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**The introduction and operation of standard costing at J&P Coats Ltd., 1925-1961: an  
institutional interpretation**

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# **The introduction and operation of standard costing at J&P Coats Ltd., 1925-1961: an institutional interpretation**

## **Introduction**

This study provides a history of the introduction and use of standard costing (SC) throughout the home and international operations of J&P Coats Ltd, the large, British-based multinational thread combine, between 1925 and 1961. We interpret this history through the lens of institutional theory as applied to the introduction and operation of management accounting (MA) systems in organisations, as formulated in key studies by Burns and Scapens (2000) and ter Bogt and Scapens (2014).

The Coats combine, formed from the Coats, Clarks, Brooks and Chadwicks firms in 1896, had fully centralised the control of its international operations, cash flows and investments in its Glasgow headquarters, which would prove to be a cornerstone of its future success (Kininmonth and McKinstry 2007). The account which follows of the introduction and operation of SC at Coats emphasises the timings, practicalities and business motivation relating to its implementation, which gave the firm full mastery of cost management in all its plants across the 1930s, through the war years and into the 1960s.

In contrast with these details, we adopt an institutional approach to interpreting the effects of certain social, political and cultural forces (which we identify below as ‘institutions’) acting inside and outside the firm. This approach helps to explain, *inter alia*, why the SC system at Coats was first developed, in isolation, in its US operation from 1925 in spite of an initial lack of support at Head Office. Moreover, why it went on to be implemented successfully across

the group whilst achieving unplanned but desirable ends. The study demonstrates that the institutional view is capable of providing extra analytical insights for historians.

We also contribute to the literature on the introduction of SC in the UK, as summarised by Boyns and Edwards (2007, 2013). These authors have synthesised what is known of the development of SC and budgetary control in the UK. They chart current understandings concerning its chronological development, listing twelve firms that are known to have adopted SC in some form up to 1942-43, nine of these introducing it prior to 1932, the year it began to be installed in Coats' UK plants. The first three known firms to bring in SC were in the chemical sector, British Xylonite (1880s), Albright and Wilson (1890s for total costs, 1924 for labour) and British Dyestuffs (1922). The next five firms (up to 1930) were in metals or engineering, with J Lyons, in the food trade, installing SC in 1932 (Boyns and Edwards 2013).

Boyns and Edwards (2013, 290/1) observe that 'standard costing and budgetary control... had become far more commonplace by the late-1960s than it had been in 1945'. On the question of whether the USA or the UK had been first, or quicker, to install SC and budgetary control, or whether the one had influenced the other, they take a noncommittal approach stating that 'it would be surprising if there were no important variations in the historical development of accounting in the two countries' (*ibid*, 271). The present study locates J&P Coats precisely in the above chronology and reflect on what it reveals about the interaction between Britain and the USA in the development of SC. It also examines the Coats case to explore further aspects of the history of SC, differences in practice across firms and also differences of viewpoint on practice, with reference to sources surveyed by Boyns and Edwards (2007, 2013), notably Chatfield, (1977); (Locke, 1979); Blyth, (1923); Edwards (1937); ICAEW, (1947); Brown, (1949); Jones, (1985); Chandler, (1977).

We end the study in 1961 when Coats merged with the smaller Patons and Baldwins Ltd., another UK-based textile combine. After the merger, the enlarged firm, no longer family-dominated, embarked on a long-term programme of diversification within the textile industry very different to the previous thread-focused strategy of Coats (Coats 2013).

The study proceeds with a review of key literature, including a summary of research resources. Next the background of J&P Coats is provided followed by a short history of management change within the company, up to the point of the implementation of SC. We then present the surviving evidence on the installation of SC, followed by an evaluation of the usefulness of SC at Coats up to 1961. An institutional interpretation of the introduction of SC at Coats follows. We conclude with insights drawn from the Coats case to what is known about the introduction of SC more generally.

## **Review of literature and other research resources**

### ***Archival and other primary sources***

The J & P Coats' archives at Glasgow University (UGD199) are voluminous, with a headline listing covering some twenty pages and a detailed listing running to hundreds of pages. A large proportion of what survives represents long but incomplete runs of books from what was once a detailed double-entry system of financial accounts. Of more use for this study are surviving minute books for the Board and committees, together with letter books and correspondence from 1868-1987. What is available provides some context for the firms' financial operations and MA.

As is often the case, Coats' costing system and SC records *per se*, have failed to survive in their entirety within the company's archives, given the constantly moving nature of costs, which are only useful over

the short-term (McKinstry 2009). However, some Board Minutes, (UGD199/1/1/5) Finance Committee Minutes (UGD199/1/1/24) and a Budget Installation Account which record details of the SC installation process (UGD199/1/8/11), as well as a SC training manual from 1962 remain, revealing little change in principle from the system that was implemented from 1925 onwards (UGD199, 1/26/7).

We have also consulted the papers of Willie Mathieson (1905-1996), held in a private collection. Mathieson was a senior Coats financial executive who worked for the firm from 1918 to 1965. He was involved in the introduction of SC in the early 1930s and rose to become (later in his career) the senior executive in charge of SC internationally. His papers include pro-forma costing forms, a few of these dating back to the 1940s with the rest undated (Mathieson 1). Another undated set of forms contains instructions for the allocation and apportionment of overheads (Mathieson 2), deployed in the creation of SC at Coats. In addition to these resources, we utilise notes taken from conversations with Mathieson late in life with Ken Mathieson, one of the authors (Mathieson 3).

An unpublished history of Coats (nd), archived at Glasgow University Business Archives, was commissioned by the firm from Jock Hunter, a lecturer in economics at Glasgow University. It was withdrawn at the draft stage on grounds of the sensitivity of the information it revealed (*ex inf* Brian Coats 2017). This history draws heavily on interviews with Coats senior staff, including Willie Mathieson and directors whose age and length of service with the company straddled the dates when SC was introduced and utilised at the firm. The interviews are thus an invaluable source on SC's progress as well as a prime source on the company's development.

### ***Published resources for the study of J&P Coats***

Blair's book on the Paisley thread industry (1907) remains a useful summary of the rise of Coats and Clarks, out of which J&P Coats Ltd. had been formed in 1896. A detailed study of Coats' initial growth in Paisley from 1830-83 (Cairncross and Hunter 1987) analyses key financial statistics from Coats' early phase. Kininmonth (2006) describes in detail Coats' committee system of management from the 1890s to the 1960s. Coats' tight central financial and treasury control of its multinational operations from Glasgow, one of the great secrets of its steady success, is detailed in Kininmonth and McKinstry (2007). However this paper touched on, but did not fully analyse Coats' MA systems, which only reached their potential for tight financial control at the plant level with the advent of SC.

