

The Influence of the Evolution of Economic Activity in the Late Middle Ages and the Renaissance on the Emergence of the Dualistic Concept in Accounting

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Abstract

Purpose: The purpose of this study is to demonstrate that the basic assumptions of double accounting were created by the same premises that contributed to the revival of humanistic trends in Europe in the 13th–14th centuries, especially in the socio-economic sphere.

Approach: This is a historical overview of the section of the literature devoted to the rise and evolution of double entry accounting. The study is the result of research and literature studies, based on Polish and foreign sources.

Conclusions: It can be stated with full conviction that accounting as we know it today is a product of the end of the Middle Ages, and especially of the early period of the Italian Renaissance in Italy. The preserved documents show that the accounting based on double entry, in the period of the thirteenth and fifteenth centuries, was shaped in several stages. First, it covered receivables and liabilities, initially by banks, then by other companies, and then, other assets were entered twice: goods, cash and liabilities. The use of equity in accounting led to the inclusion of result events in the accounting records. At this point, the entity's accounting became a closed system as we know it today.

Limitations: Taking into account a large number of – especially foreign-language – source materials on the origin of accounting, only a small part of these sources were analyzed and cited during the preparation of the article. It seems that the topic is worth further research and literature studies.

Practical implications: The study is primarily epistemological in nature, not focused on economic practice.

Originality: It is one of the few studies in accounting in Poland devoted to the origins of accounting based on double entry and its evolution as a result of economic development in Europe in the late Middle Ages and early Renaissance.

Keywords: socio-economic processes, evolution of accounting, double accounting, Middle Ages, Renaissance.

JEL: B1, B11, B15

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Wpływ ewolucji działalności gospodarczej okresu późnego Średniowiecza i Renesansu na powstanie rachunkowości podwójnej

Streszczenie

Cel: celem niniejszego opracowania jest wykazanie, że do powstania podstawowych założeń rachunkowości podwójnej doprowadziły te same przesłanki, które przyczyniły się do odrodzenia prądów humanistycznych w Europie w okresie XIII–XIV w., zwłaszcza w sferze społeczno-gospodarczej.

Podejście: jest to historyczny przegląd części literatury poświęconej powstaniu i ewolucji rachunkowości opartej na podwójnym zapisie. Opracowanie jest rezultatem badań i studiów literaturowych, na bazie źródeł polsko- oraz obcojęzycznych,

Wnioski: można z pełnym przekonaniem stwierdzić, że rachunkowość, jaką znamy dzisiaj, jest wytworem końca Średniowiecza, a zwłaszcza wczesnego okresu włoskiego Renesansu na terenach Italii. Z zachowanych dokumentów wynika, że rachunkowość oparta na zapisie podwójnym, w okresie XIII–XV w. kształtowała się na kilku etapach. Początkowo zostały nią objęte należności i zobowiązania, najpierw przez banki, potem przez inne spółki. Kolejno, objęto podwójnym zapisem inne składniki majątku: towary, środki pieniężne oraz zobowiązania. Zastosowanie w rachunkowości kont kapitałów własnych doprowadziło do objęcia ewidencją księgową zdarzeń wynikowych. W tym momencie rachunkowość jednostki stała się systemem zamkniętym, takim jaki znamy dzisiaj.

Ograniczenia: biorąc pod uwagę sporą liczbę – zwłaszcza obcojęzycznych – materiałów źródłowych na temat powstania rachunkowości, w trakcie opracowywania artykułu przeanalizowano i zacytowano tylko niewielką część tych źródeł. Wydaje się, że temat jest wart dalszych badań i studiów literaturowych.

Implikacje praktyczne: opracowanie ma przede wszystkim charakter teoriopoznawczy, nie jest ukierunkowane na praktykę gospodarczą.

