exercise their right to withhold sales or cost of sales information from their public disclosures. Aghamolla and Thakor (2022) find that private US biopharmaceutical firms are more likely to go public following a reform that required disclosure of clinical trials (rendering sunk the proprietary costs associated with public listing).

Gassen and Muhn (2025) conduct an experiment where they notify German private firms of their pre-existing right to restrict access to their public financial statements. Like Dedman and Lennox, they find competitive concerns influence firms' responses, but importantly, the sizable notification reactions indicate many private firms were unaware of basic disclosure choices available to them.[29] Restriction decisions are also more prevalent in firms relying less on external financing, reinforcing that voluntary public disclosure attracts attention from capital providers.

[29] Similarly, Christofferson et al. (2025) find evidence in an experimental study in Denmark that private firms underutilize peer information in performance analysis.

Bernard (2016) provides evidence that public disclosure can facilitate predation strategies, which rely in part on larger rivals' ability to identify weaker counterparts, how they are performing, and when to take action. Although Germany has required public disclosure for all limited liability private firms for decades, the rule was largely unenforced until 2006, and thus pre-2006 disclosure decisions shed light on which firms avoided disclosure to prevent predation. Bernard finds significantly more disclosure avoidance by the financially constrained firms that theory posits are most exposed to predation risk. More generally, the setting he uses underscores the relative importance of enforcement in explaining variation in dissemination decisions for private firms.

Collectively, the empirical evidence shows that private firm information dissemination can attract attention from prospective investors and enable monitoring by existing investors, but also heightens concerns about how competitors can use the information. Much like public firms, private firms choose to disclose, report privately, or restrict access to financial information in light of these tradeoffs. However, the competitive concerns and frictions relevant to private firms sometimes differ from those relevant to public firms. For example, it is unclear whether concerns about predation extend to public firms, which are much less financially constrained than private firms.

This work motivates several avenues for future research. First, as Bourveau et al. (2022) highlight, websites have become an important dissemination tool and will likely play a growing role in helping firms attract attention from capital providers. Second, as with the accounting basis and assurance mandates reviewed in Sections 4 and 5, there are ongoing debates about disclosure mandates. On the one hand, mandates create compliance costs that disproportionately fall on smaller firms and can impede capital formation and growth (e.g., Breuer 2021). In addition, "one size fits all" regulatory approaches designed for public firms often poorly serve private firms with simple operations and limited accounting resources. On the other hand, allowing firms to redact

disclosures or restrict access can invite opportunistic behavior and lead to an uneven playing field between the firm's investors. More archival work can inform these debates.

Third, we see promise in work examining how cultural factors shape dissemination choices. In surveys, private firm managers express concern about neighbors, friends, and family acquiring financial statement information (Minnis and Shroff 2017). Such concerns can be rooted in attitudes around privacy and civic obligation, which naturally differ across societies.

Finally, work in this area focuses almost entirely on the dissemination decision (e.g., whether to report financial statements or other types of reports). Aspects of the statements themselves such as readability, length, specificity, or the inclusion of specific topics have received little attention, despite a large literature finding rich heterogeneity in these aspects among public firms (Li 2008; Dyer, Lang, Stice-Lawrence 2017). The volume of textual disclosures by private firms should be a useful resource for future work interested in either causal inference or prediction.

6.2. Cheap talk disclosures appear to improve financing outcomes in some unregulated markets

The effects of unverified, one-shot, voluntary disclosures are often observable in crowdfunding markets. Surprisingly, such disclosures appear to reduce financing frictions. Studying personal loans on the US peer-to-peer lending website Prosper.com, Michels (2012) shows that unverified disclosures increase the number of bids from potential lenders and reduce the borrower's interest rate. Cascino, Correia, and Tamayo (2019) and Madsen and McMullin (2020) show similar effects on Kickstarter, a reward crowdfunding platform popular with US entrepreneurs. Cascino et al. also show that the value of voluntary disclosure increases when legal risk of misrepresentation increases, and Madsen and McMullin show that lengthier disclosures moderate the negative effect of a mandatory "risks and challenges" section on funding outcomes

for high-risk projects. Donovan (2021) finds that the disclosure of unaudited financial statements increases funding success on Crowdcube, a UK-based crowdfunding platform.

Collectively, this research provides a valuable empirical complement to analytical "cheap talk" games (e.g., Farrell and Rabin 1996), and begs new questions that intersect with the literature on voluntary assurance decisions. What is the mechanism that leads lenders and investors to respond to the disclosures, given the opportunity for manipulation? Is the response limited to lenders and investors who are unsophisticated? For example, bank loans often require firms to provide unverified projected financials. Why do banks ask for projections when their credibility is questionable? Alternatively, how do firms signal the credibility of their projections to lenders? And does this mechanism depend on capital providers' perceptions of the costs incurred by borrowers to prepare disclosures? If so, technology could be an important moderator. For example, does the value of voluntary textual disclosure change as large language models make it easier for entrepreneurs to generate and iterate on disclosures? As the marginal cost of textual disclosures changes, does the value of financial reporting and assurance change?

