ARTICLE IN PRESS

Critical Perspectives on Accounting xxx (xxxx) xxx

Contents lists available at ScienceDirect

Critical Perspectives on Accounting

journal homepage: www.elsevier.com/locate/cpa

Code as constitution: The negotiation of a uniform accounting code for U.S. railway corporations and the moral justification of stakeholder claims on wealth

Kimberly Kracman

Department of Sociology, Princeton University, Princeton, NJ 08542, USA

1. Introduction

Economic historians of the United States identify the railway industry of the nineteenth century as the birthplace of existing institutions of corporate finance, law, and labor relations (Chandler, 1990; Perrow, 2002; Thomas, 2011). This paper shows that the railway industry was also an important arena for the standardization of corporate accounting in the U. S., and that railway accountants played a significant role in the federal government's earliest attempts to regulate large corporations. The paper describes how railway accountants worked with the first federal regulator of corporations, the Interstate Commerce Commission (ICC), created by act of Congress in 1887, to create a uniform accounting code for the railway industry. This code was designed by the prominent economist and ICC statistician Henry Carter Adams to serve as a mechanism for the administrative supervision of railway corporations: a "cognitive equivalent of a constitution" (Starr, 1987, p. 53) that would promote economic democracy by protecting the property rights of non-controlling stakeholders in the railway system: shippers who used the trains to send goods to markets, long-term investors in railway shares and bonds, consumers of shipped goods, and members of the communities that the railways connected and employed. Railway accountants working with Adams created the rules for answering "potentially divisive questions of fact" (Starr, 1987, p. 53) about who contributed how much to the assets and profits of the railway corporation, and thus provided moral justification for how claims on those assets and profits were distributed.

Legal scholar Cass R. Sunstein argues that the constitution of a democratic polity must provide mechanisms for decision-making that promote reason-giving. "One of the points of constitutional arrangements," Sunstein (2001) writes, "is to protect the processes of reason-giving, ensuring something like a 'republic of reasons'" (Sunstein, 2001, p. 239). As the first Director of Statistics and Accounts at the ICC, Adams attempted to use control of the accounting practices of corporations to force management to provide an accurate narrative of how and by whom the assets and profits of the corporation were amassed. "Accounting is a process of reasoning," Adams wrote, and "[e]very accounting statement is a direct or implied argument" (Adams, 1918, p. 10). Reacting to the widespread and sometimes violent confrontations between railway operators, shippers, and communities that took place in the rapidly-industrializing U.S., Adams hoped that a uniform accounting code would generate the financial information necessary for rational public deliberation over the distribution of railway industry costs and revenues, providing a "solvent for current industrial problems" and "an instrument by which the aspirations of peace-loving democracies may be realized" (1918, p. iv).

Krippner (2017) argues that economic citizenship—a term used to denote an individual's state of access to the resources necessary for free participation in an economy, including access to credit and financial services—is most fully realized by those who own property, as wealth transforms the seeker of credit from a supplicant borrower into a negotiator among property-holding peers. In an economy still dominated by corporations (Stout, 2017; Wooldridge, 2016), and still rife with contention over the distribution of

E-mail address: kkracman@princeton.edu.

https://doi.org/10.1016/j.cpa.2021.102376
Received 19 October 2020; Received in revised form 13 August 2021; Accepted 16 August 2021

Please cite this article as: Kimberly Kracman, *Critical Perspectives on Accounting*, https://doi.org/10.1016/j.cpa.2021.102376

corporate wealth (Lazonick, 2014), economic citizenship must ultimately be grounded in meaningful representation in corporate accounts. The stakes of multiple publics must be recognized in the corporation's balance sheet, as it is here that the outstanding contributors to the capital of the corporation are recognized and property claims on assets and profits are made.

Railway accountants' work with the ICC on a uniform code for the industry culminated in forms of financial reporting that Adams hoped would recognize and reward the contributions of railway system stakeholders other than short-term holders of shares. "Is the public in fact a silent partner", he asked in a Congressional hearing on railway corporation securities, "and can its investment, as well as that of the stockholder, be expressed on the corporate balance sheet?" (Adams, 1911, pp. 12–13). At least one prominent railway officer identified the form of balance sheet statement as "the prime factor… on which everything else hangs" (Williams, 1908b). Thus, it is on the negotiation of the form of balance sheet statement for railway corporations that the paper will focus below.

The argument proceeds as follows. Section Two considers the contributions of sociologists, anthropologists, historians, and accounting scholars to our understanding of valuation, pricing, and the distribution of property: three issues at the core of the conflicts over railway rates and profits that the ICC had been charged by Congress to adjudicate. It develops an analysis of the corporate balance sheet statement that demonstrates the moral work that corporate accountants do when they create such statements. Following Adams, it argues that the balance sheet statement serves as a historical narrative of the nexus of exchanges that have taken place among stakeholders in the corporation, and that the balance sheet works to justify a particular distribution of wealth among stakeholders via a logic of contribution, through the determination of the value of each class of stakeholders' investment. Section Three discusses Adams' role at the ICC, situating the national railway system of the late nineteenth- and early twentieth-century U.S. in the global history of socialized capital accumulation. It shows how newly-organized railway corporation accountants worked with Adams to create a uniform, federally-mandated accounting code for U. S. railways. Section Four describes the disagreements between Adams, accounting officers, and railway management over the rules of asset valuation and connects these to larger questions regarding the definition of capital and the distribution of corporate wealth. Using archival records of the negotiation of a uniform form of balance sheet for railway corporations, Section Five examines the different orders of worth/logics of valuation employed by Adams, railway accountants, and representatives of railway management as evidenced by their advocacy for different procedures of railway asset valuation and railway transport pricing. The paper concludes by considering the potential role of accounting in addressing problems of wealth distribution in the United States today.

Adams' work as a corporate regulator and as a teacher of future New Deal-era economists played an important role in the development of an American middle class (Dorfman, 1969), and his focus on property ownership as a a key determinant of class relations proved prescient. As a defender of organized labor in the tumultuous year of 1886 (a defense that cost him his first teaching position at Cornell (Furner, 2011/1975)), Adams argued that the movement had finally "got the right end of the labor problem" when it demanded property rights in industrial enterprise. (Adams, 1886, p. 8862). In his efforts to represent and protect the claims of non-controlling stakeholders in the nation's first corporate industry, Adams was a part of reformist efforts to erode the massive concentration of wealth of the Gilded Era and set the stage for the "Great Compression" (Goldin & Margo, 1992) of income distribution in the mid-twentieth century. At the same time, Adams' failure to recognize the importance of historically racialized variation in state protection of person and property – a failure he shared with other Progressives – meant that the gains that he and his reformist colleagues engendered would not be enduring. In examining earlier attempts to democratize the economy via accounting, this paper concludes by considering how a fuller understanding of property – including a property in whiteness (Harris, 1993) – might allow today's critical accounting scholar to contribute to demands for economic democracy in our own era.

2. The sociology of valuation, pricing, and property rights

Sociological interest in accounting stretches back as least as far as Max Weber, who identified capital accounting as the defining mark of modern rational capitalistic enterprise (Weber, 1927, 1978) and railroads as "the most revolutionary instrumentality known to history, for economic life in general and not merely for commerce" (1927, p. 297). More recently, sociologists have noted the rhetorical power of accounting in signaling the rationality of decision-making (Carruthers & Espeland, 1991) and, more broadly, the importance of technical mechanisms of valuation and classification in determining market outcomes (DiMaggio, 2001; Fligstein & Calder, 2015; Fourcade & Healy, 2013; Lamont, 2012). Accounting scholars have provided important critiques of Weber's understanding of capital accounting while retaining his recognition of accounting as essential to both the concept (Chiapello, 2007) and the practice (Bryer, 2000a, 2000b) of modern capitalist enterprise.

Valuation of railway assets was an important part of railway accountants' work in the industrializing U.S., bound up as it was in two key issues for stakeholders in the railway system: transport rates and investment returns. Railway freight rates represented both the price of railway transport to shippers of the nation's agricultural and industrial produce and the wellspring of revenues for the payment of dividends and interest to investors in railway corporation securities. Accurate financial statements were of vital concern to the whole economy, as railway bonds so dominated financial markets that in 1908 Congress considered the possibility of using them as emergency currency (U. S. Senate Document 212, 60th Congress, 1st Session; see also Adams, 1908a, p.378). As Galambos and Pratt (1988) write of this crucial period of American industrialization, "railroad rates affected almost every substantial economic activity", and "railroad financing dominated the nation's capital markets" (p. 47).

The hotly-contended issue of the fairness of the price of railway transport was to be determined by the valuation, by accountants, of the capital invested in its provision. In following uniform rules for the ongoing valuation of railway corporation assets, accountants would provide the "rate base" upon which investors' returns would be measured, a figure important both to investors seeking to know the true situation of their capital and to shippers seeking to know whether rates were unreasonably high. "All that can be done," one railway analyst wrote, "is to credit fully every asset [purchased by corporation investors and used in transport], and from all the totals, computed by various means, to choose that one which shall most fully recognize the right of private property to a fair return" (Ripley, 1907, p. 603). This analysis was in keeping with the important, but difficult to operationalize, 1898 *Smith v. Ames* decision, in which the U.S. Supreme Court authoritatively linked railway rate setting and railway investment returns, arguing that the shipping rates charged to farmers and other users must be high enough to provide railway stock and bondholders with a "reasonable" return on capital invested, but low enough to allow the nation's farmers, manufacturers, and merchants to prosper (Miranti, 1990, p. 186).

While economists generally imagine the setting of prices as a process of competitive adjustment between anonymous aggregations of unorganized buyers and sellers, sociologists describe the process of valuation and pricing as an institutionally-structured social and moral exercise. "The mechanism of supply and demand", Beckert (2011) argues, "stands at the very end of a long chain of price-determining factors that are largely shaped through political influences, market structures, and cultural frames constituting the perception of the value of goods" (p. 770). Lepinay and Callon (2009) note that across markets as diverse as those for credit default swaps on Wall Street and diesel fuel in Nigeria, participants employ "rich verbal elaboration and explanation" of transactions in coming to consensus around price (p. 11). "Exchange", they write, "is the result of the valuation process and not its starting point" (Lepinay & Callon, 2009, p. 17). In his research on auctions, Smith (1993) argues that "price is more often the result of allocative decisions rather than vice-versa" and that "real world auctions are nearly always more concerned with establishing consensual definitions of the situation than with the particular transaction" (pp. 183–184).

