

THE CASH ACCOUNTING IN THE FIRST ENTREPRISE OF FRANCESCO DATINI IN PISA

Kuter Mikhail

Kuban State University, 149 Stavropolskaya., Krasnodar, 350040 Russia

Gurskaya Marina

Kuban State University, 149 Stavropolskaya., Krasnodar, 350040 Russia

Abstract

The paper considers the medieval practice of cash accounting in the First Enterprise of Francesco Datini in Pisa, which dates back to 1383. The research is based on the data of the preserved cash registers, which is *Entrata e Uscita*. The authors carried out the analysis of the transactions on the cash inflows and outflows over equal time periods. Particular emphasis was given to the procedure for balancing *Entrata e Uscita*.

Keywords: cash accounting, Francesco Datini, Middle Ages, *Entrata e Uscita*

JEL code: M410, N830.

Introduction

The 20th century is remarkable from the point of view of the development of the accounting history as it is considered to be the period when the study of the preserved archival materials, which are rooted to the birthplace of accounting – the medieval Italy, aroused interest of many researches.

One of such sources of the medieval Italian accounting is recognised to be the complexes of account books related to the enterprises and companies of Francesco Datini, the major part of which was retained in proper condition. This fact gave and still gives the opportunity to carry out the researches in the field of accounting history, thereby complementing scientific knowledge about the past with the contemporary science-based discoveries and findings. The mentioned legacy for the accountants all around the world is located in the State archive of the city of Prato, where lived and from where did his business the prominent Italian merchant.

Francesco Datini was an eminent medieval merchant, who lived in an Italian city, Prato. In the middle of the 14th century he headed to one of the largest trading centres of Europe in those times – to the French Avignon, where in 1363 he established his first company together with Niccolò di Bernardo. Since 1380's his business biography counted a great number of companies and enterprises in Prato, Pisa, Florence, Genoa, Barcelona and Majorca (Hyde, 1979; Joannique, 1996; Origo, 1957, Sangster, 2016).

In many of the Datini enterprises or companies the records were maintained in several books, each of which had its specific purpose. Basically there were used the following account registers: *Libro Grande* (the General ledger), *Memoriale* (the book for the initial registration of business transactions), *Entrata e Uscita* (the cash-book). In some cases the entries were kept in the books of household goods expenses (*Quaderno di Spese di Casa*), of expenditures on merchandise (*Quaderno di Mercanzie*) and of received and sent bales of goods (*Quaderno di Balle* or *Ricordanze di Balle*). The set of similar registers belonging to a certain enterprise or company constitutes a complex of its account books.

The researchers' interest to the account books of Francesco Datini in Pisa aroused due to the following reasons:

- First of all, the development of double-entry bookkeeping can be most vividly presented on the examples of the Datini Companies and enterprises, as with the time passed their accountancy provides the gradual emergence of all the recognised indicators of such an accounting system: the unified money measure, the double entry, the cross-references, the existence of accounts for incomes and expenditures combined with the calculation of the operational result in them, the account for profits and losses;
- Secondly, the accounting complexes of the Datini books were preserved in proper condition and almost in full quantity for each certain company or individual enterprise, which makes it possible to trace the registration algorithm of the accounting operations, verify the correctness of the double-entry method application by means of cross-references, which, in its turn, allows the researchers to detect the development regularities of the medieval accountancy.

The study on the cash accounting in the individual enterprises and companies of F. Datini was carried out as the mentioned procedure had some distinctive characteristics: the registers, which aimed to keep cash records, were moved outside the General ledger to the distinct book *Entrata e Uscita*. Additionally, this register is assumed to be one of the earliest preserved.

Consequently, an extraordinary approach to the procedure of accounting for cash inflow and outflow gave an idea about the existence of some extra features, which can be of value from the point of view of accounting history.

The paper aims therefore to examine in details the procedure of cash accounting and to display the mechanism for the cash balance determination in the First Enterprise of Francesco Datini in Pisa.

Review of Prior Literature

So far it is generally perceived (Sargiacomo, 2012) that at the beginning of the past century the first person, who touched upon the enterprises and companies of F. Datini in his work, was Fabio Besta (1909, 317-320). Yet, in fact the first real researcher into the Datini archives was his student – G. Corsani. This circumstance can be verified by the fact that Besta in his paperwork expressed appreciation to Corsani for the prepared for him research base (Besta, 1909, p. 318), which the latter, in his turn, also used in his own publication (Corsani, 1922, 83-85). In particular, Corsani's greatest contribution lies in the point that his work allows one to comprehend the structure of one of the earliest account books in the Avignon company (Corsani, 1922, 45, 69, 71-72). In the 1930's-1950's it would be used in the researches by another distinguishing scientist in the field of the accounting history – Raymond de Roover (Roover, 1937, 274; 1956, 140–141).