Originalność: jest ono jednym z niewielu opracowań w rachunkowości w Polsce, poświęconych źródłom powstania rachunkowości opartej na zapisie podwójnym oraz jej ewolucji w rezultacie rozwoju gospodarczego w Europie w okresie późnego Średniowiecza i wczesnego Renesansu.

Słowa kluczowe: procesy społeczno-gospodarcze, ewolucja rachunkowości, rachunkowość podwójna, średniowiecze, Renesans.

Classical accounting has been shaped and evolved into a modern, developed and multifaceted form over the last hundred and several dozen years. However, its basic paradigms, especially in the field of: accounting accounts, double entry or balancing rules, appeared already in the late Middle Ages and early Renaissance in Italy. The aim of this study is to show that the basic assumptions of the dualistic concept in accounting were created by the same premises that contributed to the revival of humanistic trends in Europe in the 13th–14th centuries, especially in the socio-economic sphere.

1. Early Middle Ages: Development of a Positional, Decimal Number System

One of the first premises for the emergence of advanced account-based and double-entry accounting in the future was the development of a new – positional – number system. It is difficult to imagine the work of a modern accountant who would use the so-called non-positional number system.

The precursors of the new number system were Indian mathematicians who, around the 5th century CE, or according to some authors – around 700 AD (Schmandt-Besserat, 2007), developed a set of numbers that are used by mankind until today. One of them, Aryabhata, who is considered to be the creator of the number zero, plays a special role in this process. The genius of the concept of zero is that, for the first time in history, a symbol was created to describe nothingness. These numbers were transferred – around the 8th century CE – from India to the Middle East, to Baghdad, where in the Jacob ben Tarik school of astrology, Musa al-Khwarizmi, the most prominent Arab mathematician of that era, developed a new number system for the algebra he had invented: today called the decimal system. The above-mentioned concept of zero and the value of digits, resulting from their places in the number, played a central role in it (Hendriksen & van Breda, 2002, p. 58). The assumptions of the new number system were completely different from the existing non-positional number systems. An example of a non-positional system is, for example, the system of Roman numerals and numbers, which while used until today, only plays an auxiliary function in relation to the decimal, positional number system.

The new number system appeared in Europe around the 10th century CE. According to some authors, it was brought to Europe by Gilbert, the Archbishop of Ravenna (later Pope Sylvester II), who at that time studied at the University of Cordoba (Islamic Spain) (Hendriksen & van Breda, 2002, p. 59). The system quickly began to spread among merchants in Italy and the neighboring regions, it also found its popularizers in southern Europe. They included, first of all, Leonard Fibonacci from Pisa, who published in the first half of the thirteenth century the work of *Liber Abacci*, popularizing the new number system. It is worth emphasizing that the implementation of the new number system faced many practical difficulties at that time. In the thirteenth and fourteenth centuries, its main opponent was especially the Church, which at the time tolerated only the non-positional Roman numeral system. As a result, in 1299, the decimal system was declared heresy and it became forbidden to use it, inter alia, in Florence. The ban was not lifted for several dozen years. Nevertheless merchants continued to apply it. A little later, at the end of the 15th century, Luca Pacioli, a monk and professor of mathematics at Italian universities, recommended in his treatise *De Computis et Scriptoris* that accountants use Arabic numerals,

with the exception of headings, which should be written in the Roman system (as cited in Pacioli, 2007). Interestingly, this custom is often used in practice to this day.

2. Later Middle Ages: The Establishment and Development of the First Merchant Banks and Companies and the Need to Improve the Techniques of Keeping Merchant Accounts

The introduction of a new number system to Europe, the establishment of the first banks and commercial companies in the Middle Ages, and the attempts to improve the methods and techniques of keeping merchant accounts were a consequence of the economic boom on our continent starting in the 12th century, first on the Apennine peninsula, and then gradually in the countries of Western and Central Europe. This was related, for example, to the flourishing of trade, both local and international, with an increase in agricultural productivity, the emergence of new cities and the development of existing ones. With the development of trade, its organization also changed. In order to reduce the trade risk, new companies were established ad hoc, which were often dissolved after the completion of the project. Some of these companies survived to form future sustainable trade companies. The need to provide the trade companies with trade credits led to the establishment of banks, especially in Italy, whose activities slowly began to spread to the rest of Western Europe (Łazarowicz, 2011, p. 46). The above phenomena and processes created a number of new factors and premises that led to the formation of the foundations of the modern accounting system.

