Public Company Auditing Around the Securities Exchange Act: Historical Lessons for ESG Assurance

Thomas Bourveau
Columbia University, Graduate School of Business

Matthias Breuer
Columbia University, Graduate School of Business

Jeroen Koenraadt
London School of Economics and Political Science

Robert Stoumbos
ESSEC Business School

Running Head: Public Company Auditing Around the Securities Exchange Act

We are indebted to Robert Knechel (editor), two anonymous referees, Daniel Aobdia, Ray Ball, Sudipta Basu (discussant), Willem Buijink, John Core, Ron Dye, Stephen Glaeser, Jon Glover, Trevor Harris, Amy Hutton, Andy Leone, Edith Leung, Christian Leuz, Michael Minnis, Zoe-Vonna Palmrose, Stephen Penman, Gary Previts, Sugata Roychowdhury, Tom Ruchti, Nemit Shroff, Mason Snow (discussant), Jeroen Suijs, Shyam Sunder, Andrew Sutherland, Ahmed Tahoun, Jake Thomas, Rodrigo Verdi, Greg Waymire, Joe Weber, David Windisch, and Stephen Zeff; seminar participants at Columbia University, Erasmus University Rotterdam, Carnegie Mellon University, Massachusetts Institute of Technology, Duke University, Baruch College, Northwestern University, London School of Economics, Boston College, NEOMA Business School, the Public Company Auditing and Oversight Board (PCAOB), the 2020 Early Insights in Accounting Webinar, the 2020 EAA Virtual Accounting Research Seminar; the 2021 Academy of Accounting Historians Brownbag; and conference participants at the 2021 AAA FARS Midyear Meeting for helpful comments and suggestions. We acknowledge the financial support from the Initiative d'Excellence Paris Seine, the Accounting Division at Columbia Business School, and the Richard Paul Richman Center for Business, Law, and Public Policy at Columbia University. We thank Rongchen Li for excellent research assistance.

THOMAS BOURVEAU, COLUMBIA UNIVERSITY, NEW YORK, NY, USA; MATTHIAS BREUER, COLUMBIA UNIVERSITY, NEW YORK, NY, USA; JEROEN KOENRAADT, LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE, DEPARTMENT OF ACCOUNTING, LONDON, UNITED KINGDOM; ROBERT STOUMBOS, ESSEC BUSINESS SCHOOL, ACCOUNTING AND MANAGEMENT CONTROL DEPARTMENT, PARIS, FRANCE.

Data Availability: Data are available from the public sources cited in the text.

JEL Classifications: G18; G34; M42

Keywords: Public Companies; Auditing, Regulation; Securities Exchange Act.

Public Company Auditing Around the Securities Exchange Act: Historical Lessons for ESG Assurance

ABSTRACT

We describe the development of public company auditing in the U.S. in the early 20^{th} century to gain perspective on current developments in ESG assurance. Using a broad sample of historical annual reports spanning four decades, we document three facts: First, the spread of public company auditing occurred steadily over the span of several decades. Second, audit services were initially heterogeneous but became standardized through the audit profession's efforts and interactions with other private and public sector actors. Third, the role of regulation in those early developments was seemingly limited to codifying existing practices, as the first federal audit regulation was introduced only late in the development of the profession and did not significantly impact capital markets. Our historical evidence on the early development of public company auditing helps us understand how we arrived at today's widely accepted and highly regulated financial audits. It uncovers parallels to and offers lessons for current developments in ESG assurance.

I. INTRODUCTION

Transformative changes in business and society shape securities markets and their supporting institutions. Recent demands for more sustainable business practices, for example, have spurred a rapid rise of sustainable investing (e.g., Broadridge Data and Analytics, 2021), which allocates funds to companies based on environmental, social, and governance (ESG) metrics. A significant roadblock for sustainable investing is the limited credibility of disparate ESG metrics reported by companies (e.g., Amel-Zadeh and Serafeim, 2018; Avramov et al., 2022). To overcome this roadblock, several commentators call for regulators to mandate a robust assurance framework following the example of financial audits (e.g., PRI, 2021; SEC, 2024, p. 268 n. 1105). Given the many unsettled questions regarding the measurement, reporting, and assurance of ESG information, however, it remains unclear how quickly and successfully regulators can implement an ESG assurance framework at par with the established framework for financial audits of public companies. To gain perspective on this important issue, it is useful to look back at the formative years of the now established financial audits.

In this paper, we provide a detailed account of the historical development of public company auditing in the United States (U.S.) from 1900 until 1940. Propelled by the growth of companies

and public capital markets, public company auditing turned from an unstructured, fringe activity into a widely adopted, standardized, and regulated activity from the turn of the century until shortly after the first major federal audit regulation introduced by the Securities Exchange Act in 1934. Our study explores (1) how public company auditing spread over this period, (2) how the audit services evolved, and (3) what role regulation played in these developments. Our evidence permits a deeper understanding of the origins of public company auditing—an important capital market institution in its own right—and uncovers parallels to and potential lessons for recent developments such as ESG assurance (e.g., Christensen et al., 2021; Knechel, 2021; Knechel et al., 2023b).

Extant historical accounts describe various influences on public company auditing in the early 20^{th} century.[1] Those influences include, for example, auditors and audit firms from the United Kingdom (U.K.) that began practicing in the U.S. around the turn of the century (e.g., Lee, 1997; Zeff, 2003; Flesher and Previts, 2014); court cases defining auditors' liability for accounting scandals (Briggs, 1931); and professional associations of auditors such as the American Institute of Accountants (AIA, predecessor of today's AICPA) (Miranti, 1990). The AIA worked together with the Federal Reserve Board (FRB) and the New York Stock Exchange (NYSE) to promote auditing practices (Zeff, 1972). In 1933, after the 1929 stock market crash, the NYSE started requiring newly listed companies to obtain annual audits (Zeff, 1972). Shortly thereafter, the Securities Acts of 1933 and 1934 introduced the first federal audit regulation and created the Securities and Exchange Commission (SEC), which was tasked with regulating public company audits. The SEC required annual audits of public companies from 1934 onward. The SEC was also granted the authority to regulate audit standards and supervision (Coffee, 2006), but initially abstained from using these powers (Wiesen, 1978).

We combine the extant historical accounts with novel data on a broad sample of public companies spanning the first four decades of the 20^{th} century to paint the most complete picture of the development of public company auditing in the U.S. to date. While extant historical accounts provide rich, institutional insights into auditing practices around the SEC's introduction (e.g., May,

[1] See Previts and Merino (1998) and Miranti (1990) for a detailed overview of this history.

1926; Hawkins, 1963; Davidson and Anderson, 1987; Pandit and Baker, 2021), the supporting empirical evidence has remained limited to select cross-sections of companies and/or time periods due to the manual labor required to collect and process information from hard-copies of historical documents.[2] Taking advantage of recent advances in the digitization and textual analysis of historical annual reports, we vastly expand the coverage of companies and time periods. The more complete coverage of companies helps the representativeness of our evidence. And the vastly expanded time-series helps describe decades-long developments in public company auditing at a high temporal resolution, allowing us to discern any discrete year-over-year changes due to individual actors or events. Indeed, our ability to examine almost the entire formative period of public company auditing, from fringe activity to regulated practice, is a unique feat which requires a historical perspective *and* extensive data.

Our historical sample comprises more than 16 thousand annual reports of U.S. public companies available in the archives maintained by *Mergent* and *ProQuest* from 1900 up until fiscal year 1940. Using optical character recognition (OCR) and natural language processing, we convert the reports into text and extract the audit statements. The audit statements provide information on companies' audit status and audit firms' names, locations, and services. Our combined sample comprises 1,517 unique companies and 118 unique audit firms over four decades. Of the 1,517 companies, 94% trade on stock exchanges, while the remaining 6% trade on the over-the-counter (OTC) market. On the audit-firm side, our sample is composed of audit firms of different origins (U.S. vs. U.K.) and sizes (small vs. large), many of which are predecessors of today's dominant audit firms (e.g., Price Waterhouse, Ernst & Ernst, Arthur Young, and Touche & Niven).

We begin our empirical examination by describing how auditing spread during the early 20^{th} century. We show that the number of audit firms and certified public accountants (CPAs) increased steadily over the period from 1900 to 1940. This increase mimics the expansion of public capi-

[2] Sivakumar and Waymire (1993) provide audit rates for 51 NYSE companies observed from 1905 to 1910. Benston (1969) provides audit rates for 333 (508) companies traded on the NYSE in 1926 (1934). Chow (1982) provides audit rates for 379 (65) companies traded on the NYSE (OTC markets) in 1926. Merino et al. (1994) provide audit rates for 430 (365) companies traded on the NYSE (other New York markets) in 1927. Barton and Waymire (2004) provide audit rates for 540 companies traded on the NYSE in 1929.

tal markets, which provided a plausible impetus for the development of public company auditing (e.g., Rajan and Zingales, 2003). We observe a similar development in the rate at which public companies obtained audits. This rate increased from just above 25% in 1900 to almost 90% by 1940. The increase in the market-wide audit rate occurred through all possible margins: existing companies increased their audit rates over time while the many entering companies exhibited typically higher audit rates than the few exiting companies. Strikingly, the increase in the audit rate occurred almost linearly over time, without any greater abrupt shifts or changes.

To further explore the adoption of audits, we examine which companies chose to obtain audits and which audit firms provided the audits. We find that companies that chose audits tended to be smaller and less profitable. Among the audited companies, we further observe that less profitable companies and non-dividend payers tended to obtain audits from more mature or reputable auditors. These findings are consistent with companies with elevated information asymmetry (e.g., smaller, less profitable companies) and agency concerns (e.g., non-dividend-paying companies) demanding audit services. Examining characteristics of audit firms valued by companies, we find that companies preferred larger and older audit firms, audit firms with less concentrated client portfolios, audit firms with offices located closer to the companies' headquarters, and audit firms that specialized in the companies' sector. These findings suggest that companies in the early 20^{th} century voluntarily chose audit firms based on characteristics associated with independence and relevant expertise (e.g., DeAngelo, 1981; Solomon et al., 1999; Rajgopal et al., 2021), just as companies do today (e.g., Downar et al., 2021).

We next explore how audit practices and services evolved over time. As a window to the hard-to-observe audit practices, we use the format and content of audit statements. We find that, in the early 20^{th} century, there was remarkable heterogeneity in audit firms' audit statements. In the first three decades, the statements discussed various topics, depending on the circumstances of the audited company. The topics were typically not discussed in a standardized way. What was pervasive, though, was that, initially, audit firms tended to state that they "certified" that the accounts were "correct," which implied a remarkably high standard of assurance compared to later in the

20^{th} century (Pandit and Baker, 2021). In efforts to improve audit practice and mitigate legal liability, the AIA issued guidance on audit statements in 1917, 1929, and 1934 (Zeff, 1972; Carmichael and Winters, 1982; Pandit and Baker, 2021). It turns out that the 1917 guidance, whose effect has generated disagreements among historians (e.g., Hawkins, 1963; Carey, 1969; Zeff, 1972), did not change audit statements much in our data. However, we do observe greater standardization of audit statements starting with the 1929 guidance. Following those guidance documents, we further observe that audit firms' switched from examining and certifying correctness of companies' accounts to opining on compliance of the annual reports with Generally Accepted Accounting Principles (GAAP), a term first used to describe a set of accounting principles agreed to by the AIA and the NYSE in the early 1930s (Zeff, 1972).

We lastly examine what role regulation played in shaping public company auditing. Consistent with prior work (Benston, 1969) and a long-run trend toward auditing, we find that the SEC's 1934 audit mandate had at best a minor impact on market-wide audit rates (e.g., an increase of 4 to 6 percentage points). With respect to companies' audit choices, we find some evidence that the mandate reduced companies' reliance on nearby and specialized auditors; possibly because the mandate reduced the signaling value of voluntary auditing (Kausar et al., 2016) or forced companies in areas and industries without an adequate supply of audit services to seek audits from more distant or less familiar firms (e.g., Duguay, 2022; Breuer et al., 2023; Minnis et al., 2024). In line with the SEC's initially passive role in the audit market (e.g., Previts and Merino, 1998, p. 271), we do not observe many significant changes in audit firms' statements. While the statements became more standardized around the time of the SEC's introduction, much of this standardization seems to be driven by ongoing initiatives of the accounting profession (e.g., Pandit and Baker, 2021). In line with a limited impact of the SEC, we also fail to find significant improvements in capital-market outcomes (e.g., market value and liquidity), both at the company level (e.g., comparing mandatorily audited companies with voluntarily audited companies or unaudited companies) and the market level (e.g., comparing regulated stock exchanges with the OTC market). Our findings suggest that the SEC's mandate forced only few companies to obtain audits, those companies did

not significantly benefit from the audits in capital markets, and also the market overall did not appear to significantly benefit from the mandate (and other SEC provisions), at least initially.

Taken together, our evidence paints the picture of a remarkably steady development of public company auditing in the U.S. from 1900 to 1940. This development closely follows the expansion of public capital markets in the U.S., which constituted a plausible impetus for the development of public company auditing. The growing demand for audited financial information created opportunities for experienced auditors and audit firms from the U.K. and newly founded American audit firms. Absent audit standards and regulations, audit practices initially differed widely across companies and audit firms. Over the span of several decades, the audit profession and audit practices developed and matured as a result of interactions between various actors, including professional organizations, stock exchanges, and existing capital-market regulators (e.g., the FRB). Notably though, there does not seem to have been one single actor or event that single-handedly propelled public company auditing. Rather, various influences seem to have combined to shape the profession and its practices over decades. Consistent with this view, we observe that even the SEC's audit regulation, which is commonly viewed as a sea-change in the U.S. audit market, had at best a minor impact on public company auditing upon its introduction. This limited impact reflects that the SEC's regulation came into force rather late in the development process of the profession, primarily codified existing practices, and left the regulation of audit standards to the profession.

The development of public company auditing in the early 20^{th} century bears a striking resemblance to current developments in ESG assurance. Just as financial audits were a century ago, ESG assurance nowadays is in its infancy, but developing rapidly. It too seems spurred by an unprecedented growth in financial capital that investors seek to allocate based on companies' information (e.g., to finance the transition to a green economy); except this time the relevant company information is about ESG performance instead of financial performance. The growing demand for ESG assurance creates opportunities for existing financial audit firms but also new types of assurance firms and services (e.g., engineering firms; Gipper et al., 2023), which parallels the entry of established U.K. audit firms and new American audit firms in the financial audit space. ESG assurance

practices are also heterogeneous and in flux; and standardization efforts, driven by various private and public sector actors (e.g., the AICPA and the PCAOB in the U.S., and the IAASB globally), are in progress, much like the state and development of financial audits in the early 20^{th} century. Lastly, regulatory interventions in the space of ESG assurance are just recently emerging. Interestingly, just like in the case of financial audits, those interventions come comparably late (i.e., phase-in by 2033), only ask for low levels of assurance in accordance with current practices, and leave much of what constitutes "good" ESG assurance practices unspecified (e.g., SEC, 2024).

Our evidence on the development of public company auditing suggests a nuanced perspective on audit regulation and its prerequisites. It hints at the importance of a developed audit profession for the success of audit regulation. Our evidence shows that, by the time the SEC was created, the audit profession was already reasonably well developed, in terms of size (e.g., audit firms and CPAs) and practices (e.g., convergence in audit statements). As a result, the SEC could rely on the audit profession's extant audit guidance; and the sizeable audit profession could execute the SEC's audit mandate. This interpretation is reinforced by other, earlier instances of regulatory deliberations in the U.S. and elsewhere, where audit mandates were shortly considered or even implemented only to be quickly dismissed due to the lack of independent and competent auditors. Collectively, these historical episodes indicate that, given the complex subject matter of auditing, it may require time and iterative interactions between various actors to develop best practices that deserve widespread (possibly mandatory) application, along with the capacity to implement them. In this vein, the frequently chastised "wild west" of ESG reporting and assurance could be viewed as a necessary developmental stage in its life cycle. Calls for regulation (e.g., ESG audit mandates) may, thus, be premature or, at least, should not be expected to deliver immediate improvements.

Our paper contributes to the literature on the evolution of auditing. Auditing is an important economic institution whose origins have been traced back to at least 1200 A.D. (e.g., Watts and Zimmerman, 1983; Waymire and Basu, 2007). The formative years of modern-day auditing, as we know it today, occurred in the U.S. in the early 20^{th} century. Extant historical accounts provide insights into select actors and developments during this period (e.g., Benston, 1969; Zeff, 1972;

Chow, 1982; Miranti, 1990; Merino et al., 1994; Previts and Merino, 1998; Barton and Waymire, 2004). Our paper enriches the picture painted by earlier accounts with the help of thousands of historical annual reports. It provides the most detailed, decades-spanning evidence on the adoption of auditing and unique evidence on the evolution of auditing services and practices. Our historical approach helps build a better understanding of the origins of modern-day accounting and "reminds us to be realistic about the pace of change and to set current trends in context" (Besley and Deaton, 2021).

Our paper also contributes to the literature on the role of regulation in auditing (e.g., Buckley and Weston, 1980; Benston, 1985). Auditing is an increasingly regulated activity, though the reasons for regulation and desirability of regulation remain controversially debated (e.g., Donovan et al., 2014; DeFond et al., 2016). Our historical examination of one of the most prominent and early audit regulations for public companies fails to detect significant capital-market benefits at both the company *and* market level. The absence of significant capital-market benefits could indicate that the mandate was superfluous (e.g., given how wide-spread auditing was even before the mandate). It could, however, also just mean that the mandate acted as an efficient codification and standardization of existing practices. Our evidence can ultimately not differentiate between those distinct views. Regardless, our evidence contributes a novel perspective on potential constraints or preconditions for successful audit regulation: the development of a profession with subject-matter expertise.

Beyond that, our paper is related to various other streams of the literature. It relates to the literature on auditing in emerging markets (e.g., crypto and decentralized finance markets; Bourveau et al., 2022, 2024; Knechel et al., 2023a) and auditing of non-financial information (e.g., ESG and data integrity; Gipper et al., 2023; Schoenfeld, 2024). It suggests that a developmental phase where practices are heterogeneous and rapidly evolving may be an inevitable stage in the life cycle of those audit markets. In this vein, our paper also relates to the literature on economic development (e.g., Besley and Persson, 2009; Acemoglu et al., 2015). This literature stresses the importance that building a state's capacity—in terms of institutions and capabilities (e.g., competent

bureaucrats)—has for its ability to execute state and regulatory functions, such as collecting taxes, enforcing laws, regulating markets, and providing public goods. This capacity building appears to be particularly relevant for the complex subject matter of corporate reporting and auditing.[3] Lastly, our paper is related to the literature on the SEC's introduction. This literature has produced mixed evidence. Some studies, mostly using simple pre/post comparisons, suggest the SEC had a limited impact on companies' disclosure and investors' trust in capital markets (e.g., Benston, 1969, 1973; Stigler, 1971; Ely and Waymire, 1999; Daines and Jones, 2012). Other studies criticize this evidence and argue in favor of the SEC (e.g., Friend and Herman, 1964; SEC, 1977; Seligman, 1983; Fox, 1999; Fox et al., 2003). Recent work revisits this debate using novel data and advanced empirical methods. Binz and Graham (2022), for example, focus on the SEC's disclosure mandate and document improved short-run reactions of investors to earnings news. We focus on the SEC's audit mandate and fail to find significant, long-run effects in capital markets.

II. HISTORICAL BACKGROUND

The history of audits in the early 20^{th} century U.S. has been explored by a number of scholarly works. Drawing on those accounts, we give a brief overview in this section.[4]

By the late 19^{th} century, the U.S. audit profession was being influenced by its more developed counterpart in the U.K. (Moyer, 1951), with British audit firms setting up offices in the U.S. The accounting and auditing profession soon became better organized, with the state of New York introducing the first CPA law in 1896, followed shortly by other states (Edwards, 1955; Previts and Merino, 1998). The accounting profession worked with other capital-market actors—from both the private and public sector—to suggest best practices for audits. The AIA published a non-binding audit standard with the FRB in 1917, with a later revision in 1929 (Zeff, 1972). The AIA later also

[3] In line with our paper, Demsetz (1967) and Mulligan and Shleifer (2005) suggest that regulation is increasing in the development of (to-be-regulated) markets. In their view, this relation emerges due to fixed costs of instituting regulation. Our paper suggests that, in case of complex matters like auditing, this relation may also emerge for another, yet related reason: the lack of obvious regulatory "answers" to complex questions, in the absence of a developed profession.

[4] For more detail on this history, please see the discussion in Section OA.1 of the Online Appendix and the corresponding Table OA1.

worked with the NYSE to produce a standard audit report in 1934 (Zeff, 1972).

Prior to the 1930s, no laws or regulations obliged companies to obtain audits of their financial statements (Zeff, 2003). Prior studies have estimated that the percentage of NYSE companies with audits was low at the beginning of the century (around 16%; Sivakumar and Waymire, 1993). By the late 1920s, by contrast, this percentage was already as high as 80% (Benston, 1969; Chow, 1982; Merino et al., 1994; Barton and Waymire, 2004), and 94% by 1934 (Benston, 1969). Chow (1982), Watts and Zimmerman (1983), and Benston (1985) argue that this widespread adoption was driven by market forces and the value of audits. By contrast, Merino et al. (1994) argue that audits were adopted to deter government regulation, a view echoed by O'Connor (2004).

The 1900s and 1910s saw government threats to regulate audits, but these were not carried out for lack of qualified auditors (Previts and Merino, 1998). There were also regulatory developments at the states and in the judicial system during the early 20^{th} century. A number of states introduced *Blue Sky Laws*. However, these laws were typically limited in scope, weakly enforced, and easy to circumvent (e.g., by issuing in other states) (Loss, 1951). By contrast, the judicial system introduced an important change in 1931 with the *Ultramares Corporation v. Touche* decision, which extended auditor liability to third parties who relied on their professional work (Miranti, 1990). In 1933, the NYSE began requiring companies applying for listing of their securities to enter into an agreement that their future annual financial statements would be audited by independent public accountants (Richardson, 1933b; Flesher and Flesher, 1986), and similar requirements for new listings were soon announced by the New York Curb Market and Chicago Stock Exchange (Richardson, 1933b; Zeff, 1972).