Of contextual relevance are studies by Kim of the changing role of the Coats family in the business (Kim 1994), of Coats operations and their fate in Tsarist Russia (Kim 1995), of Coats as a multinational before 1914 (Kim 1997) and of Coats in its two main US plants before 1914 (Kim 1997). None of these studies focuses on the firm's financial systems. Fleming, McKinstry and Wallace (2000) analyses the development of MA in the West of Scotland from 1900-1960, noting the struggle of Coats to find SC expertise in the local area in the early 1930s, but does not investigate the detailed process of installation across the firm.

A new and widely researched general history of Coats (2013) has been written by the direct descendant of James Coats, the firm's founder in the early-nineteenth century, its author also being the last family member to work in the firm. It begins with the early origins of the thread business in Paisley, tracing the firm's progress until its recent history as a multinational with few manufacturing interests remaining Britain. The work praises the firm's SC system, but provides few details.

By focusing on the implementation and operation of SC at Coats, the present study fills an important gap in an understanding of how the firm came to be financially robust not just across, but within its plants. As we outline SC became another factor in Coats' sustained success.

### *The institutional approach to the introduction of new management accounting systems*

As an analytical frame of reference, we have chosen the approach advocated by Burns and Scapens in their seminal 2000 paper, 'Conceptualising management accounting change: an institutional framework'. Burns and Scapens begin their analysis outlining the three main research trajectories in the field of organisational studies related to institutions (Miller 1994; Scott 1995; Scapens 2006), namely, new institutional economics (Walker 1998), new institutional sociology (Carruthers 1995), and old institutional economics (Veblen 1898, Hodgson 2006). The broad premise of these approaches is that societies are characterised by 'institutions', in the sense of constellations of beliefs, practices, rules, both formal (as in the law) and informal, (as in particular cultures) which bind societies together and can influence their development at the organisational level (Scott 1995).

New institutional economics extends the study of economics by focusing on social and legal norms and relationships, analysing the firm and its costs, including those involved in promoting agreements with internal and outside providers of goods and services ('transaction costs'). The second of these approaches, new institutional sociology, studies how the external environment, with its institutions consisting of rules, beliefs and traditions, affects the behaviour of organisations in their quest for legitimacy. Through isomorphism this conduct leads to organisations developing compatibility with environmental characteristics.



The third approach, old institutional economics, is favoured by Burns and Scapens (2000) for a new understanding of MA innovation. It looks upon institutions within organisations as substantially affecting their decision making and progress. For this purpose, Burns and Scapens define an institution as ‘a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group’ (2000, 5) and which includes established ‘rules’ and ‘ways of doing things’. They stress ‘the importance of organisational routines in shaping the process of management accounting change’ (2000, 3) in the sense that new systems may take on approaches and features embedded in existing systems. Conversely, new organisational rules, such as new MA systems, once adopted, alter the nature of the organisation thereafter, so that it is probable that future organisational changes respond reflexively to the routines and systems of the organisation thus altered.

Burns and Scapens also state that it is likely ‘that management accounting change which is consistent with the existing routines and institutions [*in a firm*] will be easier to achieve than change which challenges those routines and institutions’ (2000, 12). The value of these insights is that they can be used for ‘interpretive case studies of management accounting change’ (2000, 9). Burns and Scapens further note that the research in such cases ‘needs to be longitudinal in nature...to locate the processes of management accounting change in institutional time and space’ (2000, 23).

Vailatti, da Silva Rosa and Vicente (2017) set out to examine the use of institutional theory in relation to MA practices in the academic literature, analysing articles which appeared in major international accounting journals over the period 2006 to 2015. Of the 21 studies analysed, there were no studies of MA using the new institutional economics, but 81 per cent used new

institutional sociology, which, as noted, is primarily concerned with the effects of exogenous institutional factors on the firm.

Four studies used old institutional economics, with its focus on institutional factors within the firm, each adopting Burns and Scapens (2000) as their theoretical point of reference. As Vailatti, da Silva Rosa and Vicente (2017) note in these four studies ‘the process of institutionalisation proposed by Burns and Scapens (2000) can explain the factors for the implementation for new processes or tools in ... organisations’ (103). The four studies explore the nature of ‘routines’ generally (Quinn 2011), social accounting implementation (Arroyo 2012), balanced scorecard implementation (Quesado 2013) and the introduction of an extranet (Youssef 2013). As none of them were long-term studies, the relevance of our own analysis of J&P Coats remains for purposes of giving a longer institutional analysis, not hitherto undertaken.

Also of relevance to our study is ‘Institutions, Rationality and Agency in Management Accounting: Rethinking and Extending the Burns and Scapens Framework’, by ter Bogt and Scapens (2014). In their work, ter Bogt and Scapens extend the 2000 framework in order to accommodate the effects of external institutions, as well as internal institutions, on organisations and point out that the former can help explain different types of rationality (‘situated logics’) that are employed in the process of MA change. The authors point out that these updates were already ‘implicit within’ the earlier Burns and Scapens framework (2014, 28). For example, their definition of an institution as ‘a way of thought or action ... embedded in the habits of a group’ (2000, 5) is sufficiently wide to encompass institutions which originate externally or internally.

Based on a short, comparative, study of the Accounting and Finance staff research monitoring systems in Groningen and Manchester Universities, ter Bogt and Scapens demonstrate that it was useful to study higher education MA systems as they were affected by *both* external and internal institutional influences, as the former can influence the latter. Initial scrutiny of the available archival and literature resources suggests that evidence exists to support the influence of both internal and external institutions at Coats. We thus have adopted this more comprehensive approach for our own study of SC within the firm.

This research not only examines the relationship between external institutions and internal SC practices and attitudes as the latter became institutionalised, but also how these reflexively affected the organisation's subsequent development. The study will also test the degree to which the success of the Coats SC system reflected its consistency with existing routines and institutions, as Burns and Scapens (2000) suggest.

Institutional theory, while it has succeeded in becoming 'the dominant theory to study macro-organisational phenomena' (Suddaby 2010, 14), is not without its difficulties. In spite of its prevalence, there is not as yet an agreed definition of 'what an institution actually is' (Peters 2000, 11) or how such phenomena can be measured. It remains incumbent on scholars to discern and justify the existence of institutions from the available evidence, which will be seen as the study unfolds.

