

British Cost and Management Accounting Theory and Practice, c.1850–c.1950; Resolved and Unresolved Issues

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At the heart of a nation's economic success or failure is the performance of individual businesses, which itself reflects the quality of decisions made by businessmen. To make decisions, businessmen require information, including accounting information. Despite the lack of detailed research into the accounting records of businesses, and how they were used to inform decision making, there has nevertheless grown up a conventional wisdom directed at the inadequacy of costing data for decision making, the non-adoption by business of best practice as espoused in the literature, and the failure of accountants to provide the lead in the construction of costing systems [Pollard, 1965; Solomons, 1952; Yamey, 1962]. Recent archival-based research, however, has begun to unravel important elements of this conventional wisdom, and the purpose of this paper is to summarize its findings and to examine its implications for a broad-based assessment of the development of cost and management accounting theory and practice. Precise start and end dates have not been fixed for this study, but attention is focused principally on the period c.1850–c.1950.

The Scope of Cost and Management Accounting

Cost accounting and management accounting today combine to provide managers with the accounting information required to help them conduct business operations in an efficient manner. Parker [1984, p. 47] has pointed out that, in its modern meaning, cost accounting is difficult to distinguish from management accounting, while Scapens [1991, p. 10] has noted that “the terms cost accounting and management accounting now tend to be used synonymously in textbook titles.” Such ambiguity is exacerbated by researchers examining the historical development of accounting who have adopted an even wider range of related terms, including cost recording, costing, cost accounting, managerial accounting, and management accounting, some of which have been used interchangeably and others in a specific, discrete manner.

It is our view that from the historians' standpoint, a clear definition of what is meant by management accounting is needed, and we feel that there is

particular merit in adopting a broadly-based definition in order to avoid confusion between the label management accounting and a specific set of ideas, conventions, tools/techniques, and practices which, at any point in time, constitute its major elements [Boyns and Edwards, 1996]. Such definitions were popular in the early-1950s, the time when the term first entered British accounting terminology. The Institute of Chartered Accountants in England and Wales, for example, suggested that “any form of accounting which enables business to be conducted more efficiently can be regarded as management accounting...” [ICAEW, 1954, para. 2]. We recognize that the term “management accounting” was not used in the nineteenth century, but this is not seen to be a problem. The sole purpose is to discover whether systems researched meet the basic criterion subsequently articulated as justifying that designation.

Cost and Management Accounting Theory to c.1950

David Solomons’ seminal article of 1952, entitled “The historical development of costing,” is an important reference point for all studies of this kind. In that paper, which draws extensively on the work of Edwards [1937a and 1937b], he notes that, as late as 1880, virtually nothing had been written in England on the subject of cost accounting generally and, therefore, the use of cost accounting in an industrial setting. While conceding that English practice might have been in advance of theory at that time, he considered that “all signs point to a lack of interest among industrialists in the application of accounting to industrial processes” [Solomons, 1952, p. 17]. These studies have shown that there were approximately eight texts which devoted some attention to cost accounting prior to 1880. Among these, undoubtedly the most notable was that of Hamilton [1777/9] but, intriguingly, his coverage of costing was severely curtailed in the second edition of his work published in 1788 [Mephram, 1988].

It was not until a century later that further significant works on costing began to appear in Britain, during a period which Solomons has designated the “costing renaissance.” In the 1870s, works by the Scottish accountant, F. Hayne Carter [1874], and the Manchester public accountant, Thomas Battersby [1878], addressed certain aspects of costing but it is generally agreed that it was not until 1887, when Garcke and Fells’ *Factory Accounts* was published, that the first British textbook on cost accounting appeared. In so far as the literature is concerned, this message of Solomons and Edwards as to the paucity of British texts on costing prior to the 1870s is consistent with the findings from our own research [Boyns and Edwards 1997a, Boyns et al., 1997].

By the 1890s, however, cost accounts were beginning to receive attention in general accounting textbooks such as those by Dicksee [1893] and Lisle [1899]. The upsurge in the available literature in the late-nineteenth century continued apace in the early twentieth century, with Nicholson and Rohrbach [1919, p. 1] claiming that “more than 90% of this literature has been published in the last decade, and fully 75% in the last five years.” This links with the view of Pixley who described cost accounting as “a new branch of the science” of accounting [1908, p. 131]. Solomons, summarizing the nature of the

accounting literature between c.1875 and c.1950, found that, whereas in the 500 years prior to this period it had been concerned with “a rather narrow technical problem in book-keeping” it was now concerned “with the broader issue of making the accounting records mean something, of making them flexible and capable of providing information which would be significant not for one purpose (say, the measurement of profit or loss) or two (say, in addition, the fixing of selling prices) but for any of the purposes which, in modern business, figures may be called upon to serve” [1952, p. 2].