The Securities Acts of 1933 and 1934 marked a notable change in the federal regulation of audit and securities markets (Barton and Waymire, 2004). The Securities Act of 1933 expanded auditors' legal liability to third parties (e.g., Kothari et al., 1988) and required newly listed public companies on centralized exchanges (not the OTC market) to disclose audited prospectuses. The Securities Exchange Act of 1934 empowered the newly-established SEC to require audits of public company annual reports, a requirement that the SEC implemented by the end of 1934. Scholars

have proffered various reasons for why the Acts regulated audits. One potential reason was that business critics over the preceding decades had convinced a cadre of politicians that corporate disclosure needed to be regulated, and these politicians were finally elevated to power in the early 1930s (Hawkins, 1963). Another potential reason was that politicians wanted to appear to be doing something given the public anger of the time, and mandating audits was a way to appear to be doing something without actually doing much (Merino, 2003; Doron, 2016). A third potential reason was a reaction to a single large fraud scandal, in spite of there being few other accounting frauds at the time (Flesher and Flesher, 1986; Hail et al., 2018).

In the aftermath of the Securities Exchange Act of 1934, the SEC initially adopted a passive role in the audit market (e.g., Previts and Merino, 1998), even though it had been granted the power to regulate acceptable auditing standards and audit oversight. It left the definition of acceptable auditing practices to the accounting profession both because of its limited expertise and resources and because of successful lobbying by the profession (Wiesen, 1978; Doron, 2016). Only after a prominent fraud case in 1938, the McKesson Robbins scandal, did the SEC take greater interest in audit practices (Coffee, 2006). The scandal prompted concerns at the AIA that the government might start mandating specific audit procedures, and this motivated the AIA to start providing explicit guidance of its own in 1939 (Miranti, 1990).

III. HISTORICAL DATA

We construct a historical panel tracking a broad sample of public companies over several decades to trace the development of public company auditing in the U.S. We collect photocopy scans of all U.S. public companies' annual reports available in the archives maintained by *Mergent* and *ProQuest* up until fiscal year 1940.[5] We convert the scans into machine-encoded text via optical character recognition (OCR) and search the texts for audit statements, using natural language processing techniques (NLP). From the audit statements, we extract information on audit firms' names, locations, audit engagement sign-off dates, and audit practices. We combine the

[5] Most of the original annual reports in the archives of *Mergent* and *ProQuest* are held by public libraries in the U.S. (e.g., the Cleveland Public Library).

audit information with data on public companies' location, sector, trading venue, basic financial information (size, EPS, dividend policy), and equity-market outcomes obtained from the historical databases of *Global Financial Data* (*GFD*) and the *Center for Research on Securities Prices* (*CRSP*). Appendix A defines the variables in our data and Table OA2 in the Online Appendix lists the search terms used in our NLP approach.

Our combined sample comprises more than 16 thousand annual reports issued by 1,517 unique public companies over four decades. Table 1 documents that *Mergent* covers 1,190 of these companies, whereas *ProQuest* covers 579 of them. The overlap of the two databases is limited (241 companies), which makes combining the two archives particularly useful. For both archives, most companies are observed in the latter part of our sample period (1910–1940), consistent with the increasing prevalence of public companies during the early 20^{th} century (Rajan and Zingales, 2003). Despite any differences in covered companies and time periods, the distribution of sectors, trading venues, and regions is similar across the two archives, bolstering our confidence that our sample covers a reasonably representative set of public companies. Compared to the universe of public companies covered in *GFD*, the most comprehensive database of the time, our sample covers up to 24% of all public companies and up to 65% of the entire market capitalization. Our sample's substantial coverage in terms of market capitalization indicates that our sample tilts toward larger companies. This tilt is consistent with larger companies disseminating their annual reports more widely and archives focusing on annual reports of the most important companies of the time.

The majority of our 1,517 unique companies operate in either the industrial (16%), the consumer discretionary (16%), or the materials (14%) sectors. 94% of our sample companies trade on stock exchanges, while the remaining 6% trade on the OTC market. The NYSE is the largest trading venue, with 48% of our sample companies listed on it. Unsurprisingly, the majority of our sample companies are located in the North-East region of the U.S. (46%), closely followed by the Mid-West (39%). The remaining companies are located in the West (7%) and South (6%) of the U.S.

The public companies in our sample are audited by 118 unique audit firms. Our sample com-

prises both large and small audit firms. The fifteen largest audit firms in our sample account for 84.6% of the audit engagements in our sample. They include several familiar names and predecessors of today's audit firms. As of 1927, Price Waterhouse (23.2% of engagements) was the largest audit firm, followed by Ernst & Ernst (14.1%); Peat Marwick Mitchell (10.1%); Arthur Young (8.7%); Haskins & Sells (8.1%); Lybrand, Ross Bros. & Montgomery (6.7%); Touche & Niven (4.4%); Barrow Wade Guthrie (2.7%); FW LaFrentz & Co. (2.7%); and Arthur Andersen (2.4%). This list closely corresponds to the historical accounts in Zeff and Fossum (1967) and Merino et al. (1994). It comprises audit firms of British origin (Price Waterhouse and Peat Marwick Mitchell) as well as newly founded American audit firms (Ernst & Ernst; Arthur Young; Lybrand, Ross Bros. & Montgomery; Touche & Niven; Barrow Wade Guthrie; FW LaFrentz & Co.; and Arthur Andersen). An overview of our sample's 15 largest audit firms and their number of engagements is presented in Appendix B. We supplement our historical panel data with additional information on macro-economic activity from Rajan and Zingales (2003), *FRED* and League of Nations (1920–1940), the number of CPAs per year from Edwards (1960), and corporate scandals from Hail et al. (2018).

IV. HISTORICAL EVIDENCE

Our empirical examination is organized around three pertinent questions: We first examine how auditing spread during the early 20^{th} century (Section 4.1). We then explore how audit practices and services evolved over that time (Section 4.2). We lastly examine what role regulation played in those developments, with a particular focus on the impact of the SEC introduction toward the end of our sample period (Section 4.3).[6]

[6] We report results from linear regression models estimated via Ordinary Least Squares (OLS). We rely on OLS regressions, even for models with dichotomous outcomes, for their simplicity and robustness (Angrist and Pischke, 2009). Non-linear alternatives (e.g., Logit) tend to complicate the use of fixed and interactive effects (e.g., Ai and Norton, 2003). Still, in untabulated tests, we corroborate the robustness of our results from models with dichotomous outcomes to the estimation via non-linear alternatives (wherever feasible). The estimated coefficients using Logit are largely consistent in direction and statistical significance to the coefficients estimated using OLS. In all our tests, we adjust our reported results for heteroskedasticity and auto-correlation using clustered standard errors (e.g., Conley et al., 2018).

4.1 How Did Auditing Spread?

4.1.1 Capital Markets & Audit Profession

To examine the spread of auditing, we begin by describing trends in the size of capital markets and the audit profession. In Figure OA1 of the Online Appendix, we plot the number of public companies and audit firms in our sample, along with the number of CPAs over time, from 1900 to 1940. The number of public companies grew strongly, increasing more than twelve-fold from 1900 to 1940.[7] This increase appears to have happened quite steadily over time, albeit at an increasing rate after World War I and with a short-lived slump around the 1929 stock market crash. These patterns are consistent with prior evidence on the notable growth of the capital markets in the U.S. in the early 20^{th} century (e.g., O'Sullivan, 2007). Importantly, we observe a similarly strong growth in the number of audit firms. Their number also increased about twelve-fold over our sample period, closely in sync with the growth in public companies. An even more dramatic increase occurred in the number of CPAs, which is unsurprising given that the CPA designation was created in 1896 and in 1900 had only been adopted by three states (see Previts and Merino, 1998, p. 148). The number of CPAs increased by a factor of almost 600 over our sample period. This growth in the profession also manifested in an expanded geographic reach (Figure OA2 of the Online Appendix).

Collectively, our evidence on the expansion of the U.S. capital markets and audit profession in the beginning of the 20^{th} century suggests that capital markets were growing exponentially, and with it, the number of audit firms and qualified audit professionals.

4.1.2 Audit Rates

We next examine the development of the share of public companies obtaining audits. In Figure 1, we plot the share of audited companies among all public companies (referred to as the audit rate), in black, from 1900 to 1940. We observe that, in 1900, the audit rate was just above 25%.[8] By 1940, this rate had risen to almost 90%. Notably, this rise occurred quite steadily, in an

[7] This growth in number of annual reports may reflect both growth in the number of public companies and the availability of annual reports.

[8] This low audit rate in the early 1900s is consistent with the low audit rate from 1905 to 1910 for NYSE industrial companies found by Sivakumar and Waymire (1993).

almost linear fashion, over time. Interestingly, by 1933, before the SEC's audit mandate, the audit rate already reached a high of 80%. This high rate is consistent with historical accounts in Wiesen (1978) and cross-sectional evidence in Benston (1969), Chow (1982), Merino et al. (1994), and Barton and Waymire (2004), validating our approach to measuring companies' audit rates using textual analysis. Besides the average audit rate, in Figure 1, we also plot the size-weighted share of audited companies, using companies' market capitalization to proxy for their size. We observe that the size-weighted audit rate shows a rise very similar to the one observed for the equally-weighted audit rate. The size-weighted audit rate just shows a bit more variability given that it is, effectively, driven by a few large companies. The close correspondence of the equally- and the size-weighted audit-rate trends suggests that the trend toward auditing affected a wide range of companies, not just a few large ones or many small ones.

In Table OA4 of the Online Appendix, we examine which companies contributed to the market-wide rise in audit rates. We observe that the audit rate among companies entering the public capital markets increased over time. In addition, we show that the audit rate among continuing companies (i.e., those trading on public capital markets in the previous year already) tended to be higher than the rate among entering companies and also increased over time. Lastly, we observe that the audit rate among companies exiting the public capital markets tended to be lower than the rate among entering and continuing companies. These patterns suggest that the near-constant increase in the market-wide audit rate was driven by both continuing companies showing higher audit rates over time (i.e., the within-company margin) as well as entering companies boasting higher audit rates than exiting ones (i.e., the selection margin).

In Table 2, we examine economic factors and historical events correlated with and potentially contributing to the increase in the audit rate. In Panel A, we show univariate correlations of the audit rate trend from 1900 to 1933 with concurrent trends in the U.S.'s economy (e.g., gross domestic product (GDP) and population), capital markets (e.g., market capitalization and number of listed companies), and audit profession (e.g., number of audit firms and CPAs). We limit our

sample to the pre-SEC period to abstract from regulatory influences.[9] We find that the audit rate trend is strongly positively correlated with concurrent trends in the economy, and the development of the U.S. capital markets and audit profession, described in Section 4.1.1. These findings are consistent with the idea that transformative changes in the U.S. economy (e.g., the rise of large, public companies) contributed to the growth of the audit profession. We caution though that, given various concurrent trends, a causal attribution of the long-run growth in audit rates to any individual, isolated contributors is challenging to impossible. That being said, we can examine the short-run contribution of prominent candidates for specific contributors to the increased audit rate. In Panel B, we examine whether the audit rate increased in response to corporate scandals or the 1929 stock market crash, which is viewed by some as an impetus for the later SEC regulation (Seligman, 1982). Using data on corporate scandals from Hail et al. (2018), we find that the audit rate increased significantly after accounting scandals. By contrast, we do not find such an increase after non-accounting scandals or after the 1929 stock market crash. These findings are consistent with the idea that accounting scandals created demand for audits as means to restore investor trust (Roychowdhury and Srinivasan, 2019). By contrast, scandals and market crashes unrelated to companies' accounting could not be remedied by more auditing.

Collectively, our evidence on the development of the audit rate is consistent with a long-run and steady trend toward public company auditing. This trend is possibly spurred by the expansion of capital markets in the U.S. during the early 20^{th} century. The expansion plausibly raised investor demand for credible financial information, which increasingly led public companies to provide independently audited annual reports.

4.1.3 Audit Choices

We further explore which companies adopted audits and which audit firms provided the audits during the early 20^{th} century. In Table 3, we examine which company characteristics explain companies' audit and audit-firm choices in the pre-SEC era (1900–1933). In column 1, we find that smaller companies and less profitable companies were more likely to obtain an audit. This finding

[9] We explicitly examine changes in audit rates around the SEC's introduction in Section 4.3.1.

is consistent with companies with limited reputation and high information asymmetry obtaining audits to ensure investor trust. It is also consistent with Merino et al. (1994), who likewise find that smaller companies were more likely to get audits in 1927; as opposed to Chow (1982), who finds the opposite in a 1926 sample. Among companies with audits, we find, in column 2, that larger companies, less profitable companies, and non-dividend payers were most likely to obtain audits from one of the 15 biggest audit firms. This finding is consistent with large companies requiring the substantial audit resources and expertise offered by the largest audit firms (Chandar et al., 2014). It is also consistent with companies with information asymmetry (e.g., due to low profitability) and agency concerns (e.g., non-dividend payers) attempting to ensure investor trust through hiring larger audit firms, which presumably are more reputable and capable (Che et al., 2020). In columns 3 and 4, we find similar associations for companies' choices of older or British audit firms, two alternative ways to proxy for more reputable and competent audit firms. While those findings are not always statistically significant, the consistent patterns in coefficient signs reinforce our earlier interpretation.[10]

In Table 4, we examine which audit-firm characteristics explain the match between companies and their chosen audit firms. For this examination, we limit our sample to companies that obtained audits. For those companies, we create a dyadic data structure, including one observation for each possible combination of companies and *available* audit firms.[11] We regress an indicator taking the value of one for a given company's actual auditor (and zero for all other available audit firms) on audit-firm (e.g., portfolio size) and match-specific characteristics (e.g., distance between company and auditor). Following Downar et al. (2021), we measure those characteristics with a one year lag to reduce concerns about a mechanical relation between a company's audit firm choice and the audit firm's characteristics.

We find that companies were more likely to obtain audits from audit firms with larger client

[10] In untabulated analysis, we find similar results using a Logit model with one exception. The Logit model shows a positive association between profitability and the choice of an older or British auditor.

[11] Dyadic models have been widely used in the social sciences to understand the relation between pairs of actors. Recent work, for example, uses such models to examine determinants of team formation in venture capital (Gompers et al., 2016) and audit firms (Downar et al., 2021).

portfolios (column 1) and audit firms with lower client-portfolio concentration (column 2). Similarly, we observe that companies appeared to prefer Big 15 auditors (column 3), older auditors (column 4), and U.K. auditors (column 5), though the latter is not statistically significant. We interpret these auditor characteristics as reflecting independence, because those audit firms do not depend on any given client and have their reputation at stake (DeAngelo, 1981).[12] We further find that companies were more likely to obtain audits from audit firms with offices located closer to their headquarters and audit firms that specialized in the companies' respective sectors. This finding is consistent with companies preferring audit firms with greater expertise in their local markets and their lines of business (Solomon et al., 1999; Rajgopal et al., 2021).

Collectively, our evidence on companies' audit choices is consistent with companies having purposefully obtained audits to instill investor trust, when needed. When choosing among audit firms, companies seemed to have favored audit firms that were independent and had relevant expertise.[13] These revealed preferences of companies operating during the early 20^{th} century, in the absence of any federal audit regulation, are remarkably consistent with how companies appear to choose their audit firms today (e.g., Downar et al., 2021).

4.2 How Did Audit Services Evolve?

We now explore how audit services evolved during the beginning of the 20^{th} century. As a window to the hard-to-observe audit services, we use audit firms' audit statements. This approach, while clearly limited, enables a first large-scale investigation of reported services and their development over four decades.

4.2.1 Audit-Statement Topics

We first broadly examine topics discussed in audit statements. To identify topics, we use Latent Dirichlet Allocation (LDA), an unsupervised machine learning algorithm, which uncovers topics through the co-occurrence of words in audit statements. The algorithm identifies nine top-

[12] We include the five proxies separately because they capture the same underlying concept. When jointly included (untabulated), *Portfolio Concentration* and *Older Auditor* exhibit significant associations, while *Portfolio Size* and *Big 15 Auditor* become insignificant and *U.K Origin Auditor* remains insignificant.

[13] For brevity, we refer to the match between a company and its audit firm as the company's (audit-firm) choice. We acknowledge that, strictly speaking, the match reflects choices of both parties, the company and its audit firm.

ics. In Figure 2, we plot the average frequency of each topic (across all audit statements in a given year) from 1900 to 1940. The Figure shows remarkable heterogeneity in topics and significant changes in the relative importance of individual topics over time. In the early years, for example, the topic which we label "Review" is most prevalent. It groups words that describe the audit process at a high level (e.g., including terms like 'examination', 'information', 'accounting', 'review', and 'obtain'). The prevalence of this topic declines over time to the point that it almost vanishes in the 1930s. Other topics during the early years typically refer to specific issues (e.g., "Inventory", "Financing", and "Cash"). They are less frequent than the broader "Review" topic. Their relative importance remains quite stable during the first 30 years of the 20^{th} century. During the 1930s, however, those topics also appear to decline. These findings are consistent with qualitative historical studies suggesting that, initially, audit statements were not exhaustive but rather focused on just one or two major line items (e.g., inventory) of particular interest to financial statement users (e.g., Brief, 1987; Campbell and Michenzi, 1987; Pandit and Baker, 2021). These findings are also consistent with the qualitative studies suggesting that audits were initially targeted towards creditors (Sriram and Vollmers, 1997), who presumably have more interest in specific balance sheet items like those discussed in the "Inventory" and "Financing" topics; those topics decline starting in the early 1930s, which corresponds to the period when auditors began shifting their focus towards shareholders (Hawkins, 1963).

In the 1930s, we observe major changes in the prevalence of topics. A few new topics emerge and dominate. Just before 1934, for example, we observe that "Depreciation" became a much discussed topic for a while. Similarly, "Consolidation" appears to be discussed more around 1934. Most notably, we observe that one topic starts to dominate just before the end of the 1930s. This topic comprises words related to public company auditing and the auditing of companies' books. This topic appears to have superseded the earlier "Review" topic, which described the basic audit approach and opinion. These patterns suggest an increasing standardization of audit statements. They appear to reflect the ongoing standardization efforts of the profession (e.g., the use of depreciation and promulgation of GAAP; Hatfield, 1936; Hilke, 1986).

4.2.2 Audit-Statement Wording

We next examine specific wording choices and changes in audit statements during the early 20^{th} century. A manual review of select audit statements from the beginning of our sample period reveals that audit firms, initially, stated that they "certified" that the accounts were "correct," which implied a remarkably high standard of assurance compared to later in the 20^{th} century (Pandit and Baker, 2021). Using our full sample of audit statements, we explore whether the wording of audit statements changed systematically around the issuance of guidance on audit statements developed by the AIA in collaboration with the FRB in 1917 and 1929, and the NYSE in 1934 (Carmichael and Winters, 1982). Guidance documents and prior qualitative research (e.g., Pandit and Baker, 2021) identify several proposed wording changes. Specifically, the main changes in the 1917 guidance were to omit the word "correctly" and to indicate if the financial statements were prepared following the FRB's guidelines (Pandit and Baker, 2021). In 1929, the language referring to the FRB was removed (Carmichael and Winters, 1982). In 1934, possibly in response to the *Ultramares* decision which increased auditor liability, the word "certify" was removed, testing was explicitly mentioned, and the financial statements were said to be fairly presented according to "accepted principles of accounting" (Carmichael and Winters, 1982; Pandit and Baker, 2021). We examine whether these proposed changes had an impact on audit practice by regressing an indicator for the respective words on an indicator taking the value of one for years after the guidance (*Post*), a linear time trend (*Year*), and fixed effects for companies and audit firms. For these tests, we restrict our sample period to seven years, centered around the guidance year.

In Panel A of Table 5, we report the estimated changes in the wording of audit statements around the guidance releases in 1917, 1929, and 1934. After 1917, we find no significant increase in mentions of the FRB or significant decrease in mentions of the word "correct" (columns 1 and 2), indicating that the 1917 guidance was not widely followed. Consistent with this, we find no effect from removing mention of the FRB from the guidance in 1929 (column 3). However, after 1929 we find that use of the word "correct" decreased by 5.9 percentage points (column 4), which may have been caused by this guidance because it also omitted the word "correct" (Carmichael

and Winters, 1982). After 1934, we find even larger changes in line with that year's guidance, with a 46.3 percentage-point increase in mention of GAAP (column 5), a 17 percentage-point decrease in use of the word "certify" (column 6), and a 33 percentage-point increase in the word "test" (column 7). In Appendix C, we provide an example illustrating the shift around the 1934 guidance. The removal of the words "correct" and "certificate" marked a reduction in the level of assurance implied by the audit statements (e.g., Carmichael and Winters, 1982; Pandit and Baker, 2021).

4.2.3 Audit-Statement Standardization

We next examine the degree of standardization in audit statements after each new piece of guidance. For this examination, we calculate the cosine similarity between companies' audit statements and the latest standard audit statement proposed by the AIA in collaboration with the FRB and NYSE. We obtain the standard audit statements for 1917, 1929, 1931,[14] 1934, and 1939 from Carmichael and Winters (1982). In Figure 3, we plot the average cosine similarity over our sample period. We observe that there is little similarity with the earliest standard audit statement before its issuance in 1917. After its issuance, there is also no visible uptick in similarity. Consistent with our findings above, this pattern suggests that the 1917 FRB guidance did little to harmonize audit statements. This finding helps resolve some of the disagreement in the literature over whether the 1917 guidance was widely adopted (e.g., Hawkins, 1963; Carey, 1969; Zeff, 1972) by showing that it had little to no effect on the audit statements attached to annual reports. Only after the issuance of the 1929 FRB guidance do we observe a sharp increase in the similarity of companies' audit statements relative to the standard audit statement. Again consistent with our earlier findings, this pattern suggests that the 1929 FRB guidance was the first standardization initiative that significantly contributed to the harmonization of companies' audit statements. After 1929, the average similarity of companies' audit statements vis-à-vis the latest standard audit statement again went up significantly with the 1934 guidance. The widespread adoption of this guidance, which was produced in conjunction with the NYSE, is consistent with auditors turning more of their focus

[14] The 1931 guidance came from a *Journal of Accountancy* editorial, in the wake of the *Ultramares* decision Carmichael and Winters (1982).

towards shareholders in the early 1930s. After 1934, the average similarity remained high. In line with Figure 3's graphical evidence, Panel B of Table 5 shows no significant change in average similarity around the initial 1917 guidance, but a significant increase in similarity around the guidance in 1929 and 1934.