Concern has also been expressed (Suddaby 2010) that the exclusive use of institutional theory in organisational studies may result in the omission from analysis of 'the variety and complexity of the empirical world of organisations' or how 'institutions operate through the influence and agency of individuals'. To counter this, Suddaby notes that a need exists to return to 'rich

case studies' (Suddaby 2010, 14-17). In this regard, his concerns are aligned with the call of Burns and Scapens, noted earlier, for 'interpretive case studies of management accounting change' that should be 'longitudinal in nature' (2000, 9). Our study meets these requirements, attending to the roles of key individuals, operating in a context of corporate, multinational complexity over a long period of time, while also examining the institutional dimension.

### **Coats: background and organisational history**

J & P Coats Ltd. was the world's third largest company by capital raised in 1912 (Schmitz 1995), with sewing thread plants on most continents and at that point, still growing. Its first and largest production centres were its two complexes in Paisley, the Ferguslie and Anchor Mills, the factories of its two predecessor family firms, J&P Coats and J&J Clark. These firms, both of which had long had a manufacturing presence in the USA, had merged in 1896 into a single company whose shares were traded on the London Stock Exchange. At this time two English thread producers, Chadwicks and Brooks, which had previously been party to an agreement with Coats to align prices in order to eliminate competition, were also acquired. The firm relocated to a new Head Office in Glasgow, from which it steadily expanded through the acquisition of thread-producing factories throughout the rest of the world, some by outright purchase, some by majority shareholding, into the 1930s and beyond, by which stage it would come to employ some 37,000 staff across 51 mills in 25 countries (Hunter nd; Kininmonth and McKinstry 2007).

Coats' overseas expansion, from the middle years of the nineteenth century, was designed to overcome tariff barriers. Having established itself in a country for this purpose, it was determined to control key activities from the centre. Selling and associated pricing co-

ordination led to the creation of The Central Agency (TCA), in 1896 by the German Ernst Otto Philippi, hired earlier by Coats and who had been given a free hand in organising the company. TCA's central pricing resulted in plants in different countries focusing on overcoming local competitors, rather than competing with each other (Hunter nd).

From the 1890s, activities were co-ordinated through a system of Head Office committees, staffed by directors and senior managers of central functions. A Finance Committee, a Cotton Buying Committee and a Yarn Buying Committee were started in the 1890s and all three committees were still in place in 1961. A General Purposes Committee, also set up in the 1890s, co-ordinated everything else and it too was still operating in 1961. (Kininmonth and McKinstry 2007, Figure 2). The four committees, inaugurated by the autocratic Philippi, made Coats a powerful bureaucracy controlled from Glasgow.

After World War One, the Nevsky mills in Russia, owned since 1890, were expropriated by the Bolshevik government. Philippi died in 1922, leaving a huge managerial hole to be filled. The many plants bought during the Edwardian period in Europe (France, Germany, Italy, Switzerland, and Hungary) required increased attention during the 1920s along with plants in Brazil, Canada, Japan and two plants in the USA to scrutinise. By the late 1920s, there were in also many new firms in Central Europe in which Coats planned to acquire an interest. By this time the control system of four central committees plus the Board was overworked and struggling (Hunter nd).

As the older generation of family directors came to be replaced by the next generation and also by non-family directors throughout the 1920s, pressures came for decentralised power. The two large US plants, still run under the Clarks and Coats names by family descendants, had,

required to be ceded considerable independence as a result of US antitrust laws and were setting their own selling prices. Indeed, in 1925 the US division unilaterally decided to introduce SC to its operations, of which no mention in the minutes of the hard-pressed Glasgow Board for this period has been found. Powerful and able new leaders were also emerging in Europe, including former family members of firms taken over and ex-Glasgow-trainees such as James Henderson of Cucurini Cantoni Coats in Italy. In order to sell Coats brands, as well as price and sell locally branded goods, they required a certain measure of autonomy. To these individuals may be added C H MacKenzie, a Cambridge economics graduate, trained under John Maynard Keynes, recruited to TCA in 1922. He went on to become the priority board director most in favour of SC (Hunter nd).

A historical emphasis on product quality and uniform manufacturing methods was always rigorously exported to overseas mills. Hunter concluded that ‘tradition and training bred senior executives whose outlook was essentially that of very skilled mechanics rather than that of entrepreneurs’, which was limiting Coats (Hunter nd, 21).

### ***The new management system of 1931***

The firm’s response to these organisational challenges was to create a grouping of its companies into five divisions. Division 1 brought together the two Paisley mills and the two English mills as United Thread Mills while Division 2 consisted of South American businesses and other wholly owned European plants. Division 3 (Central European plants) had a local Executive Committee in Vienna. The US Division 4 consisted of plants in the USA and Canada, its pricing and selling already done through the New York Office of the Spool Cotton Company. Division 5 consisted of plants in Spain, Belgium, Japan and other foreign associated

companies. Each group was supervised by its own Liaison Committee in Glasgow. The decision was made to devolve aspects of the management of the company, but the plants remained under the supervision of Glasgow through the Liaison Committees (Hunter nd).

The other part of the 1931 reorganisation was to raise the number of committees from four to some 22. This system consisted of six senior committees intended to benefit the entire combine, Selling, United Thread Mills, Yarn and Cotton Buying, Manufacturing, Research and Development; and Finance. Together, the six senior committees were supported in their work by 16 sub-committees (Hunter nd).

Hunter concludes that the new system's purpose 'was to allocate responsibility as clearly as possible to the men who in fact made decisions, and to clear the feet of directors and senior executives of what were essentially routine matters'. In addition, he states that the committees were to be staffed by senior members of the selling, manufacturing and finance functions at Head Office 'hitherto very largely separate' (Hunter nd, 34), indicating a matrix approach designed to produce more informed decision making. Kininmonth (2008) has concluded that the system appeared to have kept substantial decision making away from the Board, but that a minority of the decisions could have been made by subordinates.

