European Journal of Accounting, Auditing and Finance Research
Vol.5, No.10, pp.79-99, November 2017
Published by European Centre for Research Training and Development UK (www.eajournals.org)

THE DOUBLE ENTRY BOOK KEEPING (DEB) SYSTEM AND THE EMERGENCE OF *ETHICS AND THE SPIRIT OF CAPITALISM*

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ABSTRACT: *The purpose of this paper is to cast a new light on the post-Sombartian debate on development of double entry. Sombart (1916) thought that the invention of double-entry bookkeeping was essential to the birth of capitalism. It is known that Max Weber developed the same theme, but to a lesser extent. Epochs after, accounting scholars have debated the idea quite extensively during the 20th century. All these previous works have in common the fact that address the historical question by comparing accounting practices to business practices, some of which are interpreted as capitalist. In this paper, the aim is not to understand the birth of capitalism, but to contribute to understanding of the birth of the concept of capitalism itself from accounting thoughts perceptive. The concept of capitalism came about in 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 conceptualize what they called capitalism, and it is easy to show that the notion of capitalism itself is rooted in accounting thoughts. Therefore, the work will present the account of how the concept of capitalism was innovated as example of the influence of accounting thoughts on economic and sociological development. In view therefore, 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.*

KEYWORDS: Capitalism, Accounting Thoughts, Karl Marx, Werner Sombart, Double Entry Book Keeping, Economic Development

INTRODUCTION

Capitalism and double entry bookkeeping (DEB) are in-dissociable interconnected concepts (Sombart, 1916). This assertion by Sombart provoked the interest of accounting historians, who despite their differences have generally concluded that Sombart's avowal was not valid for the whole period prior to the second half of the 18th century. A review of a few major works involved in the debate shows the differences in their treatment of Sombart's works that were examined and 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 (2000) leaves aside the concept of DEB to concentrate on accounting signatures. Additionally, Carruthers and Espeland (1991) set out to study the relationship between accounting practices and capitalism not as a technical connection, that is, 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

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

decision aid, accounting contributes to the legitimacy of practices originally considered illegitimate. This research work is a new attempt to understand the links between DEB and capitalism, bringing a new approach to the issue. All previous works have in common the fact that they address the historical interrogation by comparing accounting practices to business practices, some of which are interpreted as capitalist. This paper sets out not 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. Additionally, the aim of the study is to showcase the fact that the concept of capitalism could not have come into existence 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 works on DEB and capitalism and analyses the subsequent controversy. The second part looks into the matter of concomitant importance to the concept of DEB and capitalism. Additionally, the aim of the study is to demonstrate that the concept of capitalism is in-dissociable from a representation of economic life shaped by an accounting outlook. The study conclude with identifying directions for analysis of the influence of accounting representations in the representations produced by the emerging social sciences.

Double entry book keeping, Capitalism, and the pre-Sombartian debates

Studies revealed that it was Werner Sombart 1863-1941 who declared that "capitalism and double entry bookkeeping are absolutely in-dissociable; Sombart argued that the relationship between DEB and capitalism is that of form to content" (Sombart, 1992). Sombart from his position 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 analyzing each on its own merits with a view to working out its own particular characteristics rather than getting at general economic law" (Parsons, 1928). This school of thought 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 as an epoch of history, but also the idea that there were separate identifiable periods within capitalism itself. Sombart, in his major work Der Modern Kapitalismus, first published in 1902, identified three stages in the development of capitalism: early capitalism or Frühkapitalismus, this was from the thirteenth to the middle of the eighteenth century, full capitalism or Hochkapitalismus, from the middle of the eighteenth 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 advanced, particularly in accounting. The section of Sombart work covered presentation of "development of systematic account-keeping". Apparently relying largely on the work of Sieveking, Sombart identifies certain numbers of stages that are summarized as follows:

The first appearance of book keeping and accounts. This eras brought direction 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 (1916), the first accounts were developed in Italy in the 13th century.

Then, the Development of DEB: On the emergent of DEB, "each entry was recorded in two accounts, as a debit in one, and as a credit in the other. This was the fundamental principle of DEB. “As a result of this system, an enterprise's accounts are inseparably linked, tightly bound together like a bundle of sticks." (Sombart, 1992). Sombart thought this stage was reached from the second half of the 14th century. In particular, Sombart mentions the accounts of the city of Genoa, which were kept under a DEB system from as early as 1340 (Backhaus, 1898).