6.3. Financial reporting to banks depends on the nature of the information environment, loan, bank, and economic conditions

Given the importance of bank financing to private firms, several studies collect data from banks or bank vendors and study the nature of bank information demand. Minnis and Sutherland (2017) examine the determinants of banks' information requests of US SMEs during the monitoring process. They find that banks request financial statements for half of the loans, and statements appear to substitute for other information sources (e.g., tax returns). Financial statements are far less likely to be requested for commercial real estate loans that typically involve appraisals and inspections, indicating their usefulness to lenders depends on the loan type. They

also find that interim statements (i.e., monthly or quarterly) are more likely to be provided to the bank when the loan is collateralized, indicating a monitoring role of financial statements with respect to assets securing a loan.

Berger, Minnis, and Sutherland (2017) examine how *bank* characteristics influence reporting relationships with borrowers, focusing on how the provision of audited financial statements to the bank depends on the bank's expertise in a given sector as well as the bank's size. Intuitively, audited financial statements are costly for borrowers to produce, and banks that are informed by their prior experience and exposure to similar firms should be less likely to demand them. As for bank size, larger banks may be more inclined to demand audited financial statements, which represent a form of "hard" information that they can more easily transmit and evaluate within their organization (Stein 2002; Liberti and Petersen 2019). Berger et al. find that banks are less likely to collect audited statements from US borrowers in industries in which they have more experience, indicating a substitutability between hard and soft information. Additionally, large banks tend to rely more than their smaller counterparts on audited financial statements.

Lisowsky, Minnis, and Sutherland (2017) investigate how the state of the economy influences borrower-bank reporting relationships. Theoretical work shows how economic growth can reduce the benefit of firm-specific credit analysis (Ruckes 2004; Dell'Ariccia and Marquez 2006). They show that US banks reduced their collection of audited financial statements from construction firms at nearly twice the rate of firms in other industries during the housing boom period before 2008. This pattern reversed after the housing bust. Moreover, audited financial statement collection by banks and production by borrowers before the bust is associated with better performance during the bust. In a study using similar data, Minnis et al. (2024) find that both technological development and the emergence of nonbank lenders in recent decades have

significantly reduced reliance on attested financial statements in lending in the US. Intuitively, technological advances have spawned new screening and monitoring tools that lenders can rely upon in lieu of verified financial statements. As the mix of lenders in the economy changes, the demand for attested financial statements changes to the extent these competing lenders differ in their screening and monitoring approaches.

The findings from bank-centered studies are suggestive of accounting practices more generally. Indeed, banks are perhaps the most important provider of financing to private firms, and Badertscher et al. (2023) report that many of the drivers of the choice between an audit, compilation, or review are common to US firms with and without bank debt. Nevertheless, work seeking to support or refute the assumption that we can generalize from bank relationships to reporting practices unconditionally is worthwhile. Additionally, lenders' screening and monitoring efforts increasingly rely on technological tools and big data (Demerjian 2024), and there are multiple avenues to explore how this development changes firm-bank reporting and contracting.

6.4. Information sharing and disclosure and audit mandates undermine relationship lending

The profitability of relationship lending relies, in part, on the lender's ability to use soft information to maintain information asymmetries between the borrower and other potential lenders. These asymmetries ensure the borrower cannot easily switch lenders (e.g., Agarwal and Hauswald 2010), giving the relationship lender an incentive to finance the borrower even during unprofitable periods. However, if hard information is sufficient for screening and monitoring, other lenders can more easily compete, reducing the viability of a long-term lending relationship.

Following this line of reasoning, Breuer, Hombach, and Müller (2018) examine the effects of public disclosure mandates in Germany. Exploiting size-based requirements, they find that mandates lead to more transactional banking relationships. For example, firms that are mandated

to have an audit and publicly disclose an income statement (in addition to other financial information) have more banking relationships and use shorter debt maturities than firms that are not subject to these mandates. Their interpretation is that such regulation "levels the playing field" between banks, increasing banking competition and undermining traditional relationships.[30]

Sutherland (2018) examines an adjacent question—whether lender-to-lender credit reporting affects firms' banking relationships and the terms of loan contracts. He exploits the staggered participation of lenders in PayNet, a commercial data provider serving the US equipment finance market, to identify the effects of information sharing. He finds that information sharing leads to many of the same effects as shown in Breuer et al. (2018)—borrowers are more likely to exit existing banking relationships and add new ones, and firms that add new relationships contract for shorter maturities and smaller contract sizes. The benefits of transactional banking notwithstanding, improved information sharing and disclosure and audit mandates are not unambiguously good for borrowers. Sutherland shows that delinquent borrowers are less likely to have lending contracts renewed as credit reporting expands, and Breuer et al. show that disclosure and audit mandates worsen high-risk borrowers' access to banks. This is notable because many high-risk, unprofitable firms ultimately recover and contribute meaningfully to the economy, and they rely on relationship financing to sustain themselves early on.

One opportunity for future research is to investigate how relationship lending practices evolve as data coverage of small borrowers expands and these borrowers become less opaque to lenders in the market. Theory offers two possibilities (e.g., Boot and Thakor 2000). First, lenders

[30] However, disclosure mandates can also undermine the quality of public signals of creditworthiness. Using the expansion of Germany private firm reporting in the mid-2000s as a setting, Vanhaverbeke, Balsmeier, and Doherr (2024) show that mandatory financial disclosure can undermine the quality of credit ratings, reducing their association with bank debt and trade financing. Consistent with reputational concerns driving this effect, they show that subsequent defaults cannot explain the increase in downgrades driven by negative discretionary assessments.

could pivot away from a relationship focus and toward a transactional focus, in which they do not anticipate repeated dealings with the borrower and have diminished incentives to acquire private information about the borrower. The evidence in Breuer et al. (2018) and Sutherland (2018) is consistent with this possibility. However, lenders could also offer new services to borrowers that increase the relationship surplus and raise switching costs. Empirical settings that permit researchers to observe the full set of services lenders offer can investigate this possibility.