Much of the material used for the purpose of Solomons’ masterly exposition of developments from the 1870s, however, is drawn from the overseas literature, in particular that of the United States. His main sources included engineering journals such as *Engineering*, *The Engineer*, and *The Engineering Magazine*, especially the last named, and it is noticeable that there are relatively few citations dated later than the second decade of the twentieth century. This is consistent with Edwards’ judgement that “I do not think that in the last 30 years cost accountants have added much to the theory of their subject” [1937b, p. 344], but may reflect rather too great a reliance on Edwards’ work and/or a failure to investigate the full range of relevant literature, especially that contained in contemporary accounting journals. Hence it is perhaps not surprising that Solomons, and others who have followed him, such as Wells [1977], should suggest that engineers have played a key role in the development of costing since the end of the nineteenth century. While this may have been the case in the United States, it has still to be investigated whether it was also the case in Britain, and there is evidence from the collection of costing articles taken from the accounting literature covering the period 1887-1952 compiled by Boyns et al. [1996] that the role of accountants in Britain may not have been negligible. If nothing else, it suggests that professional accountants had an interest in costing matters from an early time, particularly in respect of issues such as: the function of costing; the form of cost accounts; the allocation of overheads; costing for different types of business organisation; uniform costing; standard costing; budgetary control; costing systems and industrial development; costing and management; and the role of the cost accountant.

Management Accounting Practice to c.1900

The work of Edwards [1937b], Pollard [1965], Solomons [1952], Urwick and Brech [1948/9] and Yamey [1962] had, by the 1970s, produced the broad conclusion that meager developments in costing had taken place up to the late-nineteenth century. Chandler [1977], based principally on research into U.S. accounting history, argued that the development of the large-scale business enterprise had had a positive impact on the development of cost accounting in the late nineteenth and early twentieth centuries. Given the earlier industrialization on this side of the Atlantic, and the larger scale of some business activities, at least up to the middle of the nineteenth century, corresponding developments might be expected to have occurred in Britain. Research, undertaken in the main subsequent to the date of the above works, has shown

that cost accounting progress had been made early on by companies at the forefront of Britain's industrialization [see Boyns and Edwards, 1997a].

There is clear evidence that, as the companies covered by these studies expanded and departmentalized each stage of the production process, costing systems were devised, implemented and subsequently developed. The research also suggests that certain generalizations which make up the conventional wisdom as to the development of cost accounting in Britain prior to 1900 are no longer tenable. One of the most important of these, based on arguments by Garner [1955: 9], Solomons [1952], and Edwards [1937b], is the view that cost and financial accounts were initially separate, that is, the costing records were developed separately from the (financial) accounts proper, and even possibly outside the double entry system. Some writers [Edwards, 1937b, pp. 389-90; Johnson and Kaplan, 1987] have argued that the process of integration of cost and financial accounts, irrespective of when it occurs, is not a good thing, since the overbearing influence of financial accounting considerations results in the cost accounts losing relevance for the purpose of decision making. However, recent research has shown that cost and financial accounting systems in British firms did not start out separate from one another. Rather, there is evidence of the integration of cost and financial accounting systems within a double entry framework well before Solomons' so-called costing renaissance and, in one case, that of the Staveley ironworks, as far back as 1690 [Edwards and Boyns, 1992]. A *dramatic inconsistency* is therefore seen to exist between the conventional wisdom in regard to the separate origins of cost and financial accounts, based as it is largely on the evidence of the literature, and the contents of the archives interrogated.

It is one thing to discover that cost/management information has been generated by an accounting system, but quite another to demonstrate how, if at all, it has been used. The general lack of evidence of the use made of systems of double entry bookkeeping for routine concerns such as eliminating waste and inefficiency, however, is unsurprising. Such questions were matters principally for the consideration of managers relatively low down the managerial hierarchy, with communication of information often by word of mouth or in a written form less likely to have survived. However, there is evidence that such information was used to inform strategic decision making. In their study of Dowlais, Boyns and Edwards [1997b] found that the process of accounting change was contingent upon a set of unique circumstances that shaped attitudes and actions. An interaction was discerned between the accounting system, organizational structure and management decision making process (for example, concerning the purchase of the Penyarden property and the switch to steel manufacture, in the late-1850s and 1860s) which, however, was more in line with the suggestion of Alford [1976] of a complex, symbiotic relationship between strategy and structure than with the causal explanation preferred by Chandler, namely that structure follows strategy.

