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COST ACCOUNTING AN INSTITUTIONAL YARDSTICK FOR MEASURING BRITISH ENTREPRENEURIAL PERFORMANCE, CIRCA 1914

Abstract: This article, like that published in the spring issue, again finds fault with recent attempts by economic historians to rehabilitate the reputation of the late Victorian and Edwardian entrepreneur. It argues that, since after 1880 cost accounting became a “necessary” technology for good entrepreneurial performance, the revisionist economic historians’ failure to consider institutional factors, like cost accounting, has led them to overlook elements essential to an appraisal of comparative entrepreneurial performance. The growing inferiority of British costing methods, as opposed to American and German, moreover, meant a relative British entrepreneurial failure.

In the first part of this essay, published in the spring issue, recent negative opinions about the quality of British entrepreneurial performance, circa 1914, were criticized from a cost accounting point of view.¹ In this article attention shifts to the institutional basis of entrepreneurial activity. Although the revisionist historians under discussion are ostensibly preoccupied with the entrepreneur they really have ignored the effect of environment upon his operations. They have done this, moreover, even when the results of their own studies indicate that the subject should be investigated. Roderick Floud, in his study of Greenwood and Batley, observed, for example, that the character of the company’s accounting system

makes it impossible to measure the capital inputs, and therefore, the cost of such inputs, making it impossible to approach directly either the extent of, or the cost of factor substitution in the form of the use of capital rather than labor.²

If Floud could not measure these inputs could Greenwood & Batley? Floud never tries to answer such a question. This is unfortunate because, again as Floud noted, quoting a contemporary source, the firm’s financial record was “simply disastrous.”³ There is something incongruous about saying that a firm had, at the same

time, a disastrous financial and a good productivity record. The accounts should explain why and if they cannot then perhaps they might themselves be part of the problem.⁴ If they did not supply management with the right information, then management might be responsible for its own financial difficulties, despite, assuming Floud's conclusions to be correct, the firm's good productivity record. In other words the firm might be an example of inept instead of good management, the proof of which is derived from the discovery, through the accounts, of its internal structural chaos.

Revisionists have not spent much time explaining their neglect of institutional factors in entrepreneurial behavior. What they have said, however, boils down to a two point justification. First, they accept the dictum that the market is the primary force in economic life. They contend that, with sufficient demand, a skilled supply of capable entrepreneurs will be forthcoming in a modern economy. Or, to quote Professor Habbakuk's well-known appeal to demand theory, "Great generals are not made in times of peace; great entrepreneurs are not made in non-expanding industries."⁵ This dictum simply excludes the hypothesis of entrepreneurial failure causing economic decline, thus eliminating the necessity of bothering with the matter. Second, as econometricians they have not found much merit in the socio-psychological or religious-institutional explanations of economic activity, some of which, like the Weber-Tawney thesis, have in the past, gained great currency among historians. Accordingly they reject the idea that the British entrepreneur, for whatever particular reason, lost his elan. For them it has not been proved and is, with these sociological methods, probably unprovable, that Britain had a smaller pool of aggressive entrepreneurs in 1900 than in 1850.

Both points are hardly indisputable. No evidence exists that great entrepreneurs cannot be made during periods of contracting or static markets. On the contrary, favorable marketing conditions can permit less capable entrepreneurs to survive quite well. When the crunch comes, when entrepreneurs are forced to compete fiercely in a shrinking market they have to show ingenuity. More than one industrial empire has been made under these conditions. A demand supremacy theory, moreover, automatically raises questions about the relationship between supply and demand. Institutionalists probably would concede that individual talent existed in equal measure in Britain at different times. The problem is that individual talent has to be expressed effectively. If a firm, an industry, or an economy is not organized to provide the entrepreneur with information appropriate to a high level of management excellence, and if it does not

have the organizational wherewithal to act on this information, then the brightest and most capable individual will be frustrated. To argue that Britain had plenty of bright young people about misses the point since defective business organization and administration could have prevented proper utilization of individual skills. This was true, above all, when, during the second industrial revolution, industry's technological and managerial needs could no longer be satisfied in traditional ways, e.g., through in shop training. Demand theorists would probably concede that individual talent is wasted in a badly organized business but they would contend that the market creates the organizational milieu. Institutionalists would counter that, in this case, supply creates its own demand. But there is no need to counter dictum with dictum. The question can only be answered, if at all, by historical investigation, for either view, depending on the specific historical context, could be correct.

The problem, however, is that econometric methods hinder rather than abet this practical inquiry. McCloskey stated this clearly in the following exchange with Professor David S. Landes. The issue was the poor productivity of British coal mines, which McCloskey, in a paper, attributed to unfavorable geological formations, that is, to a natural instead of a human cause.

McCloskey: The purpose of the paper is to estimate the magnitude of the geological effect. The argument, then, is that once these have been properly measured there is no residual productivity difference to be examined by entrepreneurship.