On the basis of existing documents, is it possible to determine when in the Middle Ages the commercial interests of the merchants began to be registered in a new way? It seems that the oldest found documents, which we would call accounting documents today, are three scraps of written paper, found between the pages of the cartularius of a Genoese notary, Giovanni Scriba, and dated 1156–1158. These documents contained three contracts of limited partnerships (*commenda* type), concluded between two partners: Ingo de Volta and Ansaldo Baialardo. They concerned three commercial expeditions carried out by the latter partner, and included amounts contributed to the companies, received profits and the method of their distribution (de Roover, 1956, p. 88). In turn, the oldest relic among the books of accounts are fragments of the book of an unknown bank from Florence dated 1211. It is a book of lenders, containing only the accounts of debtors. Each loan was recorded separately, next to the debtor's name. Additionally, the amount of the loan was entered, together with an entry that recorded the repayment of the debt. However, there

were no summaries or balances. There is, however, an exception to this book. In addition to information on debtors, it included information about the accession of a new partner to the bank, who brought both cash and his receivables (debts of six persons) (Lee, 1973, pp. 137–149). It is worth emphasizing that one can find contradictory entries in the book, as one person's debt was transferred to another. As M. Gmytrasiewicz rightly points out, the entries in Italian banks at that time did not concern the movement of cash, but only the transfer of debt from one party to another. Such postings (the so-called *gyro accounting*) are first examples of the use of double accounting entries (Gmytrasiewicz, 1977, p. 36). Another book found, belonging to the company Gentile de'Sasseti and Sons, from the years 1274–1311, contained new elements. First, it included a breakdown of accounts, separately for creditors' accounts and debtors' accounts. Secondly, it presents the only surviving account of partners' participation in a company from the 13th century. It was the share of one of the owners, Gentile, increased by the value of the profits and decreased by the payment of wages to one of the partners. G.A. Lee claims that such an account could be a mirror image of the capital account in the investee company (Lee, 1973, pp. 151–152).

Generalizing the economic and social phenomena and processes in Europe that intensified in the 13th–14th centuries, it seems that seven factors can be distinguished, which enabled the emergence of a dualistic concept in accounting at that time, i.e.,

- gradual dissemination of literacy and writing skills in the society, which in turn made it possible for traders to record economic events,
- improvement and dissemination of knowledge of arithmetic, allowing for making calculations or adding up amounts,
- consolidation of forms of private ownership and the development of new forms of companies, which in turn made it possible to register facts related to the company's property and rights to it,
- development of money and new forms and institutions of monetary transactions, which in consequence not only allowed for reducing economic events to a common denominator, but also led to the distinction between the accrual principle and the cash principle,
- credit development, which resulted in the fact that unsettled transactions determined their recording on separate accounting accounts,
- improvement of the trading system and expansion of various forms of intermediation in trade; its development created strong impulses for people to act, but also created the need for economic records of more and more numerous economic transactions,
- the emergence of the concept of equity; without it, trade would not have been able to develop and function properly, and credit would not have been granted (Littleton, 1966).

Even the bubonic plague that swept through Europe in the mid-fourteenth century, causing the death of about one third of our continent's population, did not stop the above processes, because – after it ended – there was a need to rebuild the European economy.

All the above-mentioned factors influenced the development of accounting during this period, although their share was, of course, varied. In the author's opinion, the development of accounting was most strongly influenced by three of them, i.e., the development of new forms of companies, aimed at creating sustainable trade companies, the development and gradual dissemination of trade credit, and the development of trade and various forms of intermediation in trade. These premises will be discussed in more detail in the next part of the study.