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 any doubt be summed up under the following objective: keeping track of every movement throughout the corporation's capital cycle, quantifying it and recording it in writing" (Sombart, 1992). The capital account seems to have appeared in the books a little later than the profit and loss account. According to Sombart (1916), 1430 was the initial date proposed for the earliest capital account. Later on that century, Luca Pacioli (1494) published his treatise, considered "the first scientific system for DEB in which all previous empirical discoveries were theorized into a coherent, comprehensive representation. Pacioli's work presents the first three stages identified by Sombart, who however recognized that DEB was not such an advanced accounting system as our modern system, since Pacioli was unaware of the practice of closing the accounts, or establishing an annual balance sheet (Sombart, 1992).

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

It could be argued that Sombart was obviously far from being ignorant of accounting history, from considering that DEB underwent an improvement process throughout the early capitalism period. Sombart described the main features of the capitalism 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). However, "in the period of full capitalism, the principles of profit and economic rationalism attain complete control and fashion of all economic relationships when scientific and mechanistic technology is widely applied." (Sombart, 1992). 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 as: Keeping accounts encouraged order and clarity, which Sombart believes are necessary for successful development of a capitalist system. According to Sombart, 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. In addition, the idea of accumulation also developed thanks to DEB: in Sombart words "double

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

entry bookkeeping has only one objective, which is: 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, and 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 of DEB 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" (Sombart, 1916).

Through DEB, rationalization of commerce became possible. DEB reflects the "close cohesion between the reign of the principal of accumulation, and the trend towards rationalization", both being founded on "codification of the business world into figures" (Sombart, 1916). More broadly, DEB created a "system of concepts", including "those that are familiar with the concepts because DEB concepts is used 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 in existent, and that without DEB it would not have come into being. This could prompt a deeper definition of capital as the capacity for accumulation as assessed through double entry bookkeeping (Sombart, 1916). The same applies to "the concepts of fixed and circulating capital", "rotating capital", "production cost" etc. "The conceptual artillery of the private economy and the political economy being applied to the capitalistic economy is largely 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 organization designed to increase the value of a given capital. This reveals the creative contribution of DEB to the arrival of the capitalist enterprise." (Sombart, 1992).

Finally, DEB's contribution to the separation of the business and its owner. "The existence of the capitalist enterprise", "must be considered as the organization of production in such a way as to free each undertaking from its owner. It must be acknowledged that accounting has contributed significantly to this emancipation" (Sombart, 1992). The company becomes autonomous and stands apart from the businessman; corporation changes from the inside according to its own laws. Once again, there are two reasons: Because the company, as a channel for capital, appears to be an entity constructed by integration into the accounting system, and because the company's unity cannot be deduced from the owner as a person, who simply occupies the role of a creditor supplying capital"(Sombart, 1992).

The theme of the link between accounting and capitalism is also present in the works of Weber (1991), 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). But Weber develops this idea no further, turning instead to the requirements for using a "capital account as standard". The works of Weber devoted 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). However, Weber makes not a single statement on the contribution of accounting to the birth and development of capitalism, even though Weber later presented 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. Rational accounting is not one of a range of institutions of rational capitalism,

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

but is the institution par excellence, whose progress is an indicator and sign. Bryer (2000) called it a signature of the advance of capitalism. Bryer argued that DEB does not bring capitalism into being, but its existence is a sign of capitalism, as it needs all the other institutions of capitalism which include: free labor market, significant monetary circuits, and calculability in order to function. The Weberian approach is 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 & Grundmann, 2001), but also to the liberties he took with historical facts to further his own theories. No doubt explains why Sombart's major work, ‘Der Modern Kapitalismus’, has never been fully translated into English or French, and many of his other works are also untranslated. Non-German speaking commentators on Sombartian themes are thus at a disadvantage in assessing his works and its relationship to the rest of his work, independently of the works of Weber, which are more easily available in translation.