Accounting is the institutionalized process through which coming to consensus (or suppressed disagreement) around value and price routinely takes place. In an analysis of the financialization of railway assets in India, Bear (2020) describes railway corporation accounting procedures as "arenas for contestation of the legitimacy of state, market, and financial practices" and accounting codes as "political-economic treaties for accumulation" (p. 49). "Hidden inside the technical forms used to value infrastructure", Bear writes, are "the durable forms of extraction" of public wealth (2020, pp. 63–64). Sikka (2015) describes accounting practices and accounting firms as "key sites for the perpetuation of inequalities" (p. 48), showing how the accountant's classification of taxes and wages as costs to be minimized for the sake of efficiency routinely naturalizes the transfer of corporate surpluses, from workers and society to shareholders.

In his work for the ICC, Adams tried to create through the accounting practices of railway corporations a place for the public at the bargaining table over the proceeds of enterprise; as he wrote in 1918, "The stockholder claims the full equity in the accumulated surplus, and no one but the public, under the general theory of reasonable rates, can contest this claim" (1918, p. 83). In the case of the railroads, "the public" whose property rights Adams hoped to represent were the users of railway transport: the majority of shippers too small to negotiate secret low-rate deals with railroad management, and long-term investors in the railroads, public and private, whose main aim was to receive a modest but safe return on investment while promoting affordable transport of goods to market.[1]

Accounting scholars have long understood the function of accounting as "recording the facts about property and property rights" (Previts & Merino, 1998, p. 6). Robertson and Funnell (2012) show how the accounting rules used by one of the earliest joint stock organizations organized to move valuable goods to market, the Dutch East India Company (VOC), provided a "kind of constitution" for the Dutch Republic (p. 348), and Bryer (2000a, 2000b) demonstrates that the accounting code used by the English East India Company (EIC) was negotiated as an attempt by the generality of shareholders in the Company's ventures to maximize and protect their property claims to the wealth created by the use of the Company's fixed (ships, fortifications) and circulating (wages, bribes, supplies) capital, through the regularization of its financial reporting. Adams likewise hoped to use ICC control of railroads' accounting practices to safeguard the property rights of small shippers and long-term investors, from loss of their investment to corporate raiders and wealthy elites.

In the field of economic sociology, Becher (2015) and Carruthers and Ariovich (2004) draw attention to the social and political nature of property; how property is not a "thing" but always a set of social relations and expectations around the use and control of resources, negotiated with and enforced by the state. But it is Starr's (1987) observations on the generation of official economic statistics that are most helpful in thinking about the role of accounting in justifying and enforcing a particular distribution of wealth. Starr writes, "The structure of rules (classifications, methods of measurement and weighting) is the cognitive equivalent of a constitution. Just as a constitution binds a polity to rules for elections (a kind of numerical procedure), so the structure of statistics binds it to procedures for resolving potentially divisive questions of fact" (Starr, 1987, p. 53).

Among the most important facts to be determined by the American polity are those describing the historical origins of property. Who contributed how much to the creation of the nation's productive capital? Or to put the question in the language of early American economists like Adams, Ripley, and their better-remembered colleague, John Bates Clark (1887, 1889), does each of the persons involved in the creation of the nation's wealth enjoy rights of ownership proportional to that person's contribution to the creation of that wealth? An accounting code provides a mechanism for answering the economist's question by generating statistics of the values of labor, raw materials, and state and private investment, including, in the case of the railroads, the investment made by users of the roads in the payment of shipping rates. An official accounting code binds all parties to acknowledge the legitimacy of the answer.

A financial statement generated by a corporate accountant is thus a moral document. By means of definitions, classifications, and procedures, accounting codes create stories of actions taken and obligations incurred in the course of the many exchanges and transfers

[1] Railway workers and other suppliers of railway transport inputs are also important stakeholders in railway corporations, and excellent in-depth treatments of relations between workers and management, too large a subject to cover here, may be found elsewhere (Arnesen, 2001; Kornweibel, 2003; Licht, 1983). In the contended issue of railway transport rates on which this paper focuses, the interests of regularly-employed railway workers were generally in agreement with those of investors; the higher the rates, the higher the revenues available for wages and profits (Licht, 1983, p. 231).

that make up what comes to be known as "the economy." Wuthnow (1987) has defined a moral order as a set of public definitions of moral obligations among persons, and of directions for the carrying out of obligations in relationships in a legitimate way. An accounting code provides the rules for calculating obligations in market relationships, and an official accounting code is the "cognitive constitution" by which accountants create the facts of contribution and obligation, credits and debits, that members of an economy are required to accept. Accounting codes thus function as mechanisms for the generation of moral narratives that facilitate and justify a particular distribution of wealth and power. As Lepinay and Callon (2009) argue, "It is in the technical design of the [valuation] formula that moral and economic values are entangled" (p. 281).

Over the last decade, critical accounting scholars have used an economies of worth theoretic to explore the role of accounting in valuation. Of particular interest to these scholars has been the competition of various principles, modes, or logics of evaluation associated with different "orders of worth" (Boltanski & Thevenot, 1999, p. 368; see also Annisette & Richardson, 2011; Annisette et al., 2017). Recently Griffen and Timmermans (2020) have shown that logics of evaluation may be used to justify actions after the fact, buttressing support for the legitimacy of an action taken according to one order of worth by means of another. In the case of the newly-industrializing United States, economic actors operating from various orders of worth (e.g., civic, industrial, and market) tended to justify their actions to other stakeholders according to a logic of contribution. By this logic, economic actors within a society are understood to earn property in proportion to the value of their contribution to the wealth of that society; contribution justifies claim.

In the following sections, this paper will use evidence from the negotiation of a uniform accounting code for the U. S. railway industry to argue that ownership is a moral issue, and that capital accounting provides the mechanism by which ownership claims are made. Even today, the balance sheet statement provides a technical account of the history of the corporation that justifies the distribution of corporate assets and profits by means of a logic of contribution. In the words of the seventh edition of a popular accounting textbook, the liabilities and equity side of the balance sheet provides a list of both "1) the amount of funds supplied by creditors and equity investors, and 2) the claims of these parties against the assets" (Anthony & Pearlman, 2000, p. 4). Fundamental technical decisions about who counts as an outstanding creditor on the liabilities side of the balance sheet, and how to calculate the value of what they contributed, thus have a radical impact on the distribution of corporate assets and profits. "There is considerable danger", Adams (1918) warned in *American Railway Accounting*, "that the management of a property will fail to hold in mind an outstanding liability that finds no place among the liabilities listed on the general balance sheet" (p. 172).

Ownership claims are moral arguments. Huston (1998) writes that the revolutionary leadership of the late eighteenth-century United States referred just as frequently to the ideal of "securing the rights of labor" as a justification for national independence as they did to the better-remembered phrase, "no taxation without representation". If a plurality of twenty-first century Americans still understand the moral order of the United States to be one in which property is accumulated as a reward to contribution to the national wealth, as Wuthnow's (2008) research suggests that they do, then the history-in-code of U.S. corporations—the balance sheet statement—constitutes a powerful moral argument for the distribution of property claims on wealth.[2] As the British accounting professor Lawrence Dicksee wrote in 1905, "an 'account' is not primarily a collection of *figures*: it is a narration of events and facts" (Dicksee, 1905, p. 224). The facts generated by the rules provide a story: a history or narration of reason-giving, as Sunstein recommends, that morally justifies an existing distribution of wealth via a logic of contribution.

Adams sought to use the rules and procedures of a uniform accounting code to institutionalize a place for the public to make property claims on the railway corporation's balance sheet, essentially enfranchising through accounting the users of the railroad who did not have sufficient market power or organization to negotiate stable transport rates and, where users were also investors, stable returns on railway securities.[3] The financial entrepreneur or "promoter", Adams wrote, had in the past been far too free to use the "sponge" of the "charter right to issue stocks and bonds" to "absorb all kinds of unattached values" arising in the building and operation of the railroads, the first of these being the value of commercial development along the path of the railways (1911, pp. 4–5). As it was the public that ultimately created this value, Adams wanted the revenues generated by their contribution to be recognized. Accountants were to be the agents by which the public interest in railway corporations would be expressed, justified, and protected. "It is the purpose of the system of accounts promulgated by the ICC", Adams wrote in 1908, "to deprive the executive officer of the liberty of deciding arbitrarily when a liability shall be taken into the accounts" (Adams, 1908a, p. 371). Adams attempted to put his convictions about the property rights of railway stakeholders into durable institutionalized reality through his work with railway accounting officers and their management counterparts. This work could not have taken place without the authority and administrative resources provided him as an agent of the ICC.

3. United States railways and the Interstate Commerce Commission

Before there was the Securities and Exchange Commission, there was the Interstate Commerce Commission, formed by act of the U. S. Congress in 1887. Though it initially struggled to find its place in the political landscape of populist rage and court conservatism, an amending act in 1906 greatly strengthened the ICC's powers, including the authority to mandate a uniform accounting code for the nation's largest corporations. By the first decades of the twentieth century, the ICC was "probably the most powerful agency in the federal government" (Stone, 1991, p. 10), and by the outset of the 1930s was popularly recognized as the "most powerful institution in

[2] The logic of contribution operates in other polities as well; see Nguyen, 2018, p. 643, on moral explanations of wealth and poverty in Vietnam.

[3] Note that enfranchisement here does not necessarily mean the awarding of voting rights in the corporation like those of shareholders. Economic enfranchisement as Krippner (2017) defines it, and as Adams (1886a) envisioned it, is rather a state of ownership in which one holds a protected right to some meaningful enjoyment of the common wealth, in the manner of creditors on a balance sheet.

the world" (Sharfman, 1931, p. 12). While the scope of the ICC's regulatory authority expanded to cover other transportation and communication industries, railway corporations were the first focus of its attention.

Economic sociologists and historians of the United States have long traced the origins of existing national market institutions of finance and production to the development of the railway industry in the nineteenth and early twentieth centuries. As Chandler (2002) writes, "nearly all the instruments and techniques of modern finance in the United States were perfected in order to fund the construction of railroads and to facilitate their growth through merger and acquisition" (p. 58). Dobbin (1994) and Perrow (2002) describe how the building of railway transport infrastructure was also the building of a regime of property rights via enduring institutions for the coordination and control of productive wealth. The central institution of this property regime is the large corporation.