To sum up, as a consequence of the circumstances presented above, in Italy at the turn of the 13th and 14th centuries, accounting based on T-accounts and double accounting records appeared and developed, also creating an integrated, internally consistent system of interdependent accounts. It should be emphasized that in that period the concept of balancing resources and their sources of origin also appeared. This concept can be considered without exaggeration as the greatest (though not the only) contribution of accounting to the development of human civilization. Many disciplines of modern knowledge use the balance sheet concept, adapting it to their own needs. Today we have various balance sheets not only in economic sciences, but also in other sciences, such as exact, natural and technical sciences. This idea goes back, however, to the 14th century, to the concept of an accounting balance sheet and an accounting account based on double entry.

3. Early Renaissance: The Key Factors of the Dualistic Concept in Accounting

As already mentioned, three factors i.e., company, credit and brokerage, had the greatest impact on the development of the dualistic concept in accounting in the early days of the Renaissance. The influence of the aforementioned factors on the emergence and development of classical accounting occurred especially in the first period of the Renaissance.

The concept of the *company* remains the most important factor as it has led to the recognition of the enterprise as an entity separate from the owners (de Roover, 1956, p. 115). As already mentioned, this concept led to the creation of the principle of subjectivity in accounting, according to which the company became an accounting entity separated from its environment. The first ad hoc companies appeared in Italian cities as early as the 10th century, although the documented sources on this subject at our disposal date back to the mid-12th century. Around the 14th century,

companies became a dominant form in maritime trade. Two types of companies can be distinguished: *commenda* companies and *societas maris* ones. Contracts of commenda companies were concluded for the duration of a specific commercial undertaking between two partners: the investing person (limited partner, silent partner) and a person traveling (general partner, active partner). If the trip was successful, usually 3/4 of the profit was received by the investor, and 1/4 by the traveler. Quiet partnerships, such as commenda, had an additional benefit for the traveler, i.e., in this type of transactions no interest was paid (not recognized by the Church at the time), because the capital contributed by the limited partner was a form of loan for the general partner. Another form were *societas maris* companies, in which the financial contribution was also made by the traveler, while the profits were divided in proportion to the contribution (Hendriksen & van Breda, 2002, p. 60; Kawa, 1988, p. 7).

Credit is another factor that contributed to the creation and subsequent development of the accounting system, and especially to the creation of a bilateral account and recording of events. With the growing number of credit operations, recording of these events became a necessity. Initially, each transaction was treated separately and there were no accounting accounts. Then, gradually, all items relating to the same person were grouped together, thus creating a separate account, which with the passage of time took a bilateral form (de Roover, 1956, p. 116).

The third factor significant for the development of accounting in the Renaissance period was the development of forms of *intermediation* in business transactions. While credit became an impulse for merchants-bankers to keep accounts for settlements, intermediation led to the appearance of commodity accounts. At the beginning, itinerant merchants who traveled with goods predominated in trade, but with time they began to create department stores, often abroad. The persons running them were obliged to send the receipts from sales to their principals, which in turn led to records of the goods received and sold. With such entries, it is difficult not to notice that receivables correspond to revenues, and liabilities – to purchases. Thus, as the entire batch of goods was sold, the difference that remained on the account of a given batch of goods represented the financial result from its sale (de Roover, 1956, p. 117).

4. Early Renaissance: Increasing Complexity of Economic Processes and Its Impact on Accounting

The above factors indicate that the process of evolution of the economic record system to its full form of accounting based on the dualistic concept was also the result of the increasing complexity of the economic life of that time. The process was relatively long and lasted until about the mid-fourteenth

century. As a result, some concepts and principles of accounting were formed at that time, which are still used today, inter alia, balancing, subjectivity, periodization, matching of revenues and costs, or prudent valuation. Finally, the following principles were distinguished: accrual and cash.