Landes: He objected to precisely this residual procedure. If one started with the entrepreneurial explanation, one could exclude geological conditions just as well. . . .

McCloskey: . . . If one does start with the entrepreneurial hypothesis, there are no guides as to how to put the argument in quantitative form.⁶

Mathematical historians are quantifiers. As quantifiers they have concentrated on productivity indices, profits, and costs. Since the creation of managerial structures cannot be examined quantitatively within the framework of neoclassical economic theory, the subject has had to be dropped. To ignore a subject because it is insignificant is not the same thing as to claim it is insignificant because it does not fit into an explanatory model, even if the model is deemed "sufficient."

This does not mean the revisionist distrust of sociological-institutional explanations of history is unfounded. Tough minded thinkers have preferred to shy away from the cause and effect quagmire characteristic of most psychological and sociological explanations of economic activity. Economics has, in this respect, been a much more compelling auxiliary. This is why the New Economic History has made such headway. There is nothing, however, that is soft minded about managerial accounting. It deals with the institutionalization of modern management practices and it provides the method through which this institutionalization process can be studied. It permits the historian to measure the importance of the institutional factor in entrepreneurial performance in a manner that mathematical history, as practiced by the revisionists, does not. Indeed, because these revisionists have restricted their work to quantifiable costs, profit, and productivity factors, they have been able only to look at (some) of the results of entrepreneurial activity, not at entrepreneurial activity itself.

Cost accounting theory and practice, then, is quite germane to the debate about British entrepreneurship because accounting became an element essential to successful management after 1880. Superiority or inferiority in cost accounting meant superior or inferior entrepreneurial performance. The question is, therefore, how did British accounting fare? Unfortunately an answer to this question is not immediately forthcoming because the subject has been handled with confusion in most histories of British accounting. Although accounting historians generally agree that the British trailed behind the Americans after World War I, they also invariably claim that the British led the world in cost accounting before 1900. This lead has always been explained indirectly, usually by stressing the facts that accounting acquired professional status early in Britain and that British writers dominated in cost accounting theory. Neither contention, however, really proves that British industry ever led in cost accounting. Although accounting undoubtedly acquired a solid professional standing much earlier in Britain than elsewhere, cost accounting did not benefit therefrom. In fact the opposite was probably true. An analysis of materials published in *The Incorporated Accountants' Journal* in the year 1875 revealed for example that

nearly all the leading articles are on points raised in bankruptcy law and practice, and the other pages are devoted to reports of law cases on bankruptcy. . . . Hardly a word in the old papers about taxation, costing, statistical records; relatively little about utility companies or even

about ordinary joint-stock companies: practically nothing about that very important subject of recent years, the Holding Company, and nothing at all about mechanical accounting.⁷

The British accounting profession engaged almost exclusively at that time in financial not cost accounting. It was, in fact, a liberal profession made up of independent wealthy businessmen who did not work directly for industry but acted as consultants, working out of their own offices, much as lawyers do. The chartered or incorporated accountants, moreover, were not even exposed to cost accounting during their training, for as young "articled" clerks they were apprenticed to accounting offices instead of formally educated in colleges or universities. They could only learn what happened in the offices and, since the accountants seldom dealt with costing matters neither did the apprentices. The clerks who kept cost records in British industry were not chartered or incorporated accountants. They were poor, badly educated men who received what training they got on the job in a factory bookkeeping office. They hardly ever came into professional contact with public accountants who, in any case, despised them because of their lower class origins. Indeed public accountants did not consider these industrial cost accountants to be engaged in accounting. J. M. Fells remarked in 1910,

It is now some 23 years or so ago that my friend Mr. Emile Garcke and I, in the flush of our youth, wrote the first pioneering book on this subject. Then it seemed to be thought by some that we had written a book on economics, and not one on accountancy. *The Accountant*, which performs a most useful service in always representing the average mind of the profession, pointed out that the work was rather concerned with the wages and time books, stock books, and matters of a similar nature, which, as a rule did not come within the scope of an accountant's duties.⁸

Because of this isolation the public accounting profession probably ignored cost accounting long after its practice should have attracted notice. This neglect, moreover, had serious repercussions throughout British business because the professional accounting societies decided what subjects would be covered in the accounting examinations that the "articled" clerks had to pass. Businessmen, engineers, or progressive minded politicians could ask for

greater emphasis on cost accounting in the training of young accountants but unless the accountants agreed nothing could be done. And the accountants were set in their ways.

The literature which affirms Britain's early lead in cost accounting treats the subject exclusively in terms of theoretical development. The assumption is made, therefore, that superiority in theory meant superiority in practice. Nobody, however, has thoroughly studied cost accounting practice in British business. Nonetheless the available evidence, which consists of contemporary observations made by accountants on both sides of the Atlantic, clearly indicates that no correlation existed. On the contrary, J. M. Fells, Britain's leading cost accountant around 1900, commented about the backwardness of English practice.

