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Accounting and the birth of the notion of capitalism

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Abstract

The purpose of this paper is to cast a new light on the post-Sombartian debate. As we know, Sombart (Sombart W. Der moderne Kapitalismus. München, Leipzig: Duncker and Humbolt, 1916) thought that the invention of double-entry bookkeeping was essential to the birth of capitalism. Max Weber developed the same theme, but to a lesser extent. Accounting scholars have debated the idea quite extensively during the 20th century. All these previous works have in common the fact that they address the historical question by comparing accounting practices to business practices, some of which are interpreted as capitalist. In this paper, my aim is not so much to understand the birth of capitalism, but to contribute to some understanding of the birth of the concept of capitalism itself. The concept was forged during the 19th century. At that time, capitalism and a certain kind of double-entry bookkeeping practice that was able to highlight the circuit of capital were inextricably linked. It might be suggested that this historical situation greatly helped the scholars of the period to conceptualise what they called capitalism, and it is easy to show that the notion of capitalism itself is rooted in accounting notions. I will thus argue that the history of how the concept of capitalism was invented is an example of the influence of accounting ideas on economic and sociological thinking.

Keywords: Capitalism; Accounting; Karl Marx; Werner Sombart; Double-entry bookkeeping

In his major work, *Der moderne Kapitalismus*,[1] Werner Sombart asserts that capitalism and double-entry bookkeeping (hereafter referred to as DEB) are indissociably intercon-

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[1] The first edition dates from 1902. In 1916, Sombart published a second, completely revised version, in two volumes, and a third volume was added in 1928. The debate refers to the revised edition of 1916.

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nected, and devotes more than 10 pages to the various relationships he sees between the two phenomena. These few pages have aroused the interest of accounting historians, who despite their differences have generally concluded that Sombart's assertion was not valid for the whole period prior to the second half of the 18th century. A review of a few major texts involved in the debate shows the differences in their treatment of Sombart's writing, which aspects are examined and which ignored, pointing to opportunities for further testing of Sombart's claims. Other authors, having noted the difficulties involved in proving congenital links between DEB and capitalism, have sought new interpretations. Bryer (2000a,b) renews the analysis by focusing on what he calls "accounting signatures". The true signature of capitalism is in Bryer's opinion not DEB alone, but the capacity to frequently calculate the "rate of return on capital". Carruthers and Espeland (1991) set out to study the relationship between accounting practices and capitalism not as a technical connection (in the sense that accounting makes it possible to reach more rational decisions), but as a rhetorical bond and a justification (even when badly kept and useless as a decision aid, accounting contributes to the legitimacy of practices originally considered illegitimate).

This article is a new attempt to understand the links between DEB and capitalism, bringing a new approach to the issue. All the previous works have in common the fact that they address the historical question by comparing accounting practices to business practices, some of which are interpreted as capitalist. This paper sets out not so much to understand the birth of capitalism, but to contribute to some understanding of the birth of the concept of capitalism itself. Rather than concentrating on the remote periods of the origins of capitalism, the focus here is on the much more recent period that saw the birth of the concept of capitalism, with an attempt to trace its genealogy. The aim is to show that this concept could not have come into being in the minds of social scientists without some knowledge of the DEB practices of their time. I will argue that the history of how the concept of capitalism was invented is an example of the influence of accounting ideas on economic and sociological thinking.

The plan of this article is as follows. The first part discusses Sombart's writings and analyses the subsequent controversy. The second part then looks into the matter of not the origins but the concept of capitalism itself. The aim is to show that the concept of capitalism is indissociable from a representation of economic life shaped by an accounting outlook. The conclusion opens out the issues, identifying directions for analysis of the influence of accounting representations in the representations produced by the emerging social sciences (particularly the field of economics, still called political economy at the time). The concept of capitalism is here considered to be just one of many examples of this as yet unexplored phenomenon.

1. The post-Sombartian debate

1.1. Sombart's writings

It was Werner Sombart (1863–1941) who declared that "capitalism and double entry bookkeeping are absolutely indissociable; their relationship to each other is that of form to content" (Sombart, 1992, p. 23). Sombart belongs to what has been called "the German historical school in economics", which put "the emphasis on the relativity of economic systems and epochs, and the necessity of analysing each on its own merits with a view to working out its own particular characteristics rather than getting at general economic law" (Parsons, 1928, p. 643).[2] This school was to produce a theory of stages, identifying various periods and their related economic systems. This was at the origin of the idea of capitalism not only as an epoch of history, but also the idea that there were separate identifiable periods within capitalism itself. Sombart, in his major work *Der moderne Kapitalismus*, first published in 1902, identified three stages in the development of capitalism: early capitalism or Frühkapitalismus (from the 13th to the middle of the 18th century), full capitalism or Hochkapitalismus (from the middle of the 18th century to the first World War) and late capitalism (since 1914) (Sombart, 1930). This approach to economic phenomena explains Sombart's interest in all the cultural developments taking place as capitalism itself developed, particularly in accounting. The section of his book covering these questions starts with a presentation of "development of systematic account-keeping". Apparently, relying largely on the work of H. Sieveking, Sombart identifies a certain number of stages that can be summarised as follows:

(1) The first appearance of accounts. They brought order to the "inextricable confusion" of merchants' records, which previously had no purpose other than to prevent oversights, and took the form of basic notes with no underlying system. According to Sombart, the first accounts were developed in Italy in the 13th century.
(2) Development of DEB: "each entry is recorded in two accounts, as a debit in one, as a credit in the other. This is the fundamental principle of DEB. Through this system, an enterprise's accounts are inextricably linked, tightly bound together like a bundle of sticks." (Sombart, 1992, p. 20). Sombart thought this stage was reached from the second half of the 14th century. In particular, he mentions the accounts of the city of Genoa, which were kept under a DEB system from as early as 1340.
(3) A third stage came about with the introduction of the capital account and a profit and loss account, used to close all the ledger accounts. This is "the very essence of double entry bookkeeping" which "can without a doubt be summed up in this objective: keeping track of every movement throughout the company's capital cycle, quantifying it and recording it in writing" (Sombart, 1992, p. 21). The capital account seems to have appeared in the books a little later than the profit and loss account. Year 1430 is the date proposed for the earliest capital account. Later on that century, in 1494 brother Luca Pacioli published his treatise, considered "the first scientific system for DEB in which all previous empirical discoveries were theorised into a coherent, comprehensive representation" (ibid, p. 21). Pacioli's work presents the first three stages identified by Sombart, who however recognised that "it was not such an advanced accounting system as our modern system" (ibid, p. 22), since Pacioli was unaware of the practice of closing the accounts, or establishing an annual balance sheet.

[2] Sombart was a student under Gustav Schmoller, a major theorist of the German historical school. Schmoller became involved in a disagreement with the Austrian marginalist school known as the quarrel of methods, following publication in 1894 of his book on political economy and its methods. In this book he contrasted his recommended empirical, inductive method with the deductive approach used by the Viennese school and the marginalists. The Viennese economist Carl Menger published a response to this work, thus feeding the controversy.

(4) Year 1608, the date Simon Stevin's textbook was published, is taken as the year it was first proposed to close annual accounts and establish a balance sheet within a DEB system.
(5) The final stage considered by Sombart saw the introduction of stocktaking in closing procedures, principally in order to restate stock value if necessary. Although the French *ordonnance* of 1673 required merchants to perform a stocktake at least every two years, the link between establishing the balance sheet and this non-accounting procedure does not appear to have been realised until very late on; in Sombart's opinion, it went unnoticed throughout the whole early capitalism period. Apart from this point, which troubled him, Sombart maintained that "for the moment it is sufficient to have clearly established that the double entry bookkeeping system had already reached maturity in the early capitalism period" (Sombart, 1992, p. 23).

Sombart was obviously far from ignorant of accounting history, and considered that DEB underwent an improvement process throughout the early capitalism period. He described the main features of the period as follows: "the capitalistic entrepreneurs, and their subordinates, the workmen, still bear the earmarks of their feudal or handicraft origin: their economic outlook still exhibits the superficial characteristics of pre-capitalistic mentality. The economic principles of capitalism are still struggling for recognition" (Sombart, 1930, p. 25). However, "in the period of full capitalism (. . .) the principles of profit and economic rationalism attain complete control and fashion all economic relationships. (. . .) Scientific, mechanistic technology is widely applied." (ibid, p. 25). Once DEB was fully developed, it became part of this technology, necessary for the rational capitalism of the second period.

Having established these historical milestones, Sombart went on to bring out "the significance of a systematic accounting system in the development of capitalism", highlighting various aspects:

(1) Keeping accounts encouraged *order* and *clarity*, which Sombart believes are necessary for successful development of a capitalist system. Accounting brought to business the mathematical order which was later to prove its worth so brilliantly in the field of astrophysics, through the idea of quantification for each event.
(2) The idea of *accumulation* also developed thanks to DEB: "double entry bookkeeping has only one objective: to increase the value of a sum measured in a purely quantitative manner. When one plunges into double entry bookkeeping, the nature of all the goods and products is forgotten, the principle of satisfying demand is forgotten, all that matters is the idea of accumulation: no other approach is possible if one wants to occupy a coherent position within this system: the aim is no longer to see sheaves or cargoes, flour or cotton, but only values which appreciate or depreciate. (. . .) The concept of capital was created essentially from this point of view", since the concept of capital can be defined "as the capacity for accumulation as assessed through double entry bookkeeping" (p. 24).
(3) Through DEB, *rationalisation* of commerce became possible. DEB reflects the "close cohesion between the reign of the principal of accumulation, and the trend towards rationalisation", both being founded on "codification of the business world into figures" (p. 25).

(4) More broadly, DEB created a "*system of concepts*", including "those that are familiar to us because we use them to understand the world of the capitalistic economy". For instance, the concept of capital: "It could be said that before double entry bookkeeping, the concept of capital was inexistent, and that without DEB it would not have come into being. We could even go so far as to define capital as the capacity for accumulation as assessed through double entry bookkeeping" (p. 24). The same applies to "the concepts of fixed and circulating capital", "rotating capital", "production cost", etc. (p. 25). "The conceptual artillery of the private economy and the political economy being applied to the capitalistic economy is largely (and people are often unaware of this) derived from the arsenal of DEB. (...) To the extent DEB engenders the notion of capital, it simultaneously engenders the notion of the capitalist enterprise as an organisation designed to increase the value of a given capital. This reveals the creative contribution of DEB to the arrival of the capitalist enterprise." (p. 25).