6.5. Disclosure and audit mandates facilitate interfirm investment

Regulators often argue for private firm disclosure and assurance mandates by claiming that these mandates reduce information asymmetries between insiders and a wide range of stakeholders (Minnis and Shroff 2017).[31] If such mandates are effective, interfirm investment via M&A or VC/PE likely increases with the corresponding reduction in adverse selection and monitoring frictions. This line of reasoning is consistent with evidence that cross-border M&A volumes targeting public firms increase with the quality of accounting standards (Rossi and Volpin 2004). The counterargument is that M&A and VC/PE deals are often sourced from private channels and driven by the appeal of the management team or market opportunity (Gompers et al. 2020), making public disclosure irrelevant or possibly even crowding out incentives to pursue such deals.

Several recent papers suggest that disclosure and audit mandates do in fact facilitate interfirm investment. Ortiz et al. (2023) examine M&A deals at the country-industry-year level as a function of the proportion of private firms subject to such mandates. They find that greater private firm disclosure results in more M&A, an effect they show is related to both more target-specific information and more peer information.[32] Baik et al. (2024) examine the effects of EU disclosure

[31] For a comprehensive discussion of information spillovers, see Roychowdhury, Shroff, and Verdi (2019).

[32] Perhaps not surprisingly, voluntary audits of private company targets help to reduce information asymmetries with potential acquirers as well. Jansen (2020) illustrates how common mechanisms for risk sharing including seller financing and earnouts are less common if the target is more likely have an audit.

and audit mandates on VC/PE investment, similarly hypothesizing that reliable public information lowers potential investors' search costs. They find that PE activity increases with incremental audit and disclosure mandates and VC activity increases with audit mandates. Bernard, Blackburne, and Thornock (2020) show that US public firms are more likely to acquire a private firm in a particular industry when they acquire more information about public peers in the same industry. Kim and Olbert (2022) find that more private firm disclosure shifts equity investment from public peer firms to private firms. However, they show a positive spillover for other private firms; greater private firm disclosure is associated with more M&A and VC/PE activity by global investors targeting both the disclosing firms *and* their private peers.

Future research can build on these findings. For example, more direct, granular evidence on how deal sourcing practices change with the introduction of disclosure and audit mandates could shed light on whether the mandates primarily help investors to identify targets and investees versus to vet them. The literature must also contend with data challenges associated with identifying private firms and private firm mergers, as well as with the identification challenges associated with measuring spillover effects (Bloom, Schankerman, and Van Reenen 2013b; Roychowdhury et al. 2019). New approaches that help researchers disentangle changes in firm entry, investment, or survival from changes in data coverage or reflection effects can lead to sharper empirical analyses.

6.6. Disclosure mandates affect product market competition along extensive and intensive margins

Most studies that examine the interplay of product market competition and corporate disclosure use the public firm setting and examine voluntary disclosure as a function of characteristics of the competitive environment (e.g., industry concentration). The private firm setting provides an important complement to this literature for at least two reasons. First, some of

the most-studied empirical relations in the public firm literature are subject to widespread concerns about measurement error, endogeneity, and interpretation (e.g., Ali et al. 2009; Berger 2011; Lang and Sul 2014). Second, variation in disclosure mandates in the private firm setting is substantial enough to explore the effects of financial reporting on how firms compete. Thus, the private firm setting allows for tests of competitive real effects of financial reporting.

Breuer (2021) examines the effects of variation in the extent of EU disclosure and audit mandates arising from size-based regulation on *industry-wide* resource allocation.[33] He finds that greater industry-level exposure to disclosure mandates is associated with more shareholders, more exit, lower gross margins, and less dispersed profit margins. The effects of audit mandates are generally more marginal, except for a strong negative effect of these mandates on entry by new firms. Also using the European private firm setting, Bernard, Burgstahler, and Kaya (2018) examine the economic significance of proprietary costs arising from public disclosure mandates. They estimate that about 8% of firms that would otherwise be slightly above a regulatory threshold manage assets, sales, or employee count to stay below it, and the magnitude of size management to avoid expanded disclosure requirements (particularly income statement disclosure) is similar to that observed to avoid audit requirements. One contribution of their study is to estimate perceived costs of public disclosure, without relying on a joint hypothesis of a firm or industry characteristic (e.g., concentration) purported to create or exacerbate these costs.[34]

Glaeser and Omartian (2022) document the geographic scope of the competitive effects of public disclosure. Although their primary tests examine import competition as a function of US

[33] See also Breuer (2025).

[34] Bernard et al. focus on proprietary costs that arise from disclosure to competitors, but these costs can relate to a broader range of stakeholders than just product market rivals. For example, Hoopes, Robinson, and Slemrod (2018) examine the consequences of public disclosure of tax return information in Australia. They provide evidence that private firms are more likely than public firms to take actions to avoid disclosure, and whereas public firms slightly decrease tax payments in response to the disclosure mandate, private firms slightly increase them. They also find some evidence of consumer backlash, again more so for private firms than public firms.

public firm presence, they also use the German private firm setting as corroborating evidence. Their results show that the expansion of disclosure by German private firms in the mid-2000s resulted in a significant increase in import competition, suggesting that it is not only domestic players that respond to expanded disclosure.