There is no branch of accountancy that calls for higher qualifications or a more mature experience than cost accounting; yet it would be no exaggeration to state that so far as the United Kingdom is concerned, proper systems of costing are the exception rather than the rule, and where they exist they are seldom supervised by professional accountants. We have at last almost outgrown the amateur auditor—at all events, so far as important business undertakings are concerned—but the impression still prevails that professional accountants would be unable to offer any practical assistance in connection with cost accounts, the most intricate branch of business accounting.⁹

Fells, a consultant who had a special interest in promoting cost accounting, could be accused perhaps of beating his own tub. But rather patriotic Englishmen who were not ready to admit any inferiority to Americans said the same thing. Thus when American accountants in 1907 claimed they excelled in accounting technology, the editor of *The Incorporated Accountants' Journal* politely but firmly denied the charge. Nonetheless, although strongly defending British accounting practice, he reluctantly admitted: "As regards costing, the Americans, with some degree of justification, claim to have led the way—that is to say, they have succeeded in getting it more generally adopted."¹⁰

British accountants equally stressed the harmful effects that poor cost accounting had on British industry. One accountant, a Mr. Rider, wrote shortly after the turn of the century that he had been able to analyze various competitive bids submitted by English firms (the figures were taken from a series of articles on "estimating" in *The Engineer*). The result, he concluded,

is rather humiliating reading for commercial men, particularly when we remember how English manufacturers have recently been thrust to one side again and again on this particular class of work by foreign competition. They prove one thing most conclusively, namely, that in most, if not all, of the establishments submitting the tenders reviewed in the articles, there can either have been no intelligent consecutive system of Cost Accounts, or the estimating staff, being (as is usually the case) highly technical, had considered any information compiled by clerks as not worth taking into account.¹¹

Negative comment was not reserved for older industries which could be suspected of using antiquated bookkeeping. Fells observed, for instance, that the electrical firm *Edison and Swan Ltd.* had failed to integrate its financial and cost accounting.

There £56,000 had been carried forward in the balance-sheet as representing the value of certain work supposed to be in progress, which had in reality been finished for a number of years. . . . I contend that had the ordinary books of account not merely been supplemented by, but absolutely considered in conjunction with the manufacturing books of the concern, such a mistake could not possibly have happened.¹²

Similar quotations can be given, moreover, to illustrate how American superiority in cost accounting permitted American industry to operate more efficiently than British. Fells, who had studied American and British railroad accounting closely, commented that “the accountant,” the “goods manager,” the “general manager and everybody else” in the British Northeastern Railway Company

agreed on one thing, viz., that they could no more “spot” where the increase had arisen in the passenger traffic than they could “spot” the decrease in the goods traffic. This is not at all a desirable state of things. It is very different from the manner in which the American railway companies’ accounts are kept. Everybody knows that Mr. Pierpont Morgan, when he first took the railway companies of the United States in hand, gathered together and studied very exhaustively all the statistics he could get at, and, as a result he pointed out that by increase in rates or decrease in cost of one-tenth of a penny per ton per mile

the companies would receive some £60,000 or £70,000 a year more. And if one looks at the elaborate accounts of these companies one can see what a great advantage these administrators have over administrators in this country.¹³

Some years later another English accountant remarked about American steel companies:

A study of the great American iron businesses of the past, culminating in the formation of the well-known Steel Trust, is interesting, as disclosing how close costing was, and is, employed by the steel kings in watching the management of their concerns, and the position of a departmental manager, whose production and costs were falling below standard, seems to have been no bed of roses. 'Make good or go' is a hard precept to work to.¹⁴

Rawlinson went on to say that "many great works" in England had their own cost accounting departments, with separate sets of offices, that prepared periodic reports on the costs of production by department. Their weekly and monthly reports enabled management to eliminate many cost inefficiencies in a firm's operations.¹⁵ But he concluded that Americans applied cost accounting technology more intensively within the firm and more extensively throughout industry than did the British and they used the information provided in order to cut costs.¹⁶

Accountants drew this picture just before World War I, when accounting technology was almost exclusively preoccupied with actual costs. British performance did not improve relative to the United States after standard costs and budgeting assumed importance in the new technology (beginning during World War I). Indeed it got worse, for the British even lost their claim to theoretical superiority. One leading accountant, Lord Stamp, described the theoretical laggardness in 1925:

English accounting practice has been developing for many years, but it has not made any substantive contribution to economic science over its own field of analysis of the results of industry, although it has practically a monopoly grip of the required data. Accountants have the figures; other people cannot use them and if accountants will not, then we get nothing; economics continues its abstract declarations and business blunders on by individual instinct.¹⁷

The most imaginative work in standard costing, budgeting, and uniform costing was done elsewhere. The point, however, need not be pursued since it is not disputed.