Railroad corporations in the United States provided a transcontinental transport system just as important to the building of American fortunes as the joint stock VOC and EIC had been to Dutch and British elites in the United Provinces and the United Kingdom, respectively. The most valuable service of roads and canals and railways in America was to transport raw goods and merchandise between coastal port cities and the interior. Important early railways like the Baltimore and Ohio, Charleston and Hamburg, Pennsylvania, and New York and Erie were all built in the 1830s through the 1850s for this purpose, while the transcontinental Union Pacific–Central Pacific lines, completed in 1869, were heralded by California Senator William Gwin as the means by which the U.S. would snatch from England the "permanent control of the commerce and exchanges of the world" (35th Cong., 2d Sess., p. 55, cited in Fogel, 1960, p. 41).

The economic development of the West through the building of the transcontinental railway system generated violent disputes between existing populations, settlers, and speculators. Railway corporations, as national institutions of a scope and influence on par with the federal military, were at the center of the controversy. From his position as head of the Division of Statistics and Accounts at the ICC, Adams hoped to use the Commission's power over the financial account-keeping and reporting of railway corporations to rationalize and democratize the management of corporate assets. As he wrote to one of the Commissioners, "Accounts, if they be honest, are true records of administration, and he who controls accounts can, in a large measure, control the policy of management" (Adams, 1893, p. 403, cited in Miranti, 1989, pp. 478-479)

Adams' desire to exercise control over corporate management was not surprising, given the tumultuous early history of the railway industry in the U.S. Since the boom of the 1850s, railway construction had in many places been a chaotic scramble of hyped-up promotion, overbuilding, corruption, and bankruptcy, in which local, state, and private funding for the extension of transport infrastructure had frequently and ignominiously evaporated (Perrow, 2002; White, 2003). As the members of the ICC noted in their second annual report of 1888, the Congressmen who created the Commission "indicated very clearly…the importance of careful and thorough work in executing [the law's] provisions" regarding the collection of financial statistics on railroad corporations and "recognized the importance of reliable and accurate information for the use of investors in railroad securities…" (ICC, 1888, pp. 58–59). In addition to the parts of the original 1887 law that charged the Commission with the task of responding to shipper complaints of illegal rebates and rate discrimination, Section Twenty of the Interstate Commerce Act authorized the ICC to require annual financial reports from the railroads.

One of the earliest consequences of the passage of the 1887 legislation was the formation by railway accountants of a professional organization just for them. At the time that Section Twenty came into effect, the field of accounting in the United States was in its infancy. The American Association of Public Accountants (AAPA) was incorporated in September of 1887, just months after the Interstate Commerce Act's passage earlier that year (Previts & Merino, 1998, p. 138). The American Association of Railway Accounting Officers (AARAO) was organized in 1889, in response to and as a result of the ICC's summoning of railway executives to Washington to aid in the creation of a form of annual report from the railroad corporations to the ICC (Railway Accounting Officers, 1888). The new requirement that all railways connected to the interstate system provide information on a uniform list of financial and operating topics required "radical changes in the system of accounting necessary on the part of many roads," according to the ICC report to Congress, as the staffs of many railroads struggled to provide basic information on capital structure, revenues, and expenses (ICC, 1888, p. 60).

Railway accounting was an important part of the evolution of business training in the U.S. In the last decades of the nineteenth century, as they moved up in status from clerks to corporate officers, prospective accountants had new opportunities for university-level education beyond the apprenticeships and proprietary schools previously available. In his simultaneous role as head of the department of Political Economy at the University of Michigan, Henry Carter Adams used railway-related problems to teach undergraduates financial statistics, accounting, and topics in economics (Shaw, 1943, pp. 532–536). Railway corporations were of great interest to business-bound students, as Adams wrote to a colleague in 1900, "I gave a few lectures in railway accounts and designed to make these so dry as to decrease the size of the class, but failed to succeed; this semester three times as many have elected the course" (Adams, 1900, p. 3). Adams' concurrent work in regulating railroads was an integral part of his teaching: "I take the Form for Annual Report [used by railroads in compliance with Section Twenty's reporting requirements], analyze its accounts, show the relations between the accounts and in this manner work back to some of the fundamental questions of accounting" (Adams, 1900, p. 3).

Federal regulation of the nation's largest corporations developed in tandem with the standardization of corporate accounting in the U.S. While the original Section Twenty of the 1887 Act to Regulate Commerce generated a new source of information on the financial and operational situation of the nation's railway corporations, the form by which this information was collected provided little specification as to how the data was to be produced. Under these conditions, the facts collected by the ICC were little more verifiable than those previously published by the railway press, which similarly depended on a process of information production not integrated in any meaningful way into the corporation's management (Chandler, 1956, pp. 216–217). In 1906, Congress passed a set of amendments to the Interstate Commerce Act, known by the name of their Congressional sponsor, William Peters Hepburn. Among other important provisions strengthening the rate-setting and enforcement powers of the ICC, the Hepburn Act augmented Section Twenty to authorize the Commission to "prescribe…a uniform system of accounts, and the manner in which such accounts shall be kept", making it "unlawful for such carriers to keep any other accounts, records or memoranda than those prescribed or approved by the commission…" and to examine and penalize with fines or imprisonment those carriers who did not comply (Hepburn Act of 1906, Pub. L. No. 59-337, 34 Stat. 593-4). Hepburn brought to Adams' Division of Statistics and Accounts both an authority and a capacity that it did not have before: to mandate the way that the nation's largest corporations kept their books, and to employ a large staff of accountants and traveling examiners to see that they did. Writing in the *Quarterly Journal of Economics* in 1906, economist Frank Dixon predicted that the amendment of Section Twenty would "have more influence than any other section of the statute upon the elimination of existing transportation evils" (Dixon, 1906, p. 40).

The Hepburn amendments also held important implications for the professional status of corporate accountants. As ICC Commissioner James S. Harlan wrote to a gathering of railway accounting officers in 1907, the new law "imposes upon you a large ultimate responsibility. To some extent at least it makes you joint administrators with us of the act to regulate commerce". (Harlan, 1907, p.3). The editor of the journal *Railway Age* likewise traced to the year 1907 a change in the railway accountant's own understanding of himself, from "confidential bookkeeper" employed by a single officer or group of directors to a professional with "fiduciary responsibility to the security holders of the company, which gives them an added duty and a new self-respect" (Railway Accounting Officers Association, ca. 1920). Then president of the AARAO, A. H. Plant, predicted that the new powers of the ICC to mandate accounting rules would strengthen the professional autonomy of railway accountants over "other associations" that have "had an advantage in this respect, and to some extent your territory has been invaded by them" (AARAO, 1907, p. 42).[4] With the passage of Hepburn, "your rulings henceforth, if approved by the Commission, will be mandatory and the invasion of your territory by other Associations will cease" (AARAO, 1907, p. 42).

Adams himself argued that the Hepburn legislation had "created a new means of exercising Governmental supervision over railway operations, for it enables the Interstate Commerce Commission to make every accounting officer in the country its agent for the administration of the law…as if the railway were the property of the Federal Government, and the accounting officers its employees" (Adams, 1907, p. 5). Citing continuing public mistrust of the management of the railways, Adams concluded that "if this new feature of the law [the capacity for administrative supervision carried out through the control of corporate account-keeping] can be made to work, there will be an end of the argument for Government ownership" of railroads for which more radical reformers were calling (Adams, 1907, p. 5). Hepburn promised another means to democratize property rights to the nation's largest joint enterprises and distribute more equitably the costs and benefits of transportation to the multiple publics whose interests found representation in Congress. Uniform accounting procedures, culminating in the form of balance sheet statement (the "key to all accounts" (Adams, 1918, p.163), to which the income statement also importantly contributed), were the unglamorous but powerful technical and moral instruments by which this promise was to be fulfilled.

4. The negotiation of a uniform accounting code

From the moment of the signing of the Hepburn Act on June 29, 1906, the leadership of the AARAO began working with Adams to create the uniform system of accounts that the Act prescribed. One of the members of the organization, assembled at their yearly meeting, had "received an intimation from officials of the federal government" that the AARAO's assistance would be solicited in working out that part of the Act authorizing the ICC to create and enforce the code (AARAO, 1908, p. 64). A Standing Committee on Corporate, Fiscal, and General Accounts was created that very day, comprised of twenty-five AARAO members chosen from the chief accounting officers of major roads, many of them past presidents of the association (AARAO, 1907, p. 53). Its first meeting was held six weeks later. Henry Carter Adams convened the Committee of Twenty-Five, as they came to be known internally, and with them began the work of compilation of the various classifications and statements that would make up the official code. The ensuing years of 1906–1910 saw what Adams later remembered as "that nation-wide symposium…out of which American railway accounting emerged as a standardized system" (1918, p. vi).

In addition to Adams and the members of the Committee of Twenty-Five, another membership organization was involved in the negotiations, though in a more backstage manner. From their earliest efforts to collect financial and operational information on the railroads, the ICC actively solicited input from the American Railway Association (ARA), an organization whose members included railway presidents and vice-presidents and operating managers. These latter officers—General Managers, General Superintendents, Divisional Superintendents—made up the bulk of the organization's membership, which was first convened in 1872 as the General Time Commission for the purpose of coordinating railway timetables. Since the Comptroller and Auditor members of the AARAO were also officers of the railroads (sometimes with the additional title of second or third vice-president), membership in the two organizations overlapped, though their efforts did not always align. The ARA was acutely interested in the negotiation of a uniform accounting code for the industry as the rules of the code had a direct impact on the calculation of asset values and operating surpluses for which managers and superintendents were held accountable.

The negotiation of a uniform accounting code among Adams, the Committee of Twenty-Five, and the ARA involved issues central to modern economic enterprise and to the definition of capital itself. Adams' contemporary Max Weber (with whom Adams had served as a lecturer at the 1904 World's Fair) used questions from accounting practice to define "capital":

> In order to test the usefulness of the present business-accounting term [capital], which is now being increasingly employed in scientific writings again, it is necessary only to ask the following questions: (1) What does it mean when we say that a

[4] Plant may have been speaking of the American Railway Association; see section 6.1.