At another coal and iron concern, Consett, Boyns and Edwards [1995] have shown how, in order to provide themselves with more appropriate information on the question of whether they should abandon the manufacture

of iron and finished products, the board gave instructions for an important change to be effected in the costing system. Thus, in 1867, transfers of coal and coke to the iron department, which had previously been made at cost, were now made at accounting prices linked to the market price of coke. Although the new system indicated a loss on iron manufacture, Consett's board, after seeking the advice of an outside expert, decided not to close down the company's iron operations. This was partly due to the view that the ripple effect on coal and coke production, and hence overall profitability of the concern, would be adverse, and the belief that modernization and greater efficiency could lead to profitable iron manufacture in the future. This evidence illustrates that management in the mid-nineteenth century understood the complexities of decision making, recognized the need for relevant information, undertook developments to ensure its availability, and were not inclined to be rushed into closing a loss-making department when other considerations were paramount. As at Dowlais, the subsequent history of Consett suggests that accounting information, despite the pessimistic assessments of Pollard and Yamey regarding the Industrial Revolution period, helped the board make the right decision. Not only did the company prove profitable in the late-nineteenth century, but the decision secured Consett's long-term survival – an outcome which appears to have been an important motivation at Consett, as with many other businesses at this time.

Management Accounting Practice c.1900 to c.1950

In this section secondary sources are interrogated for evidence of the development of management accounting procedures during the period 1900-1950, there being no detailed studies of accounting practice within British firms for this period.

Scale and size of British business

Businesses operating in the British coal and iron industry around the middle of the nineteenth century, such as Dowlais, Consett, and Staveley, had clearly developed into multiunit enterprises [Boyns and Edwards, 1995; Edwards et al., 1995], though there is little evidence that they had developed the most complex forms of the multi-divisional structure, such as those based on geographical regions or different end-products. The continuing growth in the size of British businesses in the period 1900-1950 might therefore be expected to have had an impact on the development of management accounting systems. Despite what some consider to be the "corporate lag" that occurred in Britain compared to the mature "managerial capitalism" of the United States [Gourvish, 1987, pp. 33-4], growth in corporate scale resulted in greater bureaucracy [Perkin, 1989, p. 272; Hannah, 1983, p. 72] and alongside this came the "increased functional differentiation of managerial tasks," amongst which flourished the accounts department [Hannah, 1983, p. 78]. According to Hannah, "it was particularly through developments in accounting that the introduction of new methods for the oversight and assessment of

subsidiaries was encouraged and facilitated” [1983, p. 80]. Accountants are naturally seen to have been closely implicated in this process, becoming “quickly familiarised with the problems of imposing uniform accounting on a merger and of controlling capital expenditure by forward budgeting” [Hannah, 1983, p. 86]. It could be expected, therefore, that accountants would have played an important role in developing accounting practice and also, possibly, have influenced the relationship between theory and practice. Before we examine these issues more closely, we first examine the literature for evidence as to the development of management accounting practice in the first half of the twentieth century.

The literature’s assessment of management accounting practice

Overall, the literature provides something of a confused picture. Dicksee [1928, p. 4], argued that “good costing” procedures could already be found in the basic industries, such as coal and iron, by the turn of the century and, given the results of the recent archive-based studies by Boyns and Edwards, this may be a correct assessment. In other sectors, especially engineering, where, as part of the government’s determination to prevent profiteering in the absence of market constraints, cost accounting practices came under close scrutiny during World War I, such systems, where they existed, were found wanting [Marriner, 1980; Loft, 1986, p. 141].

World War I, as a result of the efforts made to introduce costing systems into government departments and business generally [Garrett, 1961, p. 123; Marriner, 1980, p. 139], has been seen by Loft as a catalyst, moving cost accounting from “obscure corners of great industrial concerns” [1986, p. 147], “into the light” [1986, p. 141]. While there were undoubtedly some developments, others, such as the Balfour Committee on Trade and Industry, 1924 [Stacey, 1954, pp. 123-4], de Paula [1948, p. 141], and Dicksee [1928, p. 4], have questioned their extent. Cornwell confirms that, during the inter-war period “costing and standard costing were introduced at a languid rate when they were recognised at all” [1991, pp. 137-8], while the President of the Society of Incorporated Accountants and Auditors, speaking in 1945, complained that the “budgetary statement is still imperfectly understood in this country, except in comparatively few cases” [quoted in Stacey 1954, p. 207].