Collectively, our evidence on audit firms' services shows a shift toward lower *implied* levels of assurance and an increase in standardization of audit services, especially after 1929. Those trends reflect increasing efforts of the profession, as organized in the AIA, to harmonize audit practices in collaboration with various private and public actors (e.g., the NYSE and the FRB) and to fend off increasing litigation risk.

4.3 What Role Did Regulation Play?

After describing the spread of auditing and the evolution of audit services, we lastly examine the role regulation played in those developments. To this end, we examine the impact of the first federal audit regulation introduced by the SEC in 1934 on public company auditing and capital markets, the SEC's intended beneficiary.

4.3.1 Impact on Adoption of Auditing

We first examine changes in audit rates around 1934 in Table 6. In Panel A, we find that the average audit rate before 1934 is about 71% (column 1). After 1934, this rate is about 16 percentage points higher. When we control for the long-run time trend observed in Figure 1,[15] the estimated increase shrinks to 5 percentage points (column 2). Further controlling for firm characteristics does not materially change this estimate (columns 3 and 4). Taken together, the time-series evidence in Panel A suggests that the impact of the SEC's audit mandate on the market-wide audit rate was limited, ranging from 4 to 6 percentage points, after we control for the long-run time trend in the audit rate.

To sharpen the identification of the SEC impact, we test for differential changes in the audit rates of companies subject to the mandate vis-à-vis companies not subject to the mandate (the OTC

[15] This time trend control counts from 1934. Thus it is -1 for 1933, 0 for 1934, 1 for 1935, and so on.

market[16] and the transportation sector[17]) around 1934. Relative to the respective control groups, mandated companies exhibit a small and statistically insignificant increase in audit rates, which amounts to 5 percentage points in column 2 (sample: full; control: OTC) and 7 percentage points in column 4 (sample: non-OTC; control: transportation sector). These difference-in-differences results confirm our time-series evidence.

Our audit-rate results suggest that the SEC's audit mandate had a limited impact on market-wide audit rates. The impact was limited because, even absent a mandate, there was a long-run trend toward public company auditing, which led to pervasive auditing of public companies even before the SEC was introduced.

We also examine whether companies' audit-firm choices differed before and after the SEC's introduction in 1934. We examine this for the sample of companies that voluntarily adopted audits pre-1934, because this is the sample for which we can observe the change. In Table 7, we find some evidence that the mandate reduced companies' reliance on nearby and specialized auditors. This observation shows in the fact that the coefficients on the interactions of the post-1934 indicator with distance and specialization take the opposite signs compared to the coefficient signs in the pre-1934 period.[18] With respect to mandatory adopters, in untabulated tests we observe that, in the post-1934 period, after the mandate compels them to obtain audits, they exhibit similar audit-firm choices as voluntary adopters during that period.

Our audit-choice results suggest that the SEC's introduction, if anything, appears to have reduced companies' preference for auditors who have the greatest knowledge of the company's business, at least in terms of information on local and sector-specific matters. This pattern may reflect a reduced signaling benefit of voluntary auditing due to the mandate (Lennox and Pittman, 2011; Kausar et al., 2016). It may also reflect that the mandate increased the scarcity of available audit firms' services (e.g., Duguay et al., 2020; Breuer et al., 2023). While the mandate does not

[16] Section 13 of the original Securities Exchange Act, which allows the SEC to require audits, applies to "[e]very issuer of a security registered on a national securities exchange."

[17] The SEC did not require audits for railroads or other entities regulated by the Interstate Commerce Commission (17 C.F.R. §240.13b-1(b) (1938)). For almost thirty years, these companies had already been subject to inspection by examiners from the Interstate Commerce Commission.

[18] We find no significant change in demand for characteristics related to auditor independence.

appear to have drastically increased the number of companies purchasing audits, it still compelled several companies to obtain audits for the first time, and these companies tended to be large. These companies may previously have abstained from purchasing audit services due to the limited supply of high-quality audit firms in their area or industry (Minnis et al., 2024). Due to the mandate, these companies may have had to turn to more distant audit firms, especially in localities where the mandate put the local audit market under strain. In any case, we caution that our audit choice results are associational, leaving room for alternative interpretations, including that companies are trading off aspects of quality, opting for less local and sector expertise in exchange for other aspects of quality. In this regard, however, we note that our results in Table 7 already control for a number of proxies for quality, including whether the auditor is large, diversified, old, or from the U.K. Not one of these proxies of auditor quality sees a significant increase in company demand after 1934. Thus, we find no unambiguous evidence indicating that the SEC's audit mandate and regulation caused companies' to choose higher-quality or more-informed auditors.

4.3.2 Impact on Audit Services

We next examine changes in the content of audit statements around the SEC's introduction in 1934 in Table 8. We document that audit statements significantly increased in length after 1934 (an increase of around 49% more words in column 1). Despite an increase in length, we do not find a clear change in the time between companies' fiscal year ends and auditors' sign-off dates in column 2. These findings suggest that while audit statements became longer after 1934, the underlying work may not have increased significantly. We find some evidence that the topics (uncovered by our LDA) discussed in audit statements became more concentrated after 1934. This increasing concentration, however, is not necessarily driven by the SEC. In fact, our earlier evidence (Figure 2 and Table 5) indicates that the changes in topics and the wording of audit statements seems to have started already before the SEC's introduction. They were primarily driven by standardization efforts of the AIA and its collaborators (the FRB and NYSE). While the threat of regulation may have been a catalyst for those developments, the SEC itself seems to have had a limited direct effect on audit services upon introduction. In line with Zeff (2003), our graphical evidence in

Figure 2 suggests that, if anything, the SEC had an impact on audit practice only years after its introduction, in 1938/9, in response to the McKesson Robbins accounting scandal. Collectively, our audit-service results suggest that, despite major changes in audit services during the 1930s, the initial impact of the SEC on audit practice appears limited.

4.3.3 Impact on Capital Markets

We conclude by examining the impact of the SEC's introduction on capital markets, the intended beneficiaries of the regulatory intervention. In Table 9, we compare trends in capital-market outcomes (i.e., market value and liquidity) of mandatory adopters around the SEC's introduction, in a difference-in-differences design, to the trends observed for voluntarily audited companies or never-audited (non-compliant) companies.[19] We find no significant evidence that the mandatory adopters experienced differential improvements in their market values or liquidity (i.e., zero return days, zero volume days, Amihud illiquidity). Compared to never-audited companies, mandatorily audited companies show some weak evidence of liquidity improvement. These findings are consistent with the notion that mandatory audits had a limited impact on companies' capital-market outcomes and, hence, capital markets as a whole.[20] The difference-in-differences findings, however, can fail to detect significant improvements if the mandate helped not only the mandated companies, but also other companies (e.g., voluntary adopters). In this case, we may not detect a significant effect, despite the mandate's beneficial impact on the entire regulated capital market.

To explore the possibility of market-wide improvements, we examine the change in capital-market outcomes experienced by all companies trading on regulated markets around the SEC's introduction. We compare this change with the concurrent change experienced by companies trading on the unregulated OTC market. In Table 9, we find no significant evidence of improvement in

[19] Our "voluntary adopters" includes companies that chose to obtain audits absent any requirements by stock exchanges and companies that chose to obtain audits because of the NYSE requirement. Importantly, it does not include companies that obtained audits due to the SEC's mandate. For a subset of the companies classified as non-compliant, we corroborate their status by manually checking their annual reports for audit statements, alleviating concerns that our NLP-based approach fails to detect these companies' audit statements.

[20] Our findings are consistent with Daines and Jones (2012) who fail to find significant improvements in univariate liquidity comparisons of companies with and without audits before and after the SEC's introduction.

regulated markets as compared to the unregulated market.[21] As confirmation for these regression results, untabulated tests do not show notable differential trends for the average company traded on regulated exchanges vis-à-vis the OTC market around the SEC's introduction, nor the aggregate capital-market outcomes on these markets.

Collectively, our capital-market results suggest that the SEC's audit mandate had, at best, a limited impact on mandated companies and regulated capital markets. These results complement Binz and Graham (2022), who reexamine the impact of the Securities Exchange Act's disclosure mandates on capital markets. They document improved short-window reactions of investors to earnings news of mandatory disclosers compared to voluntary disclosers. Our paper complements this evidence by examining the impact of the SEC's *audit* mandate on broader market outcomes and the SEC's impact on the market as a whole. It appears that, while some provisions of the Securities Exchange Act seem to have helped investors (e.g., disclosure mandates) at select times (e.g., earnings announcement days), the audit mandate and the SEC overall seem to have had a limited impact on broader outcomes throughout most of the year (e.g., the average daily liquidity).

V. HISTORICAL PERSPECTIVE, PARALLELS, AND LESSONS

In combination with extant historical accounts, our decades-spanning empirical evidence paints a detailed picture of the formative years of public company auditing in the U.S. This picture provides an understanding for how we got to today's established and highly regulated financial audits. This evolutionary perspective is important as today's financial audits are an important economic institution. It is also important because the evolution of financial audits can hold lessons for recent developments in the space of ESG assurance, where financial audits (e.g., their standards, processes, and regulations) are frequently pointed to as a relevant benchmark (e.g., Lee, 2021).[22] Hence, an appreciation for the evolution of financial audits and the role regulation played in it can

[21] We run both equally and size-weighted tests. The weighted tests attempt to achieve a measure of aggregate market liquidity, using companies' relative market capitalization within their respective market (non-OTC or OTC market) as weights. We use fixed weights, calculated as of 1927, to abstract from changes in (relative) market values due to sample composition changes (e.g., new listings). In untabulated tests, we find similar results when using changing weights.

[22] See also sections (61)-(74) in EU (2022) and footnotes 1077 and 1078 in SEC (2024).

help draw relevant parallels to and lessons for current developments and debates.

There are several parallels between the state and development of ESG assurance today and financial audits a century ago. We provide a non-exhaustive list of parallels in Table OA5 of the Online Appendix. Similar to the spread of financial auditing in the beginning of the 20^{th} century, ESG assurance rates have been rising steadily over the past decade among U.S. public companies (e.g., from 6% in 2010 to 35% in 2020; Gipper et al., 2023). This rise, again, seems to be driven by a dramatic growth in financial capital that investors seek to allocate to companies. Just that, this time, the growth in capital arises from the desire to finance the transition to a more sustainable economy, which creates demand for information on companies' ESG performance, not just their financial performance. The growing demand for ESG information and its assurance creates opportunities for existing financial audit firms and also new types of assurance firms and services (e.g., engineering firms; Gipper et al., 2023), which parallels the entry of established U.K. audit firms and new American audit firms in the financial audit space. In terms of audit practices, ESG assurance practices are still quite heterogeneous and in flux (Gipper et al., 2023), similar to financial audit practices in the first decades of the 20^{th} century. Various private and public sector actors are working toward acceptable standards, much like the development we observed for financial audits up to the early 1930s. In the U.S., the Sustainability Accounting Standards Board (SASB), for example, is developing standards for sustainability reporting, the AICPA (formerly AIA) launched a task-force on the assurance of such sustainability information, and the Public Company Accounting Oversight Board (PCAOB) is considering revising audit standards to include matters of sustainability. Other actors like the International Auditing and Assurance Standards Board (IAASB) are developing global ESG-related assurance standards.

There are also noteworthy parallels with respect to the role of regulation. Like in the case of financial audits in the 1930s, the SEC has recently decided to mandate the reporting and assurance of greenhouse gas emissions (GHG) in the U.S., with these requirements to be phased in from 2026 to 2033. Interestingly, similar to the case of financial audits, this first intervention comes comparably late (i.e., is only scheduled to be fully phased-in a little less than a decade from now),

only asks for low levels of assurance in accordance with current practices, and leaves much of what constitutes "good" ESG assurance practices unspecified (SEC, 2024). Notably though, with these rules scheduled so far in advance to frame future development, regulators seem to be taking a more active role earlier in the life cycle of ESG assurance than they did for financial audits. The sped up developments of ESG assurance and regulatory interventions likely reflect the urgency of the matter but also the fact that practitioners and regulators can build on established auditing institutions, including standard setting bodies and regulators.[23]

More broadly, our historical evidence provides lessons for the promise and limitations of audit regulation. Our finding that uptake was limited for early audit statement guidance indicates that guidance from regulators can sometimes miss the mark, especially in early iterations. This suggests that, in the ESG context, regulators may need time to learn what ESG assurance rules will work best and, initially, may want to refrain from imposing strict requirements. If they follow this path and allow assurance best practices to develop organically in the marketplace of ideas, it may be that these best practices will naturally be adopted widely before they are codified in a mandate. In that case, the mandate itself may have little observable effect on capital markets, just as the audit mandate in 1934 had little observable effect once it was finally imposed on a market that already had widely adopted financial audits voluntarily.

In this vein, our historical evidence also hints at the importance of a developed audit profession for audit regulation to succeed. We observe that, by the time the SEC was created, the audit profession was already reasonably well developed, in terms of size (e.g., audit firms and CPAs) and practices (e.g., convergence in audit statements). As a result, the SEC could simply codify extant audit practices, relying on the audit profession's guidance; and the sizeable audit profession could execute the SEC's audit mandate, thereby contributing to the SEC's image as a successful regulator (McCraw, 1984). In line with this interpretation, Wiesen (1978) describes how leaders of major audit firms were pivotal in explaining the practice and role of auditing to lawmakers and

[23] In the European Union (EU), regulatory interventions occurred earlier than in the U.S. The earlier regulatory developments in other parts of the world may also have contributed to the speedy development in the U.S., as U.S. practitioners and regulators could learn from other countries' experiences, just as the U.S. did from the U.K.'s more developed audit profession and regulations at the beginning of the 20^{th} century.

in convincing the lawmakers that the government lacked the competences and resources to create independent government auditors.[24] In addition, the need for a developed profession is also supported by our finding that, after the 1934 mandate, companies chose auditors with less knowledge of the company's business. Thus, even a small increase in the number of audited companies may have strained capacity and forced companies to choose less suitable auditors. Such an effect would presumably have been exacerbated had professional capacity been lower at the time of the mandate.

Other instances of regulatory deliberations and actions in the U.S. and elsewhere reinforce the view that a developed profession and practices enable audit regulation. In 1902, for example, the U.S. Industrial Commission proposed to mandate public companies to produce audited annual reports; and again in the early 1910s, the FRB suggested requiring audits of financial statements for all applications for rediscount commercial paper. In both cases, the proposals were abandoned because the government bodies recognized the lack of technically qualified professionals to perform the audits (Richardson, 1933a; Merino et al., 1994; Previts and Merino, 1998, pp. 184–186). Similarly, the U.K. introduced a first audit mandate in 1844 only to repeal it in 1856 due to concerns about the lack of independent and competent auditors (Hein, 1963). A few years later, in 1862, the U.K. instituted an explicit audit option to encourage the development of the audit profession. It was only after several years of development that the U.K. reinstated the audit mandate in 1900 (Hopwood and Vieten, 1999; Competition Commission, 2012). The 1863 audit mandate in France provides another historical case study where the implementation of a mandate before the development of an independent audit profession effectively failed because, absent a developed profession, companies simply complied on paper (e.g., hiring lower level insiders as auditors) but not substantively (e.g., Mikol, 1993; Praquin, 2012). Similar issues arose more recently among countries transitioning from communist to capitalistic systems in the late 1990s and early 2000s. Those countries adopted standards and regulations imported from Western countries that took an

[24] The audit profession's influence on lawmakers is also consistent with the theory of regulatory capture (Stigler, 1971). Capture is particularly likely when lawmakers face highly-specialized and well-organized professions such as the audit profession. It is noteworthy though that Doron (2015), for example, doubts that lawmakers ever viewed government-run audits as a serious option.

investor-oriented assurance approach, but local auditors stuck to their familiar Soviet-style control and compliance approach (Krzywda et al., 1998; King et al., 2001).

Collectively, the historical episodes suggest that, given the complex subject matter of auditing, the development of expertise—in terms of audit standards and audit professionals—appears to be a helpful if not necessary precondition for successful audit regulation. In the case of financial auditing in the U.S., this development unfolded over several decades. This development may not easily be skipped, but can possibly be accelerated or guided by regulatory actions. First and foremost, however, it seems to require time and iterative interactions between various private and public sector actors to create the relevant subject-matter expertise that deserves wide (possibly mandatory) application. In the case of financial auditing, we, for example, observe much experimentation in audit statements before the profession converged on a standard audit report in 1934; this standard audit report then proved to be robust, keeping its basic form for the next fifty years.[25] This lesson illustrates the importance of historical research which takes a long-run, evolutionary perspective (Waymire and Basu, 2007). It acknowledges interdependencies between evolving institutions and echoes the observation that regulatory interventions seldom happen in isolation (Ball, 1980). This lesson also connects with the development literature which emphasizes the importance of regulatory capacity for effective government interventions (e.g., Pritchett et al., 2013).

The historical lesson on the importance of the development of expertise resonates with recent regulatory deliberations in the space of ESG assurance. Securities regulators are cautioning that "[a]lthough the objective is to have a similar level of assurance for financial and sustainability reporting, a progressive approach is needed" (IOSCO, 2021) and countries are explicitly delaying more stringent ESG regulations for lack of "capacity" (McNally, 2023; SEC, 2024). Notably, the SEC's recent rule on climate reporting and assurance acknowledges the need to build professional

[25] Pandit and Baker (2021) note that the standard audit report kept a similar form up until 1988, when the first three-paragraph report was introduced by SAS 58. Indeed, the audit report for Home Depot's 1987 annual report (link here) looks remarkably similar to the 1935 audit report we show in Appendix C.

capacity (BNP Paribas, 2022; SEC, 2024).[26] The final rule phases in assurance requirements for emissions over several years (i.e., from 2026 to 2033) to provide "additional time for standards and methodologies to further develop" and to provide "existing GHG emissions assurance providers with time to train additional staff and undertake other preparations for these engagements as necessary, as well as facilitate the entry of new GHG emissions attestation providers into the market to meet demand" (SEC, 2024, p. 692). The rule also acknowledges the importance of experimentation during the developmental stage. It permits "registrants to follow any attestation standards that are publicly available" with the explicit objective to provide "a degree of flexibility to registrants given the emerging nature of GHG assurance services" (SEC, 2024, p. 696).

VI. CONCLUSION

We describe the development of public company auditing in the U.S. during its formative years and document three notable patterns: First, we show a remarkably steady growth of public company auditing over the four decades after 1900. This growth does not seem to be single-handedly driven by any individual actor or event. Instead, it plausibly reflects the growing demand for audited information due to the expansion of public capital markets at the time. Second, we show that auditing became increasingly standardized, especially toward the end of our sample period. The standardization efforts were spearheaded by the audit profession, which interacted with various private and public sector actors. Lastly, we do not observe significant capital-market benefits of the SEC's audit regulation for companies or capital markets as a whole. Collectively, our evidence suggests that various private and public sector actors interacted over decades to develop public company auditing from a fringe, heterogeneous practice to a widely accepted, standardized, and regulated practice.

Our historical evidence helps in understanding the origins of today's established financial

[26] Business interests caution against a premature regulatory intervention on the ground that the market for ESG assurance is immature (Nasdaq, 2022; Chamber of Commerce, 2022; SEC, 2024). This argument echoes the reasons that prevented early attempts to regulate and standardize audit practices before 1920 (Richardson, 1933a; Previts and Merino, 1998). In fact, the current state of ESG assurance (e.g., its adoption rate and heterogeneity in practices; Gipper et al., 2023) more closely resembles the state of financial auditing in the first two decades of the 20^{th} century than the state immediately around the SEC's audit mandate.

audits and provides perspective for current developments. In recent years, transformative changes have once again raised complex questions about companies' reporting and auditors' role in assuring companies' reports; this time on ESG performance. Absent established standards and regulations, the current state of ESG assurance is characterized by heterogeneous and constantly changing practices (e.g., Gipper et al., 2023). This state of affairs invokes criticism and motivates calls for regulation by a variety of actors, including large companies, institutional investors, asset managers, auditors, and professional bodies (SEC, 2024, p. 268 n. 1105). Our evidence suggests that ESG assurance is in the developmental stage of its life cycle, not unlike public company auditing in the U.S. a century ago. During this stage, various approaches and solutions are "tested," and the promise of regulation to bring significant and immediate improvements appears questionable given the lack of obvious answers to the complex questions posed by transformative changes in business and society.

Our paper comes with important limitations and caveats. Our evidence is descriptive in nature and derives from one, albeit important case study: the development of public company auditing in the U.S. during the early 20^{th} century. While we take comfort that our broad-sample descriptive evidence aligns with historical accounts from the U.S. and other contexts, we acknowledge that we cannot conclusively rule out alternative interpretations of our collective evidence. We also acknowledge that any parallels and lessons we draw from our evidence are tentative and, to some degree, speculative. Nevertheless, we are intrigued by the many striking similarities between the historical and current developments and encourage future research to retroactively evaluate the extent to which the past may have provided a useful guide for future developments in the important space of ESG assurance.

APPENDIX

A Variable Definitions

Name	Definition
Macroeconomic Variables	
Audit Rate	Number of sample companies audited, proxied by the attachment of an audit statement to the annual report, divided by the total number of sample companies per year.
GDP	Total U.S. domestic GDP per year, as reported in the Statistical Yearbooks of the League of Nations.
Population	Total U.S. population per year, as reported in the Statistical Yearbooks of the League of Nations.
Total Market Capitalization	Total U.S. stock market capitalization, as reported in the Statistical Yearbooks of the League of Nations.
Total Listed Companies	Total number of listed companies in the U.S., as reported in the Statistical Yearbooks of the League of Nations.
# of Audit Firms	Total number of unique audit firms in the U.S. in our sample, proxied by audit statements signatures.
# of CPAs	Total number of CPAs in the U.S., as reported by Edwards (1960).
Accounting Scandal	Indicator variable that takes the value of one if an accounting scandal occurred in the year before a given year, and zero otherwise. Data taken from Hail et al. (2018).
Non-Accounting Scandal	Indicator variable that takes the value of one if a non-accounting scandal occurred in the year before a given year, and zero otherwise. Data taken from Hail et al. (2018).
Company Variables	
Size (*Market Value*)	Natural log of the market capitalization.
EPS	Earnings per share, basic and net of all distributions excluding the dividend per share.
Dividend Payer	Indicator variable that is equal to one if the company pays dividends, and zero otherwise.
Zero Return Days	Number of days on which the return is zero, scaled by total number of days for which there is data.
Zero Volume Days	Number of days on which the trading volume is zero, scaled by total number of days for which there is data.
Amihud Illiquidity	Amihud illiquidity calculated as in Amihud (2002), i.e., the yearly weighted average of the daily ratios of absolute return to dollar volume, multiplied by 1 million.
Auditor Variables	
Big 15 Auditor	Indicator variable that is equal to one if an auditor is one of the auditors mentioned in Appendix A of the main paper, and zero otherwise.
Older Auditor	Indicator variable that is equal to one if the auditor's age, measured as the given year minus the first year the auditor shows up in our sample, is above the sample median, and zero otherwise.
UK Origin Auditor	Indicator variable that is equal to one if the auditor is originated in the U.K. as evidenced by historical records of the ICAEW and AIA, and zero otherwise.
Auditor	Equal to the auditor name in list of auditor name keywords in Table OA3 of the Online Appendix that provides the closest match.
Portfolio Size	Natural log of the sum of the market capitalizations of all companies in the client portfolio, per year.
Portfolio Concentration	Within auditor-year Herfindahl–Hirschman index of the proportions of client size divided by total auditor portfolio size.
Audit Variables	
Audit Indicator	Indicator variable that is equal to one if the annual report contains one of the audit statement keywords in Table OA3 of the Online Appendix, and zero otherwise.
Audit Statement Length	Natural log of the number of words in the audit statement.
Audit Statement Lag	Natural log of the number of days between the sign-off date of the auditor on the audit statement and the fiscal year end. The sign-off date is the last date that is mentioned on the page of the audit statement and the subsequent two pages, no later than 1 year after the fiscal year end and no earlier than the fiscal year end. The fiscal year end is taken from *Mergent* or, if missing, from *Global Financial Data*.
Presence 'X'	Indicator variable that is equal to one if the words 'X' occur at least once in the audit statement, and zero otherwise.