(5) Finally, W. Sombart stresses DEB's contribution to the *separation of the business and its owner*. "The existence of the capitalist enterprise", he says, "must be considered as the organisation of production in such as way as to free each undertaking from its owner (...) it must be acknowledged that accounting has contributed significantly to this emancipation." (p. 25). "The company becomes autonomous and stands apart from the businessman; it changes from the inside according to its own laws. Once again, there are two reasons: (1) because the company, as a channel for capital, appears to be an entity constructed by integration into the accounting system and (2) because the company's unity cannot be deduced from the owner as a person, who simply occupies the role of a creditor supplying capital." (p. 26).

The theme of the link between accounting and capitalism is also present in the writings of Max Weber, but to a lesser extent. The existence of a capital account is central to Weber's definition of capitalism: "The most universal condition for the existence of modern capitalism is, for all large lucrative businesses supplying our daily needs, the use of a rational capital account as standard" (Weber, 1991, p. 297).[3] But Weber develops this idea no further, turning instead to the requirements for using a "capital account as standard".[4] The book *Economy and Society* (Weber, 1971, for the French edition, p. 92–8), published as we know posthumously from a collection of texts organised by Marianne Weber, also devotes some pages to the capital account, discussing the definition of "rational economic profit-making" and what should be understood by "capital" and "return on capital". Weber clearly states that "the notion of capital is understood exclusively in the context of the private economy, and in an accounting sense" (Weber, 1971, p. 95). However, he makes not a single statement on the contribution of accounting to the birth and development of capitalism, even though he would later present a theory about Protestantism's contribution to this historic process. In contrast to Protestantism, which exists independently of capitalism, capital accounting is consubstantial to capitalism.

[3] See also Weber (1992).

[4] The *Economic History* lists six: (1) appropriation of production resources by private autonomous lucrative businesses; (2) a free market; (3) rational technique, with maximum calculability; (4) rational law; (5) free labour market; (6) commercialization of the economy (Weber, 1991, p. 297–8).

Rational accounting is not one of a range of institutions of rational capitalism, but is the institution par excellence, whose progress is an indicator and sign (Bryer (2000a,b) calls it a signature) of the advance of capitalism. It does not bring capitalism into being, but its existence is a sign of capitalism, as it needs all the other institutions of capitalism (free labour market, significant monetary circuits, calculability, etc.) in order to function. The Weberian approach will be examined further later in this article, but clearly the theory that began the controversy among accounting historians discussed in this article relates more to Sombart's ideas than Weber's.

The relative oblivion that later engulfed Sombart's work (a situation that can be attributed to his pro-Nazi stance in 1930s Germany and his anti-Semitic writings (Funell, 2001; Stehr and Grundmann, 2001), but also to the liberties he took with historical facts to further his own theories)[5] no doubt explains why his major work, *Der moderne Kapitalismus*, has never been fully translated into English or French,[6] and many of his other writings are also untranslated. Non-German speaking commentators on Sombartian themes (and this includes myself) are thus at a disadvantage in assessing his thesis and its relationship to the rest of his work, independently of the works of Max Weber, which are more easily available in translation.

1.2. The post-Sombartian debate

The few pages of *Der moderne Kapitalismus* devoted to accounting have inspired many researchers, principally in the field of accounting history. Below is an examination of the arguments put forward by a certain number of these authors to defend or contradict Sombart's theories. It was not possible to mention all the relevant works. This article refers to the best-known articles, or those which in my opinion appear to bring the most new information to the debate upon their publication.

1.2.1. Basil Yamey

The English historian Basil Yamey wrote about this subject several times (Yamey, 1949, 1964, 2005), and can be considered Sombart's most hostile commentator. In his 1949 article, he mainly examines the issue in the light of the most ancient practices, thus going beyond Sombart's knowledge of the historicity of accounting. For Yamey, "the thesis linking systematic bookkeeping with the development of capitalism implies that from an early date accounts were used in certain ways and for certain purposes, and had the effect of rationalizing and methodizing business life" (Yamey, 1949, p. 100). He set out "to show

[5] As explained in a positive light by Parsons (1928), "he digs out and reduces to order an enormous mass of historical material. (. . .) But he is not a "mere" historian. He is interested, not in working out the particular circumstances of the economic history of any single country for its own sake, but in presenting European economic life as a whole, in its great common trend, and in getting at the laws of its development. His aim is thus definitely theoretical" (p. 643). Backhaus (1989, p. 602) also said about the same subject "Sombart is not engaged in legal history nor in historiography; his work consists in establishing the subdiscipline of comparative economics with a historical perspective in order to capture the developmental process leading up to a particular institutional realization."

[6] Only the third volume was translated into French under the title: "*L'apogée du Capitalisme*", Paris, Payot, 1932.

that the claims made for the double-entry system cannot be reconciled with the early practice of the system as illustrated and discussed in texts on accounting published during the first three hundred years after Luca Pacioli's first printed exposition appeared in 1494" (Yamey, 1964, p. 118).

In his 1964 article, the only contribution by DEB to the development of capitalism that Yamey acknowledges relates to Sombart's first argument, namely its influence in increasing discipline and bringing order to business transactions.[7] Other than this, he seeks to weaken Sombart's case with three arguments:

(1) Sombart allocates "a central place" in his theory to "the calculation of the profits and capital of an enterprise" (p. 119). B. Yamey attempts to show that businessmen did not often undertake such calculations and that regular, at least annual, closings only became common practice relatively late in history[8] (during the second half of the 18th century). In any event, knowing "the aggregated profitability or the rate of return" of the business does not help a businessman in his day-to-day decisions, being at most a source of satisfaction.
(2) Yamey (1964) then challenges Sombart's claim that DEB contributed to the business/owner separation: "Any notion that the double-entry system of accounting is in some sense necessary for the separation of the firm from its proprietors is invalid. Its lack of validity is apparent from the fact that partnership concerns were in operation before the invention of double entry." (p. 126).
(3) Finally, Yamey explains that accounting data can only ever concern the past, while decisions relate to the future; therefore, accounts can only have a very small role to play in decision making and thus in business rationalisation.

1.2.2. James O. Winjum

Another famous contribution to the debate was made by James O. Winjum in 1971. He takes a less negative position than Yamey (1964), beginning with the question of what DEB is understood to mean, and notes that at least four different definitions co-exist:

> "(1) a bookkeeping system constantly in equilibrium in which the only criterion is the equality of debits and credits;
>
> (2) the addition of a capital account to the first system;
>
> (3) the use of nominal accounts (revenues, expenses, ventures, etc.) in addition to the capital account of system 2, but an irregular closing of these accounts to capital. Under this system there is no periodic calculation of net income;
>
> (4) the same as system 3 except for the periodic closing of nominal accounts to capital and the annual calculation of net income". (Winjum, 1971, p. 335).

The general line of argument is this: if DEB is taken to mean system 4, then clearly Sombart is wrong (but Sombart never thought of system 4 prior to a relatively late period

[7] "From the point of view of routine administration and the control of assets, the merit of the double-entry system lies in its comprehensiveness and its possibilities for the orderly arrangement of data." (Yamey, 1964, p. 133).

[8] "There is little to establish that the double-entry system went together with regularity in balancing and in the preparation of summary accounts." (Yamey, 1964, p. 124).

in his early capitalism stage—see above). "However, if we adopt system 3, the evidence against double-entry is not so overwhelming" (p. 335). Winjum (1971) believes that system 3 was broadly "implemented by merchants in the eighteenth century". So, "If the Sombart thesis is to receive an impartial hearing, it must be evaluated on the basis of this system." (p. 335). Winjum then goes on to discuss, and on the whole defend, four theories attributed to Sombart. The theories are as follows:

(1) "Double-entry contributed to a new attitude toward economic life. The old medieval goal of subsistence was replaced by the capitalistic goal of profits. (. . .) Double-entry was imbued with the search of profits. The goals of the enterprise could be placed in a specific form and the concept of capital was made possible." (p. 336). In this respect, Winjum (1964) acknowledges the validity of Yamey's arguments, while also showing that DEB's capacity to supply capital valuation and summary accounts was referred to in very early textbooks (for instance by James Peele in 1569). And DEB, although it may not be the only possible technique for calculating capital (the inventory-based method is also mentioned in the texts—e.g. by John Mellis in 1568), remains the practice that provides the fullest information, since the end-of-period summary accounts also bring out information concerning the individual accounts.
(2) "This new spirit of acquisition was aided and propelled by the refinement of economic calculations. (. . .) Rationalisation could be based on a rigorous calculation" (p. 336). In support of this statement, Winjum (1971) mentions that accounting ledgers with enough detail and organisation for calculation of profit or loss on each venture, market or commodity existed as early as the 16th century. He also refers to the importance the earliest texts attributed to the role of accounts in monitoring the general state of affairs (particularly the work of Ympyn, 1547). It thus appears that even though DEB's potential contribution to the rationalisation process was clearly not activated in every merchant's affairs, some took up the opportunity fairly early on. Finally, Winjum (1971) vehemently disagrees with Yamey's argument that knowledge of the past is no help for more rational decisions concerning the future. On the contrary, he believes that the past has contributed to forming the business owner's judgement and market knowledge, and this helps him to anticipate events in a more realistic way.
(3) "The new rationalism was further enhanced by systematic organisation. Systematic bookkeeping promotes order in the accounts and organization in the firm" (p. 336). Winjum (1971) confirms this, stressing that accounts were seen right from the start as a tool fostering order. For example, this idea is clearly stated in Ympyn's 1547 text.
(4) "Double-entry permits a separation of ownership and management and thereby promotes the growth of the large joint stock company. By permitting a distinction between business and personal assets it makes possible the autonomous existence of the enterprise" (p. 336). Winjum (1971) here adds that "the oldest surviving records in double-entry, those of the Massiri in the Genoese commune for the year 1340, reveal just such a separation" (p. 348), indicating that people were aware of this opportunity in DEB from the earliest days, although it was not used by most merchants, who had no need for it. When partnerships were set up, however, "double-entry was generally considered the fairest method in situations where diverse interests were concerned" (p. 349).

1.2.3. Yannick Lemarchand

The French accounting historian Yannick Lemarchand later put forward new arguments against Sombart (Lemarchand, 1992, 1993, 1994). He found that double-entry bookkeeping was not the only accounting model used by capitalist enterprises at least up to the 19th century. Lemarchand states that two types of accounting co-existed: a DEB system inherited from merchants' records, and a "financial" system derived from the accounting practices of landowners, who in the 19th century were also mine-owners, and that these two systems were only combined into a single DEB system, at least in France, in the 19th century. This created a certain amount of hybrid vocabulary and practices, including a much more detailed profit and loss statement than for standard DEB. Here again we find the idea that the actors of capitalism had other calculation and valuation methods available to them, not only DEB, and that they used these other methods, just as they could calculate capital by stocktaking (Yamey, 1964).