Double entry book keeping, Capitalism, and the Post-Sombartian debates

The work of Sombart in Der Modern Kapitalismus devoted to accounting have inspired many researchers, principally in the field of accounting thoughts. Below is an examination of the arguments put forward by a certain number of other works to defend or contradict Sombart's theories. It was not possible to mention all the relevant works. This study refers to the best-known works, or those in opinion appear to bring the most new information to the debate upon their works.

The English historian Basil Yamey wrote about this subject several times (Yamey, 1949, 1964), and can be considered Sombart's most hostile commentator. In Yamey (1949) work, Yamey mainly examined the issue in the light of the most ancient practices, thus going beyond Sombart's knowledge of the historicity of accounting. For Yamey, "the work 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). Yamey set out "to show that the claims made for the double-entry system cannot be reconciled with the early practice of the system as illustrated and discussed in works on accounting published during the first three hundred years after Luca Pacioli's first printed exposition appeared in 1494" (Yamey, 1964).

According to Yamey (1964) the only contribution by DEB to the development of capitalism related to Sombart's first argument that DEB influence in increasing discipline and bringing order to business transactions. Other than this, Yamey seek to weaken Sombart's works with three arguments which are: that Sombart allocated "a central place" in his theory to "the calculation of the profits and capital of an enterprise". Yamey show that businessmen did not often undertake such calculations and that regular, at least annual, closings only became common practice relatively late in history 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.

Additionally, Yamey (1964) also challenges Sombart's claimed that DEB contributed to the business/owner separation: according to Yamey "Any notion that the double-entry system of accounting is in some sense necessary for the separation of the firm from its proprietors is

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

invalid. The notion lack validity is apparent from the fact that partnership concerns were in operation before the invention of double entry." (Yamey, 1964). 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 rationalization.

Another famous contribution to the debate was made by Winjum (1971). Winjum takes a less negative position than Yamey (1964). Winjum started with the question of what DEB is understood to mean, He noted that at least four different definitions coexist which are: (a) A bookkeeping system constantly in equilibrium in which the only criterion is the equality of debits and credits, (b) The addition of a capital account to the first system, (c) 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, and (d) the same as system (c) except for the periodic closing of nominal accounts to capital and the annual calculation of net income" (Winjum, 1971)

Winjum (1971) argued that the general line of argument is this: if DEB is taken to mean system (d) above, then clearly Sombart is wrong but Sombart never thought of system (d) prior to a relatively late period in his early capitalism stage. "However, if system (c) is adopt, the evidence against double-entry is not so overwhelming" (Winjum, 1971). Furthermore, Winjum (1964) believes that system (c) was broadly "implemented by merchants in the eighteenth century". So, "If the Sombart submission is to receive an impartial hearing, it must be evaluated on the basis of this system." (Winjum, 1971. Winjum then goes on to discuss, and on the whole defend, four theories attributed to Sombart. The theories are as follows:

That Double-entry contributed to a new attitude toward economic life. The old medieval goal of subsistence was replaced by the capitalistic goal of profits. Therefore, 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. In this respect, Winjum (1964) acknowledges the validity of Yamey's arguments, while also showing DEB's capacity to supply capital valuation and summary accounts was referred to in very early of his works. Although DEB, may not be the only possible technique for calculating capital, inventory-based method is also mentioned in other works as the practice that provides the fullest information at the end-of-period summary accounts (Backhaus, 1898; Mellis, 1568; Peele, 1569).

Additionally, this new spirit of acquisition was aided and propelled by the refinement of economic calculations. Yamey (1964) argued that Rationalization could be based on a rigorous calculation". In support of this statement, Winjum (1964) mentions that accounting ledgers with enough detail and organization for calculation of profit or loss on each venture, market or commodity existed as early as the 16th century. Winjum refers to the importance the earliest works 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 rationalization process was clearly not activated in every merchant's affairs, some took up the opportunity fairly early on. Finally, Winjum (1964) vehemently disagrees with Yamey's argument that knowledge of the past is no help for more rational decisions concerning the future. On the contrary, Winjum believes that the past has contributed to forming the business owner's judgment and market knowledge, and this help business owners to anticipate events in a more realistic way.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

The new rationalism was further enhanced by systematic organization. Systematic bookkeeping promotes order in the accounts and organization in the firm. Winjum (1964) 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) works. According to Ympyn, 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. Winjum (1964) added that the oldest surviving records in double-entry, those of the Massiri (1340) in the Genoese commune, revealed just such a separation, 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 (Winjum, 1964).