The somewhat conflicting nature of the above evidence suggests the possibility of considerable variation in cost and management accounting practice between time and place, especially between different businesses and different sectors of industry. Crucial to an understanding of such differences, and the links, if any, between accounting theory and practice in the early twentieth century, is the role played by professional accountants in the development of cost and management accounting systems.

The role of professional accountants

The appearance of professional accounting bodies, which occurred in Scotland in 1853, and in England and Wales in 1870, is thought by some to have retarded the involvement of accountants in the provision of cost

accounting information. Public accountants were undoubtedly heavily involved in liquidation work, the detection of fraud and the audit function, but one contemporary observer criticized the accountant for failing to meet the needs of “the manufacturer who may feel that he does not possess the information he desires, but may be unaware of the source from which it can be obtained” [Strachan, 1903, p. 7]. For Parker, the perceived indifference of professional accountants to costing is explained by the fact that: “Most practising accountants at this time had little contact with manufacturing companies, even in audit work, their clients being mainly engaged in banking, insurance, railways, water, docks and mines” [1986, p. 42]. More recent research, however, suggests a slightly different picture. While Parker is undoubtedly right to suggest that most large companies in Britain in the late nineteenth century fell into the business categories mentioned, a good number of manufacturing companies were quoted on the London or provincial stock exchanges in the 1880s, by which time most were the subject of a professional audit [Anderson et al., 1997]. Although there is evidence to suggest some antipathy towards the external auditor on the part of management, seeing him chiefly as “the scrutineer and compiler of aggregate results” rather than someone capable of helping shape business plans [Strachan, 1903, p. 6], the archives of late nineteenth century coal, iron, and steel companies contain examples of public accountants, many of them with leading firms, offering advice on costing systems on a consultancy basis. Examples include Chadwick, Adamson & Co. advising the massive Bolckow, Vaughan & Co. Ltd on the content of their accounting system and almost certainly their costing system in 1866, Messrs Deloitte, Dever, Griffiths & Co. and Messrs John Adamson & Co. the Shelton Iron, Steel and Coal Co. Ltd. in 1889 on the best method for keeping the company’s books, including the preparation of monthly cost sheets, and W.B. Peat & Co. at the South Durham Iron & Steel Co. Ltd. where they submitted a draft scheme of uniform cost accounts for each works to the board in 1898.

Additional evidence that professional accountants, including chartered accountants, were increasingly interested in costing matters from the late-nineteenth century is provided by a recent study of the content of the accounting literature [Boyns et al., 1996]. Some of the contributors to this literature were undoubtedly encouraged to pick up the pen as a consequence of becoming more closely connected with industry, some as a result of effects of World War I, most notably through the operations of the Ministry of Munitions where there was a great need “for cost accountants equipped with the necessary combination of accounting knowledge and a detailed understanding of all the technical, engineering and manufacturing problems involved in costing explosives, iron ore and coal mining, shell, gun and aircraft-production” [Marriner, 1980, p. 132]. By 1918 there were reported to be 340 chartered and incorporated accountants on the staff of the Ministry of Munitions alone [Loft, 1986, p. 146], with key appointments including Samuel Hardman Lever, who had acquired his extensive costing experience and skills in the United States as a partner in Barrow, Wade, Guthrie & Co. [Marriner, 1980, p. 132; Jones, 1981, p. 129], the incorporated accountant, James (later Sir James) Martin [Garrett,

1961, p. 103], John Mann, Harold Judd [Mann Judd Gordon, 1967, p. 32], Mark Webster Jenkinson, and William McLintock [Winsbury, 1977, p. 31].