Table continues on next page.

Name	Definition
Similarity 'X'	Cosine similarity between the audit statement and the example audit statement provided by the FRB and AIA in year X.
HHI Topics	Herfindahl–Hirschman index of the distribution of the nine topics within the audit statement. The nine (latent) topics are identified using Latent Dirichlet Allocation over the full sample of audit statements, and are defined as follows: (1) cash & equivalents, (2) consolidation, (3) inventory, (4) depreciation, (5) review, (6) testing, (7) financing, (8) income, (9) CPA. The top 5 associated words of each topic are presented in the caption of figure 2 of the main paper.
Dominant Topic Distribution	The extent to which the audit statement focuses on one of the nine (latent) topics, proxied by the highest probability (according to the Latent Dirichlet Allocation procedure) that one of the nine topics appears in the audit statement (i.e., we compare the probabilities for each of the nine topics within a given audit statement, and set this variable equal to the highest of the probabilities).
Client-Auditor Distance	Natural log of the geodetic distance between the city of the headquarters of the company and the city of the auditor's office that is closest to the company, out of all cities in which the auditor has an office. The list of offices per auditor is compiled out of all top 1,000 U.S. cities (in terms of population in 1940) mentioned in the available audit statements per auditor, per year. A city should be mentioned in at least 1% of all occurrences.
Client-Auditor Specialist	Indicator variable that is equal to one if the auditor is a specialist in the sector in which the company is active, and zero otherwise. The auditor is considered to be a specialist in the sector for which the proportion of total portfolio size of the auditor within the year (in terms of market capitalization) in that sector to the total auditor portfolio of the auditor within the year is largest.

B Overview of Auditors in Sample

The table presents the names and origins of the 15 auditors with the most engagements in our sample. The bottom row shows the percentage of all engagements performed by the largest 15 auditors.

			Engagements					
	Name	**Origin**	**Total**	**1900**	**1920**	**1927**	**1933**	**1940**
1	Price Waterhouse	UK	2,034	3	34	70	106	141
2	Ernst & Ernst	US	1,502		11	44	75	131
3	Haskins & Sells	US	1,178		21	25	60	94
4	Lybrand, Ross Bros. & Montgomery	US	813	1	4	21	55	89
5	Arthur Young	US	718		18	25	38	41
6	Peat Marwick Mitchell & Co.	UK	699		10	28	43	45
7	Arthur Andersen	US	489		2	7	36	60
8	Barrow Wade Guthrie	US	332		5	8	21	25
9	Touche & Niven	US	283		8	13	18	16
10	Audit Company of New York	US	164	3	5	6	1	
11	Deloitte Plender Griffiths	UK	134		3	4	5	10
12	F. W. LaFrentz & Co.	US	111		1	8	8	9
13	Scovell Wellington & Co.	US	110			3	5	10
14	Patterson Teele Dennis	US	106	3	2	1	3	4
15	Pogson, Peloubet & Co.	US	94		2	4	4	4
	Total		**8,767**	**10**	**126**	**267**	**478**	**679**
	% of total engagements in sample		84.6%	83.3%	85.1%	88.1%	85.8%	82.9%

C Audit Statements Example

This figure showcases two audit statements for the American I. G. Chemical Corporation signed by F. W. LaFrentz & Co. in 1932 (Panel (a)) and 1935 (Panel (b)). The red underline is added for emphasis.

(a) 1932

May 25, 1932.

American I. G. Chemical Corporation,
521 Fifth Avenue,
New York, N. Y.

DEAR SIRS:

We have examined the accounts and records of the American I. G. Chemical Corporation for the twelve months ended March 31, 1932; and

In our opinion, the accompanying Balance Sheet and Statements of Income and Expense, and Surplus, compiled from our General Report, set forth the financial condition of the Corporation as at March 31, 1932, and the results of its operations for the period.

F. W. LAFRENTZ & Co.

Certified Public Accountants.

(b) 1935

American I. G. Chemical Corporation,
521 Fifth Avenue,
New York, N. Y.

DEAR SIRS:

We have made an examination of the balance sheet of the American I. G. Chemical Corporation as at March 31, 1935 and of the statements of income and surplus for the year ended on that date. In connection therewith, we examined or tested accounting records of the Company and other supporting evidence and obtained information and explanations from officers and employees of the Company; we also made a general review of the accounting methods and of the operating and income accounts for the year, but we did not make a detailed audit of the transactions.

In our opinion, based upon such examination the accompanying balance sheet and related statements of income and surplus fairly present, in accordance with accepted principles of accounting consistently maintained by the Company during the year under review, its position at March 31, 1935 and the results of its operations for the year.

F. W. LAFRENTZ & Co.

Certified Public Accountants.

April 5, 1935.

REFERENCES

Acemoglu, D., C. García-Jimeno, and J. A. Robinson, 2015, State Capacity and Economic Development: A Network Approach, *American Economic Review* 105, 2364–2409.

Ai, C., and E. Norton, 2003, Interaction Terms in Logit and Probit Models, *Economics Letters* 80, 123–129.

Amel-Zadeh, A., and G. Serafeim, 2018, Why and How Investors Use ESG Information: Evidence from a Global Survey, *Financial Analysts Journal* 74, 87–103.

Amihud, Y., 2002, Illiquidity and Stock Returns: Cross-section and Time-series Effects, *Journal of Financial Markets* 5, 31–56.

Angrist, J., and J.-S. Pischke, 2009, *Mostly Harmless Econometrics – An Empricist's Companion* (Princeton University Press).

Avramov, D., S. Cheng, A. Lioui, and A. Tarelli, 2022, Sustainable Investing with ESG Rating Uncertainty, *Journal of Financial Economics* 145, 642–664.

Ball, R., 1980, Discussion of Accounting for Research and Development Costs: The Impact on Research and Development Expenditures, *Journal of Accounting Research* 18, 27–37.

Barton, J., and G. Waymire, 2004, Investor Protection under Unregulated Financial Reporting, *Journal of Accounting and Economics* 38, 65–116.

Benston, G., 1969, The Value of the SEC's Accounting Disclosure Requirements, *The Accounting Review* 44, 515–532.

Benston, G., 1973, Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934, *American Economic Review* 63, 132–155.

Benston, G., 1985, The Market for Public Accounting Services: Demand, Supply and Regulation, *Journal of Accounting and Public Policy* 4, 33–79.

Besley, T., and A. Deaton, 2021, History of inequality – A Panellists' Introduction, *The IFS Deaton Review* .

Besley, T., and T. Persson, 2009, The Origins of State Capacity: Property Rights, Taxation, and Politics, *American Economic Review* 99, 1218–44.

Binz, O., and J. R. Graham, 2022, The Information Content of Corporate Earnings: Evidence from the Securities Exchange Act of 1934, *Journal of Accounting Research* 60, 1379–1418.

BNP Paribas, 2022, Comment Letter to the SEC from BNP Paribas, *(available at link)* .

Bourveau, T., J. Brendel, and J. Schoenfeld, 2024, Decentralized Finance (DeFi) Assurance: Early Evidence, *Review of Accounting Studies* 29, 2209–2253.

Bourveau, T., E. T. DeGeorge, A. Ellahie, and D. Macciocchi, 2022, The Role of Disclosure and Information Intermediaries in an Unregulated Capital Market: Evidence from Initial Coin Offerings, *Journal of Accounting Research* 60, 129–167.

Breuer, M., A. Le, and F. Vetter, 2023, Audit Mandates, Audit Firms, and Auditors, *Working Paper (available at SSRN link)*.

Brief, R., 1987, Corporate Financial Reporting at the Turn of the Century, *Journal of Accountancy* 163, 142–151.

Briggs, L. L., 1931, Accounting and the Courts, *The Accounting Review* 184–191.

Broadridge Data and Analytics, 2021, ESG: Transforming Asset Management and Fund Distribution, *White Paper (available at link)*.

Buckley, J., and F. Weston, 1980, *Regulation and the Accounting Profession* (Lifetime Learning Publications).

Campbell, D., and A. Michenzi, 1987, Revising the Audit Report: A Response to the Expectation Gap, *CPA Journal* 57, 34–39.

Carey, J. L., 1969, *Rise of the Accounting Profession, v. 1. From Technician to Professional, 1896–1936* (University of Mississippi Press).

Carmichael, D., and A. Winters, 1982, The Evolution of Audit Reporting, *Auditing Symposium VI: Proceedings of the 1982 Touche Ross/University of Kansas Symposium on Auditing Problems* 1–20.

Chamber of Commerce, 2022, Comment Letter to the SEC from U.S. Chamber of Commerce, *(available at link)* .

Chandar, N., D. Collier, and P. Miranti, 2014, Organizational Evolution at Lybrand, Ross Bros. and Montgomery in the Twentieth Century, *Accounting History* 19, 53–76.

Che, L., O. K. Hope, and J. C. Langli, 2020, How Big-4 Firms Improve Audit Quality, *Management Science* 66, 4552–4572.

Chow, C., 1982, The Demand for External Auditing: Size, Debt and Ownership Influences, *The Accounting Review* 57, 272–291.

Christensen, H., L. Hail, and C. Leuz, 2021, Mandatory CSR and Sustainability Reporting: Economic Analysis and Literature Review, *Review of Accounting Studies* 26, 1176–1248.

Coffee, J., 2006, *Gatekeepers: The Professions and Corporate Governance* (Oxford UP).

Competition Commission, 2012, Development of the Statutory Financial Audit, *UK Competition Commission Report (available at link)*.

Conley, T., S. Goncalves, and C. Hansen, 2018, Inference with dependent data in accounting and finance applications, *Journal of Accounting Research* 56, 1139–1203.

Daines, R., and C. Jones, 2012, Truth or Consequences: Mandatory Disclosure and the Impact of the 1934 Act, *Working Paper (available at link)*.

Davidson, S., and G. D. Anderson, 1987, The Development of Accounting and Auditing Standards, *Journal of Accountancy* 163, 110–123.

DeAngelo, L., 1981, Auditor Size and Audit Quality, *Journal of Accounting and Economics* 3, 183–199.

DeFond, M., C. Lennox, and J. Zhang, 2016, Some Controversies in the Auditing Literature, *Working Paper (available at link)*.

Demsetz, H., 1967, Toward a Theory of Property Rights, *American Economic Review* 57, 347–359.

Donovan, J., R. Frankel, J. Lee, X. Martin, and H. Seo, 2014, Issues Raised by Studying DeFond and Zhang: What Should Audit Researchers Do?, *Journal of Accounting and Economics* 58, 327–338.

Doron, M., 2015, The Colonel Carter Myth and the Securities Act: Using Accounting History to Establish Institutional Legitimacy, *Accounting History* 20, 5–19.

Doron, M., 2016, The Securities Acts and Public Accounting: Financial Statement Audits as Symbolic Reform, *Accounting History* 21, 329–343.

Downar, B., J. Ernstberger, and C. Koch, 2021, Determinants and Consequences of Auditor Dyad Formation at the Top Level of Audit Teams, *Accounting, Organizations and Society* 89, 101156.

Duguay, R., 2022, The economic consequences of financial audit regulation in the charitable sector, *Journal of Accounting Research* 60, 1463–1498.

Duguay, R., M. Minnis, and A. Sutherland, 2020, Regulatory Spillovers in Common Audit Markets, *Management Science* 66, 3389–3411.

Edwards, J. D., 1955, Public accounting in the United States, 1896–1913, *The Accounting Review* 240–251.

Edwards, J. D., 1960, *History of Public Accounting in the United States* (Routledge).

Ely, K., and G. Waymire, 1999, Accounting Standard-Setting Organizations and Earnings Relevance: Longitudinal Evidence from NYSE Common Stocks, 1927–93, *Journal of Accounting Research* 37, 293–317.

EU, 2022, Directive (EU) 2022/2464 of the European Parliament and of the Council, *Official Journal of the European Union* L 322, 15–80.

Flesher, D. L., and T. Flesher, 1986, Ivar Kreuger's Contribution to U.S. Financial Reporting, *The Accounting Review* 61, 421–434.

Flesher, D. L., and G. J. Previts, 2014, Preparing an Accounting Professional: The Articles of Clerkship (1892–1897) of George Oliver May, *Accounting Historians Journal* 41, 61–78.

Fox, M., 1999, Retaining Mandatory Securities Disclosure: Why Issuer Choice Is Not Investor Empowerment, *Virginia Law Review* 85, 1335–1419.

Fox, M., R. Morck, B. Yeung, and A. Durnev, 2003, Law, Share Price Accuracy, and Economic Performance: The New Evidence, *Michigan Law Review* 102, 331–386.

Friend, I., and E. Herman, 1964, The SEC through a Glass Darkly, *Journal of Business* 37, 382–405.

Gipper, B., S. Ross, and S. Shi, 2023, ESG Assurance in the United States.

Gompers, P., V. Mukharlyamov, and Y. Xuan, 2016, The Cost of Friendship, *Journal of Financial Economics* 119, 626–644.

Hail, L., A. Tahoun, and C. Wang, 2018, Corporate Scandals and Regulation, *Journal of Accounting Research* 56, 617–671.

Hatfield, H., 1936, What They Say about Depreciation, *The Accounting Review* 11, 18–26.

Hawkins, D. F., 1963, The Development of Modern Financial Reporting Practices among American Manufacturing Corporations, *Business History Review* 37, 135–168.

Hein, L. W., 1963, The Auditor and the British Companies Acts, *The Accounting Review* 38, 508.

Hilke, J., 1986, Early Mandatory Disclosure Regulations, *International Review of Law and Economics* 6, 229–239.

Hopwood, A., and H. Vieten, 1999, *United Kingdom*, Accounting Regulation in Europe (Palgrave Macmillan).

IOSCO, 2021, Report on Sustainability-related Issuer Disclosures, *White Paper (link)*.

Kausar, Asad, Nemit Shroff, and Hal White, 2016, Real Effects of the Audit Choice, *Journal of Accounting and Economics* 62, 157–181.

King, N., A. Beattie, A.-M. Cristescu, and P. Weetman, 2001, Developing Accounting and Audit in A Transition Economy: The Romanian Experience, *European Accounting Review* 10, 149–171.

Knechel, R., 2021, The Future of Assurance in Capital Markets: Reclaiming the Economic Imperative of the Auditing Profession, *Accounting Horizons* 35, 133–151.

Knechel, R., S. Maex, and H. J. Park, 2023a, Decentralized Finance (DeFi) and Cybersecurity

Assurance, *Working Paper (available at SSRN link)*.

Knechel, R., M. Siegel, F. Kinserdal, R. Sminett, and S. Dingel, 2023b, Assurance and Measurement in a Sustainable World, *Accountability in a Sustainable World Quaterly* 1, 35–53.

Kothari, S. P., T. Lys, C. Smith, and R. Watts, 1988, Auditor Liability and Information Disclosure, *Journal of Accounting, Auditing & Finance* 3, 307–339.

Krzywda, D., D. Bailey, and M. Schroeder, 1998, The Development of the Role of the Statutory Audit in the Transitional Polish Economy, *European Accounting Review* 7, 407–440.

League of Nations, 1920–1940, *Statistical Year-books of the League of Nations* (League of Nations Secretariat, Information Section).

Lee, A., 2021, A Climate for Change: Meeting Investor Demand for Climate and ESG Information at the SEC, *Speech (available at link)*.

Lee, T. A., 1997, The Influence of Scottish Accountants in the United States: The Early Case of the Society of Accountants in Edinburgh, *Accounting Historians Journal* 24, 117–141.

Lennox, C., and J. Pittman, 2011, Voluntary Audits versus Mandatory Audits, *The Accounting Review* 86, 1655–1678.

Loss, L., 1951, *Securities Regulation* (Little, Brown).

May, G., 1926, Corporate Publicity and the Auditor, *Journal of Accountancy* 42, 321–326.

McCraw, T., 1984, *Prophets of Regulation: Charles Francis Adams, Louis D. Brandeis, James M. Landis, Alfred E. Kahn* (Belknap Press of Harvard University Press).

McNally, F., 2023, 'Very important' for independent providers to be able to work on CSRD assurance, says EU official, *Responsible Investor* .

Merino, B., A. Mayper, and R. Sriram, 1994, Voluntary Audits in New York Markets in 1927: A Case Study, *Journal of Business Finance and Accounting* 21, 619–643.

Merino, B. D., 2003, Financial Reporting in the 1930s in the United States Peserving the Status Quo, *Accounting Forum* 27, 270–290.

Mikol, A., 1993, The Evolution of Auditing and the Independent Auditor in France, *European Accounting Review* 2, 1–16.

Minnis, Michael, Andrew G. Sutherland, and Felix W. Vetter, 2024, Financial statements not required, *Journal of Accounting and Economics* 101732.

Miranti, P. J., 1990, *Accountancy Comes of Age: The Development of an American Profession, 1886–1940* (University of North Carolina Press).

Moyer, C., 1951, Early Developments in American Auditing, *The Accounting Review* 26, 3–8.

Mulligan, C., and A. Shleifer, 2005, The Extent of the Market and the Supply of Regulation, *Quarterly Journal of Economics* 120, 1445–1473.

Nasdaq, 2022, Comment Letter to the SEC from Nasdaq, *(available at link)* .

O'Connor, S. M., 2004, Be Careful What You Wish for: How Accountants and Congress Created the Problem of Auditor Independence, *Boston College Law Review* 45, 741–827.

O'Sullivan, M., 2007, The Expansion of the U.S. Stock Market, 1885–1930: Historical Facts and Theoretical Fashions, *Enterprise & Society* 8, 489–542.

Pandit, G. M., and C. R. Baker, 2021, Historical Development of the Standard Audit Report in the U.S: Form, Scope, and Renewed Attention to Fraud Detection, *Accounting Historians Journal* 48, 31–45.

Praquin, N., 2012, Commercial Legislation and the Emergence of Corporate Auditing in France, 1856–1935, *Accounting History Review* 22, 161–189.

Previts, G. J., and B. D. Merino, 1998, *A History of Accountancy in the United States: The Cultural Significance of Accounting*, Historical Perspectives on Business Enterprise Series (Ohio State University Press).

PRI, 2021, Comment Letter to the SEC from the PRI, *(available at link)* .

Pritchett, L., M. Woolcock, and M. Andrews, 2013, Looking Like a State: Techniques of Persistent Failure in State Capability for Implementation, *Journal of Development Studies* 49, 1–18.

Rajan, R., and L. Zingales, 2003, The Great Reversals: The Politics of Financial Development in the Twentieth Century, *Journal of Financial Economics* 69, 5–50.

Rajgopal, S., S. Srinivasan, and X. Zheng, 2021, Measuring Audit Quality, *Review of Accounting Studies* 26, 559–619.

Richardson, A. P., 1933a, Introduction of Plan is Gradual, *Journal of Accountancy* 55, 83–85.

Richardson, A. P., 1933b, Stock Exchange Demands Audit of Listed Companies, *Journal of Accountancy* 55, 81–82.

Roychowdhury, S., and S. Srinivasan, 2019, The Role of Gatekeepers in Capital Markets, *Journal of Accounting Research* 57, 295–322.

Schoenfeld, J., 2024, Cyber Risk and Voluntary Service Organization Control SOC Audits, *Review of Accounting Studies* 29, 580–620.

SEC, 1977, *Report of the Advisory Committee on Corporate Disclosure to the Securities and Exchange Commission* (United States Government Publishing Office).

SEC, 2024, Final Rule: The Enhancement and Standardization of Climate-Related Disclosures for Investors, *Release Nos. 33-11275; 34-99678; File No. S7-10-22 (link)*.

Seligman, J., 1982, *The Transformation of Wall Street: A History of the Securities and Exchange Commission and Modern Corporate Finance* (Houghton Mifflin Company, Boston).

Seligman, J., 1983, The Historical Need for a Mandatory Corporate Disclosure System, *Journal of Corporation Law* 9, 1.

Sivakumar, K., and G. Waymire, 1993, The Information Content of Earnings in a Discretionary Reporting Environment: Evidence from NYSE Industrials, 1905–10, *Journal of Accounting Research* 31, 62–91.

Solomon, I., M. Shields, and O. Whittington, 1999, What Do Industry-Specialist Auditors Know?, *Journal of Accounting Research* 37, 191–208.

Sriram, R. S., and G. Vollmers, 1997, A Reexamination of the Development of the Accounting Profession – Critical Events from 1912–1940, *Accounting Historians Journal* 24, 65–90.

Stigler, G. J., 1971, The Theory of Economic Regulation, *The Bell Journal of Economics and Management Science* 2, 3–21.

Watts, R. L., and J. L. Zimmerman, 1983, Agency Problems, Auditing and the Theory of the Firm, *Journal of Law and Economics* 26, 613–640.

Waymire, G. B., and S. Basu, 2007, Accounting is an Evolved Economic Institution, *Foundations and Trends® in Accounting* 2, 1–174.