Because British cost accounting technology remained relatively backward, the historian cannot, by studying Britain alone, determine what factors were responsible for the retardation. That would be like searching for the causes of something that did not happen. Work can be done, however, comparatively, by looking for and at similar institutions in Britain, after they have been identified as causal factors in a country where cost accounting theory and practice has flourished. Both America and Germany qualify in this respect. American cost accountants have studied their own experience the most; indeed they, with rare exceptions, seem to think that cost accounting is an Anglo-American institution.¹⁸

Inasmuch as accounting historians usually confine their analysis to the English speaking world and its literature, relatively little has been said in America about the impressive theoretical and practical work done in Germany on cost accounting.¹⁹ Although theoretical contributions were made by many intelligent men, a look at the work of a giant among them, Professor Eugen Schmalenbach, suffices to illustrate the theoretical development. Schmalenbach, an accountant by training, realized in the late 19th century that accounting was an applied science and he devoted a lifetime, as a professor in Cologne, to perfecting this business technology. He was among the first to recognize the digressive, progressive, and proportional nature of costs, and that technological factors, e.g., plant size, equipment, speed of output, unit and lot size, as well as production factors, e.g., variations in volume of output, determined costs. He even constructed a management decision model which, based on marginal cost theory, set minimal production costs (or optimal profit levels) in a firm.²⁰ Schmalenbach emphasized the uselessness of historical costs, thereby anticipating standard cost accounting and forecasting.²¹ He, in the 1920s, worked up the charts of accounts and flow charts which became the basis of uniform accounting, not only in Germany but throughout continental Europe. This German professor, then, "took cost theory beyond its descriptive stage."²² For him accounting was a tool which, as he explained when developing the concept of a "dynamic balance sheet," enabled management in private or public enterprises to achieve maximum efficiency.²³

Many of Schmalenbach's ideas sparked intense debate among professional accountants, accounting professors, and accounting

students in Germany. His concept of progressive, regressive, and proportional costs was subjected to detailed analysis and found wanting; his decision model was rejected as impractical. The point is not, however, that Schmalenbach was wrong but that the academic and accounting community, under his influence, debated the essential features of management accounting. This debate began a decade before the First World War and continued through the conflict unabated. Then in the 1920s there began

research on a portentous scale; dozens of scholars occupied only with scientific work, textbooks, and monographs; a half-dozen or more periodicals and a well-trained staff of considerable size busied with the theoretical and practical problems of the newly-created '*Betriebswirtschaftslehre*.'²⁴

German business economics became the most theoretically oriented in the world, and cost accounting theory was an important part of German business economics. Indeed before World War I it was business economics in Germany. As a result German academic accountants made significant contributions to the science of cost accounting. Their work in value theory was unparalleled in its analytical sophistication and their contributions to uniform cost accounting theory were equally unrivaled.

From the beginning Germans never forgot that theory had little meaning unless it affected industrial practice. Schmalenbach certainly conceived of accounting as an applied science. Between 1906 and 1914 his periodical, the *Zeitschrift für handelswissenschaftliche Forschung*, regularly published articles, written by working cost accountants and engineers, that described current industrial accounting procedures. The war and the defeat, moreover, triggered a fundamental reevaluation of German industry that culminated in the "rationalization" movement of the postwar era. Most descriptions of the movement concentrate on the 1920s, but, as far as cost accounting is concerned, it really began with the cost accounting renaissance in German industry shortly after 1900 and ended with the Nazi efforts to implement a uniform system of modern cost accounting in German industry in the late 1930s.²⁵

German achievements in cost accounting technology, therefore, cannot be denied. But what about the institutions which succeeded this development? First there were business factors. German industry tended quite early to be integrated into large-scale organizations. The big German banks, with state encouragement, fostered

this integration. These banks, which were “. . . a combination of commercial bank, investment bank and investment trust. . . ,” functioned as middlemen between the investing public and industry because they took “. . . the stocks and bonds [of a company] and tried to place them with the public.”²⁶ Improved cost accounting developed out of this relationship. In effect, the banks, as middlemen, assumed a great responsibility towards the investor. They needed, therefore, to have reliable information about the financial status and business performance (both actual and potential) of the firms in which they took an interest. The banks, therefore, recruited and trained their own staffs of auditors, men, who, because they were interested in the industrial as well as the financial performance of their clients, had to be trained cost accountants. Through their work banks became cost accounting catalysts. Auditors pressed customers into adopting improved accounting systems. Indeed, when a bank held a company’s stock in its investment portfolio, its auditors insisted that the client firm implement management control oriented cost accounting.²⁷ Thus institutionalized interaction between banks and industry fostered cost accounting.