It is almost certainly the case that professional firms became more closely involved in costing matters post-World War I, with some naturally more prominent than others. Deloitte, Plender, Griffiths & Co., for example, began a long-term connection with the Bank of England in 1919, when they prepared a cost accounting system tailored to the Bank's requirements, subsequently acting in a consultation capacity to "the governor on many occasions on matters outside the domestic economy of the bank" [Kettle, 1957, p. 11]. Price Waterhouse, however, was less concerned with such work and though costing engagements grew during the inter-war period, they remained of minor significance until 1945, principally because the firm regarded itself primarily as auditors. It was Garnsey, however, reflecting a forward-looking attitude which was not typical of the firm at this time, who recruited Albert Cathles, an Edinburgh accountant who had been employed by the Ministry of Munitions as Deputy Controller of Factory Audit Costs, in 1919. Cathles undertook a variety of business investigations specializing in "works and cost accounting" [Jones, 1995, p. 118]. Indeed, a Systems Department was set up following Cathles appointment, but it remained fairly small, "undertaking specific tasks probably for existing audit clients" [Jones, 1995, p. 139].

Other ways in which chartered accountants influenced costing developments included taking up appointments with particular businesses or through acting as advisors to business organizations. Thus, after qualifying as a chartered accountant in 1920, Bertrand Waring moved almost immediately into industry, working as assistant secretary to a foundry company in Derby. He then joined Joseph Lucas, becoming company secretary in 1924, a board member in 1935, managing director in 1948 and chairman in 1951. According to the firm's historian, his "strength as an accountant [was] invaluable in assessing and shaping the company's financial policy and procedures" [Nockolds, 1976, p. 298] and he is considered to have been responsible for transforming Lucas from a "Birmingham business producing accessories for the motor industry into an international group with interests spreading into aviation components and industrial engineering" [Jeremy and Tweedale, 1994, p. 220]. Another such example is Basil Smallpeice, who moved from Bullimore & Co. immediately on qualification, in 1930, to become accountant and assistant secretary at Hoover Ltd. He then joined Doulton & Co. Ltd in 1937, where he became secretary and chief accountant responsible for costing and accountancy at the factories [*The Accountant*, 7 January 1950, pp. 10-11]. Other examples of the role played by professional accountants in the utilization of accounting's potential for the purpose of business management are L. Robson at Pilkingtons [Barker, 1977, p. 337] and James Hornby Jolly and Eric Charles Drake at GKN [Jones, 1985, pp. 523-5; Jones, 1990, p. 288]. Sir William Barclay Peat played a rather different but important role as secretary to the National Federation of Iron and Steel Manufacturers following its formation c.1918. Ultimately, in June 1935, its successor organization published "The Uniform Cost System for the Iron and Steel Industry" [British Iron and Steel Federation, 1937].

Overall, the period 1900-1950 saw professionally qualified accountants moving from public practice to dominate control of the finance function within business and, indeed, to become heavily involved in business management at all levels [Matthews et al., 1998]. The number of professional accountants working in business, for example, rose from 270 in 1911 to approximately 18,500 in 1951, and were by the latter date comfortably the most prominent professional grouping represented around the corporate board table.

Relationship between Theory and Practice

The available evidence suggests that the relationship between cost and management accounting theory and practice has altered significantly over the past one hundred years or so. In the period prior to Solomons' costing renaissance, practice in some industries, most particularly coal, iron, and steel, was in advance of theory but, in late twentieth century Britain, management accounting theory is much in advance of practice [Coates et al., 1983, pp. 280 and 475-6; Drury, 1985, pp. 784-6; Scapens, 1991, ch. 3]. But when did this reversal occur, and how and why has it come about? And what, if any, was the role of accountants? As yet, we know all too little about the nature of the accounting systems used by British businesses in the twentieth century and how they have developed, and whether or not any changes were influenced by developments in accounting theory. In the context of Britain's relative economic decline since the late nineteenth century, the role played by accounting systems may have been important, particularly when compared to what was happening in other countries, most notably the United States [see, for example, Locke, 1979a,b]. While there is circumstantial evidence that the United States developed and implemented techniques such as standard costing and budgetary control more rapidly than in Britain, this still has to be established as does, if it was the case, the question of whether such differences had any long-term economic implications.

The research agenda for British accounting and business historians as we move into the twenty-first century is therefore substantial. It includes, in addition to the above, the need for investigating the accounting records of firms operating in sectors such as textiles and engineering before 1900, in order to determine whether the results of studies of the coal, iron, and steel sector apply more generally, and of firms in all sectors during the twentieth century. Only when it is known what was happening, rather than what others have perceived to have been the case, will it become possible to address issues such as the impact of accounting systems on economic performance, whether of individual businesses or of the economy as a whole. Comparisons with what was happening in other countries such as the United States will also provide important criteria for judging the significance of developments in Britain during the twentieth century, as it has done for earlier periods [see, for example, Boyns et al., 1997].

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