Wiesen, J., 1978, The Securities Acts and Independent Auditors: What Did Congress Intend?, *Working Paper (available at link)*.

Zeff, S., 1972, *Forging Accounting Principles in Five Countries: A History and an Analysis of Trends* (Stipes Publishing Co.).

Zeff, S., 2003, How the U.S. Accounting Profession got Where it is Today: Part I, *Accounting Horizons* 17, 189–205.

Zeff, S., and R. Fossum, 1967, An Analysis of Large Audit Clients, *The Accounting Review* 42, 298–320.

Figure 1
Audit Rate

This figure shows the fraction of companies in our sample that have been audited, proxied by the attachment of an audit statement to their annual report, over time. The proportion is calculated in two ways: as a proportion in terms of number of sample companies, and as a proportion in terms of total sample market capitalization. The dashed line indicates 1934, the year of the Securities Exchange Act and the audit mandate imposed by the Securities and Exchange Commission.

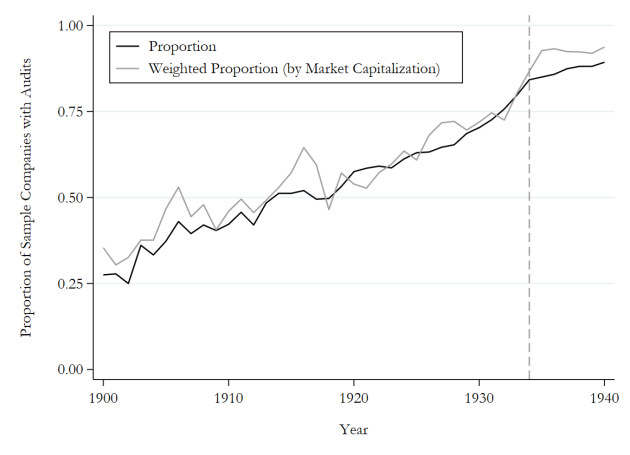


Figure 2
Audit Statement Topic Distribution

This figure shows the probability distribution of the nine topics discussed in the sample of audit statements over time. The nine topics are identified with Latent Dirichlet allocation (LDA) using the full sample of audit statements, and named based on the five most common words associated with the topic. The topics (associated words) are *Cash & Equivalents* ('provision', 'security', 'cash', 'certificate', 'verify'), *Consolidation* ('report', 'examination', 'consolidate', 'asset', 'foreign'), *Inventory* ('inventory', 'cost', 'price', 'market', 'quantity'), *Depreciation* ('depreciation', 'amount', 'reserve', 'property', 'charge'), *Review* ('examination', 'information', 'accounting', 'review', 'obtain'), *Testing* ('accounting', 'test', 'precede', 'method', 'control'), *Financing* ('stock', 'liability', 'share', 'capital', 'note'), *Income* ('loss', 'profit', 'transaction', 'review', 'support'), *CPA* ('certify', 'book', 'accountant', 'public', 'condition'). The dashed line indicates 1934, the year of the Securities Exchange Act.

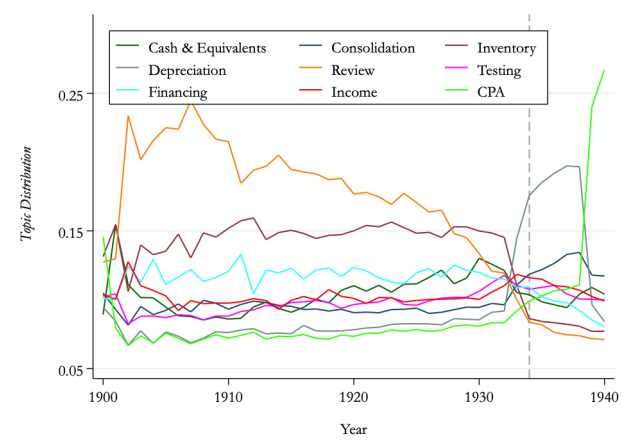


Figure 3

Audit Statement Similarity with Standard Audit Statements

This figure shows the average cosine similarity between the audit statements attached to the annual reports in our sample in a particular year and the latest standard audit statement as reported by Carmichael and Winters (1982). The dashed line indicates 1934, the year of the Securities Exchange Act. The dotted lines indicate the years in which a new standard audit statement is proposed by the American Institute of Accountants (AIA) and the Federal Reserve Board (FRB) in 1917 and 1929, and the AIA and the New York Stock Exchange (NYSE) in 1931, 1934 and 1939.

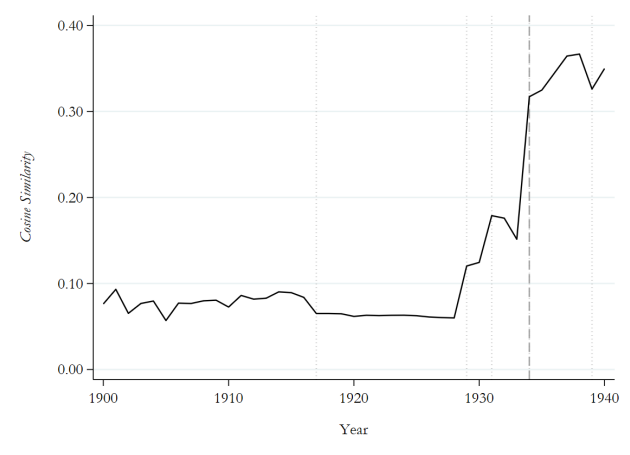


Table 1
Descriptive Statistics

This table presents the descriptive statistics for the variables used in the analyses. Panel A gives an overview of the sample. We start with annual reports from *Mergent* and *ProQuest*, and we use the outer-join of both as our full sample of annual reports. Auditor data are proxied from the audit statements attached to the annual reports. Sector, trading venue, and market data are taken from Global Financial Data (GFD). Panel B presents the descriptive statistics for the full sample period. Table OA3 of the Online Appendix presents the descriptive statistics for the pre-1934 period and the post-1934 period. See Appendix A for detailed definitions of the variables. We winsorize continuous variables at the 1% and 99% level.

Panel A: Sample Overview

	Total	Mergent	ProQuest	Overlap	Auditors
Company-years	16,408	9,252	9,349	2,193	1,397
Companies	1,517	1,190	579	241	118
$>$ 100 company-years starting in	1910	1920	1910	1932	–
Sector *Company-years (companies)*					
Communications	263 (37)	218 (34)	81 (8)	36 (5)	30 (2)
Consumer Discretionary	2,516 (236)	1,584 (201)	1,353 (77)	421 (42)	209 (16)
Consumer Staples	2,131 (182)	1,233 (143)	1,313 (81)	415 (42)	190 (15)
Energy	832 (61)	409 (44)	546 (30)	123 (12)	25 (2)
Finance	1,116 (92)	276 (43)	862 (59)	22 (5)	48 (6)
Health Care	302 (26)	157 (17)	220 (17)	75 (8)	53 (5)
Industrials	2,593 (242)	1,432 (187)	1,578 (105)	417 (50)	282 (26)
Information Technology	190 (18)	124 (13)	124 (10)	58 (5)	20 (4)
Materials	2,458 (215)	1,493 (178)	1,393 (82)	428 (45)	248 (21)
Real Estate	16 (4)	16 (4)	0 (0)	0 (0)	3 (1)
Transports	1,164 (92)	595 (70)	584 (27)	15 (5)	54 (1)
Utilities and Telecommunications	1,026 (82)	613 (64)	509 (29)	96 (9)	110 (3)
Trading Venue *Company-years (companies)*					
ASE	768 (82)	676 (70)	131 (9)	39 (5)	117 (11)
NYSE	8,987 (722)	4,680 (545)	5,805 (345)	1,498 (165)	755 (56)
OTC	926 (114)	600 (92)	413 (30)	87 (8)	49 (7)
Other	3,941 (372)	2,209 (294)	2,214 (141)	482 (50)	352 (29)
Region *Company-years (companies)*					
Mid-West	5,684 (592)	3,649 (512)	2,858 (176)	823 (93)	373 (32)
North-East	8,552 (702)	4,357 (517)	5,390 (319)	1,195 (127)	880 (72)
South	1,001 (89)	524 (65)	572 (35)	95 (11)	43 (5)
West	1,045 (109)	660 (83)	465 (37)	80 (10)	96 (8)

Panel B: Descriptive Statistics

	N	Mean	S.D.	Min.	Q1	Med.	Q3	Max.
Company Variables								
Size (Market Value)	11,775	2.579	1.641	0.000	1.300	2.508	3.719	6.442
EPS	5,068	3.554	4.485	−7.880	0.860	2.723	5.335	20.630
Dividend Payer	5,068	0.659	0.474	0.000	0.000	1.000	1.000	1.000
Zero Return Days	10,637	0.286	0.388	0.000	0.000	0.083	0.417	1.000
Zero Volume Days	10,637	0.051	0.159	0.000	0.000	0.000	0.000	0.917
Amihud Illiquidity	8,273	4.245	2.817	0.016	1.971	3.840	6.094	11.617
Auditor Variables								
Portfolio Size	10,249	48.194	42.476	1.000	9.000	36.000	77.000	139.000
Portfolio Concentration	10,207	0.423	0.267	0.000	0.230	0.299	0.533	1.000
Audit Variables								
Audit Indicator	16,408	0.718	0.450	0.000	0.000	1.000	1.000	1.000
Audit Report Length	7,762	5.025	0.691	2.708	4.533	5.130	5.497	6.428
Audit Report Lag	10,899	4.577	1.007	2.303	3.850	4.248	5.940	5.940
Client-Auditor Distance	10,130	146.459	348.321	0.000	0.000	0.000	130.159	1,975.422
Client-Auditor Specialist	11,781	0.315	0.465	0.000	0.000	0.000	1.000	1.000

Table 2

Determinants of Public Company Auditing, Pre-SEC

This table shows the time trend and the macro-level determinants of public company auditing. Panel A shows the correlation between the audit rate and different macro-level measures and stock market development measures from Rajan and Zingales (2003) across the 34 years before the audit mandate. Panel B shows the association between different scandal categories from Hail et al. (2018), and the 1929 stock market crash, with public company auditing. *Audit Rate* is the number of sample companies that are audited, proxied by the attachment of an audit statement to the annual report, divided by the total number of sample companies per year. *GDP* is the total U.S. domestic GDP, *Population* is the total U.S. population, *Total Market Capitalization* is the total stock market capitalization, *Total Listed Companies* is the total number of listed companies. These variables are all obtained from the Statistical Yearbooks of the League of Nations. *# of Audit Firms* is the number of unique audit firms in our sample, proxied by audit statements, *# of CPAs* is the total number of CPAs in the U.S. from Edwards (1960). *Accounting Scandal* takes the value of one if an accounting scandal occurred in the year before a given year, and zero otherwise. *Non-Accounting Scandal* takes the value of one if a non-accounting or near-accounting scandal occurred in the year before a given year, and zero otherwise. *Post 1929* is a dummy variable that is equal to one if the year is later than 1929, and zero otherwise. The sample period spans 1900–1933 for Panels A and columns 1 and 2 of Panel B, and is restricted to four years before and after the 1929 stock market crash in column 3 of Panel B. See Appendix A for detailed definitions of the variables. In Panel B, we use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, ** and *** denote statistical significance at the 10%, 5% and 1% level (two-tailed), respectively.

Panel A: Correlation of Audit Rate and Macro-level Variables

	Audit Rate					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
GDP	0.896***					
Population		0.979***				
Total Market Capitalization			0.868***			
Total Listed Companies				0.882***		
# of Audit Firms					0.916***	
# of CPAs						0.884***
N	34	34	34	34	34	34

Panel B: Scandals, 1929 Stock Market Crash, and Public Company Auditing

	Audit Indicator		
	(1)	**(2)**	**(3)**
Accounting Scandal	0.045***		
	(4.09)		
Non-Accounting Scandal		−0.003	
		(−0.57)	
Post-1929			0.007
			(0.56)
N	9,827	9,827	5,633
R^2	0.717	0.718	0.771
Time Trend	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 3

Auditor Choice and Role of Company Characteristics

This table shows the company-level determinants of auditing and auditor choice. *Audit Indicator* is a dummy variable that is equal to one if a company is audited, proxied by the attachment of an audit statement to the annual report, and zero otherwise. *Big 15 Auditor* is equal to one if an auditor is one of the auditors mentioned in Appendix B, and zero otherwise. *Older Auditor* is equal to one if the auditor's age, measured as the given year minus the first year the auditor shows up in our sample, is above the sample median, and zero otherwise. *UK Origin Auditor* is equal to one if the auditor is originated in the U.K. as evidenced by historical records of the ICAEW and AIA, and zero otherwise. *Size* is the natural log of a company's market capitalization. *EPS* is a company's earnings per share. *Dividend Payer* is equal to one if a company pays a dividend, and zero otherwise. The sample spans the period 1900–1933 and only includes companies that are audited for columns 2 to 4. See Appendix A for detailed definitions of the variables. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, **, and *** denote statistical significance at the two-tailed 10, 5, and 1 percent level, respectively.

	Full Sample	**Audited Sample**		
	Audit Indicator	***Big 15 Auditor***	***Older Auditor***	***UK Origin Auditor***
	(1)	**(2)**	**(3)**	**(4)**
Size	−0.026*	0.024*	0.030*	0.036*
	(−1.79)	(1.67)	(1.82)	(1.71)
EPS	−0.007*	−0.005*	−0.002	−0.008*
	(−1.81)	(−1.64)	(−0.56)	(−1.65)
Dividend Payer	0.029	−0.098**	−0.051	0.008
	(0.84)	(−2.22)	(−0.98)	(0.14)
N	2,702	1,913	2,017	2,017
R^2	0.056	0.041	0.090	0.041
Year FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes

Table 4

Auditor Choice and the Role of Auditor Characteristics, Pre-SEC

This table presents determinants of companies' auditor choice. The estimates are based on a dyadic regression model. This model includes all possible company-auditor matches in a given year. The dependent variable *Auditor Choice* is equal to zero for all auditors, except for the auditor that is chosen by the company. The explanatory variables are auditor-specific variables (*Portfolio Size*, *Portfolio Concentration*, *Big 15 Auditor*, *Older Auditor*, and *UK Origin Auditor*), and company-auditor-specific variables (*Client-Auditor Distance* and *Client-Auditor Specialist*). *Portfolio Size* is the logarithm of the sum of the market capitalization of all companies in an auditor's client portfolio in a given year. *Portfolio Concentration* is the sum of squared client shares (client capitalization over an auditor's total portfolio size) of a given auditor in a given year. *Big 15 Auditor* is an indicator variable that is equal to one if an auditor is one of the auditors mentioned in Appendix B, and zero otherwise. *Older Auditor* is an indicator variable that is equal to one if the auditor's age, measured as the given year minus the first year the auditor shows up in our sample, is above the sample median, and zero otherwise. *UK Origin Auditor* is an indicator variable that is equal to one if the auditor is originated in the U.K. as evidenced by historical records of the ICAEW and AIA, and zero otherwise. *Client-Auditor Distance* is the logarithm of the geodetic distance between the city of the headquarters of the company and the city of the auditor's office that is closest the company, out of all cities in which the auditor has an office. *Client-Auditor Specialist* is an indicator variable that is equal to one if the auditor is a specialist in the sector in which the company is active, and zero otherwise. The auditor is considered to be a specialist in the sector for which the proportion of total portfolio size (in terms of market capitalization) in that sector to the total auditor portfolio is largest. See Appendix A for detailed definitions of the variables. The sample period spans 1900–1933. We winsorize continuous variables at the 1% and 99% level. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, **, and *** denote statistical significance at the two-tailed 10, 5, and 1 percent level, respectively.

	Auditor Choice					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Portfolio Size	0.006***					
	(2.95)					
Portfolio Concentration		−0.066***				
		(−4.05)				
Big 15 Auditor			0.031***			
			(3.05)			
Older Auditor				0.054**		
				(2.09)		
UK Origin Auditor					0.022	
					(1.11)	
Client-Auditor Distance	−0.011***	−0.009***	−0.011***	−0.012***	−0.013***	−0.008***
	(−4.64)	(−4.58)	(−4.49)	(−4.97)	(−4.67)	(−5.34)
Client-Auditor Specialist	0.025***	0.025***	0.025***	0.026***	0.023***	0.031***
	(6.94)	(7.31)	(8.05)	(9.20)	(5.80)	(9.58)
N	145,841	145,841	167,606	167,606	132,452	167,606
R^2	0.060	0.066	0.058	0.063	0.057	0.105
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Auditor-Year FE	No	No	No	No	No	Yes

Table 5

Audit Service and Content of Audit Statements: Influence of Guidance

This table shows the differences in word occurrence and similarity in audit statements around the guidance of private and governmental bodies. Panel A presents the presence of words in audit statements as a result of specific audit statement guidance by the Federal Reserve Board (FRB) and American Institute of Accountants (AIA) in 1917 and 1929, and the American Institute of Accountants and New York Stock Exchange (NYSE) in 1934. Panel B shows the textual similarity between audit statements and the example audit statements attached to the guidance. *Presence 'FRB'* is equal to one if the words 'Federal Reserve Board' occur at least once in the audit statement, and zero otherwise. Word presence variables for 'correct', 'certify', and 'test' are calculated similarly. *Presence 'GAAP'* is equal to one if an audit statement mentions compliance with Generally Accepted Accounting Principles ('GAAP'). *Similarity 1917* is the cosine similarity between a given audit statement and the example audit statement provided by the FRB and AIA in 1917. Other similarity variables are calculated similarly, but using different example audit statements. *Post* is equal to one in the period after the guidance. *Year* is a linear time-trend variable, starting at 0 and increasing with one per year. The sample period is restricted to seven years before and after the specific guidance. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, ** and *** denote statistical significance at the 10%, 5% and 1% level (two-tailed), respectively.

Panel A: Audit Statement Word Presence following Audit Statement Guidance

	1917 Guidance		1929 Guidance		1934 Guidance		
	Presence 'FRB'	*Presence 'Correct'*	*Presence 'FRB'*	*Presence 'Correct'*	*Presence 'GAAP'*	*Presence 'Certify'*	*Presence 'Test'*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Post	0.053	−0.044	−0.018	−0.059**	0.463***	−0.170***	0.330***
	(1.09)	(−1.23)	(−0.84)	(−2.32)	(20.63)	(−7.51)	(15.28)
Year	0.003	−0.004	0.003	−0.040***	0.037***	−0.044***	0.030***
	(0.43)	(−0.79)	(0.75)	(−11.33)	(14.51)	(−17.15)	(12.22)
N	1,524	1,524	5,743	5,743	5,953	7,863	7,863
R^2	0.556	0.528	0.468	0.498	0.700	0.558	0.599
Time Trend	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Panel B: Similarity between Audit Statements and Audit Statement Guidance

	Similarity 1917	*Similarity 1929*	*Similarity 1934*
	(1)	(2)	(3)
Post	0.003	0.014***	0.198***
	(1.03)	(4.30)	(26.14)
N	1,093	4,248	5,981
R^2	0.687	0.465	0.606
Time Trend	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes

Table 6
Audit Rate

This table presents audit rate changes around the SEC's introduction. Panel A presents the time-series differences in audit rates, pre- and post-1934 for the full sample of companies. Panel B presents the results for difference-in-differences specifications using various control groups: companies trading on the OTC (versus all other companies) and transportation companies trading on regular exchanges (versus all non-transportation companies trading on regular exchanges). *Audit Indicator* is a dummy variable that is equal to one if a company is audited, proxied by the attachment of an audit statement to the annual report, and zero otherwise. *Post* is a dummy variable that is equal to one if the year is later than 1933, and zero otherwise. *Size* is the natural log of a company's market capitalization. *EPS* is a company's earnings per share. *Dividend Payer* is a dummy variable that is equal to one if a company pays a dividend, and zero otherwise. The sample period is restricted to seven years before and after the 1934 introduction of the SEC. See Appendix A for detailed definitions of the variables. We winsorize continuous variables at the 1% and 99% level. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, ** and *** denote statistical significance at the 10%, 5% and 1% level (two-tailed), respectively.

Panel A: Time-Series Differences

	Audit Indicator			
	(1)	**(2)**	**(3)**	**(4)**
Post	0.157***	0.046***	0.044***	0.064***
	(14.33)	(4.06)	(4.54)	(4.58)
Size				−0.001
				(−0.06)
EPS				−0.004**
				(−2.30)
Dividend Payer				0.033
				(0.91)
Year		0.016***	0.014***	0.007***
		(9.36)	(9.53)	(3.34)
Constant	0.713***	0.758***	0.762***	0.836***
	(53.30)	(62.91)	(149.73)	(22.11)
N	11,188	11,188	11,035	4,577
R^2	0.038	0.044	0.682	0.610
Time Trend	No	Yes	Yes	Yes
Firm FE	No	No	Yes	Yes

Panel B: Difference-in-Differences

	Audit Indicator			
	(1)	**(2)**	**(3)**	**(4)**
Non-OTC	0.180***			
	(2.90)			
Non-OTC × *Post*	−0.025	0.049		
	(−0.55)	(1.38)		
Non-Transportation			0.302***	
			(4.31)	
Non-Transportation × *Post*			0.062	0.074
			(1.08)	(1.35)
N	11,188	11,035	10,453	10,317
R^2	0.057	0.683	0.088	0.668
Year FE	Yes	Yes	Yes	Yes
Firm FE	No	Yes	No	Yes

Table 7

Auditor Choice and the Role of Auditor Characteristics, Post-SEC

This table presents determinants of companies' auditor choice as a difference between the period before the introduction of the audit mandate by the SEC in 1934, and after. The estimates are based on a dyadic regression model. This model includes all possible company-auditor matches in a given year. The dependent variable *Auditor Choice* is equal to zero for all auditors, except for the auditor that is chosen by the company. The explanatory variables are auditor-specific variables (*Portfolio Size*, *Portfolio Concentration*, *Big 15 Auditor*, *Older Auditor*, and *UK Origin Auditor*), and company-auditor-specific variables (*Client-Auditor Distance*. *Post* is an indicator variable that is equal to one if the year is later than 1933, and zero otherwise. See Appendix A for detailed definitions of the variables. The sample includes only *voluntary* adopters of audits, and the sample period spans 1927–1940. We winsorize continuous variables at the 1% and 99% level. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, **, and *** denote statistical significance at the two-tailed 10, 5, and 1 percent level, respectively.