Future research can add to this literature in several ways. One opportunity is to explore how firms use disclosures to make different strategic decisions. For example, do disclosure mandates primarily attract entrants that emphasize product differentiation or entrants that are copycats? Copycat-type behavior seems especially likely, given that reporting regulation can undermine innovation incentives (Breuer et al. 2025), but additional evidence would help to interpret the current body of evidence.[35] Another avenue would be to flesh out how concerns about public disclosure undermine reporting quality, potentially even misleading rivals. Tomy (2019) provides evidence in this space; she tests whether US community banks used accounting discretion to deter entry after the Interstate Banking and Branching Efficiency Act was announced but not yet effective. She finds that community banks, 96% of which are private, increased loan loss provisions, plausibly to dissuade rivals from opening competing branches, and she also finds that these accounting decisions are not justified ex post, as future losses cannot explain the increase in provisions. Less clear in her study—and an open question in the literature—is whether such opportunistic reporting is effective in deterring entry.

7. Data Opportunities and Challenges

[35] There is some evidence that public disclosure facilitates copycat behavior related to financing decisions. Bernard, Kaya, and Wertz (2021) examine whether the availability of private firm peers' public disclosures helps to account for evidence of capital structure mimicking (e.g., Leary and Roberts 2014). Using the mid-2000s in Germany as a setting, they find that new firms entering concentrated markets adopt more similar financing decisions to local incumbents after the expansion of private firm reporting. Their tests suggest interfirm learning is the most likely explanation for the results, but whether this learning is value-increasing or merely a type of herding is unclear.

One driving force behind the growth in private firm research is the availability of private firm data. Underlying this growth is the expansion of technology that allows for the creation and storage of large datasets, communication and surveillance technologies that enable researchers to contact and observe private firms, and statistical techniques and programs for studying large datasets. In this respect, there are parallels to how the empirical asset pricing literature rapidly expanded following the development of the Center for Research on Securities Prices data (Fama 2014, 2017).

In this section, we provide an overview of the relevant empirical strategies, with an emphasis on the opportunities and challenges unique to the private firm setting. A common theme we uncover is that researchers often rely upon indirect approaches when faced with the challenge of recording and analyzing the economic activity of firms that have chosen private ownership—in large part to remain opaque to outsiders. In other words, when confronted with limited direct sources of private firm data, researchers often glean information (or proxies for the information) from indirect (i.e., unconventional or incidental) sources and compile fragments of financial information as opposed to complete financial statements.

To organize this discussion, we first describe each strategy and provide an example. We also offer a brief evaluation of the advantages and disadvantages based on factors including generalizability (do the data cover the entire population, and if not, how representative is the sample?), availability (are the data publicly available?), researcher effort (does using the data involve extensive collection, cleaning, and verification effort on the part of the researcher?), and comprehensiveness (what variables are covered, and how granular are the data?).

7.1. Incidental regulation and supervisory data

Although private firms face limited information production, verification, and dissemination regulation, many face other regulation that requires some form of reporting that reveals accounting choices or other data—what we call "incidental regulation." For example, the US Department of Labor requires any administrator or sponsor of an employee benefit plan subject to ERISA, regardless of ownership type, to file Form 5500. In addition to plan and participant information, Form 5500 identifies the plan's auditor who, anecdotally, is often the same auditor of the firm's financial statements. Thus, retirement plan filings can provide a lens into private firms' auditor choices and the audit market more broadly (Cascino, Tamayo, and Vetter 2021; Abramova 2024; Stockbridge 2025). Likewise, researchers can gain a glimpse into private firm operations and accounting choices through reporting required under investor protection (Cook et al. 2020), employee safety (Heese and Pérez-Cavazos 2020), consumer protection (Hayes, Jiang, and Pan 2021; Dou et al. 2024), and banking (Beatty and Harris 1998) oversight.

Incidental regulation can provide good generalizability and data availability, as the regulator can compel participation by all firms regardless of ownership and in many cases requires public reporting to promote monitoring and transparency. Regulator enforcement mechanisms can also discipline the quality and completeness of the data, sparing researcher effort.

7.2. Surveillance approaches

In a surveillance approach, researchers acquire data by monitoring a firm's locations or operations. For example, cell phone location data can be used to measure foot traffic in a geographic location such as a store or place of worship (Bizjak et al. 2022; Pope 2024). Satellite imaging technology can measure the number of cars in a retailer's parking lots (Zhu 2019; Kang, Stice-Lawrence, and Wong 2021) or the amount of emissions from a given location (Zheng et al.

2020). Such approaches naturally permit researchers to observe both public and private firm activity but are subject to measurement limitations (e.g., weather patterns can stymie satellite observation, and cell phone locations are an imperfect proxy for consumer spending).

Related, private firms leave a considerable "digital footprint" online via their websites, customer reviews, and social media presence. Empirical work increasingly uses information scraped from the web, often with the goal of developing a more complete picture of a given market than what one could obtain using public filings alone. As an example, Hoberg et al. (2024) conduct an extensive web-scraping and natural language processing exercise to develop a more robust industry classification system that encompasses private firms. Similarly, many researchers are scraping job postings and resumes posted on professional networking websites (or acquiring datasets from vendors that specialize in this scraping) to measure technological investment and labor demand at firms (Babina et al. 2024; Charoenwong et al. 2024).