> corporation has a 'basic capital' (net worth) of one million pounds? And (2), what when we say that capital is 'written down'? What, (3), when corporation law prescribes what objects may be 'brought in' as capital and in what manner? (Weber, 1978, p. 94)

Perhaps a decade prior to Weber's voicing of these questions, in an address before the 1908 convention of the American Association of Public Accountants, Adams argued that it was "essential that a uniform definition be given to the phrase 'capital outstanding'…and that uniform methods be followed in the classification and assignment of corporate investments" (AAPA, 1908, p. 147). Adams went on to identify

> three questions which are not only fundamental in the science of accounts, but which bear a peculiar significance when we consider the reasons which prompted Congress to confer upon the Commission the right to prescribe accounts for transportation agencies. These questions pertain to the following points: First. The inclusion of depreciation in operating expenses. Second. The treatment of abandoned property. Third. The propriety of secret reserves. (AAPA, 1908, p. 151)

Adams predicted these three questions would create controversy between "the management of great properties on the one hand, and the accountant on the other; for the accountant is in a peculiar sense the professional representative of the investor in corporate securities and of the general public" (AAPA, 1908, p. 151).

As they worked together on the creation of a uniform accounting code for the railway industry, both Adams and railway management came to view the form of balance sheet statement—one of the last components of the code to be negotiated—as especially important to the determination and justification of shipping rates and investment returns. While the income statement was arguably of greater use to the investor in determining the progress of his investment, it was in the negotiation of the balance sheet that all of the tensions between Adams, railway accountants, and railway management came to a head. Warning signs abounded that the negotiation of this statement would be an especially intense exercise in reason-giving, of the kind Tilly (2006) describes. In an examination of the reasons people give for the things they do, Tilly writes, "we should notice that on average people argue harder about reasons when they disagree about the nature of their relationship, when the relation is intense, or when at least one of the parties has something to lose by acknowledging the character of the relation" (Tilly, 2006, pp. 14–15). Such was to be the case with the balance sheet statement, which was to generate a moral argument-in-code for a particular distribution of property claims on the wealth accumulated in the railway itself and, indirectly through rates, on the wealth that the railways carried.

In November 1908, two years into his work with the Committee of Twenty-Five, Adams received a letter of advisement from his assistant Charles Lutz regarding Adams' upcoming attendance at the Committee's next meeting, at which Adams was to propose a form of balance sheet statement. By this point, Adams and the Committee had already created together most of the classifications and statements that would make up the uniform code. Lutz, who was himself a comptroller on the Louisville & Nashville Railroad and a leading member of the AARAO, wrote that A. H. Plant, auditor for the Southern Railway, Chairman of the Committee of Twenty-Five, and member of the ARA's Standing Committee on Statistical Inquiry, had intimated to Lutz that the "apprehended action by the American Railway Association, inimical to the Association of Accounting Officers and the Committee of Twenty-Five" was not likely to occur after all (Lutz, 1908, p. 1). Plant was thus giving Adams the green light to proceed with the discussion of the balance sheet at the upcoming meeting of the Committee as planned.

Though the letter does not specify what the ARA's "apprehended action" had been, in a report to the annual convention of the National Association of Railway Commissioners a month earlier Adams thought it "proper to state" that a committee of executives from the American Railway Association had "urged strongly upon the Interstate Commerce Commission the abandonment of the rules and accounts involving the formal recognition of a depreciation charge in operating expenses", a request that was denied by the Commission "for the reason that the recognition of the principle of depreciation was believed to be essential to secure in the reports of the carriers a correct statement of net revenue from operations" (NARC, 1909, p. 141–142). The Classification of Operating Expenses earlier negotiated by Adams and the AARAO and issued in 1907 had included the requirement that railway corporations make monthly charges for depreciation on rolling stock and equipment, recommending straight-line charges but allowing each railway to estimate the life of the assets to which the requirement applied.[5] The form of balance sheet statement proposed by Adams included on the liabilities side a replacement account in which depreciation charges would accumulate.

While the Committee of Twenty-Five had already agreed with Adams to include formal depreciation charges in operating expenses, among the larger community of railway accountants and managers the topic remained controversial (AARAO, 1908, p. 66). Greater controversy was yet to come. As Adams related in a letter to ICC Commissioner James Harlan, penned shortly after the three-day meeting with the Committee, "the balance sheet I submitted was severely handled, and a substitute balance sheet was voted" (1908b, p. 1). When Adams told the members that he could not agree to the principles they wished to be expressed in the form of balance sheet statement, they voted again to take an adjournment for a few months. Adams wrote to Harlan that "my interpretation of this was that the members of the Committee wanted to go home and consult their executive officers as to what policy they should pursue" (1908b, p. 4).

Adams concluded his letter to Harlan by pledging to supply him and the rest of the Commission with a detailed report upon the multiple points on which Adams and the Committee of Twenty-Five had differed, which with an earlier report on the topic of

[5] Prior to that year, as Adams (1918, pp. 94–95) later recounted, many roads did not make regular charges for depreciation, maintaining productive capacity through maintenance charges as needed and paying the whole cost of replacement of fully depreciated equipment when revenues allowed. The ICC's Classification provided for depreciation charges on fixed assets as well as on rolling stock and equipment, but required only the latter.

depreciation would "place the Commission in possession of every significant controverted question that arises in connection with a standard system of railway accounts" (1908b, p. 4). When Adams sent the aforementioned report to Harlan a few weeks later, he prefaced its contents as covering "certain points likely to arise in connection with the formulation of a standard balance sheet respecting which it is possible that my recommendations to the Commission will not be in harmony with the views of the accredited representatives of the American Railway Association" (Adams, 1908c, p. 1). Though Adams' meeting had been with a committee of accounting officers, it was the association of railway management that he identified as the source of the conflict (see Fig. 1).

Adams noted that the issues being contested "are, in a partial degree only, points of accounting. They involve questions that affect the relation of railways to the public in a broad and comprehensive way; they touch the Commission's policy and may possibly proceed so far as to involve the necessity of congressional action" (Adams, 1908c, p. 3).

While Adams' form of balance sheet statement was eventually issued without recourse to further legislation from Congress, the creation of this part of the code was marked by an unprecedented level of dissent. A closer look at two of the micro-level technical topics on which the ICC and representatives of the railways collided—the requirement of formal depreciation charges on equipment and the treatment of abandoned property—demonstrates the macro-level constraints and conflicting logics of valuation those representatives faced and employed. Though the internal demands of professionalization may have enhanced Committee of Twenty-Five members' susceptibility to Adams' arguments for standardized accounting rules, the need to attract investment capital equally prompted railway officers—accountants and managers alike—to resist them. The difference, as Hill (1987) has argued, was in whom these corporate officers saw themselves compelled to represent; who were the "we" being represented on the creditor side of the balance sheet (p. 6)? And how did accounting rules provide a mechanism for deciding who deserved what? These questions were implicit in the negotiation of the uniform code.

While the first topic on which Adams and the Committee contended was that of requiring formal depreciation charges on rolling stock and equipment, a second and even more thorny problem was the treatment of fixed assets abandoned in the course of improvements. Property abandonment was often the result of a railway management's decision to flatten the grade or straighten the curve of a stretch of track, improving transport efficiency, or to build more substantial stations or shops, leaving the old track or buildings behind. Adams argued that the cost value of abandoned property should be written off, as it was no longer in use for transportation and thus should not be included in the rate base. The Committee of Twenty-Five disagreed. As Adams wrote to ICC Commissioner Harlan, "this [treatment of abandoned property] is one of the points of permanent disagreement between myself and the representatives of the carriers" (Adams, 1908c, p. 7) (see Fig. 2).

Recognizing the burden that a large write-down would create for the corporation should the value of property abandoned be charged to any one period, Adams proposed to allow the corporation to carry the historical cost value of the abandoned property on the assets side of the balance sheet as a deferred debit item, segregated from the rate base, to be paid down out of income over a series of years.[6] Floating this idea with the American Association of Public Accountants in preparation for his fated meeting with the Committee, Adams noted that the suggestion "which is in the nature of a compromise between the extreme claims of the contending interests, should meet with sympathetic reception, not only because it seems to satisfy the demand for equity and fair dealing, but it indicates a policy under which investors will be willing to purchase the securities of public service industries" (AAPA, 1908, p. 155).

Contrary to Adams' hopes, however, his proposal regarding the treatment of abandoned property was one of multiple features that did not receive a "sympathetic reception" from the Committee of Twenty-Five in its meeting one month later. Instead, the members passed a resolution "asserting the right of the carrier to keep in its Property Account the value of property abandoned on the ground that such property was at one time an investment" (Adams, 1908b, p.2). By "Property Account" the Committee referred to the first account on the assets side of the form of balance sheet statement, the figure on which the fairness of rates and returns was calculated. This resolution reflected an understanding of the principles of corporate accounting practice of which Adams, on behalf of the ICC, could not approve.

5. Orders of worth in the negotiation of a uniform accounting code

To understand the impasse that developed between Adams, members of the AARAO's Committee of Twenty-Five, and the ARA as they negotiated the rules of capital accounting, it is helpful to see the years 1906–1910 as a "critical moment in history," as defined by Boltanski and Thévenot (1999): a time and place in which "people, involved in ordinary relationships, who are doing things together… and who have to coordinate their actions, realize that something is going wrong; that they cannot get along any more; that something has to change" (p. 359). Disputes among actors in the industrializing U.S.—i.e., the users of railways and those who managed them—culminated in a technical but also moral negotiation over the distribution of development costs and gains. The old arrangement, under which railroad lines were built and run by an uncoordinated combination of disparately regulated public and speculative funding, no longer sufficed. In such a moment, the "persons involved are subjected to an imperative of justification," under which, following "rules of acceptability," they attempt to "produce a story which makes sense", in order to "set up a claim, unveil an injustice,

[6] For example: A railway replaces a building originally costing $1000 with a more substantial one costing $5000. The cost of the new building ($5000) is debited on the assets side under Investment in Road and Equipment, and the cost of the old building ($1000) is concurrently credited to the same account, minus salvage. This latter amount ($1000 minus salvage) is debited on the assets side to the deferred debit account, Property Abandoned, Chargeable to Operating Expenses, thus removing it from the rate base. Over a period of time, the $1000 minus salvage is charged to Operating Expenses and concurrently credited to the deferred credit account, Operating Reserves. This latter account is charged with the $1000 minus salvage, and the Property Abandoned account credited with the same. Thus offset, the abandoned property is written off the Balance Sheet.