The shape of accounting at that time could have been influenced by, inter alia, more and more complex recording of receivables and liabilities as part of ongoing business transactions. Originally, the records of settlements were kept by banks in connection with granting loans to merchants by banks. Legal returns were an inseparable element of the record of information on receivables or liabilities: should give (in Latin *debit dare*) and should have (in Latin *debit habere*). The first was related to the recording of the receivables, because the debtor should repay a certain amount. The second return concerned the liability, as the creditor should receive a certain amount. These events showed that each amount had to be entered in the banker's books twice, by debiting the payer's account and crediting the creditor's account.

This approach gradually spread to other professional groups, apart from bankers, e.g. merchants, who began to perceive and record other economic events in a similar way, apart from settlements. Therefore, the increasing complexity of economic life at that time led to a situation where, apart from accounts receivable and payable, other accounts began to appear, e.g. for cash or goods, and even for costs subject to settlement over time. As a consequence, new solutions regarding the settlement of the company's operating costs began to appear. Accountants of that time not only noticed the problem of allocating costs to the correct periods, but were also able to solve it. In the documents, one can find an example of the settlement of rent paid for four years in advance. The settlement consisted of the fact that, at the end of the first year, 1/4 of the total amount of rent was included in the costs, and the remaining balance was left for settlement in the following years (de Roover, 1956, p. 119). Therefore, it documents the emergence of accrued costs, and the above-mentioned principle of matching revenues and costs.

In the early Renaissance, however, the developing accounting system had a significant weakness. There was still no registration of changes in the size of equity of companies through recording revenues and costs. Without them, it would be difficult to talk about a dualistic concept in accounting (Łazarowicz, 2011, p. 56). Only at the turn of the thirteenth and fourteenth centuries was the relationship between flows (income, costs) and equity noticed: the principle that each income gained in a given period increases equity, and each cost incurred decreases it. As a result, equity accounts and profit and loss accounts began to emerge as a permanent component of merchant accounts, which ultimately led to the procedure of closing the books of accounts and reporting the first balance sheets and profit sharing

reports. This completed the process of creating an accounting system based on postings on two accounts.

It can be said that determining the financial result was not a particularly difficult procedure at that time. The financial result for a given period was probably determined at the end of some economic undertaking (the periodization principle was not yet commonly applied) as the difference between assets and liabilities, plus equity. This method of determining the financial result differed from today's methods, including the different perception of the role of equity in economic processes at that time, which was not treated as a permanent element. From the point of view of a particular economic undertaking, one can rather speak of the final capital (Turyna, 2014, p. 20). Moreover, in determining the financial result, the cash principle was followed, rather than the accrual principle, as the amounts obtained from sale transactions were compared to the amounts invested.

The first documented case of using double-entry accounting on bilateral accounts can be dated to 1340 and concerns the Genoa City Hall. As a result, with each entry there was a reference to that page in the book where there was a counter entry. Debit entries were called *debent nobis pro* and were placed on the left side of the account. For credit records, the term *receptimus in* was used and positioned on the right. The main ledger of the city of Genoa contained, for example, the accounts of: tax officials, tax collectors, notaries, goods, debtors, military creditors, lock managers, income and expenditure accounts, profit and loss accounts, and the commune's account constituting the capital account. The fiscal year in the Genoa City Hall ran from March 6 of the current year to March 5 of the following year (Scheffs, 1939, p. 37; Martinelli, 1983, p. 85).