Web scraping offers multiple appealing features. The internet hosts an enormous trove of data, and tools such as the Wayback Machine enable researchers to track changes in information over time. Many websites providing this information are free and open to the public; hence this data resource is generally available to anyone. On the other hand, scraping projects can entail considerable researcher effort, especially if the website restricts the number of page visits or if the information is unstandardized.

7.3. Administrative and tax data

Many countries collect extensive data about their firms and citizens and make this data available to certain government employees and native researchers. For example, Kisseleva, Mjøs, and Robinson (2025) access administrative records from Norway to study the role of accounting in early stage-firms' financing outcomes. Regenburg and Seitz (2021) use datasets covering crime,

employment spells, and bankruptcies from Statistics Denmark to examine whether the criminal records of private firm CEOs and rank-and-file employees help predict firm bankruptcy. Feldman et al. (2021) use US tax return data to compare the investment choices of private and public firms. Labro and Omartian (2025) use firm-level proprietary US Census data (e.g., the Management and Organizational Practices Survey) to examine how managerial practices affect employee retention.

Similar to incidental regulation, empirical strategies relying on administrative or tax data benefit from generalizability (at least within country) due to comprehensive coverage. However, unlike regulator-collected data, administrative and tax data are typically not reported to the public, and access is limited to the relevant agency or native researchers, thus limiting availability.

7.4. Credit registry and credit bureau data

Central banks in developing countries commonly maintain credit registries to aid prudential oversight and policymaking and promote economic growth (Djankov, McLiesh, and Shleifer 2007). These registries detail credit exposures at the borrower-lender level, borrower credit histories, and in some cases, borrower biographical and financial statement information. Many countries (and in some cases, individual states or provinces) also maintain collateral registries, which record specific collateral attributes to ensure correct identification of the asset in the event of default or dispute between secured lenders. Finally, credit bureaus collect and disseminate similar information to credit registries, but they are privately operated and thus rely on voluntary participation by lenders. As one illustrative application, Balakrishnan and Ertan (2021) find that banks' loan loss recognition improves with increases in public credit registry coverage, including of small and opaque borrowers.

Because credit is such an important source of financing for private firms, credit registries and credit bureaus can provide useful insight into their financing activities and performance.

However, two selection issues can arise with empirical work using this data. First, because these datasets by design focus on credit exposures, and sometimes only cover lenders of a certain type (bank) or size (e.g., bank asset participation threshold), the researcher can only observe firms through the lens of lending, and perhaps only certain types of lending. Not all firms rely on credit, and fewer rely on credit from large banks. Second, because credit bureaus rely on voluntary participation, lender-level selection comes into play. Finally, like administrative and tax data, credit registry data is often limited to central bank employees or native researchers, though country-year level data is publicly reported by the World Bank.

7.5. National corporate register data

In most European countries, public and private firms are required to submit mandatory financial disclosures to central corporate registers, such as the UK Companies House. Because the registers primarily serve stakeholders interested in ad hoc research (e.g., to vet potential customers or suppliers), they maintain search portals akin to SEC EDGAR but generally do not allow bulk downloads. However, third-party services collect filings from the registers and sell standardized, structured data to clients. These datasets are widely used in the literature. For example, Kausar et al. (2016) use FAME to examine the signaling benefits of voluntary audits in the UK. Breuer (2021) uses data from both Amadeus via WRDS and historical Amadeus discs to study the effects of reporting regulation on resource allocation in Europe. Kim and Olbert (2022) use Orbis, which provides global coverage, to examine how private firm disclosure affects demand for public equity.

These datasets are widely used in part because they have extensive coverage, are available with standard (albeit expensive) data subscriptions, and can be easily cross-checked against information in original filings.[36] One disadvantage of these datasets is that cross-country coverage

[36] For example, filings for UK private firms are publicly available in their original form via the UK Companies House search portal: https://find-and-update.company-information.service.gov.uk/.

necessitates standardization that can result in the loss of information or counterintuitive variable definitions (e.g., Bernard et al. 2018). They also sometimes only include the most recent information and delete historical values, delete records of dissolved firms, and include dormant firms (see Beuselinck et al. 2023).

7.6. Third-party data vendor

The data services sector has grown significantly in recent decades, with vendors selling data to a range of clients including investors, banks, auditors, and other firms. This growth has provided new opportunities for researchers to observe private firms by bypassing academic data vendors and acquiring commercial data. Minnis (2011) accesses data from Sageworks, a vendor specializing in risk management tools for banks and accounting firms, to examine the effects of financial statement verification on borrowing costs. Also using Sageworks, Badertscher, Shroff, and White (2013) find that private firms are more responsive to their investment opportunities when there are more public firms in their industry.

Because third-party vendors rely on revenue from customers, they often invest in significant cleaning, verification, and categorization to ensure the quality of their products and the commercial value to buyers, sparing researcher effort. On the other hand, data from these vendors are not gathered randomly, introducing both selection and generalizability issues. Additionally, data access can require significant cost or personal connections, limiting availability to many.

7.7. Surveys and experiments

The early private firm literature often relied on surveys for data (Nair and Rittenberg 1983; Cloyd et al. 1996; AICPA 2004). Today, researchers are better equipped to conduct surveys and experiments, because websites and data vendors' products enable them to efficiently identify and contact a large set of private firms. One particularly novel example that combines survey and

experimental features is Gassen and Muhn (2025), who notify a randomly selected set of firms about their right to restrict public access to their financial statements.