Fig. 1. Henry Carter Adams, hand-drawn cartoon illustrating conflict between the Committee of Twenty-Five and the ARA over form of balance sheet statement. Text at bottom reads: "Where would the baby get off? Probably at a station called Government Ownership." Henry Carter Adams Collection, Bentley Historical Library, University of Michigan.

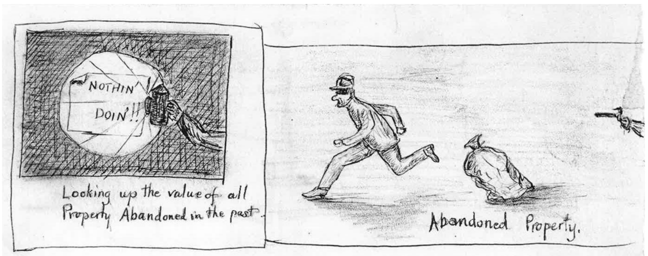

Fig. 2. Henry Carter Adams, hand-drawn cartoon illustrating railroad management's resistance to reporting of abandoned property, Henry Carter Adams Collection, Bentley Historical Library, University of Michigan

and ask for atonement" (Boltanski & Thevenot, 1999, pp. 360, 363). Disputes over procedures for calculating the rate base were disputes over the story that the balance sheet statement would tell about whether or not rates and returns were fair.

Adams, the Committee, and the involved members of the ARA had available to them at least three different "orders of worth"—civic, industrial, and market (Boltanski & Thevenot, 1999, p. 368)—to employ in the negotiation of the uniform accounting code. In his reasoning on depreciation, Adams applied both a civic and an industrial order of worth to the valuation of depreciated assets. His use of a civic order of worth was reflected in his concern for maintaining and reporting accurately the value of railway assets purchased with capital contributed by multiple stakeholders in the corporation, including not only controlling shareholders but also shippers, long-term investors, consumers, and communities, the collectivity to whom Adams referred as the rate-paying and security-holding "public." Adams wanted to see these stakeholders' contributions protected in the accounts that made up the balance sheet. To do this, he also called on an industrial order of worth, using the professional expertise of corporate accountants to provide accurate statistics encompassing all of the costs of railway transport, including the loss of capital invested in equipment that wore down past repair or ended its life in obsolescence.

Adams' use of both civic and industrial orders of worth can be seen in his preface to the *Annual Report on the Statistics of Railways in the United States* for the fiscal year ending in June 1907, which contained the results of the first year's requirement of formal depreciation charges on equipment. Among the tasks of the railway accountant, Adams argued, was the practical recognition of the existence of an "industrial law, a law which works regardless alike of the corporation's policy of management or the Commission's rules of accounting," that "capital assets are consumed in operation" (ICC, 1909, pp. 22–23). Accurate accounting, Adams claimed, required that depreciation charges be recorded in the accounts in the period in which they occurred. The purpose of the uniform accounting code was to require of the railway corporation that "facts should be recorded as they are rather than as the operating or financial management may wish to have the market or stockholders think that they are" (ICC, 1909, p. 23).

Brief (1965) defines as accounting error "the failure to systematically distinguish between capital and revenue expenditures and the failure to periodically allocate the original cost of fixed assets to expense" (p. 14). Rule-making in accordance with an industrial order of worth demanded an error-free statement of operating costs. Adherence to good accounting practice also expressed a civic order of worth for those like Adams who believed in the power of official statistics to force corporate management to act as public-minded stewards of the assets with which they were entrusted. By determining a real rate of return on the capital actually employed in the production of railway transport, the ICC's Division of Statistics and Accounts would provide the facts necessary for determining whether the contributors of that capital—investors and rate-payers both—were receiving fair compensation for their investment.

As aspiring professionals, railway accounting officers understood the logic of the procedures proposed by Adams. Scientific objectivity required that the form of balance sheet provide for recognition of the costs borne and capital contributions made by multiple stakeholders in the railways. As the editor of the *Railway Age* had noted, after the passage of Hepburn the railway accountant was no longer the "confidential bookkeeper" of a single officer or board of directors, but a professional with duties to a larger public (RAOA, ca. 1920). To be recognized as such, railway corporation accountants needed to show themselves to be independent experts following internally-determined standards of procedure, unbiased by personal interest, and seeking to follow with maximum efficiency the pursuit of internally-defined ends. Freedom from bias would require accounting for the full cost of transport provision to rate-payers and long-term investors as well as to the holders and traders of shares. Identification of the stakeholders to which one is accountable has an impact on the mechanism of valuation one favors and the order of worth one employs.

As the employees of a board of directors, however, concerned with the market value of the corporation's securities, and recognizing the imperative to pay a low price for capital, accounting officers could also sympathize with operating and financial managers' preference for flexibility in accounting for the depreciation of assets used in transport production. When competing for capital, railway officers employed a market order of worth, in which the value of an asset was determined by its attractiveness to investors. Flexibility was the issue; executives tended to favor a less formal approach to dealing with depreciation than the one that the ICC required, preferring to maintain road and equipment just enough to keep the trains running and replacing them as needed when revenues were high.

Railway accountants were thus suspended between three orders of valuation (civic, industrial, and market) as they debated the topic of depreciation. Some leaders in the railway accounting community publicly recognized the legitimacy of Adams' position. At the 1908 meeting of the AARAO, Committee of Twenty-Five member and Erie Railroad Comptroller M. P. Blauvelt grudgingly voiced his acceptance of the ICC's requirement of formal depreciation on equipment, noting that it was "idle to argue that there is no such thing as depreciation" and describing the requirement as "eminently fair" (AARAO, 1908, p. 68). And at the annual meeting of the AAPA, A. W. Teele, C.P.A., spoke in favor of formal depreciation for the railways, noting that many of the leading roads already practiced this as a matter of course (AAPA, 1908, pp. 159–160). At the 1908 meeting of the ARA, a member of the Special Committee on Relations with the ICC reported that, while in the Committee's opinion the ICC had "no legal right to demand the charge of depreciation", the force of this argument was diminished by the lack of unanimity among the railway officials of the country "as to the general principles involved [in the charging of depreciation] and the ends to be obtained" (ARA, 1909, p. 615). This lack of agreement hampered the ARA's attempt to present a unified opposition to the requirement.

5.1. Orders of worth and the problem of depreciation

The archived arguments of one prominent railway executive illustrate the complex issues at stake in the dispute over asset valuation procedures and their impact on the rate base. This officer expressed a market order of worth in his opposition to the ICC's new rules, but used a moral logic of contribution to make his case. Writing in response to a circular on the new depreciation requirement sent out by Adams' office earlier in 1908, and with an eye to the upcoming work on the balance sheet, railway officer W. H. Williams began the first of two letters to the ICC with the assertion that the railway company's assets were private property, and that the Commission's new rules infringed upon the enjoyment of that property. "The property of this Company, Williams wrote, "is as much its private property as are the belongings of any private citizen…It is not to be supposed in attempting to <u>regulate</u> the business transacted by interstate commerce carriers the Government intended to deny the application of <u>economic laws</u> to valuation of <u>increments earned or unearned</u>, while insisting upon thereof in the case of <u>equally unearned and possibly unmerited Depreciation</u>" (Williams, 1908a, p. 1).

Williams, a member of both the ARA and the AARAO, was a railman who had risen from assistant cashier in an Ohio freight office to the position of Third Vice-President of the venerable Delaware and Hudson Company (Biographical Directory of the Railway Officers of America, 1906, p. 661). The existing historical record does not indicate what Williams' duties as a Third Vice-President were, though his employment history and his inclusion on the AARAO's Committee of Twenty-Five indicate his involvement in the Delaware and Hudson Company's financial reporting. Though not a university graduate, Williams was a 1910 contributor to the American Economic Association *Quarterly*, where he wrote about the valuation of assets in public service corporations (Williams, 1910). In his correspondence with the ICC, Williams opposed both a proposed rule stipulating that assets be valued at historical cost—a value-minimizing procedure, as post-1900 inflation and economic development tended to raise the market value of assets—and the requirement that depreciation be charged, either to operating expense in the case of regular depletion of value by time or use, or to profit and loss in the case of exceptional asset-wasting events more readily attributable to the actions or inactions of the corporation's board of trustees. Williams (1908a) found these combined requirements unfair to the corporation's owners, whom he identified exclusively as its stockholders.

Using the language of merit and unmerit, "increments earned and unearned" (1908a, p. 1) Williams claimed that stockholders and the managers that served them would be unfairly treated by rules that depress operating surpluses with depreciation charges and yet prevent the augmentation of those surpluses by appreciation in the market value of the railroad, by limiting asset value to original cost. Though he didn't say it explicitly, throughout the letter Williams' arguments imply that the entrepreneurs who risked their time and effort in getting the initial charter for the railroad were not being compensated for that effort. These were the very people whom Adams, by contrast, described as enjoying too great a freedom to "sponge" up "unattached values" provided by other stakeholders in the road and in the cargo it carried (Adams, 1911, pp. 4–5). By favoring asset valuation at historical cost, requiring formal depreciation charges to operating expenses, and limiting the claims of shareholders to contributions actually made,[7] Adams was attempting to institutionalize a property claim on railway assets for these other stakeholders (shippers, small investors, and local and state governments) who also risked their own contributions in the building up of assets and profits. For Adams, formal depreciation charges were a means to protect the common good, by calling on professional accountants to accurately and transparently record the maintenance expenses on all capital actually invested in the provision of railway transport. Williams, though a member of the Committee of Twenty-Five, clearly operated from a different order of worth, in which asset values were measured by the price they could fetch on the market for the legally-recognized owners of the property: the corporation's shareholders. "The courts," Williams wrote,

> have held that the several items are worth the amounts at which they can be disposed of (in commercial parlance) 'as they are'. If this is to be the final holding, and values are the sums realized through sales by a willing seller to a willing buyer, then in analyzing the General Balance Sheet the plus and minus quantities should be equally considered and Appreciation and Depreciation treated alike. (1908a, p. 1)

In Williams' opinion, the corporation's assets should be valued at market price, at whatever the stockholders could get for them, to the extent that the law allowed. Williams insisted that the stockholders are "the real owners of the property" (1908a, p. 3), and that the railway corporation should be looked at as a "joint partnership" between the stockholders only (Williams, 1908b, p. 3). Accordingly, he saw no need to provide via accounting rules a distinction between the price stockholders actually paid for the purchase of productive assets and the current market value of those assets. This is in direct contradiction with Adams' proposition that the public be considered partners in the corporation (Adams, 1911, pp. 12–13), and that their property claims also be represented in the corporation's accounts.