Directors from the founding family members, Coats, Clarks, Brooks and Chadwicks, continued to attend the central committees. Up to the 1930s, they were numerically dominant, indicating a tension between a desire to delegate away from the Board but at the same time to retain family control. An expenditure limit of £3000 applied to the committees, except for the Manufacturing Committee, whose limit was £20,000, above which, the Board had to decide. In the comparatively devolved US plants, a limit of \$100,000 applied, beyond which Glasgow's

approval was required. The new management system of 1931 thus held centralised power and delegation in a delicate balance. It was still in operation up to the end of the period of study (Kininmonth 2008).

### **The introduction of SC throughout Coats**

SC at Coats had been introduced in its more independent US operations in 1925. The consultants employed were Stevenson, Jordan and Harrison (SJH), a New York-based firm which provided 'services in labour and production cost planning' (Ferguson 2002, 76). SC was at that time 'almost completely unknown in the UK' (Hunter nd, 38). It was not until the late 1920s that the Board at Head Office in Glasgow decided that concerns about the company's cost accounting system should take the rest of the group in that direction.

While events in the USA took their own course, of which little trace remains, Hunter (nd) points out that there were financial control concerns in Glasgow. Little consciousness existed at Head Office of the different financial dynamics at Coats' increasingly numerous overseas subsidiary mills, some of which arose because of transfer payments, designed in some cases to avoid local taxation. In addition, the variety of business circumstances applying to each, together with a lack of financial analysis in Glasgow, meant that the secrets of the combine's success were not fully understood at Head Office. The lack of financial analysis had not been seen as a great problem, given the firm's steady profitability. However, the company's auditors, Thomson McLintock & Co, per John Duncan, were asked to report to the Board on 'our Cost Section'. Duncan produced a preliminary report on 13 March, 1929, followed by a final report on 8 May 1930 (UGD199, 1/1/5).



Duncan concluded that there was a lack of reconciliation of raw materials produced and consumed within the system, a considerable problem, as the raw material costs of making and processing thread were far and away the largest cost element. Nor was there a mechanism for notifying cost departments of 'changes in working conditions and prices at the mills', a comment relating to the firm's output-based wage rates. Additionally 'the complex question of exchange rates' which was not, apparently, being handled well in cost calculations. The lateness of the availability of accurate average costs for stock valuation calculations was also becoming an obstacle (UGD199, 1/1/5).

On considering the report, the Board decided to look into 'the question of standard costs', with Duncan asked to advise on specialists in the field who might be able to help Coats (UGD199, 1/1/5, 12 June, 1930). It seems that there was little detailed knowledge in Glasgow of SC in the USA and that there was no link to US consultants.

Later in 1930, it became clear that Duncan had recommended Thomas Downie Junior, CA, who was a partner in the Glasgow firm Harrison, Downie & Inglis. Downie was the author of what Boyns and Edwards (2013) identify as the first book written in the UK specialising in SC (Downie 1927). Only three copies are known to exist in the UK (*ex inf* T Boyns), suggesting it attracted few sales and little interest. After explaining the principles of the system, Downie's book contained several fully worked examples of SC, which he saw as a counterpart to rational production systems, making complimentary passing reference to FW Taylor, the US pioneer of 'scientific management'. Downie saw SC as a means of highlighting inefficiencies through the analysis of variances. In the preface to his book, he notes that he had studied several systems in operation (Downie 1927), almost certainly in the USA, where he spent two years in the mid-1920s (*ex inf* Institute of Chartered Accountants of Scotland, November, 2017).

By January 1931, Downie had been engaged by the Board to begin the installation of SC at Coats' Eagley Thread Mills, near Bolton (UGD199/1/1/5). Downie's report of 21 January examined some of the practicalities of choosing dates for standard setting and bases for the apportionment of 'oncost'. At a Board meeting at around the same time, it was decided that the new SC should be set assuming a high level of efficiency and that quarterly reporting of costs was appropriate as the firm already had a quarterly financial reporting system. Communications with the US operations were planned to talk about stock policy in relation to SC, showing that the USA experience was being utilised.

On 11 March 1931, the decision was made at the Board meeting to create a Sub-Committee to oversee the introduction of SC across the group, when Downie's appointment as auditor of Coats' UK Mills was also confirmed (UGD199/1/1/5). From July 1931, the activities of the SC Sub-Committee, are recorded in the Finance Committee Minutes (UGD199/1/1/24). In January 1932, a 'Mr Case' of SJH was advising on Division 4's SC at the company's New Jersey and Providence Mills in the USA, informing Glasgow of how it had set up the standards earlier in the USA. SJH had opened up an office in London in 1930 with no known connection to Coats.

At this time, SJH did not include any work study, that is, the calculation of times for the various labour operations in the mills, as a basis for its analysis, this service being supplied at Coats by Stevens and Company of Boston, described in a minute of 11 April 1932 as 'experts from the USA'. A minute of 9 May 1932 records that JC Clark, the chairman of Coats, was to be in charge of the introduction of SC. Mr Parker of Stevens was to report to the Coats Manufacturing Committee with Mr Case of SJH reporting to the Finance Committee (UGD199, 1/1/24). A minute of 17 April 1933 reveals the schedule for the installation of SC across large

parts of the Coats Group, which had been divided up into five divisions as part of the 1931 reorganisation:

- 1933-34**      Division 1 (UK Plants)
- 1934**      Division 2 (Canada, South America and other wholly owned plants throughout Europe)
- 1935**      Division 3 (Central European plants)
- 1936**      Division 5 (Spain, Belgium, Japan and other foreign associated companies)

No mention was made in the schedule of the US Division 4 (the Coats plants in the USA and Canada), as SC was already in operation there. However, the role of Mr Case was to drop to 'consultant' in December 1933, suggesting good progress (UGD199, 1/1/24).

The system, in outline, consisted of the preparation of SC for products, principally sewing thread. The most common production processes were: Spinning; Twisting; Mercerising (a process which added a sheen to the thread); Bleaching; Dyeing; Hankwinding; and Polishing (Mathieson 1). Only three of these processes were required for standard white thread, with a fourth (dyeing) required for coloured or black thread. Costing, in pence per pound of yarn, consisted of providing a labour cost by multiplying the relevant standard operation times by the standard wage rates. 'Oncost' (overhead) was added, based on labour cost multiplied by appropriate overhead recovery rates, allocated and apportioned to each process, with additions for 'drugs', or chemicals, such as bleach or dyes. To this figure was added the standard yarn cost. Allowances for wastage at each stage were included in the standards (UGD199, 1/26/7). The manufacturing system, while large-scale, would not appear to have represented any particular difficulties for SC, with its small number of basic processes. However, there were

some 2300 products on sale across the group, 5000 colour shades were offered and 50,000 possible specifications (Hunter nd.). The costs were to be prepared quarterly.