The French accounting historian Lemarchand (1992, 1993, & 1994) later put forward new arguments against Sombart. 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. According to Lemarchand, here again the idea that the actors of capitalism had other calculation and valuation methods available to them was found, not only DEB, and that they used these other methods, just as they could calculate capital by stock-taking (Yamey 1964). In addition, it cannot be denied that Weber was much more cautious than Sombart on this point (Weber, 1991, 1985, & 1991). As Weber explains in the 1920 introduction to his work ‘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, 1985).

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. Although it would be possible in the financial 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 financial model, investments are immediately charged to expenses. Using DEB, however, DEB 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 "financial" approach, and do not facilitate traceability of capital flows (Lemarchand, 1992; 1993; Yamey; 1964).

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

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

between fixed capital (primitive advances) and variable capital (annual advances) was first made by Quesnay (1758) in his Tableau Economique, and later taken up by the economists' sect, then Turgot and Smith. In fact, this distinction which partly echoes the difference between investment and consumption had been thought of much earlier by other accounting historians Lemarchand (1992) quoted Moschetti (1610) work as an example. Knowing this, can it be concluded that accounting revealed the concept? Lemarchand (1992 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 Lemarchand (1993) quoted an expense report of Ironmongers (1667) in which an "advance" was broken down into different uses: "solid, real expenses" for land, buildings and the hammering shop and "provisions" (Lemarchand, 1992; 1993; & 1994).

The table 1 below summarizes the positions of Sombart, Yamey, Winjum, and Lemarchand concerning the impact of DEB to the development of capitalism.

Table 1. Sombart, Yamey, Winjum, and Lemarchand summary of impact of DEB on the development of capitalism

S/N	Sombart (1916)	Yamey (1964)	Winjum (1971)	Lemarchand (1992)
1	DEB contributes to order and discipline	Agrees	Agrees	Not discussed
2	DEB constructs the idea of accumulation: - that 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.
3	The accounts are a tool for economically rationalizing decisions, by relating them to the capital accumulation objectives	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 research Knowledge of the past is a help for decisions involving the future	Not discussed

4	Creation of a system of concepts used by actors and economist 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.
5	Separation of the business from its owners	Disagrees, the separation results from 'Partnership'	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

Source: Author's Compilations.

As shown above, 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 was seen 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. It is good to also consider authors who have sought to renew the debate significantly, expressing it in terms other than those of the accounting historians' controversy discussed above.

For example, 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, they proposed a new angle: that is, if there is a link between DEB and capitalism, it should not be analyzed in terms of technical use, along the lines established by Yamey in 1949 and followed by Winjum in 1964 and Lemarchand in 1992. 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. Additionally, 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

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

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 (Backhaus, 1898).

Furthermore, Carruthers and Espeland (1991) thus brought a fresh angle to the central question underlying Weber's ‘The protestant Ethic and the spirit of Capitalism’ this shown 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. Although this is a useful addition in respect of the works of Weber (1971) and Sombart (1991), who did not discuss these aspects in detail, this interpretation of the relationship between accounting and capitalism is nevertheless coherent with their conceptual outlook both refer to the notion of the spirit of capitalism, and consider rationalization and calculability as important; for Weber the issue of legitimacy is important (Sombart, 1991; Weber, 1971).

In 2000, Bryer (2000a; 2000 b) also offered a completely new perspective on the subject. What is important for him is not the kind of accounting used, double-entry or single-entry, but 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). Therefore, DEB can be used without applying this reasoning (Lemarchand, 1992). Bryer came up with an ingenious idea. Taking up the link that Sombart (1949) and Weber (1971) saw between accounting and the spirit of capitalism, Bryer looked at accounting calculations rather 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 of Marx 1964 with Engels and those of Sombart and Weber. Bryers' purpose was 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, Bryer believes it is possible, through analysis of accounting methods, to identify for various business sectors and countries the periods when capitalistic mentalities appeared and the way they developed· 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 and Engels (1964) historical theory on the transition from feudalism to capitalism.