It cannot be denied that Max Weber was much more cautious than Sombart on this point (Weber, 1991, 1992). As he explains in the 1920 introduction to his essay *The Protestant Ethic and the Spirit of Capitalism*:

> "The important fact is always that a calculation of capital in terms of money is made, *whether by modern book-keeping methods or in any other way, however primitive and crude*. Everything is done in terms of balances: at the beginning of the enterprise an initial balance, before every individual decision a calculation to ascertain its probable profitableness, and at the end a final balance to ascertain how much profit has been made" (Weber, 1992, p. 18, our emphasis).

Yamey's criticism concerning the other capital calculation methods is invalid for Weber's theory. Lemarchand's position, on the other hand, is unshaken, since accounts in finance operated on the basis of lists of expenses and income, possibly classified into categories, but with no balance sheet or capital account.[9] Although it would be possible in the finance system to calculate profit, it would be impossible to relate the profit to investments or a capital. Only DEB can keep a trace in the accounts of the value of investments – and later the practice of depreciation – while in the finance model, investments are immediately charged to expenses. Using DEB, however, cannot in itself guarantee all its potential, "keeping track of every movement throughout the company's capital cycle" as Sombart says. Lemarchand unearths some late 19th century accounts – thus dating from the height of *Hochkapitalismus* – which, while they use DEB, apply principles inherited from a "finance" approach, and do not facilitate traceability of capital flows.

Lemarchand is also interested in the distinction between fixed capital and circulating capital, which Sombart takes as deriving from accounting practices. In economic theory, the distinction between fixed capital (primitive advances) and variable capital (annual advances) was first made by F. Quesnay in 1758 in his *Tableau Economique*, and later taken up by the economists' sect, then Turgot and A. Smith.[10] In fact, this distinction – which partly echoes

[9] Stocks, movable and immovable goods were not recorded by value but by nature, with non-accounting inventories sometimes carried out.

[10] The meaning attributed to the two concepts itself evolved, with A. Smith's usage of "circulating capital" and "fixed capital" differing from the F. Quesnay's use of primitive advances and annual advances. See K. Marx in

the difference between investment and consumption – had been thought of much earlier by other accounting authors (Lemarchand quotes the 1610 Moschetti text as an example). Knowing this, can it be concluded that the accounting revealed the concept? Lemarchand prefers to think that accounting thought, like economic thought, was influenced by the merchants' practical experience and their perception of the different uses or applications for certain expenses (he quotes an expense report of 1667 for an ironmonger, in which an "advance" was broken down into different uses: "solid, real expenses" (for land, buildings and the hammering shop) and "provisions").

The table overleaf (Table 1) summarises the positions of Sombart and Yamey, Winjum and Lemarchand concerning the contribution by DEB to the development of capitalism.

As the table shows, one part of Sombart's theory goes mostly unchallenged (except partially by Lemarchand): the contribution of accounting to the birth of concepts used to understand the economic world. As we shall see later, this idea appears worthy of further examination, and Sombart's work itself can be used as an example of thinking that has been conceptually influenced by accounting.

Let us now turn to authors who have sought to renew the debate significantly, expressing it in terms other than those of the historians' controversy discussed above.

1.2.4. Bruce G. Carruthers and Wendy Nelson Espeland

Carruthers and Espeland (1991), noting that in practice, merchants and businessmen only rarely – or only fairly late in time – took advantage of all the opportunities DEB had to offer, proposed a new angle: if there is a link between DEB and capitalism, it should not be analysed in terms of technical use, i.e. along the lines established by Yamey in 1949 and followed by Winjum and Lemarchand. The important factor is not the technical advantages of DEB, but its advantages in terms of legitimacy; otherwise, these authors say, the accounts would not have been so badly kept.

DEB's contribution to legitimacy varies according to the period. In view of the pre-capitalistic mentality's low opinion of the aim for profit and commercial activities, 15th and 16th century merchants would have been quick to take advantage of the legitimacy conferred on their activity by the practice of mathematical skills (just as Renaissance artists sought to raise their status by displaying their mathematical knowledge in the accurate perspectives they painted). The constant equilibrium guaranteed by the equal value of credits and debits in DEB could make business deals appear fair and legitimate, in keeping with the Aristotelian representation of perfectly balanced transactions. The accounting record books invoked God at the start and thanks were given for any profit made. Only gradually did the rhetoric of accounting come to be expressed in a vocabulary of rationality, leaving behind the need to call on the rhetoric of Cicero, or Aristotle's models of justice, or God to establish the legitimacy of transactions. Little by little, accounting became the incarnation of rationality, in line with the new source of legitimacy provided under high capitalism. However, this only became possible with the development of literacy and numeracy skills in the users of accounts.

Capital, volume 3, Chapter X "Theories of Fixed and Circulating Capital. The Physiocrats and Adam Smith". See also Fetter (1937).

Table 1
The post-Sombartian controversy among accounting historians

Sombart (1916)	Yamey (1964)	Winjum (1971)	Lemarchand (1992)
DEB contributes to order and discipline	Agrees	Agrees	Not discussed
DEB constructs the idea of accumulation: everything is expressed as a value that appreciates or depreciates the concept of capital	Disagrees, because establishing summary accounts is rare and not performed on a regular basis. Capital can be calculated without using DEB (based on inventory and debts)	Observes that the method for calculating capital is explained in texts as early as the second half of the 16th century	There are two accounting models for capitalism. Monitoring of the entire capital cycle is only possible with appropriate recording of stocks, investments and depreciation in a DEB system. This does not become standard practice until the end of the 19th century
The accounts are a tool for economically rationalising decisions, by relating them to the capital accumulation objective	The accounts are not very useful in taking decisions concerning the future	Although not used by all traders, this opportunity was known to some and recommended by the textbooks. Knowledge of the past is a help for decisions involving the future	Not discussed
Creation of a system of concepts used by actors and economists in their view of economic life in the capitalist world	Not discussed	Not discussed	Some concepts appeared in accounting before being used in political economy, but does this mean that accounting is the source of economic representations? Another hypothesis is that tradesmen's reasoning influenced both accounting and economics
Separation of the business from its owner	Disagrees, the separation results from "partnerships"	But there was awareness from the start of the possibility of separating ownership and management through DEB, although it was rarely used (most merchants had no partners)	Not discussed

Carruthers and Espeland (1991) thus brought a fresh angle to the central question underlying Weber's *The Protestant Ethic and the Spirit of Capitalism* ("how did an activity that from the point of view of moral ethics was, at best, tolerated, manage to turn itself into a vocation as referred to by Benjamin Franklin?") and attribute to DEB a role in changing legitimacy. As it was primarily in religion that Weber and Sombart found the sources of this change in legitimacy,[11] Carruthers and Espeland's theory can be seen as an addition to the writings of Weber and Sombart, perfectly consistent with their general conceptual framework.[12]

This new interpretation of the association between DEB and capitalism has since become an object of controversy, as the evidence supplied by the authors to prove the validity of their theory appears less than sound to historians. Yamey (2005)[13] considers that DEB in itself cannot be seen as proof of morality: "the double-entry system was as able to record the affairs of the most unscrupulous money-lender or crooked business man as it was those of an honest and moral business man" (p. 81). Moreover, "it is surely bizarre or naïve to suppose that any medieval or Renaissance merchant or banker who happened to have serious misgivings about his own rectitude or the morality of his activities would have had those misgivings expunged from his mind by the rhetoric of his double-entry ledger" (p. 82). The hypothesis put forward by Carruthers and Espeland requires better supporting evidence, even though here again Yamey is arguably more interested in the case for the prosecution than the defence.[14]

1.2.5. Robert A. Bryer

Bryer's articles, particularly the two published in 2000 in the journal *Accounting, Organizations and Society*, also offered a completely new perspective on the subject. What is important for him is not so much the kind of accounting used (double-entry or single-entry) as the accounting signature associated with each calculative mentality (feudal, capitalistic and capitalist). As seen above, the historian's debate focused on the question of DEB and Sombart's theory was regularly weakened by evidence proving that it was not using DEB that made the difference, but actually reasoning in terms of capital and return on capital. This kind of reasoning can operate without DEB (Yamey, 1964) and DEB can be used without applying this reasoning (Lemarchand, 1992).

Bryer has come up with an ingenious idea. Taking up the link that Sombart and Weber saw between accounting and the spirit of capitalism, he looks at accounting calculations rather

[11] There was, however, strong disagreement between them on the relative role of Protestantism and Judaism in this change.

[12] For both Weber and Sombart, the spirit of capitalism is thought as the first element in the emergence of capitalism; and an orientation towards rationalisation and calculability is at the very heart of the spirit of capitalism.

[13] In fact, this article by Yamey criticises the work of Carruthers and Espeland but above all, the research by Aho (1985) used broadly as the basis for their work. He also makes critical reference to two other interpretations of the historical significance of DEB: the view linking DEB to Manichaeism and the view linking DEB to understanding of the concept of zero and negative numbers.

[14] Surely a man who wishes to organise his life and business rationally, in coherence with the moral reasons that guide his actions (since this is what preoccupies Weber in his essay on the spirit of capitalism) could conceivably derive a certain satisfaction from disciplined account-keeping that benefits from the sophistication made possible by a DEB system.

than recording methods, and suggests that the calculations performed reflect the mentalities and spirit of a period.

Another point of interest in Bryer's work lies in the connection he establishes between Marx's theories and those of Sombart and Weber.[15] Bryers' purpose is to show that it is possible to translate to accounting Marx's theory of the transition from feudalism to capitalism and to find evidence of such a transition through the analysis of accounting archives. Specifically, he believes it is possible, through analysis of accounting methods, to identify for various business sectors (trade, farming, etc.) and countries the periods when capitalistic mentalities appeared and the way they developed.[16] His aim is not to determine the contribution made by accounting to the birth and development of capitalism (which he sees above all as a product of the class struggle) but to date the various stages of capitalism by reference to accounting, and to validate Marx's historical theory on the transition from feudalism to capitalism.