When assessing the accounting system based on double entry in the city of Genoa, from the perspective of the present times, one may have some doubts as to the unification of the rules for qualifying the resulting events. Some of them were charged to the income and cost accounts, while others were transferred directly to the financial result account. Doubts could also be raised about the principles of recognizing these events, especially the differences in their detail. As a result, information on the generated profit was "scattered" on the capital account of the office. Nevertheless, it was a significant improvement upon the previously used accounting principles in commercial companies. It may also be surprising that the town hall dealt with the trade in goods and, moreover, often sold them at a loss. According to de Roover, this office, wanting to increase its cash holdings, bought goods from suppliers on credit and immediately resold them for cash, at a price below the purchase price. The loss that arose on this occasion was intended to conceal interest, then forbidden by the Church. It was a typical practice of those times, and similar accounts can be found, for example, in the books of the city of Bruges (de Roover, 1955, p. 413). Apparently, the so-called "creative" accounting is not an invention of modern times.

Another case of using accounting based on double entries was the well-known at the time, large commercial company Francesco di Marco Datini (see Table 1). The discussed company, operating in the years 1335–1410, had all the features of a modern, multinational corporation, with its headquarters in Prato (Tuscany) and branches in several European countries including Catalonia (see Table 1 below). All branches were required to prepare and send annual financial statements to the Tuscan headquarters.

It is worth paying attention to several elements in the discussed financial statements. Firstly, the amount of the determined profit was included in the balance sheet as a component of equity. This is a significant improvement over the previously described separate asset and liability reports; as a result, they did form a coherent whole. This is a consequence of the discovery, at the turn of the 13th and 14th centuries, of the impact of the company's resource flows (revenues and costs) on its equity. As in modern financial statements, the profit became the result of a list of registered revenues and costs. The balance sheet creates an inventory report, and the profit and loss account represents the activity flows.

Secondly, the above report shows that the accounting at that time was beginning to recognize the need to apply the precautionary principle, which may be confirmed, for example, by the item “bad debts” in the balance sheet. This did not apply to the income statement, despite the fact that if bad debts were written off as costs, the profit of the branch would decrease by half. On the one hand, this may indicate a mercantile caution, on the other hand – a lack of it. If the profit was consumed, the invested capital could be infringed (Bareja, 2010, p. 78).

Thirdly, the methods of valuation of company assets, especially inventories, were improved. This may be confirmed by the method of valuation of stocks in one of Datini's branches. According to Marcel Scheffs “... the value of individual items was obtained through experience by assessing each item separately, or by asking experts, traders or other auxiliary persons, such as brokers ...”. Any shortages that arose were transferred to the profit on goods account with the justification that “... movables deteriorated during the year...” (Scheffs, 1939, p. 31).

ASSETS	Barcelona currency	% of total assets
Money assets at hand and in bank accounts, incl.	1701	11.2
– money assets at hand	18	0.1
– money assets in bank accounts	1242	8.2
– special money account	440	2.9

Table cont.

ASSETS	Barcelona currency	% of total assets
Receivables, incl.	7134	47.1
– Local merchants for goods sold	4841	31.9
– Local customers for exchange transactions	2192	14.5
– Local clients with insurance	99	0.7
Balances on the accounts of foreign related entities, incl.	4845	31.8
– Venice	1305	8.5
– Genoa	9	0.1
– Avignon	-	0.0
– Montpellier	854	5.6
– Paris	19	0.1
– Pisa	980	6.4
– Bruges	1036	6.5
– Florence	520	3.8
– Perpignan	118	0.8
Datini's branches in other places, incl.	525	3.4
– Majorca	88	0.6
– Venice	224	1.4
– Florence	211	1.4
Inventories – stock goods	288	1.9
Office equipment, incl.	125	0.8
– Office furniture	95	0.6
– Marta, our slave	30	0.2
Others, incl.	193	1.3
– Various deferred expenses and deferred deliveries	112	0.7
– Current account of Simone Andrea	25	0.2
– Cash shortage	38	0.3
– Various corrections of entries	17	0.1
Irrecoverable receivables	384	2.5
Undiscovered errors in summing up the balance sheet	11	0.0
Total	15208	100.0

Table cont.