A key advantage of survey and experimental approaches is that they allow the researcher to introduce variation that aids theory testing. On the other hand, surveys and experiments can require significant researcher effort and resources, and it is often prohibitively costly to reconduct the study if errors are discovered or additional analyses are requested once the results have been tabulated. Moreover, generalizability is threatened by non-response bias.

8. Conclusion

We conclude with four takeaways that we hope guide future research. First, private firm research settings provide unique insights into the economic role of accounting. With modern data gathering and analysis tools, researchers can select the firm-type setting best suited for their research question more easily than ever before. Authors of theory studies can articulate the variation or setting that they have in mind for empiricists seeking to test their models, and authors of empirical studies can articulate why their setting (using public or private firms) is most appropriate to test their hypotheses. Second, there is limited descriptive evidence on fundamental accounting choices including whether to use US GAAP, undergo an audit, or adopt various managerial accounting practices. Descriptive evidence on these choices can inform theory, direct empirical researchers to the most relevant sources of variation to study, and guide debate on accounting and audit standards. Third, numerous securities, tax, and environmental regulation reforms involve enforcement based on ownership type or firm size. Our review illustrates the importance of spillovers and unintended consequences to fully understanding the effects of such regulation. Fourth, private firm accounting choices depend on a range of factors, frictions, and potential substitutes that have less relevance in the public firm setting. These differences

underscore the limited generalizability between the public firm setting and private firm setting, but they also create many opportunities to better understand the economic role of accounting. A general takeaway is that institutional context and firm characteristics interact with accounting choices: not all firms can be studied through the same lens.

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Figure 1: Summary of Conceptual Framework

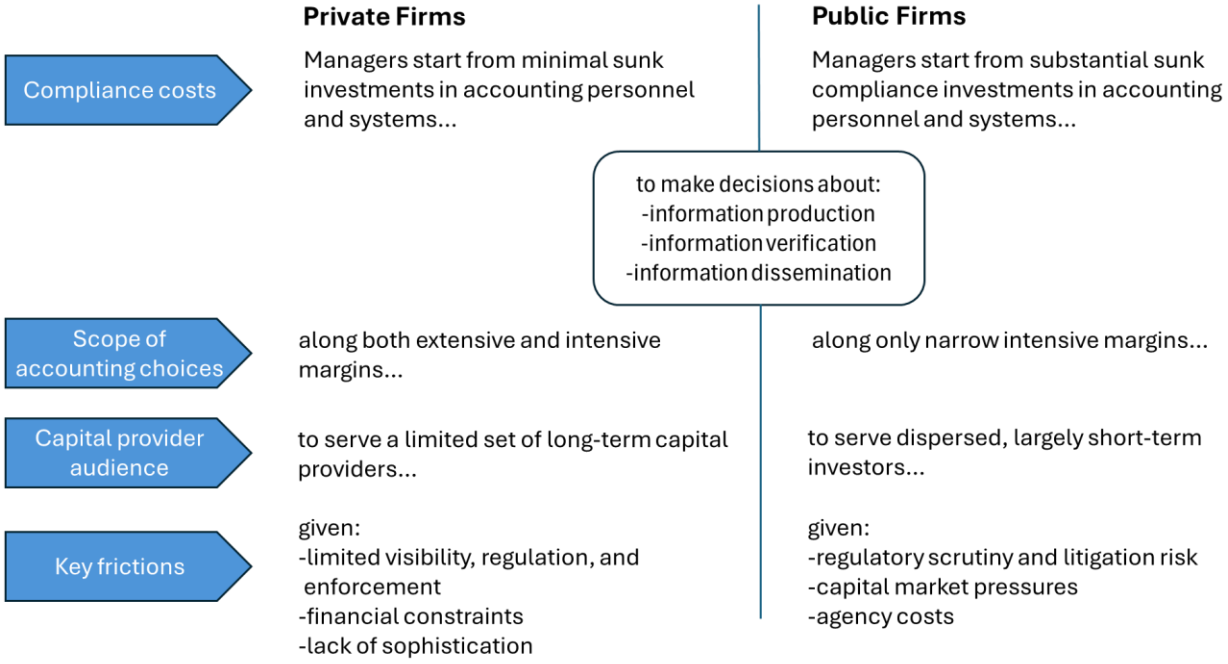

Fig. 1. This figure summarizes our conceptual framework for the survey. The framework describes the contextual factors that shape the representative private firm's accounting choices, in juxtaposition with the factors that shape the representative public firm's accounting choices. We provide more detail on these factors in Sections 2 and 3, where we also highlight important sources of heterogeneity among private firms (e.g., variation in exposure to accounting regulation in Europe versus the US).