This interaction, moreover, was characteristic of German business structure. Such bodies as the German Machine Manufacturers or the Rheinisch-Westphalian Coal Selling Syndicate needed good cost accounting technology in order to operate their cartels efficiently. All of the cartels had “their standing committees on accounting and costing problems and laid down uniform systems for their members.”²⁸ The German trade associations for heavy and light industry (*Zentralverband Deutscher Industrieller*, founded in 1875, and the *Bund der Industriellen*, founded in 1895) also

acted as originators as well as clearinghouses for ideas in the field of industrial accounting. The original purpose of this collaboration was mutual assistance and better understanding between members of the same industry. [But] it . . . gradually developed into a comprehensive technical advice system, whereby each accountant working in a particular trade or industry [could] call upon the combined experience of his fellow.²⁹

There is no doubt that “[t]he more rigid and comprehensive organization of industries in Germany,” as an English cost accounting expert remarked, “in cartels, syndicates, combines and similar organizations has been instrumental in evolving unified methods of control.”³⁰

State supported educational institutions also promoted cost accounting. Although noneconomic in the sense that they were state created, these educational institutions had direct—e.g., professors worked as industrial consultants—contacts with private business as well as indirect ones through the quasi-economic professional associations formed to promote the interests of their graduates. Two sets of institutions, with associated professional societies, existed. There were the *Technische Hochschulen* which had grown up during the nineteenth century.³¹ By 1900 they numbered an impressive eleven within the German Empire. Although education in these schools had been exclusively technical, the professors, some of whom were industrialists themselves, had grown conscious during the last two decades of the 19th century of the need for engineers to acquire management skills. Perspicacious engineers realized that the new American challenge arose less from a technical than a managerial superiority.³² This led them to scientific management and cost accounting. Indeed the Association of German Engineers (*Verein Deutscher Ingenieure, VDI*), to which many of these professors belonged, devoted an entire meeting in 1912 to the scientific management movement in America.³³ Professors in the *Technische Hochschulen*, representatives from the *VDI* and from industry, many of whom were graduates from *Technische Hochschulen*, and civil servants, reviewing technical education, specifically urged that greater emphasis be placed on cost accounting and business administration in the *Technische Hochschulen*.³⁴ The first cost accounting courses were introduced there before the war. During the first decade of the 20th century, moreover, numerous cost accounting studies written by professors in and graduates from the *Technische Hochschulen*, were published.³⁵ Thereafter *Betriebswirtschaftslehre* (theory of business economics) became a standard preoccupation of professors and students.

The *Handelshochschulen* (Business Schools) belonged to the second set of institutions, the creation of which was even more important in the development of cost accounting than the first. The first *Handelshochschule* started in Leipzig in 1898, a second in Cologne (1901), a third in Frankfurt am Main (1901), a fourth in Berlin (1906), a fifth in Mannheim (1908), a sixth in Munich (1910), a seventh in Königsberg (1915), an eighth in Nürnberg (1920). Two of them, Cologne and Frankfurt, formed the nucleus of universities which grew up in these significant commercial centers.³⁶ The professors in these new schools, not those in the older universities and *Technische Hochschulen*, made business economics into a respected applied science. Men like Schmalenbach and Schmidt

“. . .wrote all the literature of scientific value and directed all the scientific groups of scholars.”³⁷ The graduates from these schools, who entered commercial, banking, and industrial pursuits not only carried the idea of the professors with them but kept abreast of technical matters on their own. The *Verband Deutscher Diplomkaufleute* (Association of German Business School Graduates), which was organized to defend the group’s professional interests, published a series of technical books and a periodical (*Der praktische Betriebswirt, The Practical Business Economist*) which kept members posted on cost accounting and related business technologies.

Thus three streams—the *Technische Hochschulen* and the engineering fraternities, the *Handelshochschulen* and their graduates, and the banks, industrial cartels, and trade associations—carried cost accounting into the German economy. These three streams, moreover, flowed together through the medium of the state bureaucracy. The interaction among these institutions manifested itself even before the First World War, when industrialists, city officials, and business school professors formed the *Gesellschaft für wirtschaftliche Ausbildung, e. V. zu Frankfurt am Main* (Society for Education in Efficiency, Frankfurt am Main) which propagated the latest business administrative and accounting techniques in a series of lecture courses especially intended for working engineers and plant managers.³⁸ Professors and lecturers from various *Handelshochschulen* and *Technische Hochschulen* were active in this program which, despite the Frankfurt designation in the organization’s title, operated nationally. The institutional interaction was even greater after World War I. The *Reichskuratorium für Wirtschaftlichkeit, RKW* (*Reich Development Trust*), with state money, drew industrial leaders, professors, and state officials together in its various committees in order to promote efficiency.³⁹ Indeed in the 1920s the RKW began, under Schmalenbach’s guidance, to publish model charts for various German industries.⁴⁰ In 1927, in its annual report, the RKW noted that

systems of uniform bookkeeping had been completed and their adoption recommended in the following branches of industry: engineering; lignite production; breweries; textiles; tile manufacture, rubber industry; coal trade; wholesale paper trade; and freight shipping on the Rhine.⁴¹

Finally the Nazi dictatorship profited from the same institutions when it carried through a general reform in uniform accounting during the 1930s. It is true that Eugen Schmalenbach, who had chaired the *Reichsausschuss für Betriebswirtschaft* (Central Man-

agement Committee) of the RKW refused to serve the Nazis, but his influence, through his writings, his students, and his earlier work in the Rf.B was great. In fact, without the theoretical work of the professors, the full cooperation of thousands of trained accountant graduates from the business schools, and three decades of cooperative work among business leaders, engineers, and accountants on various committees, the Nazis could not have begun the formidable task of implementing uniform accounting in Germany.