Concerning DEB more specifically, this position places Bryer close to Lemarchand. Although, in his opinion, capitalism's accounting signature is produced in the most relevant way by DEB,[17] DEB is not a sufficient guarantee in itself: it can be used with a feudal mentality and oriented towards the calculation of the feudal surplus. But for calculating capitalist profit, "cost-based accruals or 'capital-revenue' accounting is appropriate" (Bryer, 2000a, p. 141). In this analysis, as capital becomes increasingly socialised, accounting practices evolve progressively, in accordance with Marx's theory, and DEB not only finally becomes the dominant model, but more importantly is associated with very specific rules for valuing assets and liabilities so that capitalist profit can be calculated.[18] What remains here of the Sombartian hypothesis is that it is ultimately impossible to dissociate the history of capitalism – which over the period concerned is in fact the history of the transition from feudalism to capitalism – and, within capitalist practices, the history of the socialisation of capital—from the history of DEB.

[15] In fact, almost no further reference is subsequently made to Sombart, maybe because much of his work was not available in English, but perhaps also because the theme of the signature of capitalism by accounting is much closer to Weberian than Sombartian ideas (see above).

[16] Bryer's translation of Marx's theory of transition using accounting ideas "revealed a two step theory of transition from the feudal mentality to capitalistic mentality. First the appearance of capitalistic mentalities in farmers using wage labour and in merchants who socialise their capital" (Bryer, 2000b, p. 328). Farmers' accounting signature is the "consumable surplus" (e.g. receipts minus payments) which should be maximised, while for merchants it is the "feudal rate of return", corresponding to "feudal surplus divided by the initial capital employed." The modern capitalistic mentality is born later out of the interaction between these two early mentalities, and has its own accounting signature: "the rate of return on capital employed in production." Bryer attempts to validate this theory in his second article of 2000 based on a review of the accounts kept by farmers, merchants and the English East India Company, with examples covering a period of three centuries (16–18th centuries).

[17] "From Marx's perspective, the signature for the social character of capital is DEB employed to provide the means of calculating the rate of return on capital" (Bryer, 2000a, p. 141).

[18] Bryer (1993) sets forth the first full expression of his theory linking the history of capitalism, the history of the socialisation of capital, and the history of DEB. DEB "emerged as capital became socialised in response to a collective demand from investors for the frequent calculation of the rate of return on capital as the basis of sharing profits." (p. 115). The development of DEB is fundamental to the progress of socialisation of capital as clearly described in volume 3 of Capital, i.e. development of partnerships, then joint stock companies where capital is pooled and management is separated from ownership of the capital.

Apart from their varied approaches, all the works in the post-Sombartian controversy considered above share the same main method of demonstration. They aim to date certain accounting practices or accounting systems (based on extracts from accounting records and accounting texts), and to place them in a general common history of capitalism, that is rarely explained[19] (and never refers to Sombart's stages of capitalism). Depending on the date chosen, the historical theory under examination by the author is backed up or weakened.

None of the authors studied, except Bryer, really takes the trouble to explain what they mean by capitalism. It goes without saying that just as it is important to define what is meant by DEB (Winjum, 1971), it is essential to define the other term in the debate, particularly as the two terms are fairly different in nature. Capitalism is a concept that comes from the social sciences, used to refer to a certain perceived way of thinking in an economic system, and as a basis for interpretation of historical facts. It is not a concept that originated in the world of business, as accounting did. Any historicity it may have is to be found in the history of thought, not in the history of commerce and business.

I shall now return to the Sombartian thesis and add this point of view. The second part of this article argues that the link between DEB and capitalism is to be found within the concept of capitalism itself, which could not have come into existence without a certain level of familiarity with DEB practices. As the concept of capitalism emerged at a late period in the development of the economic system it sought to define, its birth was contemporary with highly developed accounting practices, as depicted by Sombart. This hypothesis explains the difficulties identified by historians in proving the relationship between DEB and capitalism for the earliest periods, without invalidating the existence of a close link between the two phenomena. This solution is different from both the proposals of Carruthers and Espeland, and Bryer.

2. Accounting and the notion of capitalism

2.1. The notion of capitalism

The concept was forged during the 19th century. Deschepper (1964) finds the word "capitalism" penned for the first time in 1850 by Louis Blanc in his treatise *Organisation du Travail*, where it is used to distinguish between capital and capitalism, which presumes private appropriation of capital: "This sophism consists of perpetually confusing the usefulness of capital with what I shall call capitalism, in other words the appropriation of capital by some to the exclusion of others. Let everyone shout "Long live capital". We shall applaud and our attack on capitalism, its deadly enemy, shall be all the stronger." (Blanc, 1850, quoted by Deschepper, 1964, p. 153).[20]

But the word was in fact seldom used in the 19th century. Proudhon used it very little but provided a definition which also refers to a certain ownership system: "Economic and social regime in which capital as a source of income does not generally belong to those who implement it in their own work" (quoted by Braudel, 1979, p. 276). Marx hardly ever used

[19] Only Robert A. Bryer explains his theory of the development of capitalism (in fact Marx's theory).

[20] In the English language, the word also first appeared in the 1850s (*Oxford English Dictionary*).

the term of capitalism, instead constantly using expressions such as “capitalist system” or “capitalist production”, but F. Engels used it, and the German economist Alfred Schäffle used the word *Kapitalismus* as early as 1870 (Braudel, 1979, p. 766).

It is only at the turn of the 20th century that the word “took off” on the intellectual and political scenes, becoming the natural antonym of socialism. In fact, once again it was Sombart who popularised the term, in his 1902 work *Der moderne Kapitalismus*. The word was then incorporated into the Marxist vocabulary in order to talk about the different stages of economic development as outlined by the author of *Capital*. It was thus Sombart who gave the term capitalism its full glory and associated it very rapidly with DEB. Is this mere coincidence, or should we consider that on the contrary, DEB and its principles contributed to the construction of Sombart’s concept of capitalism?

What did Sombart understand by capitalism? First of all, he acknowledges the heritage of the socialist writers: “The concept of capitalism and even more clearly the term itself may be traced primarily to the writings of socialist theoricians. It has in fact remained one of the key concepts of socialism down to the present time.” (Sombart, 1930, p. 3). In this literature, the term of capitalism has negative moral connotations, making it a deeply divisive concept: “The older German economists and to a much greater extent the economists of other countries rejected entirely the concept of capitalism” (ibid, p. 3). Some authors did not even mention it (Gide, Cauwes, Marshall, Seligman, Cassel); others including Gustav Schmoller, Sombart’s teacher, did discuss it but the “concept is subsequently rejected” (p. 3–4).

All the evidences suggest that Sombart took his initial approach to capitalism from Marx, although Marx did not use the word, rather than from the German historical school, which as we have seen was aware of the term. Sombart first encountered the issue in its Marxian form: he made no secret of this fact and, at least in the first part of his career, openly expressed his indebtedness to Marx’s analyses. He even participated “in the social movement, earning a reputation as a Marxist which brought him many difficulties in his life and career and cost him at least six offers of full professorships in subsequent years” (Backhaus, 1989, p. 602). Friedrich Engels recognised him as one of his friend’s most talented disciples.[21]

In seeking to present the concept of capitalism, Sombart explains quite naturally that it was Marx “who virtually discovered the phenomenon” (Sombart, 1930, p. 3). The first definition he proposes is fairly explicit: “Capitalism designates an economic system significantly characterized by the predominance of “capital” (p. 4). The author must be well acquainted with all of Marx’s work to be satisfied with such a compact definition, which can say nothing very clear before Marx: not because the concept of capital was unknown (it was already in use in the field of political economy) but because it had not yet been raised to the status of a central symbol and structure of the bourgeois period’s economic system and associated with all the typical capitalist social relationships.

In order to understand the concept of capitalism, it is necessary to understand the Sombartian notion of the “economic system”, since capitalism is seen as a specific economic system. “The function of such a conception [of an economic system] is to enable us to

[21] “It is the first time that a German university professor succeeds on the whole in seeing in Marx’s writings what Marx really says” (Engels “Supplement to *Capital* volume 3”, in *Capital* volume 3, English edition 1977, London: Lawrence and Wishart, p. 893–4, quoted by Stehr and Grundmann, 2001, p. xv).

classify the fundamental characteristics of economic life of a particular time, to distinguish it from the economic organization of other periods and thus to delimit the major economic epochs in history" (p. 5). It is "a formative conception not derived from empirical observation" which enables economic science "to arrange its material in systems" (pp. 4–5). Sombart goes on to define an economic system as "a mode of providing for material wants" comprising three aspects: (1) a mental attitude or spirit, (2) a form of organisation and (3) a technique.

In relation to capitalism, these three aspects are described as follows:

(1) "The spirit of capitalism is dominated by three ideas: acquisition, competition and rationality. (. . .) The aim of all economic activity is not referred back to the living person. An abstraction, the stock of material things, occupies the center of the economic stage. (. . .) There are no limits to acquisition, and the system exercises a psychological compulsion to boundless extension." (Sombart, 1930, p. 6–7). Capital is the abstraction that private businesses exist to accumulate: "the idea of such an economic system is expressed most perfectly in the endeavor to utilize that fund of exchange value which supplies the necessary substratum for production activities (capital)" (ibid, p. 6).

(2) "It is a system based upon private initiative and exchange. There is a regular cooperation of two groups of the population, the owners of the means of production and the propertyless workers, all of whom are brought into relation through the market".[22] Here once again is the issue of ownership of production resources that was central to the first uses of the term "capitalism" by Louis Blanc or Proudhon (see above), and also of course to Marx's thinking. The high capitalism period is also marked by the autonomous existence of the company. "By the combination of all simultaneous and successive business transactions into a conceptual whole, an independent economic organism is created over and above the individuals who constitute it. This entity appears then as the agent in each of these transactions and leads, as it were, a life of its own, which often exceeds in length that of its human members" (Sombart, 1930, p. 13). The role of bookkeeping is determinant in this emancipation: "This integrated system of relationships treated as an entity in the sciences of law and accounting becomes independent of any particular owner; it sets itself tasks, chooses means for their realisation, forces men into its path, and carries them off in its wake. It is an intellectual construct which acts as a material monster" (ibid, p. 13).

(3) "Capitalist technology must ensure a high degree of productivity. (. . .) The compensation of wage earners, which is limited to the amount needed for subsistence, can, with increased productivity be produced in a shorter time, and a larger proportion of the total working time remains therefore for the production of profits." (Sombart, 1930, p. 12). Sombart is following Marx's core thesis on non-paid labour as a source of profit.

Marx's influence is thus clearly visible, but unlike Marx, Sombart gives priority in his analyses to the role of the spirit of capitalism, rather than to the role of the class struggle, in describing the historical process. In Sombart's own words: "It is a fundamental contention of this work that at different times different attitudes toward economic life have prevailed

[22] Sombart, "Prinzipielle Eigenart des modern kapitalismus", in *Grundiss der Sozialoekonomik*, volume IV, quoted by Parsons (1928, p. 647).

and that it is the spirit which has created a suitable form for itself and has thus created economic organization".[23] His original aim was "to complete the Marxian perspective by adding a socio-psychological and socio-cultural dimension to the analysis of the genesis and the nature of "capitalism" (Stehr and Grundmann, 2001, p. xv).