LIABILITIES	Barcelona currency	% of total liabilities
Creditors – local merchants (mainly bills of exchange)	1951	12,8
Balances of accounts of foreign related entities, incl.	8261	54,3
– Majorca	586	3.8
– Valencia	865	5.7
– Perpignan	3	0.0
– Montpellier	91	0.6
– Paris	297	2.0
– Bruges	2848	18.7
– Bologna	570	3.8%
– Florence	2090	13.7
– Genoa	666	4.4
– Pisa	182	1.2
– Venice	59	0.4
Datini branches in other places, incl.	2557	16.8
– Florence	504	5.3
– Genoa	1037	6.8
– Avignon	32	0.2
– Majorca	510	3.4
– Valencia	171	1.1
Consignment sales	828	5.5
Provisions for outstanding taxes and unforeseen costs	80	0.5
Owner equity – Francesco di Marco Datini da Prato	768	5.1
Other equities	761	5.0
– Net profit from the sales of goods and other transactions	751	4.9
– Subsequent adjustments	10	0.1
Total	15208	100.0

Table cont.

PROFIT & LOSS ACCOUNT	Barcelona currency
Gross profits from trading	689
Gross profits from currency exchange	262
Credit balance of expenses on goods	133
Total gross profits	1085
Costs to be deducted	
– rent for 18 months	60
– bad bill	3
– convoy expenses	67
– maintenance costs	106
– depreciation of office equipment	16
– provision for unpaid taxes and other expenses	80
Total costs	333
Net profit	751

Tab. 1. Balance sheet and profit and loss account of the branch of Francesco di Marco Datini & Co in Barcelona. Source: de Roover, 1956, pp. 142–143; Gawart & Jeziarska, 2003, pp. 72–73.

Writing off the decrease in the value of goods is a manifestation of applying the principle of prudent valuation when determining the financial result. Another manifestation of prudence is the item “*provisions for outstanding taxes and unforeseen costs*”. In the discussed entity, it was an item in the profit and loss account. In addition, the problem of depreciation of fixed assets appears for the first time in Datini’s books: it was not found in any of the earlier preserved documents. One of the elements of the profit and loss account is the depreciation rate for office equipment. In the Datini report, however, we do not know any detailed rules for determining this rate.

An interesting element of the Datini company’s balance sheet is the item “*Marta, our slave*”, treated as an element of office equipment, next to furniture. From the point of view of modern accounting, it seems unacceptable to place people in the balance sheet as an asset. It should be remembered, however, that the slavery system in the fourteenth century was sanctioned by law, and slaves were treated as objects, and did not have the same rights as free people. It is also unclear whether Marta, the slave girl, was part of the company’s assets or if she belonged to the private property of its owners. In the latter case, one could speak of a failure to

distinguish between the company's assets and private property, which would violate the entity concept in accounting.

Finally, the balance sheet item "*undiscovered errors in summing up the balance sheet*" may indicate imperfections of the then procedures related to the preparation of the balance sheet, such as the lack of precise control of accounting entries. It should be emphasized, however, that enormous progress occurred at that time, e.g. writing off the value of goods or receivables, creating provisions, or depreciation of fixed assets. The role of the financial statements also changed. While previously separate statements of assets and liabilities were intended only to determine the financial result, now the balance sheet and the profit and loss account served control purposes and the analysis of the financial situation, especially about equity, i.e., the wealth of owners and its development (Bareja, 2010, p. 81).