Apart from their varied approaches, all the works in the post-Sombartian controversy considered above share the same main method of demonstration. They all 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 was hardly explained and never refers to Sombart's stages of capitalism. Depending on the date chosen,

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

the historical theory under examination by the author is backed up or weakened. Additionally, 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. Capitalism 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.

It is good to now return to the Sombartian works and add this point of view. The second part of this study 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 (1916; 1930; 1992). 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 (1991), and Bryer (2000).

Accounting and 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 'Organization du Travail', where it was 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 is today 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). 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). In addition, Marx hardly seems to have known the term, although Engels used it, and the German economist Alfred Schäffle used the word Kapitalismus as early as 1870 (Braudel, 1979; Marx & Engels, 1964).

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 popularized the term, in his 1902 work 'Der moderne Kapitalismus'. The word capitalism 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 (Parsons, 1928). The question is, 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). In this study, the term of capitalism has

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

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. Some authors did not even mention the concept of capitalism in their works, other scholars including Gustav Schmoller, who was Sombart's teacher, did discuss it but the concept was subsequently rejected (Parsons, 1928).

Additionally, evidence suggests that Sombart took his initial approach to capitalism from Marx, although Marx never used the word capitalism, rather than from the German historical school, which 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. Sombart 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" (Sombart, 1930) and Engels recognized Sombart as one of his friend's most talented disciples. In seeking to present the concept of capitalism, Sombart explains quite naturally that it was Marx "who virtually discovered the phenomenon" (Sombart, 1930). The first definition Sombart proposed is fairly explicit: "Capitalism designates an economic system significantly characterized by the predominance of "capital". Scholar must be well acquainted with all 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 for 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 (Sombart, 1930). Capitalism is a formative conception not derived from empirical observation which enables economic science to arrange its material in systems. Sombart (1930) 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 organization, 3) a technique. In relation to capitalism, these three aspects are described as follows:

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). Furthermore, 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) (Sombart, 1930).

Additionally capitalism 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 property-less workers, all of whom are brought into relation through the market. Here once again is the issue of ownership of production resources that was central to the first uses of the term "capitalism" by scholars like Marx (1990) thinking. The high capitalism period was 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

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

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). The role of bookkeeping (DEB) was 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 realization, forces men into its path, and carries them off in its wake. It is an intellectual construct which acts as a material monster (Sombart, 1916; 1930).

Thirdly, 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). Sombart in following Marx's core research work on non-paid labor 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 and that it is the spirit which has created a suitable form for itself and has thus created economic organization (Sombart, 1930). Sombart (1916) 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 & Grundmann, 2001). 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.

Marx's notion of capital

According to Marx (1990) in his work the transformation of money into capital, the general formula of capital is a marvel of clear exposition. Marx contrasts the direct form of circulation of commodities or "simple circulation" with the circulation of capital. Marx (1990) argued that 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. He said 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). According to Marx, 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. Therefore, 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 (Marx, 1990). 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. For Marx, the complete form of this process is therefore M-C-M', where M'= M+▲M, the original sum advanced plus an increment. This increment or excess over the original value is known as surplus-value (Marx, 1990).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Therefore, 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. 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. This limitless accumulation, found at 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 circulating capital. This places capitalist in opposition to the miser, who accumulates a stock of money by removing it from circulation. 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. Pinning down the specific forms of appearance assumed in turn by self-valorizing value in the course of its life, will provide the following elucidation: capital is money, capital is commodities. capital 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 capital possess this form. Money therefore, forms the starting-point and the conclusion of every valorization process (Stehr & Grundmann, 2001; Marx, 1990)

Marx (1990) advanced to explained the origin of the increase in value between M and M' that is the purpose for the capitalist process. He argued that 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 well know, Marx found in the consumption by the capitalist of a specific merchandise labor 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 labor, 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 in-dissociable from the wage-earning phenomenon, as Sombart and Weber said, once again repeating Marx's ideas. Putting aside the question of the wage-earners for a moment, and turn to the other characteristics of capital. Every aspect of this representation of capital corresponds to that given by balance sheets taken from DEB accounts of the kind Marx may have known in the 19th century. It is convincing to note that Marx would not have been able to establish his definition if he had not had the accounting practices of his time as a reference point.