Figure 2: Amounts Raised in Private Equity Funds and IPOs

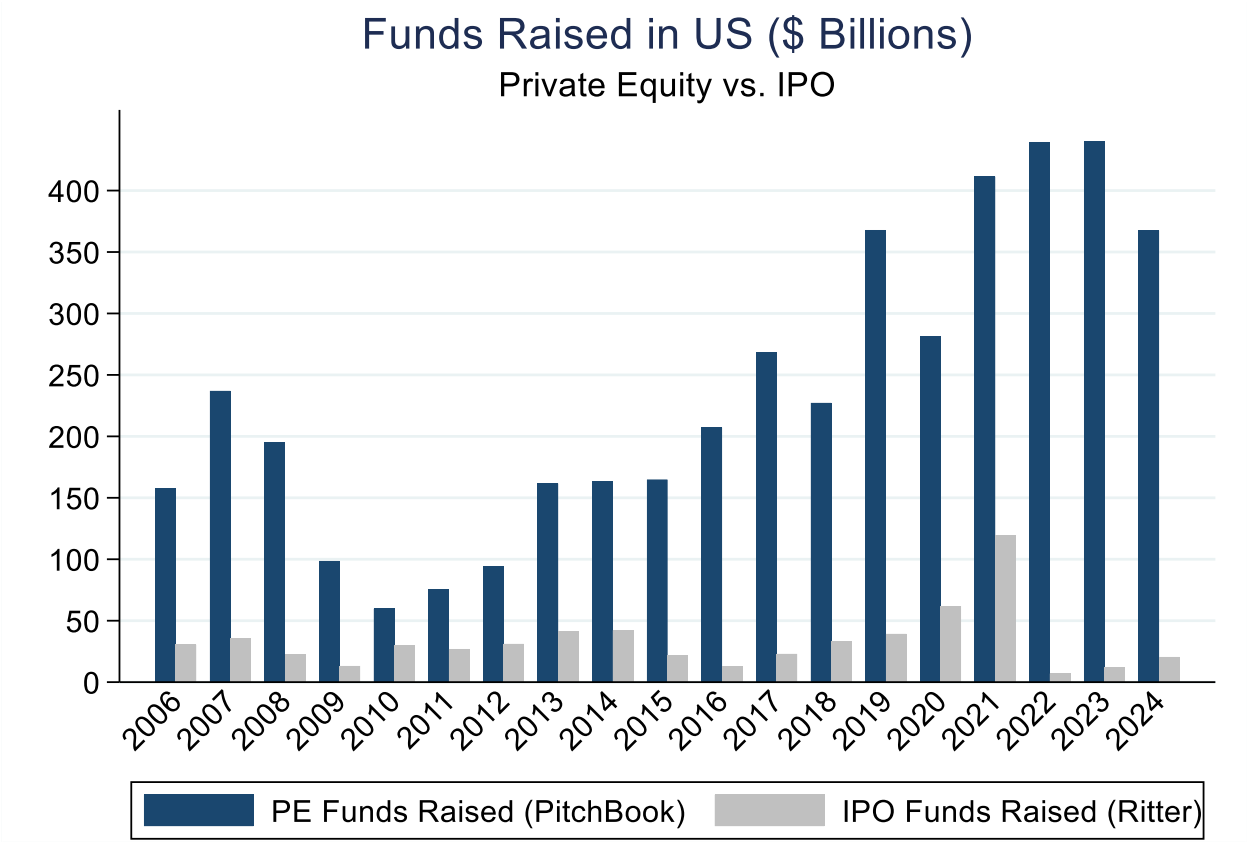

Fig. 2. This figure reports the dollars of capital raised by PE funds (dark bar) and IPOs (light bar). PitchBook provided the PE data. Jay Ritter provided the IPO proceeds data (https://site.warrington.ufl.edu/ritter/files/IPO-Statistics.pdf). This figure updates a similar figure from Minnis (2022).

Table 1: US Firm Size Distribution

Employees	Business Entities	Employees by Business Size
<5	4,340,553	7,171,681
5-9	1,435,287	9,536,741
10-19	1,005,053	13,600,875
20-49	734,904	22,145,348
50-99	244,540	16,782,863
100-249	139,368	20,938,565
250-499	37,272	12,614,034
500-999	13,719	9,368,738
>=1,000	8,407	20,830,583
Total	**7,959,103**	**132,989,428**

Table 1. This table reports the number of business entities and total employees in each firm size category. Business Entities include only firms with paid employees. Source: 2019 Census Bureau.

Table 2: Estimates of the Economic Importance of Private Firms

Measure	Source	Public firms	Private firms	Basis
US				
# Firms	SBA (2024), World Bank (2024)	4,000	34.8 million	500 employees
GDP	SBA (2024)	44.5%	43.5%	500 employees
Net new job creation 1995-2023	SBA (2024)	38.9%	61.1%	500 employees
Private sector workers	EY (2021)	28.3 million	96.7 million	Ownership type
Net income	Tax Policy Center (2024)	63.2%	36.8%	$10 million assets
Rest of World				
Employment (European Union)	European Commission (2024)	34.8%	65.2%	SMEs (see footer)
Employment (Japan)	METI (2019)	31.2%	68.8%	SMEs (see footer)

Table 2. This table presents estimates of the economic importance of private firms to the US, EU, and Japanese economies. The Basis column reports the benchmark that the Source uses to calculate the figures. For example, the SBA generally uses a cutoff of 500 employees to define small firms, which we consider private firms for the purposes of this exercise. As of 2024, the European Commission defines SMEs as enterprises that have fewer than 250 employees, and have either an annual turnover of less than 50 million euro or assets of less than 43 million euro. The Japanese Ministry of Economy, Trade, and Industry (METI) defines SMEs based on their capital and employee count, with thresholds set differently by industry (e.g., up to 50 million Japanese yen and up to 100 employees for firms in service industries). See METI (2019). Appendix A provides additional detail on the source and measurement basis for these figures.

Appendix A: Assessing the economic importance of private firms

This Appendix describes the construction of Table 2. We describe the data source and measurement basis, elaborate on several key figures included in the table, and discuss complementary figures relevant to Section 2.2.