During this period, similarly advanced accounting already existed in many large commercial companies and banks. An example may be one of the most famous banks of that era, i.e. the Medici bank, established in Florence in 1397, which in its heyday had five branches in Italy and four outside Italy. Each branch kept separate accounts, and as of March 24, all branches closed their books, and copies of their balance sheets were sent to the bank's headquarters in Florence, where they were analyzed in detail. Normal practices in a bank included, for example, creating provisions for payables due, doubtful receivables and unforeseen costs (de Roover, 1956, pp. 141–154). In fact, several specific "schools" of accounting existed in Italy during this time, resulting primarily from the specificity and differences in the activities conducted by companies in a given area. And so, companies operating in Florence or Milan were more focused on banking and commercial activities, while in Venice, merchant activity and international transactions clearly dominated. Differences in accounting systems can be seen, for example, in the way of setting up goods accounts. Florentine or Milan companies kept separate accounts for specific assortments or batches of goods, while Venetian companies created separate accounts of goods for individual merchant enterprises or separate trade journeys. In turn, balance sheets in the case of banking or banking and trading companies were usually prepared once a year and were mainly used to analyze the financial situation. Balance sheets of Venetian companies were usually prepared every few years in order to establish the compliance of assets with liabilities, and sales reports were prepared regularly once a year (Łazarowicz, 2011, p. 73).

5. Summary and Conclusions

To sum up, it can be stated with full conviction that accounting as we know it today is a product of the end of the Middle Ages, and especially of the early period of the Italian Renaissance in Italy.

On the basis of the preserved documents, it can be stated that accounting based on the dualistic concept was shaped in several stages during the period of 13th to 15th centuries. In the first stage, it covered receivables and liabilities, first by banks, then by other companies, in order to transfer amounts from one client's account to another's. In the next stage, other assets were entered into double entry accounting: for instance, goods, cash and liabilities. However, with this approach, the closed system still did not occur: there was no "clamp" balancing of assets with liabilities, i.e., the owners' contributions. Separate reports were prepared: on assets, and on liabilities, and the financial result was determined as the difference between the sum of assets and the sum of liabilities. As a result, only the introduction to the records of equity accounts led to the next stage of evolution, which was including the result events in the accounting records. At this point, the entity's accounting became a closed, balancing system (Gmytrasiewicz & Karmańska, 2006, p. 49). Such a system still exists today.

Despite the fundamental similarities, it is necessary to remember the differences between the functioning of accounting of that period, compared to modern accounting. Until the 17th century, the main purpose of accounting was to provide information only to the owner, usually one person. In this situation, keeping the accounts was a private matter of the owner who did not disclose them to anyone. There were also no requirements for creating conditions for the true and fair view principle to apply. For the same reasons, no distinctions were made between the owner's personal matters and interests, and such a distinction existed only in relatively few companies, especially when there were several owners. The concept of an accounting period in the current sense did not apply, and companies closed their books of accounts in a discretionary manner. Some of them did it once a year (*Datini, Medici*), some – once every two or three years (eg. *Alberti*), and most did it when, for example, a commercial enterprise was completed. These ventures were usually short-term in nature, and the profits were calculated at their end. For this reason, most companies did not know the fixed capital, but used the final capital, which was settled at the end of the project. As mentioned previously, there were no stable monetary units during this period, there were various units of currency in circulation. Under these conditions, bookkeeping was inconvenient and troublesome (Turyna, 2014, p. 20).

One important question is worth answering: why was a bilateral account established at that time, followed by bilateral accounting records? After all, the dualistic concept in accounting to justify the use of double entry is simply to recognize the two sides of each transaction. From the perspective of today, this could be done using one box and entries with plus and minus signs, instead of using a two-sided accounting account and debiting one and crediting the other side. One may ask: why all these complicated operations? Well, the explanation is simple. Accountants of that time knew

the concepts of money, receivables, liabilities, equity, and expenses and knew how to use them, but the concept of negative numbers did not exist yet in the mathematics of that period. Mathematicians of that time, such as the German mathematician Martin Stifel, considered negative numbers an absurd category, a kind of heresy, and mathematics only recognized them in the 17th century. The invention of the two-sided account allowed accountants to get around the problem of the lack of negative numbers, where one side meant an increase, and the other a decrease in the value of an economic category (Hendriksen & van Breda, 1988, pp. 62–63). One can even claim that it was the accountants of the Renaissance period that in a way “forced” mathematicians to develop a system of negative numbers.

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