Sombart's concept of capitalism derives from Marxian analysis, even though Sombart does not stress the same aspects. His notion of capital is thus bound to be imbued with Marx's definition of capital, although Sombart appears to treat the concept largely as an accounting concept. To further investigations, an examination of Marx's concept of capital is required.

2.2. *Marx's definition of capital*

This section starts with an analysis of Part Two of volume 1 of *Capital*, entitled "The transformation of money into capital" and containing three chapters. The first (Chapter IV: The general formula of capital) is a marvel of clear exposition. The author contrasts "the direct form of the circulation of commodities" or "simple circulation" with the circulation of capital.

Simple circulation takes the form C-M-C (commodity-money-commodity), that is "the transformation of commodities into money and the re-conversion of money into commodities: selling in order to buy". Capital circulates in the opposite direction, "M-C-M, the transformation of money into commodities, and the reconversion of commodities into money: buying in order to sell." (Marx, 1990, p. 248).

In the first case, money is merely an intermediary for trading commodities, "for instance in the case of the peasant who sells corn and with the money thus set free buys clothes". In the second case, the point of the exchange is to recover the money that has been advanced. "In the one case both the starting point and the terminating-point of the movement are commodities, in the other there are money" (p. 249). "The path M-C-M (. . .) proceeds from the extreme of money and finally returns to that same extreme. Its driving and motivating force, its determining purpose, is therefore exchange-value." (p. 250).

Through simple circulation, buyers and sellers find themselves with different merchandise in the end from at the beginning. M-C-M circulation, on the other hand, "appears to lack any content, because it is tautological. Both extremes have the same economic form" (p. 250). For Marx, "the complete form of this process is therefore M-C-M′, where $M' = M + \Delta M$, i.e. the original sum advanced plus an increment. This increment or excess over the original value [he calls] "surplus-value." (p. 251).

The Marxian definition of capital begins by highlighting the M-C-M′ cycle. "Money which describes the latter course in its movement is transformed into capital, becomes capital, and from the point of view of its function, already is capital." (p. 248). Capital is any money thrown into the sphere of circulation for the purpose of being recovered with a surplus, and this cycle is seen as endless: "the circulation of money as capital is an end in itself, for the valorization of value takes place only within this constantly renewed movement. The movement of capital is therefore limitless" (p. 253). This limitless accumulation, found at

[23] Sombart, *Der Moderne Kapitalismus*, volume 1, p. 25, quoted by Parsons (1928, p. 644).

the heart of Sombart's spirit of capitalism, is thus also central to Marx's definition, but for Marx it is first and foremost a material process, while for Sombart it is a way of viewing the world and giving purpose to one's actions (even though there would no longer be any need for a spirit once businesses have become autonomous and turned into "material monsters", as the logic of the system would be imposed on all). The capitalist is forever insatiably throwing new capital into circulation, with the aim of increasing the abstract wealth formed by the total capital in action.[24] This places him in opposition to the miser, who accumulates a stock of money by removing it from circulation.[25]

And what material form does this capital take? Money or merchandise? "It is constantly changing from one form into the other, without becoming lost in this movement. (. . .) If we pin down the specific forms of appearance assumed in turn by selfvalorizing value in the course of its life, we reach the following elucidation: capital is money, capital is commodities. (. . .) it alternately assumes and loses the form of money and the form of commodities, but preserves and expands itself through all these changes, value requires above all an independent form by means of which its identity with itself may be asserted. Only in the form of money does it possess this form. Money therefore forms the starting-point and the conclusion of every valorization process." (p. 255).

Every aspect of this representation of capital corresponds to that given by balance sheets taken from DEB accounts of the kind in use in the 19th century, at the time Marx was working on the subject. Indeed, translating the concept of Marxian capital into accounting terms, we have a capital with the value of the balance sheet total (assuming a simplified business form, with no debts). In the liabilities, we shall see that it comprises the initial capital plus the business's successive profits, as ΔM is added to the initial M. But in fact this entry is an abstraction, because apart from the time of the first investment, capital is sometimes money and sometimes merchandise, constantly transforming, always caught up in circulation: the balance sheet assets tell us so. This means the transition from M to M' only becomes clear from comparison between two balance sheets. The surplus value never comes back materially to the form ΔM, which can only be the result of calculating the difference between M and M': as Marx explains, "at the end of the process, we do not receive on one hand the original £100, and on the other the surplus value of £10. What emerges is rather a value of £110." (p. 253). Marx's concept of capital is thus two-sided: on one side, circulation, with constantly changing forms as reflected in the assets, and on the other side, accumulation, which can only be seen in the liabilities and is an abstraction, because the materiality of capital is indicated in the assets. And yet this is the abstraction which makes the world go round.

Other aspects of Marx's theory appear to correspond perfectly to contemporary 19th century accounting theory. As Bryer has often stressed in his articles, it is possible to derive from Marx a set of accounting principles that are not only very clear, but also consistent with

[24] "It is only in so far as the appropriation of ever more wealth in the abstract is the sole driving force behind his operations that he functions as a capitalist." (Marx, 1990, p. 254).

[25] "The ceaseless augmentation of value, which the miser seeks to attain by saving his money from circulation, is achieved by the more acute capitalist by means of throwing his money again and again into circulation." (Marx, 1990, p. 254–5).

the practices of his own time.[26] Based on these aspects, we aim to show that this possibility of transposition to accounting terms is quite simply connected to the fact that Marx used the accounting practices of his time to construct his theory. But first, more presentation of Marx's theory is necessary to highlight other points of contact.

After defining capital in Chapter 4, volume 1 of *Capital*, Marx explains in his next two chapters the origin of the increase in value between M and M′ that is the purpose for the capitalist process. There can only be capital if there is a surplus value. Since Marx believes that exchange alone cannot create this surplus value, the origins must be sought elsewhere. As we know, he found it in the consumption by the capitalist of a specific merchandise – labour – which by nature creates value when consumed. In order for this merchandise to be available for purchase, it must be for sale, and this requires two other historical conditions: (1) that the worker is free to sell his capacity for labour, (2) that he cannot use it to produce merchandise for exchange, as he has no means of production. And so for money to be transformed into capital, the existence of a wage-earning class is necessary for the capitalist to extract the surplus value that justifies his activities. Capitalism is indissociable from the wage-earning phenomenon, as Sombart and Weber[27] say, once again repeating Marx's ideas.

Another important concept, which in fact Marx only fully develops in volume 2 of *Capital*, is that the extraction of surplus value happens at a specific point in the overall M-C-M′ circulation cycle: the point of production, which in fact comes between the two market transactions, when the capitalist buys resources with his capital (M-C) and when he resells the manufactured merchandise (C′-M′). For Marx, the surplus value is produced by consumption of the labour purchased on the market during the production process (which he labels C. . .P. . .C′) and is therefore independent of the trading space, which is only the space where the surplus value becomes visible, due to recovery of the capital in monetary form. This is why for Marx, the trade exchange never produces value; only production has that power.

On the basis of this construction, Marx breaks down the total capital in circulation into several categories (see Table 2): the *capital of circulation*, which is mobilised for trading transactions in the sphere of circulation and can take either the form of money to purchase (*money-capital*) or merchandise to sell (*commodity-capital*), and *productive capital* which is invested into the sphere of production and is made up of *fixed capital* and *circulating capital*. The difference between fixed capital and circulating capital lies solely in the way they circulate, i.e. the way they are incorporated into the production process before later emerging in the form of money upon the sale of the merchandise.

> "The capital-value advanced in fixed capital is as much circulated by the product as that which has been advanced in the circulating capital, and both are equally con-

[26] Bryer (1994) provides a fairly comprehensive presentation of this point. He shows that not only is the definition of capital (referred to just above) compatible with the accounting practices of his time, but that Marx's theory is also compatible with the principle of "attaching" costs to products, with the distinction in stock valuation between production costs and "non-production overhead costs", and with multi-annual depreciation of fixed assets. See also Bryer (1998, 1999a,b).

[27] See footnote 4 above. Weber, in his *Economic History*, explains very clearly that the historical condition of the wage-earning class is absolutely necessary for the capital account to function as standard.

Table 2
The different forms of capital according to Marx

Classification based on the point in the general M-C-M′ circulation process	Sub-category within each point in the process
Productive capital used in the production process	Fixed capital: incorporated by fractions—investment of multiannual duration Circulating capital: incorporated all at once, comprising all merchandise that will be consumed, including labour
Capital of circulation used in trading transactions	Commodity-capital: what is to be sold Money-capital: money available

verted into money-capital by the circulation of the commodity-capital. The difference evolves only from the fact that the value of the fixed capital circulates piece-meal and therefore must likewise be replaced piece-meal, at shorter or longer intervals, must be reproduced in its bodily form." (Marx, *Capital*, volume 2, Chapter X).[28]

The correspondence between Marx's classification of capital and the accounting classification applied to assets is particularly striking. This observation is all the more important as in two chapters of volume 2 (Chapters X and XI) Marx discusses the classifications used by his predecessors, showing their incoherencies and weaknesses. For instance, he criticises Adam Smith for the major confusion between total capital of circulation and circulating capital, and between circulating capital and capital of circulation. This leads us to infer that Marx found in the accounting practices of his time a means to clarify his own concepts.

2.3. Consequences for the concept of capitalism

It is surely thoroughly unlikely that such definitions of capital and the "different forms over and over again assumed and stripped off successively by the same advanced capital-value during its curriculum vitae",[29] so appropriate to business accounting practices and summing up so perfectly the system of sources and applications evident in DEB, could have been arrived at without accounting knowledge. If this theory is correct, then the accounting practices of the time made a significant contribution to Marx's definition of capital, which itself determined Sombart's (and Weber's) definition of capitalism. The DEB system of the second half of the 19th century is then encapsulated in the very concept of capitalism, which could not have come into being without it. There is nothing surprising in the fact that Sombart should discover DEB's exceptional acquaintance with capitalism. Weber even later went so far as to define capitalism by the capital account, acknowledging the unbreakable link between capitalism and capital accounting.

[28] All quotations in this article from volumes 2 and 3 of *Capital* are taken from the Collected Works available online at www.marxists.org which include "Marx/Engels Collected Works (MECW), as compiled and printed by Progress Publishers of the Soviet Union in collaboration with Lawrence & Wishart (London) and International Publishers (New York), starting in 1975 and completed in 2005." Consequently, it is not possible to supply page references, and only the relevant Chapter number is cited.