The complex institutional supports that sustained the growth of cost accounting in Germany did not exist in Britain. Since big British banks did not finance industrialization they never developed a similar institutional relationship with British industry.⁴² London accounting firms, like Price Waterhouse, which became internationally famous, did serve the needs of the financial and commercial community but, since the milieu was cut off from British manufacturing industries, the bookkeeping technology involved financial instead of industrial costing. British industry, moreover, never organized on the German scale. It was not compelled to implement the cost accounting control mechanisms that were unavoidable in larger, more rigid organizations.

Nor did English educational institutions consciously promote cost accounting as part of a new management technology. Although an *Institute of Works and Cost Accountants* was founded (1919), it functioned along familiar lines—apprenticeship combined with *Institute* administered examinations, for which apprentices prepared after work through self-study. The close connections between higher education and accounting that developed in Germany (and America) never took hold. Only in 1947 did “eleven of the larger universities, by agreement with the main accountancy bodies,” begin a degree program in accountancy.⁴³ But, since an accounting degree had a “vocational” bias, neither Oxford nor Cambridge accepted the scheme.⁴⁴ Moreover, the accounting societies only agreed because the program perpetuated the apprenticeship system (after 2½ years in the university a period of apprenticeship was required in order to receive a degree). This belated and halfhearted recognition of university work illustrates the reluctance of professional accountants, embedded in their institutes, to recognize the importance of academic research and training. A few of the professionals saw the need, but, as a group, English accountants continued to mouth the old clichés about the superiority of apprenticeship over formal education. This attitude deprived British accounting of the research as well as the educational benefits which came from the German institutions. “This insistent practical urge. . . .” one apologist ad-

mitted, "provoked a critic to declare that accountants were insensitive to the need for sustained academic study and research. It is probable that a certain want of contact with the universities had something to do with this apparent neglect. . . ."45

What the English education system failed to do specifically for accountants and cost accountants it also failed to do generally for English management. The tendency to bring Oxbridge men into management resulted in general ignorance of cost accounting at the top where old school ties counted for more than managerial skills. Even graduates with degrees in economics or business administration (from the few British universities that eventually started such programs) did not possess the requisite knowledge because cost accounting was not part of the university curricula. Theoretical marcoeconomics, the glory of Britain, was the mainstay of education in economics and business. Nor were British engineers much better prepared in cost accounting. The long tradition of apprenticeship training, which marked British engineering, once again discouraged innovation. Engineering schools developed late and when they came engineering education was almost exclusively technical in nature. The men who organized the institutions did not seem to realize that modern industry needed industrial and management as well as academically trained electrical, chemical, and mechanical engineers. The engineering curricula in the colleges and higher technical schools were obsolescent, in comparison with the American and German, from the beginning.

Nor did British government administrative and financial policies effectively improve cost accounting technology. British authorities, awaking to the backwardness of governmental cost accounting during the First World War, introduced better cost accounting procedures into the defense ministries.⁴⁶ Moreover, they encouraged private industry to adopt better cost accounting. State action, however, never meant much. Company laws, which required annual audits in limited liability firms, encouraged better financial accounting. But cost accounting was not significantly affected thereby. Nor did the taxation laws indirectly improve costing, as they did in Germany. Whereas German law required corporations to pay taxes according to volume of sales and turnover, thereby demanding more accurate and complete accounts, English law only taxed profits. The British government's failure to promote effective uniform accounting methods was to prove especially significant. As the country retreated from competition to protectionism in the 20th century, British industry did not arm itself with the control mechanisms with which industrial efficiency could be assured after the spur of com-

petition disappeared. The neglect had serious repercussions during the Second World War, for the British government, because of the diversity of accounting procedures within particular industries, had difficulty awarding and paying contracts. Without uniform cost accounting nobody was in fact quite sure what the costs were.

This essay on cost accounting development has ranged temporally over a broad span. The revisionist econometricians out to refurbish the image of the Victorian and Edwardian entrepreneur might be tempted to say, therefore, that the critique has missed its mark. So what, for the sake of argument, if the Germans developed a better system of cost accounting than the British between 1900 and 1940? So what if the German entrepreneur outstripped the British during the same period of time? They have been studying the performance of the late *Victorian* and *Edwardian* entrepreneur. I believe, however, that the revisionists, by restricting their analysis to the pre-1914 period have not understood the nature of the debate. McCloskey and Sandberg listed four specific charges which the pessimists have leveled against British industrialists:

- (1) They were bad salesmen, especially abroad.
- (2) They overinvested in old staple export industries, such as cotton and iron, and were slow to move into industries of the future, such as chemicals, automobiles, and electrical engineering.
- (3) They underinvested in the laboratories and technical personnel required for the development and exploitation of applied science.
- (4) Most important, they failed to adopt in many industries the best available techniques of production, such as ring spinning in cotton textiles, the Solvay process in chemical, mechanical cutting in coal, and a host of new techniques in iron and steel.⁴⁷

All four charges, except the first perhaps, highlight an economy undergoing a basic transformation. All imply that it is not the country's past achievements but its ability to adapt to future requirements that is the yardstick by which "economic" accomplishments have to be measured. Moreover all, except the first, are really statements about the structure of an economy. Even the first can be so considered if salesmanship is viewed in terms of training and management systems. These are, by McCloskey and Sandberg's own admission, the charges that they, revisionists, have to refute.

The problem is that, with their methods, the revisionists have been unable, especially when restricting the analytical time frame to the Victorian-Edwardian era, to deal with, much less refute, the four

propositions. In order to chart trends in costs, profits, and productivity the econometrician needs long runs of commercial and industrial statistics. He is forced, therefore, to study industries that have not only been around for some time but which have been considered important enough to warrant statistical compilation. The period was one of the most technologically innovative in history. The new industries, which were destined to replace the older staple industries, and which, therefore, were the most technologically advanced, economically dynamic, financially profitable, and structurally creative during the second industrial revolution, were only on the threshold of their greatness at the turn of the century. Obviously the farther the econometricians push statistical runs from 1900 or from 1914 into the past the more they have been forced to deal with older industries. And the more they have been occupied with the older industries the less they have been able to study the British entrepreneur during a period of transformation. S. B. Saul, when reviewing the work of the new economic historians at the Harvard Conference in 1970, noticed this limitation. "The Conference papers were restricted to discussions of the older industries," he remarked "even Floud's machine tool firm was definitely not of the new generation. What of the newer industries?"⁴⁸

The statistical method, however, limits the revisionists treatment of the old industries too. Economic historians tend to believe that the old industries (iron, textiles, shipbuilding) suffered from a first start handicap by the end of the nineteenth century. That may be true, but there is no inexorable law of economic development which makes it so. If an early start means that an industry is later automatically saddled with obsolescent plant and equipment then the German chemical and electrical industries would have, in the 20th century, to have been, because of their earlier start, inferior to those of the British. The question is not so much which industry started first as which was capable of constant adaptation and innovation. The question is about industrial potential, c. 1914, not industrial accomplishments. To examine "potential" the institutional infrastructure of industry has to be taken into account; for, if it is inadequate during a period of industrial transformation, that industry's ability to modernize its managerial and productive structure will be adversely affected.⁴⁹ British entrepreneurs operated quite well in the financial and managerial milieu of the first industrial revolution. They had serious difficulties, however, adapting to the technological and organizational demands of the second. The revisionists, with their backward looking statistical runs on costs, profits, and productivity, have really ignored this essential point. That is why cost

accounting is so useful. It is both method and object of research; method because it provides the historian with analytical tools which deal with structure during a period of structural change; object because it is an essential part of the subject under investigation. A study of its development shows that the econometric revisionist optimistic evaluation of the British entrepreneur, circa 1914, is misplaced.

FOOTNOTES

¹Vol. 6, No. 1, pp. 17-28.

²Floud, p. 329.

³Floud, p. 318.

⁴Floud maintains that "although the financial administration of the firm was severely criticized after 1890, no similar criticisms were made of the quality of work." Floud, p. 318. Good workmanship does not, of course, mean good productivity, low costs, or acceptable profits.

⁵Habakkuk, p. 212.

⁶McCloskey, *Essays*, p. 309.

⁷Jones, p. 182.

⁸Fells, *The Accountancy*, p. 69. Also see, Emile Garcke and J. M. Fells, *Factory*.

⁹Fells, *The Accountancy*, p. 70.

¹⁰*English*, p. 193.

¹¹Rider, p. 178.

¹²Showell, p. 63. Fells' remarks follow a speech made by A. E. Showell.

¹³Showell, p. 63. Fells is quoting a man named Joseph Pease, who was head of the *Northeastern Railway Company*.

¹⁴Rawlinson, p. 265.

¹⁵Rawlinson, p. 265.

¹⁶Rawlinson, p. 265.

¹⁷Murphy, p. 43.

¹⁸Thus Gardner and Littleton stay almost exclusively in the Anglo-American world. A. A. Garrett, in an article "Accounting Research, An International Function," only deals with the Commonwealth, the United States, and the United Kingdom. David Solomons in "The Historical Development of Costing," mentions Germany in a short footnote.

¹⁹Hanns-Martin W. Schoenfeld, who has written one of the few studies in English on German cost accounting states that ". . . relatively little work has been done to make known and to utilize in the United States scholarly ideas which have been generated in Europe—which in industrialization and business research is second only to the United States. Since central European ideas have had some—and occasionally considerable—influence on the field of business administration in Japan, in certain countries in Eastern Europe, in South America, and in the rest of the industrialized world, scholars in accounting and related fields should have an opportunity to become familiar with this approach." Schoenfeld, p. v.