Translating the concept of Marxian capital into accounting terms, there is a capital with the value of the balance sheet total, assuming a simplified business form, with no debts. In the liabilities, it can be seen that it comprises the initial capital plus the business's successive profits, as ▲M 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: as the balance sheet assets shown. 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 ▲M, which can only be the result of calculating the difference between M and M': as Marx explained, at the end of the process, owner 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. 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 Stehr & Grundmann, 2001; Marx, 1990).

Consequences of the concept of capitalism

It is surely thoroughly unlikely that such a definition of capital, 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 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 (Sombart, 1930; Weber, 1991).

The links between capitalism and accounting are thus perhaps more conceptual since the capitalism could only be born conceptually, thanks to accounting 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 earlier, the only period in which all the practical links between accounting and capitalism was 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 (Sombart, 1930). 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 ignited Marx's way in understanding the capitalist system; Marx’s analysis, reworked by Sombart, later led to the concept of capitalism. In the end, Sombart's fourth argument, concerning the creation of a system of concepts by accounting, makes it possible to understand why the other four arguments only become irrefutable at a relatively late period. This study 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 arrival, Marx works, are of course eloquent, but the fact is that he never once mentions accounting in his works.

Accounting and DEB from Marx’s perceptive

Marx said very little about accounting and DEB in his numerous works. For instance, there is the passage where Marx mocks political economists' enthusiasm for the Robinson Crusoe stories (Marx, 1990). Robinson, of course, has a ledger and commences like a true-born Briton, to keep a set of books. Marx (2000) addressed the issue of the labor-time expended in bookkeeping. This expenditure according to Marx is part of the costs of circulation, it is not considered productive but makes capitalist circulation possible. Through accounting, the movement of production, especially of the production of surplus-value is reflected symbolically in imagination. But this does not mean Marx sees accounting as intrinsically capitalist. Accounting, he states, will be even more important in the collective production system (Miller, 2000). While works of Marx do not contradict Sombart's theory, the fact remains that Marx does not indicate any in-depth knowledge of bookkeeping or accounting in his works.

But it is worthy to know that the accounting practice of depreciation remained an impenetrable concept for Marx. Above all, Marx found it difficult to understand what it was hiding. Marx believed that businessmen were blinded to the fundamental logic of the system they belonged to. According to him, the businessmen thought that profit was legitimate, whereas in fact it was work for which the workers had not been paid. The way businessmen reasoned and more specifically, counted blinded them to this fact. As Mark neatly argued in his work dated 1858. .According to Marx and Engels (1964) the tradesmen's calculation method is naturally based on illusions that are partly even greater than those of the economists; but it corrects the theoretical illusions with practical illusions. Marx used practical examples to criticize political economics, but did not believe that practice was telling him the whole truth. Marx latter analyzed 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 Marx spent his life trying to demonstrate them scientifically (Marx & Engels, 1964; Marx, 1990). It is clear that Marx did not only needed to understand the 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 his letter dated of 1868, Marx explains to Engels his co-author, that he would like to use the data he has concerning his factory. According to him, these figures were sufficient to illustrate the surplus value rate, but Marx needed further data for the profit rate. He wanted 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. In respond, Engels replied 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 Marx more details because the owner's sons have been forbidden to give out further information.

From a very early period, Marx was able to view matters from an accounting perspective. But 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 in 1851. At that time Marx was interested in currency and the theory put forward by the banker and economist 'Lord Overstone', who published in a theory on currency circulation. In order to explain this theory to Engels and criticize it, Marx took 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 were presented in two columns. The left-hand column includes "Capital", "Reserves" and "Deposits": the liabilities. The right-hand column includes "Government securities", "Bills of exchange" and "Bullion or coin" the assets (Marx & Engels, 1964). Additionally, Marx and Engels (1964) argued that the tradesman as a firm, that is the person who makes the profit and the same tradesman as a consumer are, in commerce, quite different persons, in fact two enemies. They said the tradesman as a firm has a name: the capital account, or profit and loss account. The tradesman who eats, drinks, pays rent and has children is called the household expenses account. The capital item debits from the household expenses account every centime that passes from the commercial pocket to the private pocket. The economic actors are personified by the accounts, and the capitalist is the capital account personified.

There could be no better extract to support their argument.