	Auditor Choice					
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Portfolio Size	0.005***					
	(3.19)					
Portfolio Size × *Post*	0.000					
	(0.03)					
Portfolio Concentration		−0.061***				
		(−3.82)				
Portfolio Concentration × *Post*		0.004				
		(0.59)				
Big 15 Auditor			0.032***			
			(3.22)			
Big 15 Auditor × *Post*			0.005			
			(1.04)			
Older Auditor				0.043*		
				(1.91)		
Older Auditor × *Post*				0.005		
				(0.65)		
UK Origin Auditor					0.015	
					(0.89)	
UK Origin Auditor × *Post*					0.000	
					(−0.01)	
Client-Auditor Distance	-0.009***	−0.007***	−0.008***	−0.010***	−0.012***	−0.006***
	(-4.44)	(−4.81)	(−4.51)	(−4.56)	(−4.41)	(−5.60)
Client-Auditor Distance × *Post*	0.002**	0.002**	0.002**	0.002**	0.001	0.002**
	(2.32)	(2.30)	(2.06)	(2.27)	(1.07)	(2.50)
Client-Auditor Specialist	0.014***	0.015***	0.014***	0.014***	0.012***	0.019***
	(5.39)	(6.04)	(6.51)	(6.10)	(3.74)	(9.92)
Client-Auditor Specialist × *Post*	-0.004*	−0.003	−0.003*	−0.003	−0.003	−0.006***
	(-1.87)	(−1.47)	(−1.73)	(−1.58)	(−1.21)	(−4.17)
N	300,655	300,655	319,172	319,172	241,085	340,202
R^2	0.044	0.049	0.046	0.045	0.041	0.085
Firm-Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Auditor-Year FE	No	No	No	No	No	Yes

Table 8

Audit Services and Content of Audit Statements: Pre and Post-SEC

This table presents changes in audit services around the SEC's introduction. The columns present time-series differences in audit statement characteristics (1 and 2) and content (3 and 4), respectively. *Audit Statement Length* is the natural log of the total number of words in the audit statement. *Audit Statement Lag* is the natural log of the number of days between the auditor's sign-off date and the end of the company's fiscal year. *HHI Topics* is the Hirschman-Herfindahl Index of the probability that each of the identified nine topics is contained in the audit statement. *Dominant Topic Distribution* is the probability that the topic with the highest probability is contained in the audit statement. The nine topics are identified with Latent Dirichlet allocation (LDA) using the full sample of audit statements, and named based on the five most common words associated with the topic. *Post* is a dummy variable that is equal to one if the year is later than 1933, and zero otherwise. See Appendix A for detailed definitions of the variables. We winsorize continuous variables at the 1% and 99% level. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. The sample period is restricted to seven years before and after the 1934 introduction of the SEC. *, ** and *** denote statistical significance at the 10%, 5% and 1% level (two-tailed), respectively.

	Audit Statement Characteristics		**Audit Statement Content**	
	Audit Statement Length	***Audit Statement Lag***	***HHI Topics***	***Dominant Topic Distribution***
	(1)	**(2)**	**(3)**	**(4)**
Post	0.491***	0.044	0.002	0.007*
	(13.48)	(1.22)	(1.53)	(1.85)
N	5,894	7,203	5,842	5,842
R^2	0.566	0.546	0.422	0.416
Time Trend	Yes	Yes	Yes	Yes
Auditor FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

Table 9
Capital Market Effects

This table presents changes in capital-market quality around the SEC's introduction. Using difference-in-difference tests, it compares changes of *Mandatory Adopters* (companies trading on regular exchanges who only got an audit after the audit mandate) with changes of *Voluntary Adopters* (companies trading on regular exchanges or the OTC market who got audits before the audit mandate) or *Never Adopters* (non-compliant companies trading on regular exchanges and non-adopters on the OTC market); and compares changes in regulated (non-OTC) markets with those in unregulated (OTC) markets. The weighted specifications are based on within-market (non-OTC vs. OTC) market-capitalization weights as of 1927. *Market Value* is the natural log of a company's market capitalization. *Zero Return Days* is the number of days on which a company's returns are zero, scaled by the total number of days for which there is data. *Zero Volume Days* is the number of days on which a company's trading volume is zero, scaled by the total number of days for which there is data. *Amihud Illiquidity* is calculated as in Amihud (2002). Non-interacted variables are omitted for brevity. See Appendix A for detailed definitions of the variables. All estimates are based on the sample of audit statements between 1927 and 1940. We winsorize continuous variables at the 1% and 99% level. We use OLS and cluster standard errors at the company level to correct for heteroskedasticity. *, **, and *** denote statistical significance at the two-tailed 10, 5, and 1 percent level, respectively.

	Market Value	***Zero Return Days***	***Zero Volume Days***	***Amihud Illiquidity***
	(1)	**(2)**	**(3)**	**(4)**
Mandatory Adopters v. *Voluntary Adopters*				
Mandatory Adopter × *Post 1934*	−0.057	0.033	−0.011	−0.217
	(−0.65)	(0.68)	(−0.80)	(−1.04)
N	7,315	6,542	6,542	5,487
R^2	0.914	0.651	0.444	0.707
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Mandatory Adopters v. *Never Adopters*				
Mandatory Adopter × *Post 1934*	0.092	0.038	0.048	−1.146*
	(0.58)	(0.62)	(1.42)	(−1.81)
N	801	764	764	488
R^2	0.928	0.811	0.630	0.858
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Unweighted				
Non-OTC × *Post 1934*	−0.016	−0.070	0.016	−0.216
	(−0.09)	(−1.04)	(0.39)	(−0.37)
N	7,671	6,880	6,880	5,662
R^2	0.913	0.681	0.413	0.707
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes
Weighted				
Non-OTC × *Post 1934*	0.004	−0.027	−0.003	−0.240
	(0.28)	(−1.04)	(−0.46)	(−1.14)
N	2,604	2,370	2,370	1,959
R^2	0.994	0.393	0.188	0.778
Year FE	Yes	Yes	Yes	Yes
Firm FE	Yes	Yes	Yes	Yes

ONLINE APPENDIX

Public Company Auditing Around the Securities Exchange Act: Historical Lessons for ESG Assurance

OA.I. HISTORICAL BACKGROUND AND RESEARCH

OA.1.1 The Development of the Audit Profession

By the late 19^{th} century,[1] the U.S. audit profession was being influenced by its more developed counterpart in the United Kingdom (Moyer, 1951).[2] English audit firms set up offices in the U.S., and English accountants made up a large part of the founding members of the American Association of Public Accountants (AAPA, forerunner of the AIA and then AICPA) (Previts and Merino, 1998, p. 138).[3] The accounting and auditing profession became better organized, with the state of New York introducing the first CPA law in 1896, soon followed by other states (Edwards, 1955; Previts and Merino, 1998, pp. 139–141 & 148).[4] In 1916, the AAPA reorganized as the American Institute of Accountants (AIA) and introduced its exam for membership in 1917; this exam was adopted as the CPA exam in 36 states by 1921 (Miranti, 1990, pp. 116 & 121).

Accountants in the early 20^{th} century worked to build the profession's competency. The first university-level accounting programs were introduced in the early 1900s (Previts and Merino, 1998, pp. 189–191; Zeff, 2008), and the number of accounting bachelor degrees and practitioners with college degrees grew substantially in the next few decades (Previts and Merino, 1998, p. 256; Matthews, 2016).[5] This period also saw the publication of Robert Montgomery's seminal textbook, *Audit Theory and Practice*, which was first published in 1912 and issued its fourth edition in 1933 (e.g., Myers, 1985; Nouri and Lombardi, 2009). The profession was also getting guidance from

[1] Some railroads already had audit committees of directors (McKee, 1979; Boockholdt, 1983; Flesher et al., 2003, 2005), and accountants formed an early professional organization in 1882 (Romeo and Kyj, 1998). For more on the accounting profession during mid-19^{th} century, see Roberts (2020). For an example of external auditors in the British Commonwealth, see Spraakman (2011). Auditing can also be found at much earlier dates (e.g., Abs et al., 1954; Stone, 1969; Holmes, 1977; Costouros, 1978; Watts and Zimmerman, 1983; Waymire and Basu, 2008).

[2] For more on the development of the audit profession in the United Kingdom, see Hein (1963), O'Connor (2004), and Waymire and Basu (2008).

[3] For example, Price Waterhouse entered the U.S. in 1894, Deloitte Plender Griffiths in 1907, and Peat Marwick Mitchell & Co. in 1915. The early 20^{th} century saw the development of the firms that would evolve into the large accounting firms we know today (e.g., Wootton and Wolk, 1992).

[4] For example, Pennsylvania issued its first CPA licence in 1899, California in 1901, Washington and Illinois in 1903, and Florida in 1906 (Edwards, 1960). For more on the people who became accountants during this period, see Roberts (2022).

[5] This period also saw the development of accounting curriculum materials through the American Association of University Instructors in Accounting (AAUIA) (Hornok and Flesher, 2020).

publications made by its associations.[6]

In addition to building the profession's competency, the AIA worked with other capital-market stakeholders—both public and private—to suggest best practices for audits. After discussions with the Federal Trade Commission (FTC) and the Federal Reserve Board (FRB), the AIA and the FRB in 1917 jointly published *Uniform Accounting* as a non-binding audit standard (Hawkins, 1963; Zeff, 1972; Davidson and Anderson, 1987; Pandit and Baker, 2021).[7] *Uniform Accounting* circulated widely, with around 65,000 copies distributed over the next dozen years (Zeff, 1972, p. 115), but historians have disagreed about its effect on audits.[8] *Uniform Accounting* was later revised in 1929 (Campbell and Michenzi, 1987), in a joint publication of the AIA and FRB titled *Verification of Financial Statements* (Zeff, 1972, pp. 117–119).

The accounting profession also collaborated with the NYSE. The AIA became interested in working with the NYSE in 1926, and they began working together in earnest after the 1929 market crash. Their correspondence produced a 1934 document titled *Audits of Corporate Accounts*, which introduced a standard audit report (Zeff, 1972). The shift in the AIA's focus toward the NYSE marked a change in focus from creditors to shareholders (Hawkins, 1963). Prior to 1920, much of the audit work was targeted towards bankers, who at the time provided the most corporate financing (Sriram and Vollmers, 1997). However, the number of U.S. stockholders rose to about 2 million in 1920, from a base of about 500 thousand in 1900, and then quintupled during the 1920s to about 10 million in 1930 (Hawkins, 1963). As a result, the 1920s saw an increase in equity issuances and a steep drop in bank loans among corporations (Previts and Merino, 1998, pp. 249–250), prompting a shift from a balance-sheet approach to an income-statement approach by 1930 (Basu and Waymire, 2010).

[6] For example, the AIA provided guidance through books, including books on professional ethics (Roberts, 2015), a topic also covered in the *Journal of Accountancy* (Roberts, 2010).

[7] While *Uniform Accounting* was mostly about audits, it did contain accounting recommendations (e.g., Zeff, 1984).

[8] Hawkins (1963) says *"the recommendations outlined in Uniform Accounting were not quickly adopted by corporations, bankers, or the accounting profession."* By contrast, Carey (1969) (p. 134) says *"Uniform Accounting had both an immediate and a lasting effect on auditing standards and procedures,"* and Zeff (1972) (p. 115) agrees saying *"it is fair to assume that its influence spread rapidly."* Previts and Merino (1998) argue that its effect was negative, saying it *"eroded auditing standards"* (p. 233) and *"had an invidious effect on practitioners in small- and medium-sized audit firms"* (p. 232).

In line with the development of the profession in the early 20^{th} century, prior studies have estimated that the percentage of NYSE companies with audits was low at the beginning of the century (around 16%; Sivakumar and Waymire, 1993). By the late 1920s, by contrast, this percentage was already as high as 80% (Benston, 1969; Chow, 1982; Merino et al., 1994; Barton and Waymire, 2004), and 94% by 1934 (Benston, 1969).[9] In addition to audit rates, Chow (1982) and Merino et al. (1994) explore what kinds of companies got audited. They find that companies were more likely to get audited when they had more debt and debt covenants (Chow, 1982; Merino et al., 1994), were listed on the NYSE (Chow, 1982; Merino et al., 1994), and had lower Moody's stock ratings (Merino et al., 1994). But they disagree on the relationship between company size and audits, with Chow (1982) finding that audits were more likely among larger companies and Merino et al. (1994) finding the opposite.

OA.1.2 The State of Regulation before the Securities Acts

Prior to the 1930s, no laws or regulations obliged companies to obtain audits of their financial statements (Zeff, 2003). In spite of this, audits were widespread by the late 1920s (May, 1926). Chow (1982), Watts and Zimmerman (1983), and Benston (1985) argue that this widespread adoption was driven by market forces and the value of audits. By contrast, Merino et al. (1994) argue that audits were adopted to deter government regulation, a view echoed by O'Connor (2004).

The threat of regulation waxed and waned during the period, starting high at the beginning of the century, falling after World War I, and rising again after the 1929 stock market crash. The 1900s and 1910s saw government threats to regulate audits, but these were not carried out for lack of qualified auditors. In 1902, the Industrial Commission, which had been created by Congress, recommended that audits of large corporations' annual reports be required and subject to government regulation. The only argument against this was that there were not enough technically

[9] Sivakumar and Waymire (1993) provide audit rates for 51 NYSE companies observed from 1905 to 1910. Benston (1969) provides audit rates for 333 (508) companies traded on the NYSE in 1926 (1934). Chow (1982) provides audit rates for 379 (65) companies traded on the NYSE (OTC markets) in 1926. Merino et al. (1994) provide audit rates for 430 (365) companies traded on the NYSE (other New York markets) in 1927. Barton and Waymire (2004) provide audit rates for 540 companies traded on the NYSE in 1929.

qualified individuals to perform all the audits (Previts and Merino, 1998, pp. 184–186).[10] In the 1910s, the FTC and FRB suggested registering auditors with the Federal Reserve and requiring audits of financial statements for all applications for rediscount of commercial paper (Zeff, 1972, p. 113; Miranti, 1990, p. 108; Sriram and Vollmers, 1997; Previts and Merino, 1998, pp. 230–231), but the suggestion was abandoned based on the argument that there were not enough competent auditors to perform all the audits (Richardson, 1933a). From the late 1910s up to 1929, the threat of regulation waned as public opinion became more pro-business (Hawkins, 1963; Miranti, 1990, p. 129) and the appetite to regulate audits dissipated (Previts and Merino, 1998, p. 250). This changed with the stock market crash in 1929, and the onset of the Great Depression (Hawkins, 1963).

The change in climate after 1929 increased the NYSE's interest in promoting audits (Zeff, 1972, p. 121), both to restore investor confidence (Flesher and Flesher, 1986) and to preempt the increased threat of government regulation (Sriram and Vollmers, 1997).[11] As a result, in 1933, the NYSE began requiring companies applying for listing of their securities to enter into an agreement that their future annual financial statements would be audited by independent public accountants (Richardson, 1933b; Flesher and Flesher, 1986), and similar requirements were announced by the New York Curb Market and Chicago Stock Exchange shortly after (Zeff, 1972, p. 123).[12]

There were also regulatory developments at the states and in the judicial system during the early 20^{th} century. A number of states introduced *Blue Sky Laws*, which created issuer liability and required prospectus disclosures for newly listed companies (e.g., Macey and Miller, 1991; Mahoney, 2003). However, these laws were typically limited in scope, weakly enforced, and easy

[10] Legislation that would have allowed a government agency to directly inspect corporate accounts was then proposed annually from 1903 to 1914, and sporadically from 1919 to 1930 (Previts and Merino, 1998, p. 186). Though this legislation never became law, railroad accounting records did become subject to government examination under the Hepburn Act in 1906 (Sivakumar and Waymire, 2003; Feeney, 2013).

[11] Flesher and Flesher (1986) say that the NYSE's interest in audits was specifically motivated by the Kreuger fraud, which we discuss more below.

[12] The announcement in Richardson (1933b) states that this requirement only applied to new listings of securities (see also Zeff (1972) and Hawkins (1963)). This is confirmed by the 1933 testimony before Congress of the chairman of the NYSE Committee on Stock List, when he said he thought the NYSE would soon extend the requirement to all companies listed on the NYSE (Flesher and Flesher, 1986), which demonstrates that only new listings had been subject to the requirement.

to circumvent (e.g., by issuing in other states) (Loss, 1951).

By contrast, the judicial system introduced changes that played an important role in shaping audit practice. Prior to 1931, third parties not in the audit contract could not sue the auditor except in cases of fraud (Miranti, 1990, p. 139).[13] Then in 1931, the *Ultramares Corporation v. Touche* decision extended auditor liability to third parties who relied on their professional work in cases when the auditor was grossly negligent (Miranti, 1990, p. 140). This ruling resulted in a reckoning for the profession by revealing the gap between the level of assurance expected by investors and the level actually provided by auditors (Carmichael and Winters, 1982). The profession quickly reacted to the ruling. In 1931, an editorial from the *Journal of Accountancy* recommended changing the wording of the audit report and dropping the "certification," a practice inherited from British audit statements, to emphasize that the audit statement is an opinion and not a guarantee (Carmichael and Winters, 1982; Pandit and Baker, 2021). This advice was followed by the AIA and NYSE, in 1934, in their recommended standard audit report, which replaced the phrase "we certify" with the phrase "in our opinion" (Zeff, 1972, p. 125).

OA.1.3 The Securities Acts of 1933 and 1934

The Securities Acts of 1933 and 1934 marked a notable change in the federal regulation of audit and securities markets (Barton and Waymire, 2004). The Securities Act of 1933 expanded auditors' legal liability to third parties, allowing them to sue auditors for negligence (e.g., Douglas and Bates, 1933; Jaenicke, 1977; Kothari et al., 1988).[14] It further required newly listed public companies with securities traded on centralized exchanges (not the OTC market) to disclose audited prospectuses. The Securities Exchange Act of 1934 extended the disclosure requirements to public companies' annual reports. It also established a federal regulator, the Securities and Exchange Commission (SEC), which was tasked with enforcing the new requirements. Most relevant to this study, the

[13] This was set forth in *Landell v. Lybrand* (1919) and *Craig v. Anyon* (1925), where the courts applied the doctrine that accountants had no liability to any parties not enjoying "privity of contract" with them.

[14] Auditors were now more vulnerable than under the common law (e.g., *Ultramares*). Now, instead of a purchaser of stock having to prove the auditor's guilt, the auditor had to prove either that they had acted in "good faith" with "due diligence" or that the purchaser's loss was due to information other than the registration statement they had audited (Miranti, 1990, pp. 150–151).

1934 Act gave the SEC power to require audits of public company annual reports, a requirement that the SEC implemented within months of the Act's passage.[15]

As to why the Securities Acts of 1933 and 1934 regulated audits and disclosure, various reasons have been put forward. One potential reason was that business critics, such as Louis D. Brandeis and William Z. Ripley, over the preceding decades had convinced a cadre of politicians that corporate disclosure needed to be regulated, and these politicians were finally elevated to power in the early 1930s (Hawkins, 1963). Another potential reason was that politicians wanted to appear to be doing something given the public anger of the time, and mandating audits was a way to appear to be doing something without actually doing much (Merino, 2003; Doron, 2016). A third potential reason was the 1932 fraud scandal involving Ivar Kreuger, who had refused audits and whose companies issued the most widely-held securities in the world (Flesher and Flesher, 1986). Flesher and Flesher (1986) argue that politicians passed the 1933 and 1934 Acts in reaction to this single fraud, rather than any systematic occurrence of fraud; citing Edwards (1939), they note that very few cases of fraud were ever proven, and only one of them (Kreuger) involved securities listed on the NYSE. Consistent with their view, studies on the causes of the 1929 crash do not attribute it to accounting fraud (Klein, 2001); and Hail et al. (2018), in their survey on corporate scandals, find only two accounting scandals in the U.S. between 1920 and the passage of the Securities Acts in 1933 and 1934.[16] Nevertheless, politicians and the NYSE agreed that audits should be required to restore investor confidence, and the press agreed with some asserting that such an audit requirement would prevent frauds like Kreuger's (Flesher and Flesher, 1986).

In the aftermath of the Securities Exchange Act of 1934, the SEC initially adopted a passive role in the audit market (e.g., Previts and Merino, 1998, p. 271), even though it had been granted the power to regulate acceptable auditing standards and audit oversight. It left the definition of

[15] Section 13(a)(2) of the 1934 Securities Exchange Act, as originally enacted, stated that annual reports would be certified by independent public accountants "if required by the rules and regulations of the [Securities and Exchange] Commission." Securities and Exchange Commission Release No. 66, promulgated on December 21, 1934, makes clear that the SEC had imposed the audit requirement by that time.

[16] The two accounting scandals Hail et al. (2018) find are International Match Company (Ivar Kreuger's U.S. subsidiary) and the Insull Group. They also search for "near accounting scandals" and find only two between 1920 and 1934.

acceptable auditing practices to the accounting profession both because of its limited expertise and resources and because of successful lobbying by the profession (Wiesen, 1978; Doron, 2016). Only after a prominent fraud case in 1938, the McKesson Robbins scandal,[17] did the SEC take greater interest in audit practices (Coffee, 2006).[18] The scandal prompted concerns at the AIA that the government might start mandating specific audit procedures, and this motivated the AIA to start providing explicit guidance of its own in 1939 (Miranti, 1990, pp. 175–177).

OA.II. THE GEOGRAPHIC SPREAD OF THE AUDIT PROFESSION

In Figure OA2, we map out the geographic expansion of the capital markets and audit profession. For various points in time (e.g., 1900, 1910, 1920, 1930, and 1940), we show in which county, at that point, public companies and audit firms were located. We also show during which period each of the U.S. states issued their first CPA license. In Panel A, we observe that, in 1900, the few existing public companies were predominantly located in counties in the North-East. Over time, as the number of public companies grew, public companies were also appearing in the Mid-West, consistent with the rise of Mid-West manufacturing (e.g., Crafts and Klein, 2021), and eventually also in the West and South. In Panel B, we observe that the geographic expansion of audit firms again widely mirrors the expansion of public companies. Many less populated regions with a few public companies, however, do not exhibit audit firm offices even in 1940, suggesting that access to audit services was likely easier in the North-East and Mid-West than elsewhere in the U.S. In this vein, we also observe, in Panel C, that New York, Pennsylvania, and Maryland—three North-Eastern states—were the first to grant CPA licenses, followed by states in the Mid-West, West, and South.

[17] For another case at this time that shaped regulation of audit practice, see Heier and Leach-López (2010).