²⁰Schoenfeld, p. 52.

²¹Schoenfeld, p. 52.

²²Schoenfeld, p. 52.

²³The best way to get familiar with Schmalenbach is through his periodical, *Zeitschrift für handelswissenschaftliche Forschung*. He started it in 1906 and wrote

many of the articles, and, during the first fifteen years, all the book reviews himself. The ideas in his books appeared first in articles in this periodical and often quite early. Also see the recent biography in English, Forrester, *Schmalenbach and After*.

²⁴Schranz, p. 279.

²⁵Brady (*The Rationalization*) is still the authoritative work. For the extension into the Nazi period see Singer and Abel.

²⁶Abel, p. 32.

²⁷Abel, p. 33.

²⁸Abel, p. 35.

²⁹Abel, p. 35.

³⁰Singer, p. 13.

³¹See Manegold and Lexis. For a comparison between French and German technical universities see Locke.

³²Two works by the influential Professor Alois Riedler of the technical *Hochschule* in Charlottenburg are important (*Ein Rückblick* and *Emil Rathenau*). Also see his *Zur Frage* and *Unsere Hochschulen*. Other professors of note are Otto Kammerer (see his *Verhandlungen*) and Georg Schlesinger (see *Selbstkostenberechnung*).

³³Fifty-fourth general meeting of the VDI held in Leipzig. American advocates of the "Taylor-System" were in attendance. See, James M. Dodge, *Industrielle* and Georg Schlesinger, *Betriebführung*—two speeches given at the meeting. Taylor's work was also translated into German, often by these professors. See, Frederick Winslow Taylor, *Die Grundsätze*, which was translated by Professor Rudolf Roesler of the technical *Hochschule* in Aachen.

³⁴*Abhandlungen*. Of articles in this report see especially, Dr. von Wiese, *Die wirtschafts- und staatswissenschaftlichen Studien*.

³⁵Two important works, at the beginning of this flood of books, were J. Lilienthal, *Fabrikorganisation*, and Albert Ballewski, *Der Fabrikbetrieb*.

³⁶See works by Redlich, Eckert, Devinat, Schmidt, Isaac, and Mantsuranis.

³⁷See works by Schranz, Matz and Schmaltz, *The Business*.

³⁸Founded in 1903.

³⁹Beginning as a private organization (1921), it did not get very far until reorganized and financed by the state (1926).

⁴⁰Abel, p. 36.

⁴¹Two accountants, G. W. Murphy and E. S. Most, who translated one of Schmalenbach's books, said of him: "It is no exaggeration to state that he transformed the German accountancy profession by operating a revolution in the attitude of businessmen to accountancy, as much as by inducing accountants themselves to extend their vision and their range of activities." (Schmalenbach, *Dynamic Accounting*, p. 5)

⁴²British industrialization was financed by individuals, by local banks, and by reinvestment of profits. Although London was a great financial center, it was involved more in commercial loans and portfolio investments (e.g., state bonds, railroad and mining securities). Whether or not British industry lacked capital because of London's failure to invest in home industries is a controversial subject. Some feel that sufficient money was available from other sources, but the fact that the big British financial institutions generally ignored home industries is not questioned.

⁴³Byrd, p. 37.

⁴⁴Byrd, p. 37.

⁴⁵Bray, *Recent*, p. 199. Also see Bray, *The English*. In 1911 a Mr. James Pater-son of Glasgow told an Assembly of Incorporated Accountants: "I find, and I think it is the experience of all who have carefully examined the cases that came under their notice, that a student who has been in a good office, and who has the natural ability to assimilate what he sees and reads, makes a better accountant than the man who starts off with the halo of a University education (Applause). I think that our method of examination, subject to certain qualifications, is a far better test than even a degree in economics in the Berlin University. (Hear, hear) We get far better results from a practical examination than from one in mere theory." Nelson, p. 20. This attitude persisted in the profession through World War II.

⁴⁶Grimwood, pp. 114-20.

⁴⁷McCloskey and Sandberg, p. 92. The list of charges is repeated in McCloskey, p. 4.

⁴⁸Saul, p. 396.

⁴⁹An excellent description of management's preparation (in research, develop-ment, and marketing) against obsolescence can be found in Sydney H. Higgins, *Dyeing*. Higgins wrote this study after a lengthy tour of factories in various coun-tries. The chapter on color production is especially interesting because of the future orientation of the German dyeing industry. Indeed as management became more future oriented it became less susceptible to obsolescence. Members of the Anglo-American management accounting team who visited the USA in 1950 were amazed to find American manufacturers discontinuing product lines or replacing plant and equipment that were perfectly "good" on the grounds that market and production forecasting showed they had no future.

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