The literature of the same sphere reveals many papers relating to the Datini companies of one more renowned research scientist – Ceccherelli (1913; 1914a; 1914b; 1939), who, in fact, did not work directly with archival materials as well, but addressed to the opinion of Corsani.

Presumably to the same period it is possible to categorise the publications of such authors as Bellini (1948); Carradori (1896); Del Lungo (1897); Guasti (1880); Livi (1910); Nicastro (1914) and Bensa (1923; 1925; 1928). Generally, they listed those account books preserved in the Prato archive, giving their brief description.

It is noteworthy that the latest of Bensa's researches can be named as the most detailed one because it discloses “the results of many years research into the life of Francesco Datini, described the companies, society contracts, promissory note and bank contracts, transportation contracts, insurance and other commercial contracts” (Melis, 1954, pp. 61–2) as well as the purpose of the

Datini account books. There is additionally give an assumption on the simultaneous emergence of the double-entry bookkeeping in various markets of the medieval Europe.

In the second part of the 20th century the researches of the archival material and their descriptions were continued by Melis (1954, 1962, 1972), de Roover (de Roover, 1937, 274–275; 1956, 141), Zerbi (Zerbi 1952, 131-136), Martinelli (1974, 191–192).

Professor Zerbi was interested in the aspects of the double-entry bookkeeping genesis and the type of accounts, which existed in the Middle Ages. In his paper work he raised the issues of cash accounting by mentioning the absence of cash account and the utilization of the cash-book instead (Zerbi 1952, 131-136). De Roover showed Zerbi's conclusions in his publication by saying the following: “Professor Zerbi (1952, 131-136), who has examined it carefully, challenges this opinion because of the absence of a cash account, though there is a cash-book which might have been used as a substitute. Combining the cash-book with the ledger would enable the book-keeper to strike a balance, provided, of course, that he observed the rules in other respects. The argument, therefore, is not decisive” (de Roover, 1956, 141).

Martinelli's (1974, 191–192) opinion regarding the Datini enterprises and companies was expressed in this quote from his work: “the case of Francesco Datini from Prato is remarkable. He established a branch-office in Avignon, where from 1366 until 1401 he kept his books according to the old form, that is he used accounts with mingled sections; he introduced in his ledgers the new “Venetian method” only in 1401. This new form, which used accounts with lateral sections, had already been introduced into the accounting systems of the branch-offices of Genoa, Florence, Pisa, Barcelona, Majorca and Valencia which he established and managed with other partners from 1383 to 1393”.

Martinelli (1974, 249) describes the cash accounting by saying that “... book which is worthwhile mentioning here was the *libra dell entrata dell uscita* or collections and payments book which followed the outline of similar ledgers used by public administrations. Its main characteristic was the division of collections, usually recorded in the first half of the book, and payments which were recorded in the second half. This created two simple or unilateral accounts which were joined only when cash had to be verified”. Therein he added: “The earliest known example was found in the books of receipts and disbursements of the commune of Siena. This important set of books was begun in 1226 and records were kept, with a few interruptions, up to the XVII century”.

Further in his work (1974, 271) while describing *Quaderno di Spese di Casa Segnato “B”*, Registro № 421, he focuses on the features of cash accounting: “Cash is another account with easily traceable cross-entries, which usually were recorded in a separate book, the *libro "dell Entrata dell Uscita"* or the “receipts and disbursements book”, consequently it was deemed useless to indicate the position of its entries in the ledger. The lack of reference to the cash cross-entry was a main characteristic of the Tuscan accounting system until the end of the fourteenth century, which was found even in the ledgers of Francesco Datini in the first decade of the fifteenth century”.

Therefore, we can state that much has been done in terms of exploring the Datini archives. However, regarding the aim of the present paper, which is to reveal and to display the accounting processes for registration of cash transactions and the determination of the cash balance in the First Datini Enterprise in Pisa, we could not come across any accurate description of such practice in the existing publications of the twentieth century

The review of prior literature prompted the authors to further expand the research topic devoted to the cash accounting issues in order to complement the current knowledge in the field of the accounting history.

Statement of Basic Materials

The present article represents the logical continuation of the previous research in the field of cash accounting amid single-entry bookkeeping in the Datini company in Avignon in 1367-1372 (Aleinikov D., Kuter M, Musaelyan A., 2017). The main source of information was the Memorial. The records of cash transactions were carried out not at the moment of receiving money, but as a result of registration of operations in the Memorial. Further, the same transactions were reflected in the cash-book or *Entrata e Uscita* in Italian. Such accounting register consisted of two sections. The first one, “Entrata”, served to keep the entries of cash receipts, the other one – of cash disbursements. The “Entrata” did not include the entries on the amounts of some separate transactions, but the accumulated cash sums by day and in some cases over several days. The records in “Uscita” (cash outflow) were treated more carefully. In the expenditure part of the cash-book each transaction was registered explicitly, which means that every transaction of cash outflow was reflected in it. For this reason, the entries of cash receipts over a month occupied “one and a half” pages in “Entrata” and six and a half pages were required for the cash disbursements in “Uscita”. Furthermore, it should be pointed out that the cash register contained no reference to the page number in the Memorial or in the General Ledger, which made it difficult to reconcile with the registers intended for business operations maintenance.