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 in 1742. The problems regarding depreciation, which can only be considered this way in a DEB system, or the references to debit and credit entries. 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. And Marx, in reworking this idea, apparently needed accounting information (Klamer, 1989; McCloskey, 1996; Portes, 1998).

In Further Works, 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, Marx 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 (Winjum, 1971). For 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. To him, capital, profits, and wages were concepts common to accounting and the political economy of his time if not always identical. Marx would choose the closest economic concepts possible to accounting. The accounting Marx knows 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 system was in full speed operation (Portes, 1998; Winjum, 1971).

More in-depth study of the Marx-Engels works would be necessary to examine how a particular aspect of the Marxian system benefited from the practical and accounting information provided by Engels. It would seem clear enough that Engels' position in business and his intimate, practical acquaintance with the system Marx theorized played a central role that has often been overlooked in Marxology. The traditional approach is to concentrate on Engels influence on Marx's conception of history. But Marx also looked to actual trading practices and accounting techniques, as the explanation above have shown (Marx & Engels, 1964; Stehr & Grundmann, 2001; Winjum, 1971). 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.

CONCLUSION

This study 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 said, in defining capitalism by the capital account. 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 Weber 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

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

generally reduced to one aspect among several, a correlate of rationalization in application, rather than the actual principle of rationalization. Most scholars instead stress the importance for Weber of "rational organization of free labor" as a central factor of capitalism.

To understand this core role of the capital account in Weber's and Sombart's thinking, and particularly its links with other basic elements of capitalism, there is a need 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 criteria 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.

Consequently, the question remains why Marx did not mention accounting in his works although he talks about it in his correspondence with Engels, and why, when it was known he likes to illustrate all his points, he did not use accounting examples as illustrations. Several postulates were possible: The first is that, Marx wanted to criticize traditional radical 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. Although Marx was firmly convinced that capitalist accounts which present profits and hide surplus value are biased and give a false representation that is misleading even for capitalists themselves, he never attempted to show that accounting thoughts 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 (Stehr & Grundmann, 2001; Portes, 1998; Winjum, 1971).

The second possibility related to what has just been said: accounting is the language of capitalists, and as such this language is as suspect as the language of traditional radical economy. It is a jumbled collection of false representations originating in the bourgeois conscience. Marx therefore, used one biased conscience accounting and business practices to fight another radical economy and form his own view. Marx was not about to give it the satisfaction of being taken into consideration in his demonstration. The empirical data he used to support his demonstration were economic statistics, data from surveys, investigations into the miserable conditions in the workers' slums, and occasionally data directly taken from the capitalists themselves. It is true Marx twice quotes Courcelle-Seneuil's business manual, but that is the only reference to practical literature observed (Althusser, 1969). Accounting, being the very form of the bourgeois capitalist conscience, could not have been used to construct a demonstration. In particular, by granting legitimacy to balance sheet representations, which correspond almost totally to his concept of capital, Marx would have run the risk of legitimizing the profit and loss statement, which reduces labor 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. From the radical position of Marx against DEBS and Accounting, it is a common gen to elucidate that those with no direct experience of capitalist exploitation like Marx and who are dominated in their practices and conscience by the ideology of the dominant class, the bourgeois ideology find it tremendously difficult to understand Capital even if they are well educated, in fact, especially if they are very learned, because there is radical incompatibility between the theoretical content of Capital and the ideas they have in their heads and ideas they see since they put them there in their practices (Portes, 1998).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Moreover, the third postulate is that Marx wanted his works to be accessible to readers with no knowledge of DEB. No specific familiarity with accounting is necessary to read his works, 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. 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) was surely right that the classical economists studied by Marx had already taken their concept of capital from accounting. According to Hicks (1974) it all came from outside from business practice, from accounting practice. Even though the user then, had not used all the information available from a balance sheet 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 and is visible in all the work on what has been called normative accounting after the arrival of the positive theory of accounting (Hopwood, 1992). But the reverse influence is still largely unexplored. Yet few economists have actually ignored the accounting question. It is only since the end of the major national accounting projects 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 in 1974, that a few years later enabled conceptualizations 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 optimize 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 (Althusser, 1969; Braudel, 1979; Hicks; 1974; Parsons, 1928).

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