Product costs, forwarded by the mills to TCA and selling committees, would come to be used to help establish selling prices. They were also used at the mills to calculate the standard and actual costs of sales every six months, for profit calculation in Glasgow. Actual stock values, raised from SC to actual cost at the mills, were provided once a year to Head Office, for annual accounts purposes. The mill cost departments also provided reports on variances to mill management, with wages details weekly and others quarterly. Managers were expected to explain and reduce excess expenditure where under their control. These reports covered labour, stores, drugs and other expenses. The mill cost departments (which employed some 50 to 60 staff in each of the Paisley mills) also utilised SC in financial forecasts and in capital expenditure proposals (UGD199, 1/26/7). The Costing Section at the Glasgow Head Office (employing some 10 staff) became closely involved in the installation of SC across the Group, as will be seen later, operating together with mill cost staff and in conjunction with the US consultants employed to help up to the late-1930s. In due course the Coats Head Office department became highly skilled in the new SC system, leading to its installation in all mills newly acquired by the Group.

A special account was maintained in Coats' General Ledger to tally the costs of installing SC from 1932 onwards. It records the names of several individuals claiming travelling expenses for trips to Eagley and Meltham Mills, as well as for trips to mills in Spain and South America. In this account are claims by staff for Spanish language classes for those installing SC in the Coats mills there. By late 1933, SC was in various stages of completion in the two huge Paisley

plants and at Eagley and Meltham Mills as a blend of consultants and Coats staff introduced the new technique together (UGD199, 1/8/11).

There were difficulties with Mr Downie's contract to instal SC as a result of his position as auditor of the home mills given a potential conflict of interest between his installation of internal systems and his auditing role (UGD199, 1/1/24). After discussions between Mr MacKenzie, director, and Ian Bolton, a leading Scottish CA, it was decided that he would withdraw from cost installation. Willie Mathieson (Mathieson 3) recalled that the Glasgow Board came to be more impressed with the types and layouts of SC information already being produced at the US plants, and Downie's work at Eagley was replaced by US layouts and analysis under the guidance of Sterling Smith of SJH, who had installed this firm's systems in Paisley. Harrison, Downie & Inglis were paid £3454 for their work between 1932 and 1934 (UGD199, 1/8/11).

It is recorded in the Finance Committee minutes that in September 1933, revision of the accounting arrangements at the Glasgow Head Office necessary for the incorporation of SC was being undertaken. Coats had decided not to integrate SC and associated variances formally into its financial accounting system but instead planned to make maximum use of SC on a memorandum basis. In 1932 Sterling Smith was heavily involved at the Paisley, English and European plants and needed to have his contract extended, indicating progress at these mills.

At the same time, Coats embarked on other MA changes. Mr McKeggie, a senior financial accounting official in Glasgow, was collecting information on the use of budgets in England, from Unilever, Dunlop and ICI, as well as in the USA. By 1934, the new SC system was beginning to reap benefits, and six members of the cost staff were deemed surplus to

requirement (UGD199, 1/1/24: 16 October 1934). Coats planned to stop using Stevens and Company and SJH by the end of 1935 (UGD199, 1/1/24).

Throughout the period of installation, reports of the Cost Sub-Committee to the Finance Committee on the progress of the installation were furnished twice yearly, each approved without comment. By March 1935, expenditure to date on SC amounted to £65,543, which included £22,351 relating to the setting up of physical (time) standards. The figure included the time of all Coats staff involved in the installation, as well as the charges of the consultants involved (UGD199, 1/1/24).

The minutes do not provide a complete picture, however, and Willie Mathieson's passport shows his working all over Europe before the outbreak of World War Two, utilising his growing skills in the German language. In addition to Austria, he installed systems at mills in Czechoslovakia, Romania and Poland, as well as having part-time involvements in Germany, Switzerland, Yugoslavia and Hungary. His work in Germany and Austria was significantly helped by the presence of several highly competent local staff, who, with the help of Mathieson and Sterling Smith of SJH (whose services were in fact retained throughout the 1930s), were quickly able to take local responsibility (Mathieson 3).

By 1940, the total cost of installing SC was recorded at £129,375, a large sum but one which pales into insignificance against annual profits of some £3m (UGD199, 1/8/11). Work on SC resumed again after World War Two with the Costing Committee responsible for overseeing its installation or maintenance in the firm's mills. The committee was disbanded in 1950.

Surviving documentation (Mathieson 1, 2 and 3) shows that the SC system changed very little over its life, the one main exception being its use for purposes of replacement cost accounting for stocks and work-in-progress after World War Two, as we discuss later.

## **Evaluation**

Hunter concluded from his interviews of directors and senior managers that, of all the changes to management, including the five new groupings of operations and the expanded committee system, it was in costing that 'the most radical and successful changes were made' (Hunter nd, 41). SC eliminated the chronic late provision of costs and the updating of actual figures that had held the firm back for so long by calculating them at standard, then updating to actual by measuring aggregate percentage differences. The success of these changes was also attested to independently by Mathieson (3), by Coats (2013) and *de facto* in the perpetuation of the SC system from its inception to the end of the period of study. The pro-forma SC system documentation which survives is also testament to the system's thoroughness and comprehensiveness (Mathieson 1).

SC also speeded up the valuation of stocks for cost of sales and profit calculations. In addition, financial forecasts in Glasgow could be produced more frequently than had been achievable in the past, using figures needed for SC. Hunter also noted the increase in financial awareness that was improving decision making, especially concerning the crucial relationship of fixed and variable cost, with its implications for capacity utilisation. Also achieved was the ability of mill managers to regularly see, periodically, what the variances from standard were for direct costs and overheads, so that the reasons could be found and controllable costs reduced (Hunter nd, Mathieson 3).

Hunter states that SC did not fulfil all that was hoped of it. It did not resolve the problems of fairly allocating the sales and administration expenses of TCA nor of the Glasgow Head Office to products. It was decided to allocate these on the basis of turnover and to charge 50 per cent more overhead for handicraft products for which demand was less stable. The system, however, succeeded in the control of the vastly greater manufacturing costs.