The simplicity of the procedure for determining the cash balance in Avignon is striking. Each section was summed up at first. The result of cash outflow in “Uscita” was transferred to “Entrata” and recorded under the cash inflow total. The revealed cash balance was reflected under the cash disbursement total and was also transferred to a new page as the first indicator of the cash inflow (opening balance) at beginning of the next month.

The accounting practices in First Enterprise of F. Datini in Pisa in 1383 showed some definite progress. First of all, it refers to the registration of every fact of both the cash receipts and the cash disbursements in “Entrata e Uscita” (Prato, AS, D. №403), which was opened on April 22, 1383. An example of the first day entries in the “Entrata” section is presented in Table 1. The results were calculated over each page.

The first entry testifies that the opening balance was transferred from *Entrata e Uscita* (Prato, AS, D. №423), which was used in the enterprise for a short period of time during the application of the registers of single-entry bookkeeping. It reveals the details of the opening balance calculation by means of comparing the total of cash inflow with the total of cash outflow and its closing balance and the subsequent adjustment of the difference between the compared sums. The similar technique will be thoroughly explained during the narration. When opening the General ledger according to Venetian method, there were opened all the new registers as well, including new *Entrata e Uscita*.

In *Entrata e Uscita* on one page there is included data over several transaction days. Table 2 shows the order of registration of cash transactions in “Entrata” over the period from April 22 to August 27, 1383 – the date of the first balance determination.

Table 1 – The translation of Prato, AS, D. №403, c. 2R from Tuscan dialect

The day 22th of April 1383	
From the old account, this day, golden f. 976 (<i>a oro</i>). That cash was from Matteo di Lorenzo, that is “ <i>in suggello</i> ” f. 764 and f. 86 s. 17 d. 3 for expenses of the cash and f. 60 s. 3 d. 2 for expenses made for the merchandise and f. 10 s. 14 d. 3 in cash and f. 73 s. 1 d. 4 Francesco for balance of an account of him. And from that money we take away f. 18 s. 16 <i>a oro</i> for profit made on trades as it can be seen here down and at the account Profit on trades (Pro di Mercatantie) put at the old account at Uscita at c. 19	f. 1976

From Gain on trades (<i>Pro di Mercatantie</i>) f. 18 s. 16 for gain on wax we sold. And we didn't write this wax in the Yellow Book (<i>Libro Giallo</i>) of the Mercatantie Book B, at c. 330	f. 18 s. 16
From Matteo di Lorenzo golden f. 13 s. 18 d. 10 <i>a oro</i> , as in an account in the Uscita at c. 109 in 5 entries, in cash	f. 13 s. 18 d. 10
...	

As appears from Table 2, if we take into account the fact that the data over May 13 is reflected on pages 2v–3r, over July 18 – on 5r–5v and over July 28 – on 5v–6r, then the number of real days of cash collection will be 47. Apart from that, it is not quite clear why the accountant reflected the transaction day August 10 twice. Thus, 116 transactions were executed over the four months from the opening to the periodic closing of the cash-book during 47 days.

Table 3 provides the analogous data on the cash disbursements in Uscita. Considering that the transactions on April 23 and April 26 can be found respectively on cartas 109r–109v and 109v–110r due to the lack of free space on the current pages, 98 cash outflow operations were made over 37 transaction days.

On the first stage in line with the Avignon practice the total of the cash expenditures was transferred from “Uscita” to “Entrata” and written down the total of the cash incomes. Consequently, the page Prato, AS, D. №403, c. 6v presents the total over the 116 receipt transactions – f. 9181 s. 6 d. 4. Under it there is the total of the cash disbursements over the same period of time transferred from page Prato, AS, D. №403, c. 113r of the “Uscita” section – f. 9286 s. 19 d. 7. So, in other words, the cash outflow exceeded its inflow by f. 105 s. 13 d. 3. Further, the accountant explained the reasons for such a situation:

– And we found more in this account as it can be seen above f. 105 s. 13 d. 3 *a oro*, and this mistake will be managed as it was already found;

– From Salvestro Bardini et Andrea del maestro Ambruogio and Co. f. 100 *d'oro* we have on their behalf from Piero Bind[...] and Co. until June 30th and we didn't [...] as in the Yellow Book B at c. 21 we didn't put at Entrata and for this reason the account is unbalanced;

– And we found more in this account f. 5 s. 13 d. 3 *d'oro* and we put it at Profit on exchanges as in the Yellow Book B at c. 335.