The US Small Business Administration (SBA) is a federal agency that provides capital, counselling, and contracting assistance to entrepreneurs and small businesses. The SBA also produces research detailing the role of small businesses (generally defined as an independent business with fewer than 500 employees) in the US economy.[1] Because so few public firms have fewer than 500 employees but many private firms have more than 500 employees (e.g., Table 2 shows there are approximately 4,000 US public firms and Table 1 shows there are more than 20,000 US business entities with more than 500 employees), estimates based on firm size can be seen as a lower bound on the economic importance of private firms. The estimates included in Table 2 come from the SBA's 2024 report based on data from the Statistics of US Business series.

According to their 2024 report based on data from the Statistics of US Business series, there are 34.8 million small businesses, representing 99.9% of all US businesses (SBA 2024). These firms employ 59.0 million workers (45.9% of US employees) and contributed 61% of the net job increases in the US between 1995 and 2023. In terms of GDP, small businesses contributed 43.5% (SBA 2024), approximately half of the private-sector total (governments are responsible for around 12% at the federal, state, and local levels) (Bhutada 2023). As for employment, a recent EY report claims that privately held companies are responsible for three-quarters of private sector employment (Carroll 2021).

Tax return data reported by the IRS provides another perspective on the role of small firms in the US economy. The IRS reports aggregate statistics by firm asset and receipt categories, as well as organizational form. One way to gauge the role of small firms is to sum the figures for all nonfarm sole proprietorships, all nonfarm partnerships, and active corporations with assets below some amount (we use $10 million). In 2019, 99.7% of the returns, 36.0% of the receipts, and 36.8% of the net income (loss) was driven by small firms based on the $10 million asset threshold for corporations (Tax Policy Center 2024).

Small business lending is also a significant part of corporate credit markets. Although measuring total corporate credit is difficult because certain types of lending are not easily observable (e.g., trade credit or personal loans to the business owner), the small business amounts are meaningful even without knowing exact percent terms. According to the Consumer Financial Protection Bureau (CFPB), the small business financing market was estimated to be $1.4 trillion

[1] For some initiatives, the SBA uses industry-specific employee count or revenue thresholds. For detail, see https://www.sba.gov/sites/default/files/files/Size_Standards_Table.pdf.

in 2017 and encompasses term loans and lines of credit (36%), supplier financing (21%), business credit cards (16%), equipment leasing (13%), factoring (7%), SBA loans (7%), and merchant cash advances (<1%) (CFPB 2017). Banks play an important role in this market: they provide over 22 million commercial and industrial loans for less than $1 million (Bipartisan Policy Center 2022). But notably, a growing share of the small business credit volume is coming from nonbank lenders including captives and independent finance companies ($400 billion), as well as FinTech lenders ($25 billion) (Gopal and Schnabl 2022; Minnis, Sutherland, and Vetter 2024).[2]

Where firms choose to raise equity financing is also revealing of the size and importance of public versus private markets. In recent years firms are increasingly turning to private markets rather than IPOs. Ewens and Farre-Mensa (2020) trace a decline in IPOs to reduced regulation for late-stage startups seeking private equity. In other words, public equity is no longer the dominant pathway to startups obtaining financing and growing to considerable scale. Kang's (2025) analysis of the Regulation D market supports this inference.

Just as private markets have become increasingly important relative to IPOs to allow firms to scale (Ewens and Farre-Mensa 2020), a large amount of corporate M&A targets private firms. For example, even though private firm deals are often unobservable in the US due to minimal public reporting requirements, Capron and Shen (2007) find in publicly available data that 60-75% of firms acquired between 2000 and 2004 were private.

Private firms are also important innovators. Innovation is crucial to economic growth and attracting growing attention in the literature (e.g., Glaeser and Lang 2024). Although public firms invest more than private firms in R&D (Feldman et al. 2021), the positive effects of public listing on innovation are largely restricted to industries dependent on external financing (Acharya and Xu 2017). Thus, despite suffering higher financing costs and greater information asymmetries with external capital providers, private firms still account for a large portion of innovation input and output. For example, studying Google Patents data between 1926 and 2010, Kogan et al. (2017) report that of the 4.4 million patents with assignee information, just over 1.9 million can be matched to public firms. Although some of the remaining 2.5 million patents are filed by universities, other non-profits, and individuals, private firms are responsible for a large share.

Similar patterns emerge internationally. According to the European Commission, SMEs in the EU account for over 99% of businesses and 50% of GDP, employ 100 million people, and rely heavily on debt financing (European Commission 2020). About 50% of SMEs are engaged in innovative activities. In Japan, SMEs contribute more than 50% of added value, make up about a third of capital investment, and employ 70% of workers (METI 2019). World Bank estimates show that the ratio of stock market capitalization to GDP (a measure of public firm importance to the

[2] See also: https://www.federalregister.gov/documents/2021/10/08/2021-19274/small-business-lending-data-collection-under-the-equal-credit-opportunity-act-regulation-b.

economy) for the US is about 25-75% greater than that for Australia, Japan, or Canada and several-fold greater than that for most European countries, including Germany, Italy, and Spain.[3] Thus, while estimates from the SBA, IRS, CFPB, and patent data indicate that private firms are responsible for roughly half of the private sector economic activity in the US, private firms appear to make up a similar or even greater proportion of economic activity in other developed nations.

[3] See: https://databank.worldbank.org/source/global-financial-development/Type/TABLE/preview/on.