Williams used the moral language of earning and merit to argue that the ICC's proposed rules for valuing assets used in the production of railway transport—the base on which the fairness of railway rates was determined—were unfair. At this critical moment in the industrial history of the United States, it was not enough for the controlling shareholders of the corporation to simply say, "We will take whatever the law allows." Where the distribution of power between disputants renders the use of violence unequal to its cost, each party must provide reasons for their choice of valuation procedure in terms that encompass more than just personal gain. Under such conditions, disputants may employ a moral logic of contribution, like that expressed in the arguments of Adams and his railway colleagues with regard to the form of balance sheet statement. This logic is not simply calculative or coordinative in the sense of making argument possible; it claims to use calculation to reward classes of actors involved in the corporation in proportion to their contribution to the corporation's property. In this way a logic of contribution differs from what Boltanski and Thevenot term the coordinating "regime of justification" (Boltanski & Thevenot, 1999, p. 361), as the former contains a specific theory of justice of the kind identified by Wuthnow (2008) and Huston (1998) in which wealth is the reward of skill, thrift, and labor. The logic of contribution provides a bridge between market and civic/industrial worlds of worth. This is further illustrated in a second point of contention between Adams and the Committee of Twenty-Five: the treatment of abandoned property on the corporation's balance sheet.

5.2. Orders of worth and the treatment of abandoned property

The Committee's negative reaction to Adams proposed rules for dealing with abandoned property was forecast in the second of Williams' letters to the ICC, sent in September of 1908. In this letter, Williams once again objected that, like the rules surrounding depreciation and the use of historical cost to determine the value of investment in road and equipment, Adams' treatment of abandoned property failed to compensate the corporation's investors for the work and risk involved in building transportation infrastructure in contested territory. To stay competitive, Williams argued, established companies must often abandon old trackage in the course of improvements to grade and material. Requiring abandoned property to be written off, however, would "result in the practical confiscation of the property" built by the first investors, without which the newer track would never have been laid (Williams, 1908b, p. 6). To require existing investors to pay for that contribution without compensation would have an effect similar to that Williams also attributed to the requirement of writing off discounts, that is, to "deny the right of investors to a fair return on their investment" (Williams, 1908b, p. 4). Here again, Williams uses the logic of reward for contribution to justify his claim that stockholders should not be required to forgo profit on current operations by being required to pay out of income the cost of replacing assets created through the

[7] Adams and the Committee also disagreed about the treatment of discounts on stocks and bonds. The Committee wanted the value of discounts included in the rate base. Adams disagreed, creating a deferred debit item for discounts similar to that used for abandoned property. Adams' position prevailed.

exertions and investments of the original stockholders in developing the business necessary to support a new line.

Williams' company, the Delaware and Hudson Company, found itself in this situation, having been organized in the 1820s to transport coal over river and canal from Pennsylvania to New York City. So too did another railway, chartered to connect the interior markets of Kansas City and Pittsburgh with ports on the Gulf of Mexico. In late 1909, the ICC received a series of letters from R. J. McCarty, Vice-President and Auditor and member of the AARAO, "inviting the attention of the Commission to the embarrassment of the Kansas City Southern Railway Company due to the Regulations concerning the Accounts of Steam Roads, effective July 1, 1909" (McCarty, 1909). The Accounts that McCarty referenced were those of the new Form of Balance Sheet Statement, officially issued by the ICC on June 21, 1909, in accordance with the rules proposed by Adams. This Form, as the Secretary of the ICC noted, represented "the lawful rules according to which all entries in the accounts involved in such statement are defined" and that "each and every person directly in charge of the accounts of any such carrier…under the law is responsible for" (ICC, 1909, p.6). The stated purpose of McCarty's letter was to object to the treatment of abandoned property. The larger issue, however, as Adams' notes in the margins of his copy of the letter make clear, was the distribution and justification of property claims to railroad corporation assets and revenues, again including the assignment of the costs and rewards of building in newly-acquired territory.

Property abandonment was common among railroads that had been built cheaply the first time, along routes not yet sufficiently expropriated to produce the freights necessary to cover the construction expenditures of a road built to last. As the Form of Balance Sheet now stood, railway corporations that abandoned old tracks or plant to replace them with better routes or materials were required to write off the value of property that was being replaced, even for purposes of improving the railroad's efficiency in delivering transport services to the public. McCarty had a pressing desire to see this requirement lifted, as the Kansas City Southern had just begun to make extensive improvements to its line. Writing off the cost of abandoned track would depress the corporation's profits and make investment capital harder to attract.

When McCarty argued that rate-payers should in fairness continue to pay a return on the capital expended for the original tracks, Adams strongly disagreed, pointing to the the negotiation of moral obligations involved in the design of the accounting code. Where McCarty argued in a follow-up letter to Commissioner Harlan that "surely the Commission would not deliberately deprive the Company of a normal rate of interest"—an appeal demanding compensation for the contribution of investors—Adams scribbled in the margin,

> This is an adjustment; a bargain or an agreement. The public—represented by the Commission—desires improvement [the replacement of the old road with one of better grade]. The stockholders desire it because it is necessary to protect or to increase the earning power of this investment. There is a burden incident to making the improvement, and the public through the rules of the Commission states what portion of the burden it is willing to bear. The carrier cannot call this an obligation or liability. *The public owes the railroad nothing* [emphasis added]. (Handwritten by Adams on letter from McCarty (1909))

In his response, Adams argues that the distribution of the cost of laying tracks in an undeveloped territory—namely, the risk of needing to lay tracks twice as traffic conditions change—should not be shouldered by ratepayers alone, as McCarty's favored way of accounting for abandoned property would institutionalize in perpetuity. The Form of Balance Sheet Statement was the mechanism by which Adams hoped to make this moral judgment operative.

Acting as representative of the rate-paying public, Adams and the ICC offered the railroads a bargain in the form of an item on the balance sheet: taking the value of abandoned property out of the rate base, but expensing its loss over a period of years. This is the way the code was finally to deal with abandoned property, through an asset valuation procedure upheld by the Supreme Court in *Kansas City Southern Railway Company v. the United States of America and the Interstate Commerce Commission* in 1913. In its decision, the Court rejected the railroad's claim that their initial contribution via investment in property later abandoned should be rewarded by higher rates in perpetuity. Though the abandonment was made for the purpose of improving transport service, by not providing in its earlier accounts for this eventuality the company had failed to perform its

> plain duty…to exact sufficient returns to keep the investment unimpaired, whether this is the result of unwarranted dividends upon overissues of securities, or of omission to exact proper prices for the output, the fault is its own. When, therefore, a public regulation of its prices comes under question, the true value of the property then employed for the purpose of earning a return cannot be enhanced by a consideration of the errors in management which have been committed in the past. (Kansas City Southern Railway Company v. the United States of America and the Interstate Commerce Commission, 1913)

In other words, if the railway had a history of paying out in dividends or rebates what should have been accumulated as a reserve for maintaining the value of capital, the rate-payers who as a class contributed to that capital should not be penalized forever for the management's error. On the other hand, Adams recognized that the original shareholders could be seen as having provided the initial funds necessary to make the experiment of building a new road (AAPA, 1908, pp. 154–5). When Adams argued in his handwritten notes on McCarty's letter that the issued form of balance sheet "creates a market" for the abandoned property (McCarty, 1909), what he described was an accounting procedure that both created and reflected an institutionally-recognized distribution of costs, in effect setting a price to be paid by the corporation's stakeholders by means of the accounting code. For the period in which the value of the abandoned capital was being gradually written down, holders of the railroad's securities would forego the enjoyment of the full returns that would be theirs when the betterment increased net revenues, but rate-payers would also forego the full savings in rates they would see from the write off of the value of the retired assets in the rate base (Adams, 1918, p. 81–82). Like the "constitutions" of the Dutch and English East India Companies, the accounting code would thus serve as an agreement between the parties to a national venture, determining the distribution of costs and surpluses generated by the assets that the venture controlled.

6. Summary and discussion

By examining the archival record of the negotiation of a uniform accounting code for U.S. railroads in the late nineteenth and early twentieth centuries, this paper has explored the role that accounting played in the federal government's earliest attempts to regulate large corporations. It has argued that accountancy and the state grew up together in the context of the railway industry, and that the standardization of corporate accounting was an important part of the development of administrative supervision as a strategy for state control of corporate enterprise. It describes the accounting code developed for railway corporations as the "cognitive equivalent of a constitution" (Starr, 1987, p. 53) among stakeholders in the nation's railways, prescribing the micro-level rules and practices by which official economic facts would be created—facts that were then used to debate macro-level questions of contribution and obligation among actors in the national economy.

Using an orders of worth theoretic (Boltanski & Thevenot, 1999), the paper compared different parties' positions in the creation of the code. On the one hand, federal statistician Henry Carter Adams, railway accountants, and railway managers favored different procedures for asset valuation as these related to the price of railway transport. Accountants, in particular, were situated among different orders of worth: civic, industrial, and market. All parties, however, pointed to the contributions made by investors in and users of the railway system, in order to justify procedures of valuation that alternately limited or expanded the field of recognized claimants on railway corporation assets and profits.