[29] Marx, *Capital*, volume 2, Chapter X.

The links between capitalism and accounting are thus perhaps more conceptual (since the first could only be born conceptually thanks to the second) than historical (in the sense that the first capitalists would have taken advantage of all the opportunities offered by DEB). This would make sense of the fact that in the historian's debate discussed in the first part of this article, the only period in which all the practical links between accounting and capitalism mentioned by Sombart are actually in existence is the *Hochkapitalismus* period, which begins in the second half of the 18th century and covers the whole of the 19th century. This period also saw the birth of the political economy that was to influence Marx and the birth of Marx's thinking itself. At the time, accounting was one of the foundations for the emerging social sciences, helped economists to construct their analyses of the economy, and lit Marx's way in understanding the capitalist system; his analysis, reworked by Sombart, would later lead to the concept of capitalism. In the end, Sombart's fourth argument, concerning the creation of a system of concepts by accounting (see above), makes it possible to understand why the other four arguments only become irrefutable at a relatively late period.

This article now sets out at least to validate the idea that Marx had effective knowledge of accounting, and used it in his reasoning. The point of culmination, i.e. his writings, are of course eloquent, but the fact is that "at first sight, Marx has little to say about accounting at all. The word is hardly ever used" (Bryer, 1994, p. 322), at least in his masterpiece.

2.4. Marx and accounting

Marx said very little about accounting in his writings. Miller (2000) has identified a certain number of passages. In volume 1 of *Capital*, for instance, there is the passage where Marx mocks political economists' enthusiasm for the Robinson Crusoe stories (Marx, 1990, p. 169ff). Robinson, of course, has a ledger and commences "like a true-born Briton, to keep a set of books". One section of volume 2 is entitled "Bookkeeping",[30] but this passage is mainly concerned with the issue of the labour-time expended in bookkeeping. This expenditure is part of the "costs of circulation", i.e. it is not considered productive but makes capitalist circulation possible. However, some phrases at the very start of this section deserve attention, as Marx asserts through them what we have so far suggested: that capital – which he defines, as seen above, as constantly moving and continually changing its form, and therefore difficult to observe – becomes visible in accounting.

"As unity within its circuits, as value in motion, whether in the sphere of production or in either phase of the sphere of circulation, capital exists ideally only in the form of money of account, primarily in the mind of the producer of commodities, the capitalist producer of commodities. This movement is fixed and controlled by bookkeeping" (*Capital*, volume 2, Chapter VI). But this does not mean Marx sees accounting as intrinsically capitalist. Accounting, he states, will be even more important in the collective production system.[31]

[30] *Capital*, volume 2, Chapter VI: The Costs of Circulation, I: Genuine Costs of Circulation, 2. Bookkeeping.

[31] "Bookkeeping, as the control and ideal synthesis of the process, becomes the more necessary the more the process assumes a social scale and loses its purely individual character. It is therefore more necessary in capitalist production than in the scattered production of handicraft and peasant economy, more necessary in collective production than in capitalist production" (quoted by Miller, 2000, p. 9). Lenin, once in power, developed this proposal further in practice, considering that accounting had an important role to play in establishing a transitional economy on the move towards socialism (Richard, 1980, volume 2, p. 3).

Chapter VIII, volume 2, also shows that Marx was well-informed as to the accounting methods for fixed assets, and their repair and replacement costs. He appears very familiar with the accounting debates of his time on the question of whether railway rolling stock repair costs should be capitalised or written off as expenses.[32] He also displays in this passage an awareness that these accounting choices have a direct impact on profit calculation, and the determination of potential dividends.[33]

In a less immediately obvious way, Marx also shows his understanding of certain accounting issues in various parts of volume 3. One of the interesting things about the third volume is that Marx announces that he intends to stick as closely as possible to practical reality.[34] This leads him to explain the similarities and differences between the capitalists' concept of profit and his own theory's concept of surplus value. One of the underlying questions is whether the calculation of profit as practised in reality (the product of accounting) is valid as a measurement of surplus value.

These different passages show that Marx was not wholly ignorant of accounting issues, but are not yet sufficient to support an assertion that he had in-depth knowledge of accounting, actively sought to understand its mechanisms, or even less that he used – as we suggest – the intelligibility of the economic process provided by accounting as a basis to construct his theory of capital. Nowhere in his opus magnum does he directly use accounting language or categories to make his theory understood. And even though capital in circulation is only visible in DEB, he never referred to DEB to show that.

Proof of accounting's contribution to the birth of Marx's work must be sought elsewhere. As Marx did not study business, and had no experience of trade, he can only have had his accounting knowledge second-hand. Friedrich Engels played a decisive role in this respect.

[32] See Bryer (1991) on the railway accounting issues of the time.

[33] This passage is from a chapter which contains several examples: "Here is proof of the lengths to which adroit boards of directors may go in manipulating the terms repairs and replacement for the purpose of extracting dividends. According to the above-quoted paper read by R.P. Williams, various English railway companies wrote off the following sums from the revenue account, as averages over a number of years, for repairs and maintenance of the permanent way and buildings (per English mile of track annually):

London and North Western	£370	Lancashire and Yorkshire	£377
Midland	£225	South Eastern	£263
London and South Western	£257	Brighton	£266
Great Northern	£360	Manchester and Sheffield	£200

These differences arise only to a very minor degree from differences in the actual expenses; they are due almost exclusively to different methods of calculation, according to whether items of expenses are debited to the capital or the revenue account. Williams says so in so many words that a lesser charge is booked because this is necessary for a good dividend, and a higher charge is booked because there is a greater revenue which can bear it." (*Capital*, volume 2, Chapter VIII: Fixed Capital and Circulating capital; II: Components, Replacement, repair, and Accumulation of Fixed capital).

[34] This volume 3 "must locate and describe the concrete forms which grow out of the movements of capital as a whole. In their actual movement capitals confront each other in such concrete shape, for which the form of capital in the immediate process of production, just as its form in the process of circulation, appear only as special instances. The various forms of capital, as evolved in this book, thus approach step by step the form which they assume on the surface of society, in the action of different capitals upon one another, in competition, and in the ordinary consciousness of the agents of production themselves." (*Capital*, volume 3, Chapter 1, first paragraph).

Engels, born in 1820, was, as we know, the son of a textile manufacturer who had founded a cotton mill in Manchester then in Barmen, Germany.[35] His youth was as different as possible from that of Marx. Whereas Marx had hardly glimpsed modern industry, Engels had grown up among factories surrounded by desperate poverty. His father, who wanted him to go into business, took him out of school before he had completed his formal education. First he gave him a job in his own factory, then sent him to Bremen to gain more experience in an import–export company. While there, Engels was gradually converted to radical thinking. When he came to Berlin in 1841 to do his military service, he was already a member of the Hegelian far left and began to publish pamphlets. On his return to Barmen, there was a sort of family meeting, and it was decided to send him away from the liberal atmosphere of Germany to the Manchester factory, where he could learn to be a "good tradesman". If he refused, he would be cut off without a penny. So he left for Manchester in the autumn of 1842. He decided to travel via Cologne to meet the editors of the *Rheinische Zeitung* directed by Marx. This was their first meeting, and it was not a success. Marx was on the point of breaking his association with the "young Hegelians" and saw Engels as one of their allies. Nevertheless, they agreed that Engels could work on the magazine and contribute articles, which he did as soon as he arrived in England. Compared to Marx, Engels had the advantage of being able to study economic reality from the inside, living as he did actually in the environment. He spent two years in Manchester. His *Outline of a Political Economy*,[36] later called a "brilliant sketch" by Marx, was published in 1844 and reveals the knowledge of political economy he had gained during this period. He was living in the heart of the English cotton industry, the most modern industry in the most developed industrial country in Europe. For months, he wandered through Manchester's working class slums, and was horrified by what he saw. His book *Condition of the Working Class in England*, written in the winter of 1844–1845, is a searing indictment of the industrial capitalism of the time. In late August 1844, Engels stopped in Paris on the way home to Germany, and met Marx for a second time. They spent 10 days together and noted their "complete agreement in all theoretical fields." This was the starting point for their work together; the meeting put the seal on a lifelong friendship.

In 1844, Engels was well ahead of Marx in analysis of economic phenomena. "Engels gave Marx more than he received from him. Each, independently of the other, had arrived at Communism, both had seen in the working classes the sector of society that, both as a product and denial of private property, would abolish private property. But Engels had incomparably deeper knowledge of the bourgeois society's economy." (Nicolaïevski and Maenchen-Helfen, 1970, p. 116). Marx had only just begun his own work on political economy (Aron, 2002, p. 177) and his own knowledge was still limited. Later, he would have read everything, understood everything, criticised everything. No other economist, except Schumpeter in the 20th century, was to acheive this level of encyclopedic knowledge (ibid, p. 178). But at the time of his second meeting with Engels, it was Engels who had the advantage. In the Economic and Philosophical Manuscripts of 1844, Marx quotes Engels' Outline of a Political Economy as a very precious basis for the work he is beginning. These manuscripts

[35] Biographical details are taken from Nicolaïevski and Maenchen-Helfen (1970).

[36] "Umrisse zu einer Kritik der Nationalökonomie", *Deutsch-Französische Jahrbücher*, Paris, issues I and II, 1844.

make interesting reading in pinpointing Marx's position in 1844: as regards the hypothesis under consideration, it is clear that the concept of capital is not at all clearly defined, as it would be in his major work. There is a short critique of the "classical" economists' view that capital is a production factor just like labour, and their implicit hypothesis that a clash between the two factors is a contingent possibility, independent of their nature. But we are still a long way from the accounting characteristics of capital that would be presented in 1867.