[18] For a discussion on how the accounting profession changed in response to the post-1934 environment, see Doron (2011). For an in-depth discussion of a champion of self-regulation of auditing procedures during the period, see Previts and Robinson (1996).

REFERENCES

Abs, G., C. Grimstad, R. Hay, W. Howe, W. La Place, F. McGurr, and W. Serraino, 1954, Historical Dates in Accounting, *The Accounting Review* 29, 486–493.

Barton, J., and G. Waymire, 2004, Investor Protection under Unregulated Financial Reporting, *Journal of Accounting and Economics* 38, 65–116.

Basu, S., and G. B. Waymire, 2010, Sprouse's What-You-May-Call-Its: Fundamental Insight or Monumental Mistake?, *Accounting Historians Journal* 37, 121–148.

Benston, G., 1969, The Value of the SEC's Accounting Disclosure Requirements, *The Accounting Review* 44, 515–532.

Benston, G., 1985, The Market for Public Accounting Services: Demand, Supply and Regulation, *Journal of Accounting and Public Policy* 4, 33–79.

Boockholdt, J. L., 1983, A Historical Perspective on the Auditor's Role: The Early Experience of the American Railroads, *Accounting Historians Journal* 10, 69–86.

Campbell, D., and A. Michenzi, 1987, Revising the Audit Report: A Response to the Expectation Gap, *CPA Journal* 57, 34–39.

Carey, J. L., 1969, *Rise of the Accounting Profession, v. 1. From Technician to Professional, 1896–1936* (University of Mississippi Press).

Carmichael, D., and A. Winters, 1982, The Evolution of Audit Reporting, *Auditing Symposium VI: Proceedings of the 1982 Touche Ross/University of Kansas Symposium on Auditing Problems* 1–20.

Chow, C., 1982, The Demand for External Auditing: Size, Debt and Ownership Influences, *The Accounting Review* 57, 272–291.

Coffee, J., 2006, *Gatekeepers: The Professions and Corporate Governance* (Oxford University Press).

Costouros, G. J., 1978, Auditing in the Athenian State of the Golden Age (500–300 BC), *Accounting Historians Journal* 5, 41–50.

Crafts, N., and A. Klein, 2021, Spatial Concentration of Manufacturing Industries in the United States: Re-examination of Long-run Trends, *European Review of Economic History* 25, 223–246.

Davidson, S., and G. D. Anderson, 1987, The Development of Accounting and Auditing Standards, *Journal of Accountancy* 163, 110–123.

Doron, M., 2011, "I Ask the Profession to Stand Still": The Evolution of American Public Accountancy, 1927–1962, *Accounting Historians Journal* 38, 111–139.

Doron, M., 2016, The Securities Acts and Public Accounting: Financial Statement Audits as Symbolic Reform, *Accounting History* 21, 329–343.

Douglas, W., and G. Bates, 1933, The Federal Securities Act of 1933, *The Yale Law Journal* 43, 171–217.

Edwards, G. W., 1939, *The Evolution of Finance Capitalism* (Macmillan).

Edwards, J. D., 1955, Public Accounting in the United States, 1896–1913, *The Accounting Review* 240–251.

Edwards, J. D., 1960, *History of Public Accounting in the United States* (Routledge).

Feeney, K., 2013, Railroad Audits: Some Arrived Ahead of Schedule, *Accounting Historians Journal* 40, 1–30.

Flesher, D. L., and T. Flesher, 1986, Ivar Kreuger's Contribution to U.S. Financial Reporting, *The Accounting Review* 61, 421–434.

Flesher, D. L., G. J. Previts, and W. D. Samson, 2005, Auditing in the United States: A Historical Perspective, *Abacus* 41, 21–39.

Flesher, D. L., W. D. Samson, and G. J. Previts, 2003, The Origins of Value-for-Money Auditing: the Baltimore and Ohio Railroad: 1827–1830, *Managerial Auditing Journal* .

Hail, L., A. Tahoun, and C. Wang, 2018, Corporate Scandals and Regulation, *Journal of Accounting Research* 56, 617–671.

Hawkins, D. F., 1963, The Development of Modern Financial Reporting Practices among American Manufacturing Corporations, *Business History Review* 37, 135–168.

Heier, J. R., and M. A. Leach-López, 2010, Development of Modern Auditing Standards: The Strange Case of Raymond Marien and the Fraud at Interstate Hosiery Mills, 1934–1937, *Accounting Historians Journal* 37, 67–93.

Hein, L. W., 1963, The Auditor and the British Companies Acts, *The Accounting Review* 38, 508.

Holmes, W., 1977, A 13th Century Audit Case, *Accounting Historians Journal* 107–111.

Hornok, E. K., and D. L. Flesher, 2020, The AAUIA From 1916–1920: How The AAUIA Contributed to the Early Developments of Accounting Education, *Accounting Historians Journal* 47, 39–53.

Jaenicke, H., 1977, The Effect of Litigation on Independent Auditors, *Working Paper (available at link).*

Klein, M., 2001, The Stock Market Crash of 1929: A Review Article, *Business History Review* 75, 325–351.

Kothari, S. P., T. Lys, C. Smith, and R. Watts, 1988, Auditor Liability and Information Disclosure, *Journal of Accounting, Auditing & Finance* 3, 307–339.

Lee, T. A., 2006, *The Development of the American Public Accountancy Profession: Scottish Chartered Accountants and the Early American Public Accountancy Profession* (Routledge).

Loss, L., 1951, *Securities Regulation* (Little, Brown).

Macey, J., and G. Miller, 1991, Origin of the Blue Sky Laws, *Texas Law Review* 70, 347–397.

Mahoney, P., 2003, The Origins of the Blue-Sky Laws: A Test of Competing Hypotheses, *Journal of Law and Economics* 46, 229–251.

Matthews, Derek, 2016, The Social Class, Educational Background, Gender and Recruitment of American CPAs: An Historical Profile, *Accounting Historians Journal* 43, 121–155.

May, G., 1926, Corporate Publicity and the Auditor, *Journal of Accountancy* 42, 321–326.

McKee, T. E., 1979, An 1870 Corporate Audit Committee, *Accounting Historians Journal* 6, 61–68.

Merino, B., A. Mayper, and R. Sriram, 1994, Voluntary Audits in New York Markets in 1927: A Case Study, *Journal of Business Finance and Accounting* 21, 619–643.

Merino, B. D., 2003, Financial Reporting in the 1930s in the United States Peserving the Status Quo, *Accounting Forum* 27, 270–290.

Miranti, P. J., 1990, *Accountancy Comes of Age: The Development of an American Profession, 1886–1940* (University of North Carolina Press).

Moyer, C., 1951, Early Developments in American Auditing, *The Accounting Review* 26, 3–8.

Myers, J. H., 1985, Spiraling Upward: Auditing Methods as Described by Montgomery and his Successors, *Accounting Historians Journal* 12, 53–72.

Nouri, H., and D. Lombardi, 2009, Auditors' Independence: An Analysis of Montgomery's Auditing Textbooks in the Twentieth Century, *Accounting Historians Journal* 36, 81–112.

O'Connor, S. M., 2004, Be Careful What You Wish for: How Accountants and Congress Created the Problem of Auditor Independence, *Boston College Law Review* 45, 741–827.

Pandit, G. M., and C. R. Baker, 2021, Historical Development of the Standard Audit Report in the U.S.: Form, Scope, and Renewed Attention to Fraud Detection, *Accounting Historians Journal* 48, 31–45.

Previts, G. J., and B. D. Merino, 1998, *A History of Accountancy in the United States: The Cultural Significance of Accounting*, Historical Perspectives on Business Enterprise Series (Ohio State University Press).

Previts, G. J., and T. R. Robinson, 1996, Samuel J. Broad's contributions to the accounting profession, *Accounting Historians Journal* 23, 69–85.

Richardson, A. P., 1933a, Introduction of Plan is Gradual, *Journal of Accountancy* 55, 83–85.

Richardson, A. P., 1933b, Stock Exchange Demands Audit of Listed Companies, *Journal of Accountancy* 55, 81–82.

Roberts, D. H., 2010, Changing Legitimacy Narratives about Professional Ethics and Independence in the 1930's Journal of Accountancy, *Accounting Historians Journal* 37, 95–122.

Roberts, D. H., 2015, Socialization of US Novice Accounting Professionals Through Ethical Discourse in 1931, *Accounting Historians Journal* 42, 63–89.

Roberts, D. H., 2020, US Public Accounting Practice and Intergenerational Occupation Transfer 1850–1870, *Accounting Historians Journal* 47, 21–33.

Roberts, D. H., 2022, Follow in Footsteps: The First CPAs of 1896–97 and Accounting Occupation Adoption by the Next Generation, *Accounting Historians Journal* .

Romeo, G. C., and L. S. Kyj, 1998, The Forgotten Accounting Association: The Institute of Accounts, *Accounting Historians Journal* 25, 29–55.

Sivakumar, K., and G. Waymire, 1993, The Information Content of Earnings in a Discretionary Reporting Environment: Evidence from NYSE Industrials, 1905–10, *Journal of Accounting Research* 31, 62–91.

Sivakumar, K., and G. Waymire, 2003, Enforceable Accounting Rules and Income Measurement by Early 20th Century Railroads, *Journal of Accounting Research* 41, 397–432.

Spraakman, G., 2011, The First External Auditors of the Hudson's Bay Company, 1866, *Accounting Historians Journal* 38, 57–80.

Sriram, R. S., and G. Vollmers, 1997, A Reexamination of the Development of the Accounting Profession – Critical Events from 1912–1940, *Accounting Historians Journal* 24, 65–90.

Stone, W. E., 1969, Antecedents of the Accounting Profession, *The Accounting Review* 44, 284–291.

Watts, R. L., and J. L. Zimmerman, 1983, Agency Problems, Auditing and the Theory of the Firm, *Journal of Law and Economics* 26, 613–640.

Waymire, G. B., and S. Basu, 2008, Accounting is an Evolved Economic Institution, *Foundations and Trends® in Accounting* 2, 1–174.

Wiesen, J., 1978, The Securities Acts and Independent Auditors: What Did Congress Intend?, *Working Paper (available at link).*

Wootton, C. W., and C. M. Wolk, 1992, The Development of "The Big Eight" Accounting Firms in the United States, 1900 to 1990, *Accounting Historians Journal* 19, 1–27.

Zeff, S., 1972, *Forging Accounting Principles in Five Countries: A History and an Analysis of Trends* (Stipes Publishing Co.).

Zeff, S., 1984, Some Junctures in the Evolution of the Process of Establishing Accounting Principles in the USA: 1917–1972, *The Accounting Review* 447–468.

Zeff, S., 2003, How the U.S. Accounting Profession Got Where It Is Today: Part I, *Accounting Horizons* 17, 189–205.

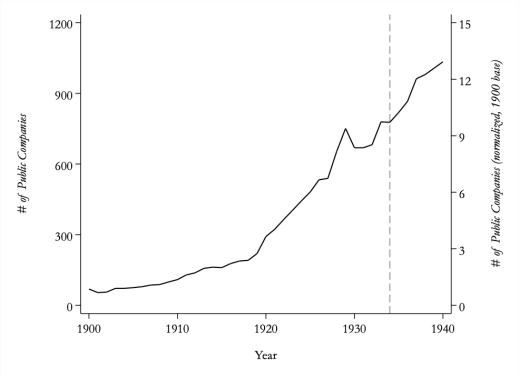
Zeff, S., 2008, *Henry Rand Hatfield: Humanist, Scholar, and Accounting Educator* (JAI).

Figure OA1

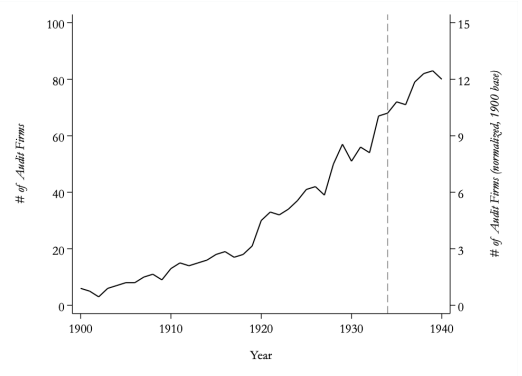
Number of Public Companies, Audit Firms and CPAs

This figure shows the number of public companies, the number of audit firms, and CPAs in the U.S. from 1900–1940. For each Figure, the left axis shows the count and the right axis shows the normalized count. We normalize the count by dividing the count of the year by the count in the base-year 1900. Panel (a) shows public companies. Panel (b) shows the number of unique audit firms in our sample. Panel (c) shows the number of CPAs in the U.S. in total. The dashed line indicates 1934, the year of the Securities Exchange Act and the audit mandate imposed by the Securities and Exchange Commission. Public company data are based on our sample. Audit firm data are measured with audit statements. CPA data are from Edwards (1960).

(a) *Public Companies*



(b) *Audit Firms*



(c) *CPAs*

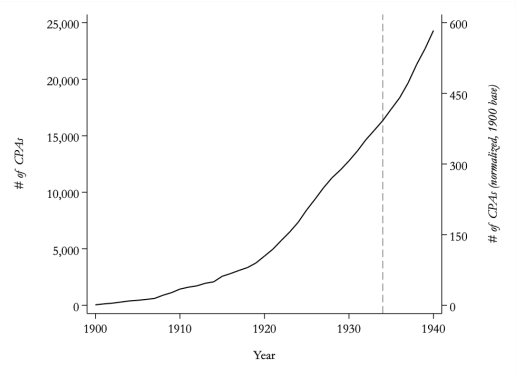
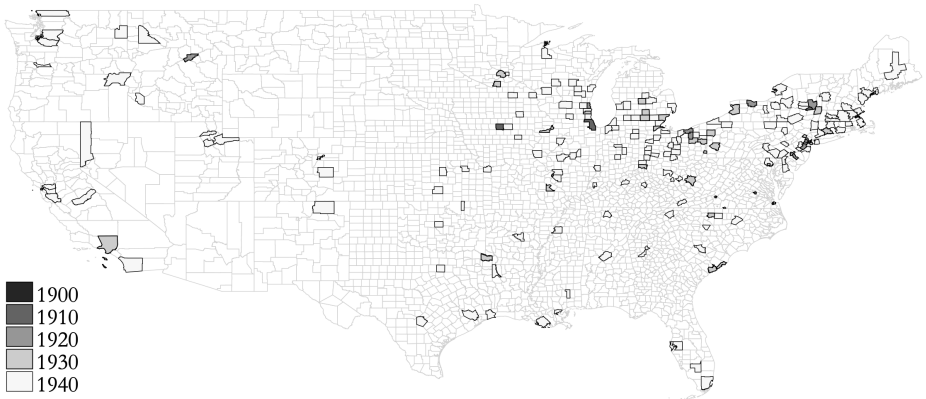


Figure OA2

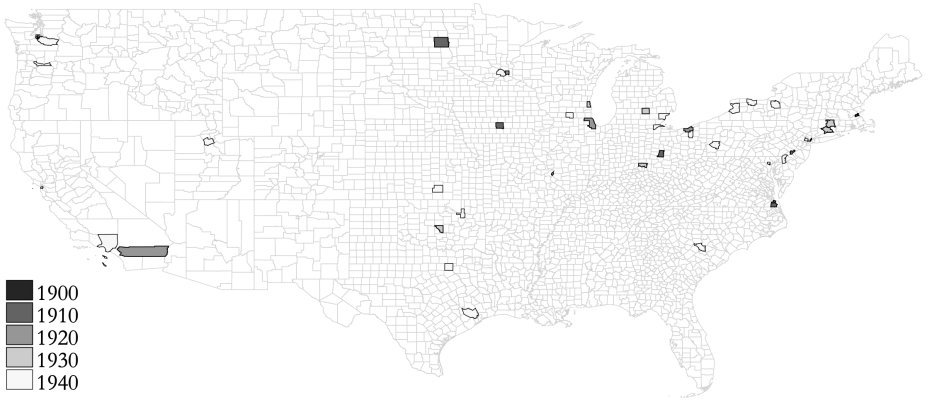
Public Companies, Audit Firms and CPA Licences in the Continental U.S.

This figure shows snapshots of the number and location of public companies and audit firms in the continental U.S. for the years 1900, 1910, 1920 and 1930 in Panels (a) and (b). Panel (c) shows in what year states issued their first CPA license, through waiver or exam. Numbers from Panels (a) and (b) are based on our sample, and for Panel (c) taken from Edwards (1960). Audit firm data are measured with audit statements attached to annual reports.

(a) *Public Companies*



(b) *Audit Firms*



(c) *Year of First CPA Licence issued*

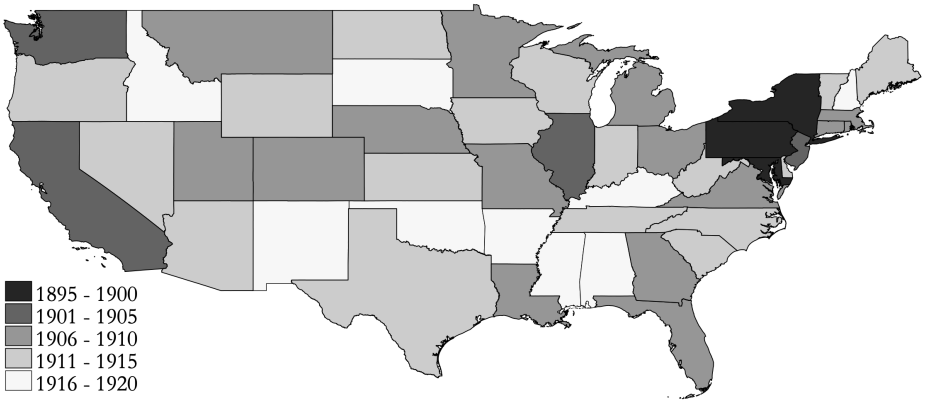


Table OA1

Literature Overview of Earlier Findings

This table presents an overview of the literature that focuses on the audit market in general, its emergence in the U.S., and its state around the time of the Securities Exchange Act of 1934. The 46 studies are classified as 'Quantitative', 'Qualitative', or 'Literature Review' on basis of the overall method used. We also present the findings/objectives of each study and relevant observations for our study (in *blue italics*).

Paper	Title	Authors	Year	Journal	Findings	Nature/Method
1	*Agency Problems, Auditing, and the Theory of the Firm: Some Evidence*	Watts and Zimmerman	1983	*Journal of Law and Economics*	*Main finding:* Market forces lead to the rise of independent audit throughout the history of corporations. *Cite Benston's work to say that independent auditing of U.S. public firms was already widespread in the 1920s.*	Qualitative
2	*Required Disclosure and the Stock Market: An Evaluation of the Securities Exchange Act of 1934*	Benston	1973	*American Economic Review*	*Main finding:* Failed to document capital market benefits to the 1934 Act. *Mentions that virtually all NYSE firms were audited in 1933; Note that auditors are liable if they are negligent since Ultramares.*	Quantitative
3	*The Value of the SEC's Accounting Disclosure Requirements*	Benston	1969	*The Accounting Review*	*Main finding:* Little justification ex ante to the disclosure mandates with the mandate not helping funds to pick better firms. *Audit rates for sample of NYSE firms were 82% in 1926 (333 companies) and 94% in 1934 (508 companies); Mentions the 1932 collaboration between the NYSE and the AIA; Mention the McKesson case; Mentions the need for independent auditors before the regulation.*	Quantitative
4	*Understanding Practice and Institutions: A Historical Perspective*	Watts and Zuo	2016	*Accounting Horizons*	*Main finding:* Description of the evolution of accounting and auditing along with corporate governance and capital markets through the centuries with a conclusion that the primary role of reporting is stewardship. *U.S. corporations raised funds in England were advised of capital market benefits of having a (reputable) auditor; Role of UK auditors in shaping the US ones; Mention the 1917 FRB report (argued limited impact without cites); AIA + NYSE on GAAP post 1929.*	Qualitative

Table continues on the next page.

Paper	Title	Authors	Year	Journal	Findings	Nature/Method
5	*Historical Development of the Standard Audit Report in the U.S.: Form, Scope and Renewed Attention to Fraud Detection*	Pandit and Baker	2021	*Accounting Historians Journal*	*Main finding:* Description of the evolution of the content of the audit report over the past two centuries. *Mentions the 1917 FRB guidance; Mention the 1929 FRB guidance; Mention the Ultramares case and the NYSE–AIA collaboration.*	Qualitative
6	*The Market for Public Accounting Services: Demand, Supply, and Regulation*	Benston	1985	*Journal of Accounting and Public Policy*	*Main finding:* Discuss the generic forces that shape the profession of public accountants without a specific time frame and discuss the structure of the industry in the 1970s. *Value of an audit when ownership and control are separated; value of an audit for contracting purposes; Value explains the large audit rate pre 1934; Confirm that the SEC waited for the McKesson case to influence directly public accounting practices.*	Qualitative
7	*Sprouse's What-You-May-Call-Its: Fundamental Insight or Monumental Mistake*	Basu and Waymire	2010	*Accounting Historians Journal*	*Main finding:* Conceptual and anecdotal critic of Sprouse (1966) which induced the FASB to focus on the balance-sheet accounting approach. *Mentions that the 1920s were characterized by a sharp rise in the number of investors thereby increasing the demand for accounting information more with an income statement than a balance sheet (for banks) angle.*	Qualitative
8	*The Development of Accounting and Auditing Standards*	Davidson and Anderson	1987	*Journal of Accountancy*	*Main finding:* Review the history of the development of accounting and auditing standards along that of the U.S. economy/industry. *Mentions of the 1917 FRB Bulletin and argue that it specified some minimum requirements for balance-sheet audits; Mention of the AIA / NYSE collaboration.*	Qualitative
9	*Corporate Financial Reporting at the Turn of the Century*	Brief	1987	*Journal of Accountancy*	*Main finding:* Describe the emergence of financial reporting by U.S. public firms in the early 20th century. *Mentions the role of British auditors in settling U.S. practices; early audit certificates varied in length, wording, and often focused on specific interests.*	Qualitative
10	*Revising the Audit Report: A Response to the Expectation Gap*	Campbell and Michenzi	1987	*CPA Journal*	*Main finding:* Historical perspective on audit reports' development in the U.S., highlighting changes induced by the 1917 & 1929 guidance and the Ultramares case. *Discusses the McKesson case's role in promulgating the first audit standard.*	Qualitative

Table continues on the next page.