In his role at the ICC, Henry Carter Adams sought to defend the property rights of shippers, long-term investors, consumers, and communities. His work with the Committee of Twenty-Five on a uniform accounting code for the railway industry had important effects on the distribution of agricultural, industrial, and financial wealth in the twentieth-century U.S. (Collier & Miranti, 2020). Adams' dedication to representing the interests of "the public" in the valuation and assignment of property claims to the nation's first big business resulted in more affordable transport rates for farmers and other shippers too small to negotiate rebated tariffs. His leadership in the collection and publication of statistics on the financial health of railway corporations led to a more equitable distribution of the cost of default risk across investors in railway securities (Miranti 1989, pp. 505–9). A decade after Adams' death, Berle and Means (1933) famously argued that the ownership and management structure of the large corporation had evolved in such a way as to include the interests of multiple stakeholders in corporate decision-making. By the late 1960s, however, the shared prosperity of communities and investors in core industries had begun to erode. Despite Adams' efforts, the "rights structures" of the large manufacturing and energy corporations that succeeded the railways were never formally altered, and "despite their creditor-like characteristics [that is, their status as one among many creditors], shareholders retained their exclusive control rights" (Ireland and Meng, 2017, p. 382). Why was the administrative supervision of corporations that Adams championed unsuccessful in protecting the property rights of non-controlling stakeholder-contributors in the long run?

One possibility, deserving of further research, is that Henry Carter Adams and many of his fellow reformers did not fully recognize the source of wealth inequality in the United States. Another contemporary of Adams, the sociologist W. E. B. Du Bois, argued in 1915 that the stubborn persistence of economic despotism in the United States, in contradistinction to the "American mythos" (Wuthnow, 2008) in which labor receives its just reward, was due in large part to the immense uncompensated seizure of the contributions of racialized workers to national and global wealth (Du Bois, 1915, p. 709). Forced transfers of land and labor under conditions of extreme asymmetries of power, having long occurred under varying degrees of racialized subordination, were especially lucrative in the American context – and especially prone to institutional erasure, given the mythos of labor receiving its fair reward. Accounting played a role in this outcome (Oldroyd et al., 2013). Railroads used for shipping by the affluent and politically powerful in the antebellum South were constructed almost entirely by enslaved African-American workers (Kornweibel, 2003), on land previously managed by Indigenous societies, carrying cotton that was the product of the labor and topsoil of both. The building of railways in the West likewise involved the undercompensation and seizure of vast amounts of labor and land (Angevine, 2004; Chang, 2019; Dunbar-Ortiz, 2014; White, 1991).

For all his efforts to represent "the public" in his work for the ICC, it must be noted that Henry Carter Adams' public included only enfranchised stakeholders in the national economy. Contributions to the value of "investment in road and equipment" were attributed to these alone on the liabilities side of the railways' corporate balance sheet. The only place under liabilities for uncompensated labor was for "wages accrued not paid", and that only represented the temporary postponement of payment of railway workers post-construction, with the bulk of those wages going to white-classified worker organizations (Arnesen, 2001; Licht, 1983).

One instance of the accountant's recognition of disenfranchised contributors to capital does appear in an industry older than the railroads, demonstrating once again the moral role of capital accounting in justifying a particular distribution of wealth. This industry was a generator of wealth that helped pay the costs of the American Revolution from Britain (Bailey, 1990; Chambers, 2015), just as tariffs on Southern cotton grown by under-compensated African-American farmers contributed significantly to the funding of veteran pensions and railway building following the Civil War (Bensel, 1990). In her 2018 book on management accounting in colonial and antebellum plantations in the West Indies and the Southern U.S.—places of great wealth accumulation for enfranchised members of the British and U.S. economies—Rosenthal (2018) reproduces the sophisticated accounting documents of plantation managers. One of these documents is an inventory of enslaved workers on a late eighteenth-century sugar plantation in Jamaica, prepared by its attorney-manager for an absentee proprietor in England. The inventory is set up in the form of a balance sheet statement, with the workers listed as assets on the left-hand side, and the credit side—the place on the balance sheet where the sources of those assets are to be listed—on the right (Rosenthal, 2018, pp. 10–11, fig. 1.1).

The particular balance sheet that Rosenthal reproduces from the financial documents of the plantation does not cover the total wealth of the enterprise; it is an inventory of enslaved workers as a subset of assets, set up in balance sheet form. The left-hand, assets side of the balance sheet has two categories: "Inventory" of living enslaved workers at the start of the accounting period, and babies born over the course of the period, who are "debited" to their mothers by name. According to balance sheet form, these women with the managers of the plantation are responsible to the creditors of the enterprise for the management of the plantation's assets, held in the form of state-enforced property rights to the product of each enslaved laborer's work. On the creditor side of the balance sheet are also two categories: inventory of living workers at the end of the accounting period, and names: the names of the workers who have died over the course of the period.

Racialized as inventory, workers are not specified by name. When they die, however, they become named creditors on the liabilities side of the inventory as it is set up in balance sheet form: Paul, Dolly, Nero. By a logic of contribution, these workers have a property right in the wealth of the enterprise equal to the labor they invested over their lifetime. Their listing by name presented no threat to the majority shareholder of the enterprise; the laborers were already dead, and their children had no state-enforced right to inherit their claim. Yet the moral story of obligation that the balance sheet tells about the origins of the wealth of the enterprise is there for us to see, two centuries of compounding interest later. Harris (1993) has written convincingly of a historical property in whiteness, and other analysts have demonstrated the continuing effects of generational transfers of wealth that, combined with racialized variation in wealth-building support from the state (Baradaran, 2017; Fernandez-Kelly, 2015; Katznelson, 2005; Rothstein, 2017; Taylor, 2019), have resulted in a significant and durable advantage in wealth-holding among U.S. white-classified households over their African-American peers today (Hamilton & Darity, 2017). Given that it is wealth that determines life chances, perhaps it is time for a property in non-white-ness to be recognized. Following a logic of contribution, the accounts provide the justification.

Acknowledgments

The author would like to thank Joseph R. Blasi, Paul J. Miranti, Jr., Viviana A. Zelizer, Miguel A. Centeno, anonymous reviewers, and journal editors for their invaluable comments and suggestions.

References

AAPA. (1908). *Twenty-first anniversary year-book*. (American Association of Public Accountants).
AARAO (Association of American Railway Accounting Officers). (1900, 1907, 1908). Report.
Adams, H. C. (1886a). The labor problem. Scientific American Supplement, 22(555): 8861-8863.
Adams, H. C. (1886). Economics and jurisprudence. *Science, 8*(178), 15–19.
Adams, H.C. (1893, March 23). [Letter to W. G. Veazey]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (ICC Letterbook 1891-1893), Ann Arbor, MI, United States.
Adams, H. C. (1900, February 28). [Letter to W. Z. Ripley]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan, Ann Arbor, MI, United States.
Adams, H. C. (1907, April 22). Memorandum for Mr. North. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 30, Valuation Folder), Ann Arbor, MI, United States.
Adams, H. C. (1908). Administrative supervision of railways under the twentieth section of the act to regulate commerce. *The Quarterly Journal of Economics, 22*(3), 364–383.
Adams, H. C. (1908b, November 21). [Letter to J. Harlan]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 29, Balance Sheet Folder), Ann Arbor, MI, United States.
Adams, H. C. (1908c, December 3). [Letter to J. Harlan]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 29, Balance Sheet Folder), Ann Arbor, MI, United States.
Adams, H. C. (1911). Memorandum on the work of President Taft's Commission on Corporate Securities. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 30, National Securities Commission Folder), Ann Arbor, MI, United States.
Adams, H. C. (1918). *American railway accounting*. Henry Holt and Company.
Angevine, R. G. (2004). *The railroad and the state: War, politics, and technology in nineteenth-century America*. Stanford University Press.
Annisette, M., & Richardson, A. J. (2011). Justification and accounting: Applying sociology of worth to accounting research. *Accounting, Auditing and Accountability Journal, 24*(2), 229–249.
Annisette, M., Vesty, G., & Amslem, T. (2017). Accounting values, controversies, and compromises in tests of worth. *Research in the Sociology of Organizations, 52*, 209–239.
Anthony, R. N., & Pearlman, L. K. (2000). *Essentials of accounting* (7th ed.). Prentice Hall.
ARA (American Railway Association). (1909). Proceedings.
Arnesen, E. (2001). *Brotherhoods of color: Black railroad workers and the struggle for equality*. Harvard University Press.
Association of American Railway Accounting Officers. (1900, 1907, 1908). Report.
Bailey, R. (1990). The slave(ry) trade and the development of capitalism in the United States: The textile industry in New England. *Social Science History, 14*(3), 373–414.
Baradaran, M. (2017). *The color of money: Black banks and the racial wealth gap*. Harvard University Press.
Bear, L. (2020). Speculations on infrastructure: From colonial public works to a post-colonial global asset class on the Indian railways, 1840–2017. *Economy and Society, 49*(1), 45–70.
Becher, D. (2015). The public nature of private property. In R. Scott, & S. Kosslyn (Eds.), *Emerging trends in the social and behavioral sciences* (pp. 1–13). John Wiley and Sons.
Beckert, J. (2011). Where do prices come from? Sociological approaches to price formation. *Socio-Economic Review, 9*(4), 757–786.
Bensel, R. F. (1990). *Yankee leviathan: The origins of central state authority in America, 1859–1877*. Cambridge University Press.
Berle, A. A., & Means, G. C. (1933). *The modern corporation and private property*. The Macmillan Company.
Biographical directory of the railway officers of America. (1885, 1887, 1906). The Railway Age Publishing Company.
Boltanski, L., & Thévenot, L. (1999). The sociology of critical capacity. *European Journal of Social Theory, 2*(3), 359–377.
Brief, R. P. (1965). Nineteenth century accounting error. *Journal of Accounting Research, 3*(1), 12–31.
Bryer, R. A. (2000a). The history of accounting and the transition to capitalism in England. Part one: Theory. *Accounting, Organizations and Society, 25*(2), 131–162.
Bryer, R. A. (2000b). The history of accounting and the transition to capitalism in England. Part two: Evidence. *Accounting, Organizations and Society, 25*(4-5), 327–381.
Carruthers, B. G., & Ariovich, L. (2004). The sociology of property rights. *Annual Review of Sociology, 30*(1), 23–46.
Carruthers, B., & Espeland, W. N. (1991). Accounting for rationality: Double-entry bookkeeping and the emergence of economic rationality. *American Journal of Sociology, 97*(1), 31–69.
Chambers, S. M. (2015). *No God But Gain: The Untold Story of Cuban Slavery, the Monroe Doctrine, and the Making of the United States*. London: Verso.