Accurate costing was especially important and necessary in the 1930s given volatile cotton prices worldwide, tariffs and quotas associated with Britain's abandonment of the Gold Standard in 1931 and the generally recessionary environment of the times. SC was helpful in setting appropriate selling prices and in decisions regarding manning levels in the UK plants. It also revealed the comparative costs of production in different plants in the USA and Europe which led to decisions to rationalise and shift production, devices which proved useful throughout the period of the study (Hunter nd).

### **An institutional interpretation of the progress of SC at Coats**

Burns and Scapens state that institutionally-based costing research 'needs to be longitudinal in nature, in order to recognise the diachronic character of the processes of institutionalisation and the ongoing, cumulative nature of ...[such]... processes' (2000, 23). We therefore proceed in a chronological manner in order to examine the forces at work. In particular, we test the tenet of Burns and Scapens that 'management accounting change that is consistent with ... existing routines and institutions will be easier to achieve than change which challenges those routines and institutions', (2000, 12). We also bring in the role of wider, societal institutions and how they come to be absorbed into firms' own institutions as argued by ter Bogt and Scapens (2014).



These authors also note that institutions ‘exist at the cognitive level of individuals’ (ter Bogt and Scapens 2014, 16). They point out that the existence of institutions often needs to be inferred from discussions with those involved. As a result, while much of our evidence is based directly on the conversations of one of the authors (Ken Mathieson) with Willie Mathieson (Mathieson 3) or indirectly on discussions held by Hunter with senior actors from the period, (see ‘Sources’, above), this inevitably involves interpretation, as do other aspects of the institutional approach advocated by Burns and Scapens (2000) and ter Bogt and Scapens (2014), which we examine in the following sub-sections below.

### ***Power, external and internal institutions in the USA***

Burns and Scapens point out that formal MA change usually occurs ‘through the actions of a powerful individual or group’ (2000, 18), which, at Coats, in the case of SC, was initially the USA board. The US management of Coats, already partly independent from Glasgow given its size, distance and the need for local co-ordination of its large, mostly USA-based businesses, had become subject to an external institution of the US government, the Consent Decree of 1914, enacted to enforce fair trade and bear down on trusts, and which allowed government examination of books without warning (Hunter nd). Combined with these business factors, it increased a sense of the firm belonging to the USA although owned in the UK, influencing the internal, institutional ‘logics’ of management in its feelings of power and independence (ter Bogt and Scapens 2014, 6).

The introduction of SC within Coats began in 1925 in its US plants, which thus felt confident enough to introduce it on their own. In response to the rapidly growing US economy, there had grown up by 1925, over three decades, a number of consultancy firms, including that of FW

Taylor, which offered to businesses new ‘scientific’ management processes which included work study and SC. The cluster of management firms thus created, many led by cost accountants, may be considered to constitute an informal external ‘institution’, containing its own ‘forms of rationality’ (ter Bogt and Scapens 2014, 13), in particular the primacy of financial discipline. In the absence of surviving evidence, we can only speculate that isomorphism, or emulation, may have influenced Coats in the USA to adopt SC and institutionalise the same ‘situated logic’ in its US operations (ter Bogt and Scapens 2014, 6).

### ***Power and institutions in the wider Coats Group***

However Hunter does make it clear that, as far as the Group HQ in Glasgow was concerned, ‘several of the older directors were unconvinced of the need for change and sceptical of the new ideas’ implicit in SC’ (Hunter nd, 26). Thus it is an example of the difficulties that, according to Burns and Scapens (2000), may be encountered in introducing a new form of management that does not conform with an organisation’s established ‘way of doing things’, even although past accounting practice had been proved conclusively in this case to be inadequate, as noted earlier. As Burns and Scapens interpret such events, (2000, 19), the objectors did not, over time, have ‘sufficient power’ and in the circumstances had failed. The successful pro-SC group on the main board, which instigated SC some four years after the USA, was led by the mathematically inclined CH MacKenzie, (Hunter nd). MacKenzie is likely to have visited the US plants, or at least, to have become increasingly aware of their uptake of SC at some point during the late-1920s.

One group which also had institutional power, and exercised it, was the Coats’ Bookkeeping department in Glasgow, which initially was more influential with the Board than the Costing

department (Mathieson 3). Ostensibly concerned that the new system, based on standard or notional costs rather than actual, should not be allowed to form part of the accounting system, the Bookkeeping department ensured that SC was kept on a memorandum basis, requiring regular reconciliations of standard to actual. However, as the new system settled in and proved its usefulness, the Costing staff became more influential than Bookkeeping, a facet of the new system's gradual 'institutionalisation' at the group level (Mathieson 3).

Further, the SC system was put into plants in a manner consistent with other 'existing routines' at Coats. Since the earliest years of the limited company, it had been general practice in Coats to send home mills staff at all appropriate levels abroad to install new machinery, new systems or production processes, which happened in the case of SC. This mixing of staff usually led to long-term transnational goodwill, together with a certain amount of cultural transfer, for example in the area of football, which was introduced into the Brazilian plants by Scottish workers in the 1910s (Coats 2013). Friendships made beyond Scotland in the installation of SC helped legitimate and smooth its progress across the group for decades to come (Mathieson 3).

The mixed local and Scottish installation teams were augmented by consultants. Stevens and Company of Boston took the lead in the area of work measurement with the installation of the SC system itself initially (in the UK) led both by Downie and then SJH's Sterling Smith. Good working relations across each team reduced the degree of unfamiliarity that might have arisen had external consultants alone been used (Mathieson 3).

Moreover, it had long been a 'settled habit of thought and action' at Coats to ensure that UK expatriate staff had a knowledge of the local language used in overseas plants (Burns and Scapens 2000, 6). As noted, staff preparing for overseas SC installation undertook language

training where necessary. This effort was favourably interpreted locally, contributing to good relations and ease of communication, which facilitated the introduction and acceptance of SC. These ‘ways of doing things’ are traced by Coats (2013) to the firm’s building of a new thread mill at Torello in Spain, completed after many delays in 1896. It emphasised the importance of learning the local language and deferring to local beliefs and values when moving in: Coats were persuaded to build a new Catholic Church next to the mill to help overcome local resistance to working for non-Catholic foremen sent from Paisley. Out of respect for Spain’s collective and family values, a range of recreational and communal facilities was also added (Coats 2013, 210-211). Coats’ care in these areas led to its large cadre of expatriate staff being referred to as the ‘Scottish Diplomatic Service’ because of the ‘multiplicity of languages and cultures’ to which they could adapt with ease (Coats 2013, 386). Ventures of this nature are a major example of external institutions (the customs, language and values of host countries) influencing Coats’ institutionalised values and practices (ter Bogt and Scapens 2014).