Paper	Title	Authors	Year	Journal	Findings	Nature/Method
11	*The Development of Modern Financial Reporting Practices among American Manufacturing Corporations*	Hawkins	1963	*Business History Review*	*Main finding:* Transition from secrecy to public reporting, driven by increased investor demand for reliable financial disclosure. *High voluntary adoption of independent audits for opinion certificates; details on 1917 & 1930 AIA/FRB initiatives.*	Qualitative
12	*The Demand for External Auditing: Size, Debt, and Ownership Influences*	Chow	1982	*The Accounting Review*	*Main finding:* Factors behind voluntary audited financial statements adoption in 1926. *Audit rates higher for larger firms, those more levered, and with more debt covenants.*	Quantitative
13	*Historical Dates in Accounting*	Abs, Grimstad, Hay, Howe, La Place, McGurr, and Serraino	1954	*The Accounting Review*	*Main finding:* Lists historical dates significant for accounting, highlighting key events relevant to the sample period. *Includes 1912, 1917, and 1931 milestones like the Ultramares case and NYSE audit requirement.*	Qualitative
14	*Investor Protection under Unregulated Financial Reporting*	Barton and Waymire	2004	*Journal of Accounting and Economics*	*Main finding:* Examines stock market patterns post-1929 based on pre-1929 financial disclosure quality. *Audit as a determinant of reporting quality; distinction between Big 9 and non-Big 9 auditors.*	Quantitative
15	*Corporate Publicity and the Auditor*	May	1926	*Journal of Accountancy*	*Main finding:* Discusses the AIA's achievements and future changes for harmonizing accounting and auditing practices. *Notes the general practice of independent audits and calls for clearer audits and auditor responsibilities.*	Qualitative
16	*Associationism, Statism, and Professional Regulation: Public Accountants and the Reform of the Financial Markets 1896-1940*	Miranti	1986	*Business History Review*	*Main finding:* Evaluates the AIA's role and responses to the establishment of regulating bodies like the FRB/FTC and SEC. *Notes the widespread adoption of auditing in the early 20th century and the AIA/NYSE collaboration.*	Qualitative
17	*The Information Content of Earnings in a Discretionary Reporting Environment: Evidence from NYSE Industrials 1905-10*	Sivakumar and Waymire	1993	*Journal of Accounting Research*	*Main finding:* Analyzes the association between accounting information and stock prices in the early 20th century. *Observes that 16% of sampled companies were audited between 1905and 1910.*	Quantitative
18	*Voluntary Audits in New York Markets in 1927: A Case Study*	Merino, Mayper, and Sriram	1994	*Journal of Business Finance & Accounting*	*Main finding:* Economic and political incentives considered for the emergence of accounting practices pre-SEC. *Argues against solely economic forces driving audit practices; highlights the AIA/FRB's 1917 impact on auditor power and financial reporting quality.*	Quantitative

Table continues on the next page.

Paper	Title	Authors	Year	Journal	Findings	Nature/Method
19	*Be Careful What You Wish For: How Accountants and Congress Created the Problem of Audit Independence*	O'Connor	2004	*Boston College Law Review*	*Main finding:* Critiques the audit mandate's effect on auditor independence and conflict of interest within the industry. *Examines the historical context of audit mandates and their impact on the profession's independence.*	Qualitative
20	*The Use of Accounting Numbers by Information Intermediaries in the Pre-SEC Era*	Basu, Prakash, and Waymire	2004	*Working Paper*	*Main finding:* Investigates the role of private forces versus regulation in fostering capital markets and accounting information's utility. *Highlights the widespread practice of financial statement auditing before SEC regulation.*	Quantitative
21	*A Reexamination of the Development of the Accounting Profession - Critical Events from 1912-1940*	Sriram and Vollmers	1997	*Accounting Historians Journal*	*Main objective:* Examine the responses of the auditing profession to shaping events. *Banks demanded better practices in the 1910s; FTC pushed for auditor registration with the FRB; The 1917 AIA/FRB document recommended clearer opinions.*	Qualitative
22	*Mandatory Disclosure Asymmetric Information and Liquidity: The Impact of the 1934 Act*	Daines and Jones	2012	*Working Paper*	*Main objective:* Examine capital market benefits post-1933 mandate. *Most firms audited pre-1934; Less than 10% not audited; Unaudited firms were larger, more liquid.*	Quantitative
23	*The Effect of the 1933 Securities Act on Investor Information and the Performance of New Issues*	Simon	1989	*American Economic Review*	*Main objective:* Impact of 1933 mandate on new stock returns. *NYSE required audits in 1928.*	Qualitative
24	*The Economic Effects of Federal Regulation on the Market for New Security Issues*	Jarrell	1981	*Journal of Law & Economics*	*Main objective:* Evaluate 1933 Act's impact on securities. *Certification costs and underwriter reputation importance highlighted.*	Quantitative
25	*Public Regulation of the Securities Markets*	Stigler	1964	*Journal of Business*	*Main objective:* Effects of mandatory registration on investor returns. *Comparison of pre-SEC and post-SEC securities; no audit mention.*	Quantitative
26	*Accounting is an Evolved Economic Institution*	Waymire and Basu	2008	*Foundations and Trends in Accounting*	*Main objective:* Primer on accounting history and research questions. *Discusses audit profession development, including UK origins.*	Literature Review
27	*Early Developments in American Auditing*	Moyer	1951	*The Accounting Review*	*Main objective:* U.S. auditing's late 19th-century development. *Influenced by UK practices.*	Qualitative
28	*Public Accounting in the United States 1896-1913*	Edwards	1955	*The Accounting Review*	*Main objective:* Development of U.S. public accounting profession. *First CPA laws passage discussed.*	Qualitative

Table continues on the next page.

Paper	Title	Authors	Year	Journal	Findings	Nature/Method
29	*The Development of "The Big Eight" Accounting Firms in the United States 1900 to 1990*	Wootton and Wolk	1992	*Accounting Historians Journal*	*Main objective:* Growth and role change of the accounting profession. *Evolution into big firms.*	Qualitative
30	*How the U.S. Accounting Profession Got Where It is Today: Part I*	Zeff	2003	*Accounting Horizons*	*Main objective:* Evolution of the U.S.accounting profession during the 20th century. *Includes early 20th-century overview.*	Qualitative
31	*Enforceable Accounting Rules and Income Measurement by Early 20th Century Railroads*	Sivakumar and Waymire	2003	*Journal of Accounting Research*	*Main objective:* Impact of 1907-1908 ICC rules on railroads. *Railroad accounting under Hepburn Act scrutiny.*	Quantitative
32	*Ivar Kreuger's Contribution to U.S. Financial Reporting*	Flesher and Flesher	1986	*The Accounting Review*	*Main objective:* Kreuger's influence on 1933 and 1934 Acts. *Audits for new listings required post-Kreuger scandal.*	Qualitative
33	*Auditor Liability and Information Disclosure*	Kothari, Lys, Smith, and Watts	1988	*Journal of Accounting, Auditing & Finance*	*Main objective:* Effects of increased auditor liability. *Discussion on pre-1933 auditor liability and expansion post-Acts.*	Quantitative
34	*The Influence of Scottish Accountants in the United States: the Early Case of the Society of Accountants in Edinburgh*	Lee	1997	*Accounting Historians Journal*	*Main objective:* Impact of Scottish accountants in the U.S. *UK auditors' early U.S. practice.*	Qualitative
35	*Accounting and the Courts*	Briggs	1931	*The Accounting Review*	*Main objective:* Court cases' impact on accounting profession. *Early 20th-century auditors' liability cases.*	Qualitative
36	*Changing Legitimacy Narratives about Professional Ethics and Independence in the 1930s*	Roberts	2010	*Accounting Historians Journal*	*Main objective:* Accounting ethics and independence narratives. *AIA's 1930s ethics rules before Securities Acts.*	Qualitative
37	*Spiraling Upward: Auditing Methods as Described by Montgomery and his Successors*	Myers	1985	*Accounting Historians Journal*	*Main objective:* Evolution of auditing methods. *Analysis based on Montgomery's textbooks.*	Qualitative

Table continues on the next page.

Paper	Title	Authors	Year	Journal	Findings	Nature/Method
38	*Auditors' Independence: An Analysis of Montgomery's Auditing Textbooks in the Twentieth Century*	Nouri and Lombardi	2009	*Accounting Historians Journal*	*Main objective:* Auditor independence development. *Montgomery's textbooks analysis.*	Qualitative
39	*Socialization of US Novice Accounting Professionals through Ethical Discourse in 1931*	Roberts	2015	*Accounting Historians Journal*	*Main objective:* Novice accountants' ethical socialization. *1931 AIA ethics book examination.*	Qualitative
40	*The AAUIA from 1916–1920: How the AAUIA contributed to the Early Developments of Accounting Education*	Hornok and Flesher	2020	*Accounting Historians Journal*	*Main objective:* AAUIA's impact on accounting education. *Focus on AAUIA's first five years.*	Qualitative
41	*Edward Everett Gore: Contributions of an Early 20th Century CPA and Civic Leader*	Flesher and Previts	2021	*Accounting Historians Journal*	*Main objective:* Gore's contributions to accountancy. *Gore was the president of the AIA from 1922 to 1924.*	Qualitative
42	*Maurice E. Peloubet: A Life of Impact on Accountancy and Society*	Holley and Flesher	2020	*The CPA Journal*	*Main objective:* To recount the contributions of Maurice E. Peloubet to the early accounting profession. *Peloubet began his career in accounting in 1911.*	Qualitative
43	*Follow in Footsteps: The First CPAs of 1896-97 and Accounting Occupation Adoption by the Next Generation*	Roberts	2022	*Accounting Historians Journal*	*Main objective:* To trace the careers of the progeny of the first CPAs. *Many offspring of the first CPAs became CPAs themselves.*	Qualitative
44	*Forging Accounting Principles in Five Countries: A History and an Analysis of Trends*	Zeff	1972	*Book*	*Main objective:* To recount the forming of accounting principles in five separate countries. *Includes a detailed account of interactions between the AIA and other market stakeholders before the Securities Acts.*	Qualitative
45	*Accountancy Comes of Age: The Development of an American Profession 1886-1940*	Miranti	1990	*Book*	*Main objective:* To recount the development of the American accounting profession in its early years. *Pays special attention to the various professional associations and their interactions.*	Qualitative
46	*A History of Accountancy in the United States: The Cultural Significance of Accounting*	Previts and Merino	1998	*Book*	*Main objective:* To recount the history of accounting in the United States from the country's beginnings to recent times. *Provides a comprehensive history of the accounting and the political and cultural environment it operated in.*	Qualitative

Table OA2
Search Words

The table presents the search words used to extract information from the annual reports. To compile the list of search terms to measure the *Audit Indicator*, we began by examining the context around the word 'audit' as found in the example audit statements from the AIA and FRB guidance of 1917 and 1929, as well as the 1934 NYSE guidance. We then hand-checked a random sample of annual reports and added relevant terms to our word list. To compile the list of auditors, we started with the list of all auditors mentioned in Lee (2006), and hand-checked audited annual reports with none of the auditors mentioned in Lee (2006) to find other auditor names. See Appendix A of the main paper for detailed definitions of the variables.

Variable	Search Words
Audit Indicator	have made an examination, have audited, auditors report, certificate of auditors, hereby certify, certify that, auditors certificate, accountants certificate, have examined the accounts, have examined the books, have examined the balance sheets, having audited the, examined or tested accounting, hereby certify that, have audited your, made an examination of, fairly represent in accordance with, tested the accounting records, in our opinion, based upon our examination, conformity with general accepted accounting principles, have audited the books, have examined the financial records
Auditor	price waterhouse, ernst ernst, haskins sells, arthur young, peat marwick mitchell, allen r smart, allen smart, jd cloud, hadfield rothwell soule coates, lybrand ross bros montgomery, barrow wade guthrie, deloitte plenders griffiths, touche niven, patterson teele dennis, west flint, howard kroehl company, cutler hammer, george dallas, scovell wellington company, arthur andersen, konopak hurst dalton, lafrentz, rg rankin, loomis suffern fernald, pauljoseph esquerre, richards ganly, fa hamilton, lawrence e brown, eastern audit company, marwick mitchell company, bieth macnaughton, general timber service, pogson pelloubet, charles f rittenhouse company, herbert f french company, elliott davis company, american audit, jk lasser, seidman seidman, lawrence brown company, wo ligon company, simonton jones company, stockwell wilson linvill, leslie banks company, leslie banks, wolf company, jh greenhalgh company, miller donaldson company, haselmire cordle, oj neff, of taylor, sd leidesdorf, main company, feinberg jacobs, storer bishop, rogers company, hurdsman cranstoun, pace gore mclaren, chandler murray chilton, marwick mitchell, puderpuder, jones caesar dickinson wilmot, patterson corwin, stagg mather, ernsternst, david himmelblau, audit company of new york, collins company, richards company, grey hunter stenn, ward weber, townsend dix pogson, amos albee son, edward steacie, loganlogan, pearce granata, squires company, wright long, ernest bell company, meech harmon lytle blackmore, quail macoubrey, herbert french company, goettsche company, boyden yardley guay, vollumvollum, cerf cooper, rhyne priaulx bearisto, lingley baird dixon, frazer torbet, stewart watts bollong, mattison davey, mcconnell breiden, hopkins company, seamans stetson tuttle, marvin scudder company, stern porter kingston coleman, detroit trust, bagley vega company, wells baxter miller, leach rindfleisch scott, brockelbank brockelbank, leonhard troub company, miller franklin company, clifford collins company, keller kirschner martin clinger, alexander aderer, mclaren goode, swearingen swearingen, robert douglas company, smith davis wills, amen surdam, snyder ellinger davies, amick spicer, lovejoy mather hough stagg, searle nicholson oakey lill, alexander grant company, searle miller company, boyce hughes farrell

Table OA3

Descriptive Statistics, Pre- and Post-1934

This table presents the descriptive statistics for the variables used in the analyses. Panel A presents the descriptive statistics for the pre-1934 period, and Panel B presents the descriptive statistics for the post-1934 period. See Appendix A of the main paper for detailed definitions of the variables. We winsorize continuous variables at the 1% and 99% level.

Panel A: Descriptive Statistics, Pre-1934								
Company Variables								
Size (Market Value)	6,857	2.757	1.587	0.000	1.555	2.679	3.851	6.442
EPS	2,380	4.365	5.411	−7.880	0.830	3.440	7.095	20.630
Dividend Payer	2,380	0.605	0.489	0.000	0.000	1.000	1.000	1.000
Zero Return Days	6,166	0.308	0.401	0.000	0.000	0.083	0.667	1.000
Zero Volume Days	6,166	0.061	0.173	0.000	0.000	0.000	0.000	0.917
Amihud Illiquidity	4,597	3.931	2.848	0.016	1.564	3.483	5.883	11.617
Auditor Variables								
Portfolio Size	5,272	30.678	27.545	1.000	7.000	21.000	52.000	105.000
Portfolio Concentration	5,243	0.467	0.276	0.000	0.246	0.372	0.644	1.000
Audit Variables								
Audit Indicator	9,963	0.620	0.485	0.000	0.000	1.000	1.000	1.000
Audit Report Length	3,915	4.740	0.673	2.708	4.304	4.635	5.283	6.428
Audit Report Lag	5,629	4.641	1.031	2.303	3.871	4.331	5.940	5.940
Client-Auditor Distance	5,201	167.844	381.127	0.000	0.000	0.000	145.002	1,975.422
Client-Auditor Specialist	6,174	0.325	0.468	0.000	0.000	0.000	1.000	1.000
Panel B: Descriptive Statistics, Post-1934								
Company Variables								
Size (Market Value)	4,918	2.332	1.683	0.000	0.929	2.195	3.484	6.442
EPS	2,688	2.836	3.302	−7.880	0.895	2.400	4.110	20.630
Dividend Payer	2,688	0.706	0.456	0.000	0.000	1.000	1.000	1.000
Zero Return Days	4,471	0.255	0.367	0.000	0.000	0.083	0.250	1.000
Zero Volume Days	4,471	0.038	0.135	0.000	0.000	0.000	0.000	0.917
Amihud Illiquidity	3,676	4.638	2.728	0.016	2.528	4.257	6.372	11.617
Auditor Variables								
Portfolio Size	4,977	66.749	47.356	1.000	18.000	74.000	111.000	139.000
Portfolio Concentration	4,964	0.377	0.249	0.000	0.208	0.286	0.453	1.000
Audit Variables								
Audit Indicator	6,445	0.870	0.336	0.000	1.000	1.000	1.000	1.000
Audit Report Length	3,847	5.315	0.578	2.708	5.088	5.318	5.663	6.428
Audit Report Lag	5,270	4.509	0.977	2.303	3.850	4.190	5.940	5.940
Client-Auditor Distance	4,929	123.894	308.399	0.000	0.000	0.000	129.025	1,975.422
Client-Auditor Specialist	5,607	0.305	0.460	0.000	0.000	0.000	1.000	1.000

Table OA4

Audit Rate of Entering, Continuing and Exiting Companies

This table presents the number of companies entering, continuing and exiting the sample, and their corresponding audit rate. A company is *entering* the sample the first year for which we have an annual report. A company is *continuing* as long as we have a continuing time series of annual reports. A company is *exiting* our sample in the year following the year for which we have the last annual report. The columns sum to the number under *total* companies, except for a few cases. This is because some companies enter the sample one year, to exit again the year after, which therefore defines them to be both *entering* and *exiting* in the same year. In addition, because our sample of annual reports spans until 1940, we lack data on the *exiting* companies in 1940. For each of these groups, the corresponding audit rate for the year is presented. *Audit Rate* is the number of sample companies that are audited, proxied by the attachment of an audit statement to the annual report, divided by the total number of sample companies per year (in %).

Panel A: Audit Rates of Entering, Continuing and Exiting Companies

	Total Companies		**Entering Companies**		**Continuing Companies**		**Exiting Companies**	
Year	**#**	***Audit Rate* (in %)**	**#**	***Audit Rate* (in %)**	**#**	***Audit Rate* (in %)**	**#**	***Audit Rate* (in %)**
1900	69	27.54	29	17.24	40	35.00	9	11.11
1901	54	27.78	7	28.57	47	27.66	0	
1902	56	25.00	3	66.67	52	23.08	1	0.00
1903	72	36.11	13	23.08	58	39.66	2	0.00
1904	72	33.33	4	0.00	67	35.82	1	0.00
1905	75	37.33	8	25.00	66	39.39	1	0.00
1906	79	43.04	7	42.86	72	43.06	1	0.00
1907	86	39.53	6	66.67	78	37.18	3	66.67
1908	88	42.05	2	0.00	86	43.02	0	
1909	99	40.40	8	25.00	91	41.76	0	
1910	109	42.20	13	38.46	94	43.62	2	0.00
1911	129	45.74	22	31.82	106	48.11	1	100.00
1912	138	42.03	17	17.65	121	45.45	0	
1913	157	48.41	13	53.85	143	48.25	1	0.00
1914	162	51.23	5	80.00	156	50.64	2	50.00
1915	160	51.25	5	40.00	153	50.98	3	66.67
1916	177	51.98	18	50.00	157	52.23	3	33.33
1917	188	49.47	17	23.53	171	52.05	1	0.00
1918	191	49.74	13	38.46	176	50.57	3	33.33
1919	220	53.18	27	48.15	193	53.89	0	
1920	292	57.53	80	63.75	208	54.81	5	60.00
1921	323	58.51	45	57.78	276	58.70	5	40.00
1922	364	59.07	54	59.26	304	59.54	7	28.57
1923	403	58.56	55	47.27	342	60.82	7	42.86
1924	443	61.17	43	65.12	395	61.01	9	33.33
1925	481	62.99	63	53.97	410	64.15	10	80.00
1926	533	63.23	62	50.00	461	64.86	16	62.50
1927	539	64.56	50	68.00	476	64.08	15	66.67
1928	654	65.29	105	61.90	523	66.16	32	59.38
1929	751	68.58	144	67.36	571	69.35	47	57.45
1930	669	70.25	63	60.32	587	72.06	27	48.15
1931	669	72.65	36	55.56	622	73.79	14	57.14
1932	682	75.66	21	71.43	647	76.04	18	72.22
1933	779	79.72	36	72.22	723	80.22	20	75.00
1934	777	84.17	28	92.86	738	84.15	13	69.23
1935	819	84.98	36	77.78	758	85.49	30	80.00
1936	866	85.80	64	75.00	782	86.83	27	77.78
1937	962	87.42	97	83.51	842	88.12	34	73.53
1938	980	88.06	40	77.50	911	88.69	34	76.47
1939	1,007	88.08	54	88.89	887	89.40	79	72.15
1940	1,034	89.26	52	86.54	982	89.41		

Table OA5

Comparison of Financial Audits and ESG Assurance

This table presents a comparison between the development of financial audits in the first four decades of the 20^{th} century and that of ESG audits in the 21^{st} century. In both cases, we focus on the market for audit services targeting public companies in the U.S.

	Financial Audits in Early 20^{th} Century	**ESG Audits in Early 21^{st} Century**
Part I: How did auditing spread?		
Capital Markets	Expansion of public capital markets creates demand for financial audits	Expanding focus from investor toward other, non-investor stakeholder demands
Profession	Existing U.K. auditors setting up U.S. offices New auditing companies	Traditional financial auditors Non-financial auditors (e.g., engineering firms)
Audit rate	Steady and monotonic increase over time	Steady and monotonic increase over time
Audit choice	Motivated by information asymmetry and agency concerns	Motivated by information asymmetry and response to public scrutiny
Auditor choice	Based on expertise and independence	Based on expertise and independence
Part II: How did audit services develop?		
Audited information	Shift from limited items to full financial statements	Shift towards an increasing number of individual metrics assured
Auditing standards	Set by private actors (e.g., NYSE, AIA) with the help of public actors (e.g., FRB, FTC)	Set by private actors (e.g., IAASB)
Legal liability	Changed the level of assurance provided	No ESG assurance litigation cases (yet)
Part III: How did regulation shape the development?		
Regulators	SEC	SEC, PCAOB
Regulations	SEC mandates audits (1934)	SEC climate rule (passed: 2024; phased-in between 2026–2033); uncertainty given current legal challenges
Timing of the regulation	Introduced after reporting and auditing practices have matured	Passed relatively early, but only phased-in in over extended period in future to allow for development of fast-evolving assurance practices
Nature of the regulation	Not prescriptive, codifying existing practices initially	Not prescriptive, codifying existing practices initially (i.e. limited assurance, flexible choice of attestation standards)