In Engels' 1844 text, however, capital is close to its accounting form and Marx explicitly acknowledges his debt to Engels on this matter, quoting the following extract from *Outline of a Political Economy* in Chapter IV of *Capital*, already discussed above: "Capital is divided (...) into the original capital and profit, the increment of capital, (...) although *in practice* profit is immediately lumped together with capital and set into motion with it" (Marx, 1990, note 5, p. 253, our emphasis). This passage is all the more remarkable in that it is one of the very rare references to Engels' work in *Capital*, and generally the quoted work is *Condition of the Working Class in England*. As Engels' text clearly indicates, his information derives from experience of actual practices. His concept is transformed by his knowledge of business.[37]

After his decisive meeting with Marx in 1844, Engels went back to Barmen, but had to leave the family home a year later when life with his family became impossible. He joined Marx, who had since become an exile in Brussels, in April 1845, and a period of intense revolutionary activities began, taking him among other places to Brussels, Paris, Germany, Switzerland and London. In November 1850, Engels moved to Manchester and began to work for the family firm as an "ordinary clerk". He had decided to take up "repugnant business" mainly to provide financial support for Marx and his family, who had emigrated to London the same year. "For 20 years, Engels did a job he hated and gave up all his own scientific work, so that Marx could fully devote himself to such work" (Nicolaïevski and Maenchen-Helfen, 1970, p. 275). To begin with, his salary was fairly low, and his position within the company only improved slowly, but he sent Marx as much money as he could. Engels became a part-owner in the business in 1864 (his father had died in 1860) and was thus able to increase his financial support. He continued to work at the factory until 1869, when he stopped working to devote his time to his political and intellectual pursuits. Once he had sold his share in the business, he paid an annuity to Marx, thus freeing him from all financial worries. Engels moved to London, not far from Marx's home, the following year.

These brief biographical details are a reminder that Engels had personal experience not only of the horror of the working class slums, but also of capitalists' thinking processes. He was initiated into these from childhood, and worked more than 20 years of his life in trade and industry. He not only had more advanced knowledge than Marx of theoretical economics at the time of their second meeting; throughout their friendship, he constantly

[37] This is an important point, because according to Deschepper (1964), the idea that the gain increases the capital and itself becomes capital is already contained in the 1727 business dictionary, *Dictionnaire de Commerce* by Savary des Bruslons (p. 79), and in the *Encyclopedie* in 1751 (p. 105). Marx could therefore have found a similar idea from a source other than Engels. Similarly, Marx certainly found both the notions of circulation and accumulation in Smith, but as we have seen Marx considered Smith to be unclear and inconsistent in his concepts, while his own appear bound up with the accounting concepts of his time.

supplied him with a multitude of details on actual business practices, particularly the subject of interest here, accounting practices.

Proof of this is found in the correspondence between the two men. The quotations below are taken from the volumes of the *Collected Works* of Marx and Engels published over the years in English by the publisher Lawrence and Wishart.

Marx's interest in accounting practices and businessmen's calculation methods is clear throughout the correspondence. In a letter to Engels dated March 5, 1858, he asks:

> "Further, how do you calculate turnover *in your books*? Here, the theoretical laws are simple and self-evident but it is nevertheless just as well to have some inkling of *how things look in practice*" (Marx and Engels, CW 40, p. 282).[38]

Marx also asked Engels many times about depreciation; this was a difficult concept for him and he often raised the question. In his letter of March 2, 1858, he needed to explain "the multi-year cycle which has been a feature of industrial development over since the consolidation of big industry" (CW 40, p. 278). Engels replied on March 4, providing percentage depreciation rates and various calculations, together with information on the real degree of wear and tear on machines, which differed from the depreciation recognised for accounting purposes. He confirms what Marx thought: based on this information, Babbage is wrong. One of Marx's methods, clearly visible in these passages, is to test economists' theories against what happens in practice. He asks Engels for figures and explanations concerning actual practices, thus "trying out" what he is reading.

Marx returns to the question of depreciation in a letter dated August 20, 1862. This time he is concerned by the fund formed over the years by the accumulation of annual deprecation charges: "Is it not, in fact, an accumulation fund to extend reproduction aside from any conversion of revenue into capital? Does the existence of this fund partly account for the very different rate at which capital accumulates in nations with advanced capitalist production?" (CW 41, p. 411).

Engels replies on September 9: "I rather suspect you have gone off the rails" (CW 41, p. 414).

On August 24, 1867, Marx raises the issue again. His question is intermingled with considerations on the deeply false reasoning McCullock seems to follow. He wants to know what really happens in practice, so he can reach a final opinion:

> "Now, as a manufacturer, you must know what you do with the returns on capital fixe before the time it has been replaced in natura. And you must answer this point for me (*without theorising, in purely practical terms*)." (CW 42, p. 408, our emphasis)

Engels sent him several pages of tables and calculations on August 27, with figures for various possible scenarios.

Marx thus appears to have worked hard to understand the depreciation practices of his time and the economic signification that should be attributed to them. The chapters of volume 2 devoted to the distinction between fixed capital and circulating capital (Chapters

[38] Collected Works, volume 40.

VIII–XI) reap the full benefit of these efforts, although there is no longer any trace of the depreciation tables sent by Engels.[39]

Above all, Marx found it difficult to understand what depreciation was hiding. Marx believed that businessmen were blinded to the fundamental logic of the system they belonged to. They thought that profit was legitimate, whereas in fact it was work for which the workers had not been paid. The way they reasoned (and more specifically, counted) blinded them to this fact. As he neatly puts it in his letter dated March 8, 1858, already quoted above:

> "The method of calculation used by businessmen is, of course, partly based on illusions even greater than those of the economists; on the other hand it rectifies the latter's theoretical illusions by means of practical ones." (CW 40, p. 284)

Marx used practical examples to criticise political economics, but did not believe that practice was telling him the whole truth. He analysed it later in the light of his most deeply-held convictions: profit is illegitimate, the class struggle is inherent to the economic system, the appropriation of production resources by capitalists and the existence of a working class are the underlying roots of the system and worker exploitation, and workers paid a subsistence salary are the true face of capitalism. These convictions were firmly established very early on, and he spent his life trying to demonstrate them scientifically.

Marx not only needed to understand practices in order to test the theories he read and those he constructed, he constantly set out to illustrate his discourse with realistic figures. For example, in a letter dated May 7, 1868, he explains to Engels that he would like to use the data he has concerning his factory. These figures are sufficient to illustrate the surplus value rate, but he needs further data for the profit rate. He wants to know the amount of capital advanced for the buildings, the way the turnover of circulating capital is calculated, and the amount of circulating capital advanced. On May 10, Engels replies that he does not understand the question on the turnover of circulating capital. Furthermore, the figures Marx has do not concern Engels' factory. And Engels cannot give him more details because the owner's sons have been forbidden to give him any further information. There is one possibility, contacting a certain H.E., but Engels warns:

> "But I fear, Monsieur Gottfried [the owner] has long taken these old *account books* into his own custody, and then Henry Ermen will not be able to help you either." (CW 43, p. 33)

From a very early period, Marx was able to view matters from an accounting perspective. The language of accounting was not unknown to him, and he used it in his arguments. One particularly clear example of this capacity is contained in his letter to Engels of February

[39] The exchange of letters in August 1867 provided the two correspondents with the opportunity to put their finger on what became known after the second world war as the "Lohmann–Ruchti Effect". This is the effect of expansion of capital caused by immediate reinvestment of the depreciation recorded every year before the asset concerned needs to be replaced. The similarity between the Lohmann–Ruchti Effect and the letters of August 1867 was also noticed as early as the 1950s by a German economist, K. Hax, who proposed to rename it the "Marx–Engels effect" (as quoted by Takatera (1960). My thanks to Yannick Lemarchand for telling me about this work.

3, 1851. At that time he was interested in currency and the theory put forward by the banker and economist Lord Overstone, who published a theory on currency circulation. In order to explain this theory to Engels and criticise it, he takes an example with figures, successively constructing four balance sheets for the Bank of England, starting with an opening balance sheet and going on to propose three different closing balance sheets, one for each of his hypotheses. The balance sheets are presented in two columns. The left-hand column includes "Capital", "Rest" and "Deposits": the liabilities. The right-hand column includes "Government securities", "Bills of exchange" and "Bullion or coin": the assets (CW 38, p. 273–8).

Regarding the capital account itself, a letter from Engels dated April 3, 1851, provides accounting explanations on the separation of the company from its ownership, in response to a question from Marx dated March 31, 1851 about "how do merchants, manufacturers, etc. account for the portion of their income which they themselves consume? Is this money too fetched from the banker or how is it arranged? I'd be glad to have your answer to this." (CW 38, p. 324).

The answer by Engels is expressed directly in accounting language, which Marx must understand:

> "In commerce, the merchant as a firm, as a producer of profits, and the same merchant as a consumer are two entirely different people who confront one another as antagonists. The merchant as a firm means capital account and/or profit and loss account. The merchant as a guzzler, toper, householder and procreator means household expense account. Hence the capital account debits the household expense account with every centime that makes its way from the commercial to the private purse." (CW 38, p. 327)

A further page of explanations and references to debit and credit entries follows. The economic actors are personified by the accounts, and the capitalist is the capital account personified. There could be no better extract to support our hypothesis.

The contribution of accounting to Marx's thinking is multifaceted and affects many points of his theory. Accounting is always seen in the form of DEB, as shown by the fictitious Bank of England balance sheets, the problems regarding depreciation, which can only be considered this way in a DEB system, or the references to debit and credit entries in the above extract. DEB may even have contributed something extra to Marx: his understanding of the overall economic circuit. The basis used by Marx in developing his own theory was the *Tableau Economique* by Dr. François Quesnay, who himself is thought to have been inspired by accounting (Klamer and McCloskey, 1992). And Marx, in reworking this idea, apparently needed accounting information (letter of June 18, 1862):

> "A propos. If it could be done very briefly, without making undue demands on you, I should like to have a sample of Italian book-keeping (with explanations). It would help to throw light on Dr. Quesnay's *Tableau économique*." (CW 41, p. 380)

In volume 2 of *Capital*, after laying down his definitions for fixed capital and circulating capital, Marx, as mentioned earlier, discusses his predecessors' contributions, particularly Quesnay and the physiocrats (Chapter X). In this passage he praises the fact that Quesnay, unlike Smith, had correctly understood the two concepts, even though he gave them the different names of "avances primitives" and "avances annuelles", and only applied them to farm labour. In *Capital*, Marx thus acknowledges the physiocratic sources of his theory of circulation, but says nothing about what we learn from his correspondence: that he interpreted Quesnay in the light of DEB.

Marx sought to define the specific characteristics of capitalism, and show that the system was born of the previous system and evolved according to certain laws. Intellectually, he had to recreate an interrelated system and its dynamics. For this systemic understanding, the representation in accounting terms of circulation and accumulation played a central role, producing the analogy through which the system could be described.

For a mid-19th century observer such as Marx, the language talked by accounting was similar to that of political economy, a field in which he read all that was published. Capital, profits and wages were concepts common to accounting and the political economy of his time,[40] if not always identical. Marx would choose the closest economic concepts possible to accounting.

The accounting Marx knows most about is the practices of Manchester manufacturers, who were at the cutting edge of their time in accounting as much as in capitalism. DEB was the dominant system. Annual closings and balance sheets were standard. Winjum's system 4 was in full speed operation.