Also important was Coats’ traditional thoroughness in management training. For some decades, it had been the practice at Coats to train future executives in all the firm’s key departments. In the case of SC, a training manual was produced at the early stages of its adoption. Every trainee had to undergo a course in the nature, detail, purpose and use of the SC system, including the accounting treatment of key figures.

As seen in the surviving 1960s update of this training manual, it was no broad appreciation course, but a guide to all the major steps in building up costs, which encompassed a full understanding of the nature and cost treatment of overheads, including their allocation and apportionment to mill processes. Further, trainees were given an understanding of the overhead allocations which affected the departments in which they were to be engaged, thus being

prepared for senior office in posts which required the handling of costs for management, financial or pricing purposes. Burns and Scapens (2000) characterise the procedures contained in such manuals as organisational ‘rules’ which quickly become institutionalised.

Moreover, the system of cost reporting implemented was harmonised with the three-month, six-month and annual reporting cycles already in existence before its implementation, utilising a pattern that was well established and more readily acceptable to reporting staff in the plants than one which was not. All of the above ‘routines and institutions’ played a part in the successful implementation of SC, confirming Burns and Scapens contention that MA change that is accomplished through existing institutions and practices is more likely to succeed (Burns and Scapens 2000, 12).

### ***Institutionalisation and the effects of unintended consequences***

Burns and Scapens (2000) make frequent reference in their paper to the ‘unintended consequences’ that can result from MA change. Hunter states, based on interviews of those concerned, that ‘this [i.e. SC] ... increased the American side’s feelings of ‘apartness’ from Glasgow’ (Hunter nd, 29). It is clear that it was also intended to signify that SC gave the USA operations management an unprecedented, detailed knowledge of their business that enabled them to understand its dynamics better, giving them a feeling of control that they knew the rest of Coats could not have had, even as late as 1930. Hunter also stated that this feeling of ‘apartness’ also brought with it the sobering but salutary knowledge that ‘the still almost totally and jealously separate operation of the Coats and Clark manufacturing assets in the USA was increasingly doubtful on economic grounds’, which had been discovered through comparative costings created as a result of SC (Hunter nd, 29). It would lead in due course to major shake-

ups and relocations of the USA operations: all of the foregoing massive unintended consequences in terms of human feelings of independence, growth in technical knowledge and strategic directional change as a result of the USA 'experiment' with SC (Hunter nd, 28).

As the main body of Coats plants implemented SC from the early 1930s, feelings of control, independence and growing financial awareness of one's own operation became the common experience (Hunter nd; Mathieson 3). Judging by the evidence from the Costing Committee Minutes of 1928-1930 presented earlier (UGD199, 1/1/24), even though there was growing pressure from within the Coats group for a degree of managerial autonomy inside the company's plants, the recorded reasons for the introduction of SC were accounting and financial ones related to the slowness and paucity of information. It is perhaps significant that SC was initiated across the Coats group almost a year in advance of the restructuring that brought a measure of devolution, suggesting that the feelings of control and responsibility that did emerge were unintended consequences. It is congruent with the contention of Burns and Scapens (2000) that, once a sense of local control and financial accountability emerged at the plant level after SC was up and running, it was likely to become institutionalised, supplanting an institutionalised outlook that 'was essentially that of very skilled mechanics rather than that of entrepreneurs' (Hunter nd, 21).

There were further unintended consequences associated with SC. One of these can be aligned with Veblen's notion of 'idle curiosity', cited by Burns and Scapens (2000, 18), the human tendency to experimentation and innovation which arises at times when there is a settled pattern of behaviour and which leads to innovative thinking. The most significant example was the development of a viable system of current cost accounting (CCA) at Coats during the years of World War Two.

Its invention grew out of the SC system, which processed stock movements at both actual and SC. Additionally, it enabled the calculation of monthly ratios of actual costs to SC, such that product costs and stocks valued at standard could be adjusted to actual level. It was noticed during the War that some of the ratios already produced could also be used to update SC to CCA for pricing and costing of government contracts. It remained useful for pricing in the period of inflation post-World War Two. Although it was the sole application of what the firm designated 'current cost accounting' (Mathieson 3), it put Coats in a leading position, as theoretical debate on CCA did not gain momentum in the international accounting literature until the 1960s (Deegan and Unerman 2011). This innovation shows how unintended consequences of the new SC system became routinised and institutionalised.

As demonstrated, the successful installation of SC at J&P Coats may be seen and explained with reference to the various tenets of institutional theory, lending credibility to the view that successful MA change is more likely to be achieved if it is introduced with due attention paid to the existing institutions and routines within organisations. Even so, as was shown, external institutions also contributed to internal ones.

### **Insights on the development of SC in the UK**

The previous chronicle has enabled us to attach some dates to the outlined events which add to what is understood about the implementation of SC in the UK. SC at Coats was in the development process since the end of 1930, the largest firm to date in the UK and at that point possibly in the world adopting it, making it the ninth firm in the UK known to have adopted it (using Boyns and Edwards' 2013 listing *sans Coats* as a guideline). Coats was also an early example of a very large UK firm adopting it, as opposed to the medium-sized firms generally

doing so (Boyns and Edwards 2007). Boyns and Edwards (2007, 971) discuss the differences between the implementation of SC in the USA and the UK, stating they would be surprised if there were 'no important variations in the historical development of accounting in the two countries', not least because of their relative size (Boyns and Edwards 2007, 973). Our analysis provides support for the view that SC was further developed in the USA than the UK (Chatfield 1977; Locke 1979) and that consultants were deeply involved in its development, exporting their services to the UK. It also suggests that, where a large firm adopting SC had branches both in the USA and the UK, a tendency would exist for the SC systems adopted to be the same, but more research is needed to confirm this argument.

Not adopting the same system of SC across its branches would have prevented Coats from acquiring a uniform system of SC 'enabling company management to compare the results of different internal operations' in factories producing the same products (Boyns and Edwards 2007, 990). It also would decrease other benefits of co-ordination and control posited as early as the 1920s (Blyth 1923) as Coats indeed did. Our research also reinforces the argument that SC and budgetary control did not develop together (Boyns and Edwards 2007; Edwards 1937; ICAEW 1947), although they developed separately at much the same time in Coats, an important insight that cautions against future linking of the two techniques at this period in the history of costing.