Chandler, A. D. (1956). Henry Varnum Poor: Business editor, analyst, and reformer. Harvard University Press.
Chandler, A. D. (1990). *Scale and scope: The dynamics of industrial capitalism*. Belknap Press of Harvard University.
Chang, G. H. (2019). *Ghosts of Gold Mountain: The Epic Story of the Chinese Who Built the Transcontinental Railroad*. Boston, MA: Houghton Mifflin Harcourt.
Chiapello, E. (2007). Accounting and the birth of the notion of capitalism. *Critical Perspectives on Accounting, 18*(3), 263–296.
Clark, J. B. (1887). Profits under modern conditions. *Political Science Quarterly, 2*(4), 603–619.
Clark, J. B. (1889). The possibility of a scientific law of wages. *Publications of the American Economic Association, 4*(1), 39–69.
Collier, D. M., & Miranti, P. J. (2020), Tariffs, rail rates and social welfare in the USA, 1887-1914. Journal of Management History, 26(4), 451–469.
Dicksee, L. R. (1905). *Auditing: A practical manual for auditors*. Robert H. Montgomery.
DiMaggio, P. (2001). Introduction: Making sense of the contemporary firm and prefiguring its future. In P. DiMaggio (Ed.), *The twenty-first-century firm: Changing economic organization in international perspective* (pp. 1–30). Princeton University Press.
Dixon, F. H. (1906). The Interstate Commerce Act as amended. *The Quarterly Journal of Economics, 21*(1), 22–51.
Dobbin, F. (1994). Forging industrial policy: The United States, Britain, and France in the railway age. *Cambridge University*. Press..
Dorfman, J. (1969). Introduction to Second Edition. In J. Dorfman (Ed.), Two Essays by Henry Carter Adams (pp. ix-xi). Augustus M. Kelley.
Du Bois, W. E. B. (1915). The African roots of war. *Atlantic Monthly, 115*(5), 707–714.
Dunbar-Ortiz, R. (2014). *An Indigenous people's history of the United States*. Beacon Press.
Fernandez-Kelly, P. (2015). *The hero's fight: African Americans in West Baltimore and the shadow of the state*. Princeton University Press.
Fligstein, N., & Calder, R. (2015). Architecture of markets. In R. Scott, & S. Kosslyn (Eds.), *Emerging trends in the social and behavioral sciences* (pp. 1–14). John Wiley and Sons.
Fogel, R. W. (1960). *The Union Pacific railroad: A case in premature enterprise*. Johns Hopkins Press.
Fourcade, M., & Healy, K. (2013). Classification situations: Life-chances in the neoliberal era. *Accounting, Organizations and Society, 38*(8), 559–572.
Furner, M. O. (2011/1975). Advocacy and objectivity: A crisis in the professionalization of American social science, 1865-1905. Transaction Publishers.
Galambos, L., & Pratt, J. (1988). *The rise of the corporate commonwealth:U.S. business and public policy in the twentieth century*. Basic Books.
Goldin, C., & Margo, R. (1992). The great compression: The wage structure in the United States at mid-century. Quarterly Journal of Economics, 107, 1–34.
Griffen, Z., & Timmermans, S. (2020). The cost of saving babies: How economists justify policies. *Economy and Society, 49*(2), 265–286.
Hamilton, D. & Darity, Jr., W. A. (2017). The political economy of education, financial literacy, and the racial wealth gap. Federal Reserve Bank of St. Louis Review, First Quarter, 99, 59–76.
Harlan, J. S. (1907, April 23). [Letter to A. H. Plant]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 29, Balance Sheet Folder), Ann Arbor, MI, United States.
Harris, C. I. (1993). Whiteness as property. *Harvard Law Review, 106*(8), 1707–1791.
Hill, H. P. (1987). *Accounting principles for the autonomous corporate entity*. Quorum Books.
Huston, J. L. (1998). *Securing the fruits of labor: The American concept of wealth distribution* (pp. 1765–1900). Louisiana State University Press.
ICC (Interstate Commerce Commission). (1888). Second annual report. Government Printing Office.
ICC (Interstate Commerce Commission). (1909). Twentieth annual report on the statistics of railways in the United States. Government Printing Office.
ICC (Interstate Commerce Commission). (1909). Form of general balance sheet statement as prescribed by the Interstate Commerce Commission for steam roads. First issue. Government Printing Office.
Ireland, P., & Meng, G. (2017). Post-capitalist property. Economy and Society, 46(3–4), 369–397.
Kansas City Southern Railway Company v. the United States of America and the Interstate Commerce Commission, 231 U.S. 423 (1913).
Katznelson, I. (2005). *When affirmative action was white: An untold history of racial inequality in twentieth-century America*. W. W: Norton & Company.
Kornweibel, T., Jr. (2003). Railroads and slavery. *Railroad History, 189*, 34–59.
Krippner, G. (2017). Democracy of credit: Ownership and the politics of credit access in late twentieth-century America. *American Journal of Sociology, 123*(1), 1–47.
Lamont, M. (2012). Toward a comparative sociology of valuaton and evaluation. *Annual Review of Sociology, 38*, 201–221.
Lazonick, W. (2014). Profits without prosperity. *Harvard Business Review, 92*(9), 46–55.
Lepinay, V., & Callon, M. (2009). Sketch of derivations in Wall Street and Atlantic Africa. In C. S. Chapman, D. Cooper, & P. Miller (Eds.), *Accounting, organizations, and institutions: Essays in honour of Anthony Hopwood* (pp. 259–289). Oxford University Press.
Licht, W. (1983). *Working for the railroad: The organization of work in the nineteenth century*. Princeton University Press.
Lutz, C. (1908, November 10). [Letter to H. C. Adams]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 29, Balance Sheet Folder), Ann Arbor, MI, United States.
McCarty, R. J. (1909, October 5). [Letter to M. A. Knapp]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 29, Balance Sheet Folder), Ann Arbor, MI, United States.
Miranti, P. J. (1989). The mind's eye of reform: The ICC's Bureau of Statistics and Accounts and a Vision of Regulation. *The Business History Review, 63*(3), 469–509.
Miranti, P. J. (1990). Measurement and organizational effectiveness: The ICC and accounting-based regulation, 1887–1940. *Business and Economic History, 19*, 183–192.
NARC (National Association of Railway Commissioners). (1909). Proceedings of the nineteenth annual convention held at Washington, D. C., October 6-8, 1908. Government Printing Office.
Nguyen, Minh T. N. (2018). Vietnam's 'socialization'policy and the moral subject in a privatizing economy. *Economy and Society, 47*(4), 627–647.
Oldroyd, D., Fleischman, R. K., & Tyson, T. N. (2013). Somebody knows the trouble I've seen: Moral issues of new world slavery and accounting practitioners. In R. K. Fleischman, W. Funnell, & S. P. Walker (Eds.), *Critical histories of accounting: Sinister inscriptions in the modern era* (pp. 144–155). Routledge.
Perrow, C. (2002). *Organizing America: Wealth, power, and the origins of corporate capitalism*. Princeton University Press.
Previts, G. J., & Merino, B. D. (1998). *A history of accountancy in the United States: The cultural significance of accounting*. Ohio State University Press.
RAOA (Railway Accounting Officers Association). (ca. 1920). What they say about the Railway Accounting Officers Association. St. Louis Mercantile Library at the University of Missouri–St. Louis.
Ripley, W. Z. (1907). Railroad valuation. *Political Science Quarterly, 22*(4), 577–610.
Robertson, J., & Funnell, W. (2012). The Dutch East-India Company and accounting for social capital at the dawn of modern capitalism: 1602–1623. *Accounting, Organizations, and Society, 37*, 342–360.
Rosenthal, C. (2018). *Accounting for slavery: Masters and management*. Harvard University Press.
Rothstein, R. (2017). *The color of law: A forgotten history of how our government segregated America*. Liverlight Publishing Corporation.
Sharfman, I. L. (1931). *The Interstate Commerce Commission: A study in administrative law and procedure*. The Commonwealth Fund.
Shaw, W. B. (1943). *The University of Michigan: An encyclopedic survey* (Vol. 2,, Part 3..
Sikka, Prem (2015). The hand of accounting and accountancy firms in deepening income and wealth inequalities and the economic crisis: Some evidence. *Critical Perspectives on Accounting, 30*, 46–62.
Smith, C. W. (1993). Seven auctions: From Walras to the real world. In R. Swedborg (Ed.), *Explorations in economic sociology* (pp. 176–192). Russell Sage Foundation.
Starr, P. (1987). The sociology of official statistics. In W. Alonso, & P. Starr (Eds.), *The politics of numbers* (pp. 7–57). Russell Sage Foundation.
Stone, R. D. (1991). *The Interstate Commerce Commission and the railroad industry*. Praeger.
Stout, L. A. (2017). The economic nature of the corporation. In Oxford Handbook of Law and Economics (Vol. 2, Ch. 14). Oxford University Press.
Sunstein, C. R. (2001). *Designing democracy: What constitutions do*. Oxford University Press.
Taylor, K.-Y. (2019). *Race for profit: How banks and the real estate industry undermined black homeownership*. University of North Carolina Press.
Thomas, W. G. (2011). *The iron way: Railroads, the civil war, and the making of modern America*. Yale University Press.
Tilly, C. (2006). *Why? What happens when people give reasons…and why*. Princeton University Press.
Weber, M. (1927). General economic history. (F. H. Knight, Trans.). Greenberg, Publisher.

Weber, M. (1978). Economy and society. (G. Roth & C. Wittich, Eds.). University of California Press.
White, R. (1991). 'It's your misfortune and none of my own': A new history of the American West. University of Oklahoma Press.
White, R. (2003). Information, markets, and corruption: Transcontinental railroads in the gilded age. *The Journal of American History, 90*(1), 19–43.
Williams, W. H. (1908). *April 22). [Letter to Interstate Commerce Commission]. Henry Carter Adams Collection, Bentley Historical Library, University of Michigan (Box 29, Balance Sheet Folder)*. United States.
Williams, W. H. (1910). Valuation of public service corporations. American Economic Association Quarterly, Third Series, 11(1), 196-238.
Wooldridge, A. (2016, September 17). The rise of the superstars. The Economist.
Wuthnow, R. (1987). *Meaning and moral order: Explorations in cultural analysis*. University of California Press.
Wuthnow, R. (2008). *American mythos: Why our best efforts to be a better nation fall short*. Princeton University Press.