The Marx–Engels correspondence could of course be studied in more depth to examine how a particular aspect of the Marxian system benefited from the practical and accounting information provided by Engels. Nevertheless, it seems clear enough that Engels' position in business and his intimate, practical acquaintance with the system Marx theorised played a central role that has often been overlooked in Marxology. The traditional approach is to concentrate on Hegel's influence on Marx's conception of history, or Ricardo's on his economics. But Marx also looked to actual trading practices and accounting techniques, as the extracts above have shown.

The question remains of why Marx hardly ever mentioned accounting in his writings although he talks about it in his correspondence with Engels, and why, when we know he likes to illustrate all his points, he does not use accounting examples as illustrations.

2.5. Why does Marx make so few references to accounting in Capital?

Several hypotheses are possible. The first is that Marx wanted to criticise traditional political economy by turning its own concepts against it. He therefore remained in the economic debating mode adopted by the objects of his criticism, even though he was constantly using accounting to grasp meaning.

The second possibility relates to his conviction that capitalist accounts which present profits, not surplus value, give a false representation that is misleading even for capitalists themselves. Accounting is the language of capitalists, and as such this language is as suspect as the language of traditional political economy. It is a jumbled collection of false representations originating in the bourgeois conscience. Marx therefore used one biased conscience

[40] With the marginalist revolution, economic concepts gradually begin to diverge from accounting concepts, until they no longer have anything in common (see e.g. the early 20th century definitions of Capital and Income provided in the work of Irving Fisher).

(accounting and business practices) to fight another (political economy) and form his own view. He was not about to give it the satisfaction of being taken into consideration in his demonstration.

Studying volumes 2 and 3 of *Capital* takes us closer to some of the major problems raised by capitalist accounting for Marx, which no doubt prevented him from openly basing his reasoning on it. The first reproach he would doubtless have made in respect of accounting balance sheets is that they are content to use a distinction, within productive capital, between fixed capital and circulating capital. As discussed earlier, it is important to understand this distinction, which Smith failed to grasp. However, it has the major flaw of hiding another distinction, much more vital in Marx's eyes, between *constant capital* and *variable capital*. This is another way of classifying productive capital, distinguishing between the advances corresponding to labour on one hand, and other advances on the other hand, whether they are consumed all at once or in portions over a longer period as used. The capital invested in labour, variable capital, is capital whose value grows (hence "variable") when it is consumed, whereas in all other consumptions, no value is created: the initial value is simply transferred and thus remains "constant". The investment in variable capital is the hidden source of the surplus value, and should be shown as such if the aim is to highlight the "true" cycle of capital. Unfortunately, capitalist accounting stays with the distinction between fixed capital and circulating capital, drowning the variable capital in the broader category of circulating capital. Also, wages as such do not appear as "advances" in capitalist accounting systems, for the corresponding labour cannot be stocked and only exists in the balance sheet through incorporation into the merchandise produced. This characteristic of labour contributes to concealment of the importance and even the existence of variable capital.[41] This neglect of constant capital among all forms of capital is the principal reproach Marx levels at Smith.[42] Similarly, he criticises Ricardo for being satisfied with the fixed capital/circulating capital dichotomy and not having been able to re-divide productive capital into constant capital and variable capital, despite the fact that his surplus value theory was right,[43] and this was a great disappointment to Marx. And what is true for Ricardo also applies, a fortiori, to capitalist accounting systems.

Another central problem in capitalist accounting becomes evident in Chapter 1 of volume 3. The production cost calculated by capitalists is a cost that reflects their own point of view, i.e. their expenses only. But production cost is lower than the value of the merchandise, because it only includes the price paid for labour (wages), not the total value conferred on the merchandise by that labour. The difference between the two is the unpaid labour, the surplus value. If the merchandise were to be sold on the market at its "actual value", the profit made by the capitalist would be exactly equal to the surplus value. Unfortunately, the

[41] "But to the extent that labour-power circulates in the market, it is not capital, no form of commodity-capital. It is not capital at all; the labourer is not a capitalist, although he brings a commodity to market, namely his own skin. Not until labour-power has been sold, been incorporated in the process of production, hence not until it has ceased to circulate as a commodity, does it become a constituent of productive capital—variable capital as the source of surplus-value, a circulating component part of productive capital with reference to the turnover of the capital-value invested in it." (volume 2, Chapter X).

[42] "Finally, it is a striking fact that Adam Smith forgets to mention labour-power when counting off the constituent parts of circulating capital." (volume 2, Chapter X).

[43] Chapter XI, volume 2 of *Capital*.

"actual value" is hidden, and the capitalist himself is blinded by calculation of the production cost. He thinks he can sell the merchandise at any price higher than its production cost, and sales thus regularly take place at prices lower than the true value. This is one of the phenomena that explains why the profit calculated in practice by accounting systems differs from surplus value, part of which in this case is appropriated not by the capitalist but by the purchasers of the merchandise. Any competition between capitalists will necessarily play on this difference between the production cost and the hidden actual value of the merchandise. Marx takes even the opportunity in this essay to criticise the Proudhon's concepts, no doubt slightly too accounting-based in his opinion, which had the failing of considering that the value of merchandise was equal to its cost, i.e. the expenses incurred to in make it.[44]

Other passages in Capital could be examined to underline capitalist accounting's inability to show the totality of the "actual" value creation process. But it must be acknowledged that these explanations were not provided by Marx himself, who never in fact spoke of capitalist accounting and its limitations. Although he was firmly convinced that capitalist accounts give a false representation, he never attempted to show that, for example, accounting textbooks provided a poor representation of business. That was a task the Marxists were to throw themselves into later, when they sought to construct accounting kept in terms of work-value rather than exchange-value.

Accounting, being the very form of the bourgeois capitalist conscience, could not have been used to construct a demonstration. Or if they had, in-depth explanations would subsequently have been required to show how these accounting systems were insufficient. This would have caused a long digression which might confer too much legitimacy on balance sheet representations. While it is true that they correspond almost totally to his concept of capital, Marx would have run the risk of simultaneously legitimising the profit and loss statement, which reduces labour to a cost, brushing aside its value-creating capacity and implying that it is merely one ingredient of production, just another item to be consumed.

A third reason for the lack of major accounting-based discussions in *Capital* is that Marx wanted his book to be accessible to readers with no knowledge of DEB. No specific familiarity with accounting is necessary to read his books, and indeed they have been read by generations of workers and communist militants, who would have found it a problem if their master spoke the accounting language used by the owners and managers.

Further investigations will perhaps solve this riddle.

At the end of this long journey, the most important fact is that analysis and understanding of the accounting practices of the second half of the 19th century played a structuring role in Marx's thought, which led to the concept of capitalism that was to serve as a basis for Sombart's proposal on the relationship between capitalism and DEB, although this contri-

[44] "The thoughtless conception that the cost-price of a commodity constitutes its actual value, and that surplus-value springs from selling the product above its value, so that commodities would be sold at their value if their selling price were to equal their cost-price, i.e., if it were to equal the price of the consumed means of production plus wages, has been heralded to the world as a newly discovered secret of socialism by Proudhon with his customary quasi-scientific chicanery. Indeed, this reduction of the value of commodities to their cost-price is the basis of his People's Bank." (volume 3, Chapter I).

bution is not immediately clear from his writings. In view of the eminent position occupied by the concept of capitalism in both past and present intellectual and political debates and current analyses of economic modernity, the fascinating role played by accounting craft in the birth of this concept certainly merits attention.

3. Conclusion

This article has aimed to offer a new interpretation of the relationship between accounting and capitalism. Its purpose was not to seek links between DEB and capitalism at its origins as predecessors have, but to find them within the concept of capitalism itself. This is exactly what Weber's definition of capitalism says, in defining capitalism by the capital account (see above). For Weber, all the other circumstances required historically by capitalism follow on from the existence of the capital account as a standard for economic activity. But he never really explains the bond between this capital account and the other requirements, and so most commentators have not seen how central the accounting concept is in the Weberian definition of capitalism. It is generally reduced to one aspect among several, a correlate of rationalisation in application, rather than the actual principle of this rationalisation. Most writers instead stress the importance for Weber of "rational organisation of free labour" as a central factor of capitalism.

To understand this core role of the capital account in Weber's thinking (and Sombart's), and particularly its links with other basic elements of capitalism, we have to go back to Marx. Without Marx, the links remain implicit and it is not clear how the "capital account as standard" can require a wage-earning class, for example. The capitalist system described by Marx is more or less the same as capitalism according to Sombart or Weber, at least when they produce a criterial definition. The irony of history is that Marx does not use the word "capitalism" and never or hardly mentions accounting, unlike Sombart or Weber. And yet Marx certainly knew more about the accounting practices of his time than the two German sociologists who were to follow him.

Highlighting the conceptual links between accounting and the concept of capitalism, as it originated almost directly from Marx's theories, opens new horizons concerning the contribution of accounting concepts to the production of economic concepts. What of the concept of capital before Marx? Hicks (1974) is surely right that the classical economists studied by Marx had already taken their concept of capital from accounting ("it came from outside—from business practice, from accounting practice" (p. 310)), even though they had not used all the information available from a balance sheet to construct it in both abstract and circulating form, as Marx would. The same is true of the concepts of profit and income, which need further examination from this perspective. The influence of theoretical economics on accounting has been noted several times (cf. Hopwood, 1992), and is visible in all the work on what has been called "normative accounting". But the reverse influence is still largely unexplored.[45] Yet few economists have actually ignored the accounting question. It is only since the end of the major national accounting projects

[45] Fortunately, there are exceptions, notably the work by T. Suzuki on accounting's role in the construction of the modern concept of macroeconomy (Suzuki, 2003).

of the 1960s and the belated supremacy of neo-classical marginalist economics from the 1970s (almost a century after the initial foundations were laid) that pure economics has ignored the issue of accounting measurements and worked with largely irreconcilable concepts. It was precisely this breakdown in relations between the two traditions of accounting theory and economic theory, despite their constant dialogue from the origins of political economy until the work of Hicks, that a few years later enabled conceptualisations from a branch of economics as far removed as possible from accounting to invade the field of accounts in the form of positive accounting theory, holding up for ridicule its metrological approach to economic activities. Since the concepts used in pure economics are broadly based on anticipations, and are thus unmeasurable in accounting terms, accounting is reduced to being seen as a plaything at the mercy of the interests of the actors, devoid of any metrological substance, manipulated by corporate management to optimise their own remuneration or in order to avoid taxes. This is a sad outcome for the long historical relationship between economics and accounting, considering that two centuries earlier accounting was helping the economists forge concepts for understanding economic life.

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