In considering change agents, the simple fact is that Coats did what a number of firms apparently did (Boyns and Edwards 2007) and approached its auditors for advice on who could help it with the task. So, Coats initiated the change, helped by advice from its auditors in the first instance. However as was shown earlier, once started on the installation work, Downie's position as auditor of parts of the combine was to debar him from continuing it. Coats' US



consultants, SJH, who had done the installation work for the firm in 1925 in the US plants, were then invited take over the job and the role of change agents for the group. The senior installation costing staff at Coats, who worked in conjunction with consultants for the first decade, then became the change agents.

Regarding the degree of integration of SC into the double-entry financial system, Brown (1949), quoted in Boyns and Edwards (2007, 986) provides five 'phases' assumed to be gone through by firms on the road to full integration of costing into their financial accounting systems. This integration never happened at Coats, where the old costing system and new SC system which followed it in the 1930s were 'kept separate but capable of being reconciled' (Brown 1949, Phase 3), due to the dominance of the financial accounting staff and their ostensible suspicion of notional figures, as explained earlier, partly, it would appear, to preserve their power.

Similarly, the non-integration of budgetary control with SC at Coats as illustrated may owe its separateness to the power of the Financial Accounting Group, whose Mr McKeggie took the lead in researching its introduction. This view fits with the findings of the ICAEW, which noted in a 1947 report quoted in Boyns and Edwards (2007, 990) that 'Budgeting and Standard Costing evolved independently but contemporaneously'. While the entrenched power of financial accounting at Coats might have been a factor, more evidence is needed.

Boyns and Edwards observe that marginal costing and associated awareness of the behaviour of fixed costs were in evidence from the eighteenth century (2007, 1019; Jones 1985). However, there was limited awareness of this at Coats until SC was introduced (Mathieson, 3). As noted, SC gave the Coats managing committees a clear assessment of the effects of volume

fluctuations in production and better enabled variances to be separated into ‘controllable’ and ‘non-controllable’. It may well be that this was a general effect of the introduction of SC across the UK.

Also, ‘responsibility accounting’ for departmental targets is associated by some writers with the widespread adoption of SC and budgetary control in the 1950s and 1960s (Boyns and Edwards 2007, 1016). Our results also note a marked increase in managerial financial awareness and competence at Coats to the introduction of SC, although it occurred from the 1925 onwards, giving earlier evidence that the one is likely to produce the other.

Additionally Boyns and Edwards (2007) discuss the findings of Alfred D Chandler, who asserted that the supposed and more rapid development of the M-form company in the USA was closely related to faster progress in the development of MA in the USA. Boyns and Edwards note that, in *The Visible Hand* (1977), Chandler suggests that devolved costing facilities enabled the largely localised control of divisions, loosely overseen by a small, head office staff. This argument has some resonance with the Coats case. While Coats was run by a system of Head Office committees, rather than a central board backed up by small, functional departments, such departments did exist for co-ordinating purposes. Thus, as the Coats case shows, it could work in firms other than those structured in M-form.

While the foregoing locates Coats in the wider picture of adoption of SC and budgetary control in the UK, it also suggests that a number of more ostensibly technical issues, such as the integration (or not) of SC into Financial Accounting systems within firms, and the implementation of SC at the same time as budgetary control (or not), may well be political

decisions relating to the balance of power, established institutions and routines within firms. This possibility should be borne in mind in future research.

### **Concluding remarks**

This study set out to accomplish a number of objectives, the first of which was to provide a history of the implementation of SC at J&P Coats, then to analyse it from an institutional point of view, using the Burns and Scapens (2000) and ter Bogt and Scapens (2014) framework. As shown above, the study has benefited from these research insights examining the effects of both internal and external institutions on the development of the varied forms of logic ('situated logics') to which they gave rise and their roles in SC implementation. At various points, it has also highlights the power of existing practices/institutions to effect change, as Burns and Scapens (2000) suggest. Further, our analysis demonstrates that the examination of both external and internal institutions, and their interaction, provides a richer, more comprehensive picture of organisational behaviour in the area of MA and SC implementation.

A summary of how SC was implemented across Coats, from an institutional point of view, would first emphasise external institutional influences on the US operation by 1925 (both legal and in the area of 'Scientific Management'). The latter eventually contributed to, by the late-1920s, the dominance of the pro-SC view on the Coats Glasgow board. This dominance resulted in the issuance of group SC implementation instructions from the Glasgow Head Office and the harmonisation of reporting dates with existing ones, the latter all already institutionalised 'ways of doing things'.

Further, the external influence of overseas cultures on Coats' own processes for the implementation of change in overseas plants was already well institutionalised in its dealings with overseas employees. This institutionalisation eased SC's introduction through deference to local language, values and full involvement of local staff.

Additionally, the rigorous training of Coats management came to incorporate the study of a full SC training manual which ensured the institutionalisation and dissemination of the new routines. The unintended consequence of acceptance of 'responsibility accounting' at plants was a sense of separation and autonomy from the centre, brought about through the forecasting and reporting requirements of the new system. While this was not well enough understood at the time to be foreseen, it did bring about improvements to management which were widely unplanned but beneficial. SC helped produce what Coats (2013) has called 'a series of articulate, self-confident and numerate managers' (Coats 2013, 386), financial awareness thus becoming the dominant 'situated logic' throughout the firm's management, displacing the Coats engineering ethos that had formerly prevailed. Our analysis also emphasises the fluctuating importance of power groupings within the firm, and the influence that these individuals eventually came to have on SC implementation at Coats.

At the outset, we sought to contribute to the literature examining how an institutional approach could be useful to historians. The retrospective view of institutionally related changes afforded by this case study helps to explain the implementation and use of SC at Coats for the years studied. It has highlighted the ebb and flow of human influence, human thought and human practice in developing MA successfully across a major firm over an extended period of time. Where the evidence is available, an institutional focus could provide additional insights.

Moreover we have located the chronology of the Coats case within the general history of SC development in the UK, as presented by Boyns and Edwards (2007 and 2013). While the basic facts of the chronology of SC or MA change across entire industries and economies is of interest, the Coats case suggests that a knowledge of the institutional factors at work in firms, taken in aggregate, could also help us understand sectoral developments more widely. Yet this would only be possible if more historical case study research into the installation of SC in the UK informed by an institutional perspective were undertaken, contingent upon the availability of suitable evidence of a firm's institutional structures and its costing practices.

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