Table 2 – Transaction days of cash inflow and the number of records by day, according to Prato, AS, D. №403, c.2r – 6v

Page	The opening date of transaction days of cash inflow and the number of records by day	Total
2r	(22.04) – 3, (23.04) – 3, (24.04) – 2	3/8
2v	(28.04) – 1, (1.05) – 4, (4.05) – 2, (5.05) – 1, (9.05) – 1, (13.05) – 1	6/10
3r	(13.05) – 3 , (14.05) – 1, (15.05) – 3, (16.05) – 2, (17.05) – 2	5/11
3v	(20.05) – 4, (22.05) – 1, (23.05) – 5, (26.05) – 4	4/14
4r	(27.05) – 2, (29.05) – 1, (30.05) – 1, (1.06) – 2, (3.06) – 1, (4.06) – 1, (8.06) – 3, (13.06) – 1	8/12
4v	(15.06) – 1, (16.06) – 1, (18.06) – 1, (20.06) – 3, (25.06) – 2, (26.06) – 2, (30.06) – 2	7/12
5r	(4.07) – 1, (7.07) – 3, (9.07) – 2, (10.07) – 4, (10.07) – 2, (14.07) – 1, (18.07) – 1	7/14
5v	(18.07) – 2 , (20.07) – 3, (21.07) – 4, (23.07) – 2, (28.07) – 3	5/12
6r	(28.07) – 1 , (3.08) – 1, (18.08) – 4, (21.08) – 3	4/9
6v	(27.08) – 2	1/2
Total		50/116

Table 3 – Transaction days of cash inflow and the number of records by day, according to Prato, AS, D. №403, c.109r – 113r

Page	The opening date of transaction days of cash inflow and the number of records by day	Total
109r	(22.04) – 5, (23.04) – 5	2/10
109v	(23.04) – 6 , (24.04) – 3, (26.04) – 1	3/10
110r	(26.04) – 1 , (28.04) – 3, (29.04) – 1, (2.05) – 1, (4.05) – 3, (5.05) – 1	6/10
110v	(6.05) – 1, (9.05) – 2, (14.01) – 1, (22.05) – 3, (23.05) – 4	5/10
111r	(25.05) – 2, (27.05) – 2, (30.05) – 2, (10.06) – 4, (12.06) – 2	5/12
111v	(13.06) – 1, (15.06) – 2, (19.06) – 3, (22.06) – 1, (30.06) – 1, (3.07) – 2	6/8
112r	(10.07) – 3, (11.07) – 1, (13.07) – 1, (18.07) – 2, (20.07) – 5, (28.07) – 2	6/14
112v	(1.08) – 3, (4.08) – 1, (7.08) – 2, (18.08) – 4, (21.08) – 2	5/12
113r	(26.08) – 12	1/12
Total		39/98

Proceeding from the accountant's records, the surplus of the cash disbursements as well as the imbalance of the cashbook appears because of the two mistakes. First of all, f. 100 received from Salvestro Bardini et Andrea del maestro Ambruoigio and Co. on their behalf from Piero Bind [...] and Co. until June 30th were not reflected in “Entrata” on time. In addition to this, the accountant did not find it necessary to be looking for any further discrepancies and simply recognised the remained difference in the sum of f. 5 s. 13 d. 3 as profit on exchanges. We shall notice, that such practice was quite common for the accountancy in the Middle Ages.

However, on page c. 113r (on which the account period on cash outflows finished) the sum f. 9286 s. 19 d. 7 is absent. At the bottom of the page after the total over the page there is a reference, which explains that the total over the period is on page 6. The last entry before the page-by-page summary on page 113r says: “The cash balance was transferred to c. 7 in this book, the sum of f. 101 s. 5 d. 5”. In this manner the accountant balanced both sections: *The cash receipts section is equal to the cash expenditure section plus the cash balance*. The cash balance was transferred to the closest blank page of the “Entrata” section and served as the first entry to account for cash inflow in the new period.

Even the earliest application of the “Entrata e Uscita” book revealed one very important regularity: all records in this register have a cross reference to the corresponding entry in the General Ledger (Libro Grande Giallo B, Prato, AS, D. №357) or in the Memorial (Memoriale Bianco B, Prato, AS, D. №367). This indicates the existence of one of the most important features of double-entry bookkeeping – the mandatory reflection of all primary data on cash flow in accounts by double entry method.

Already the next period, which did not relate to the closing of the General Ledger, can be noted by the significant increase of the level of the accounting organization. Figure 1 shows an example of the procedure for closing “Entrata e Uscita”, presented in the photocopies of real accounts.

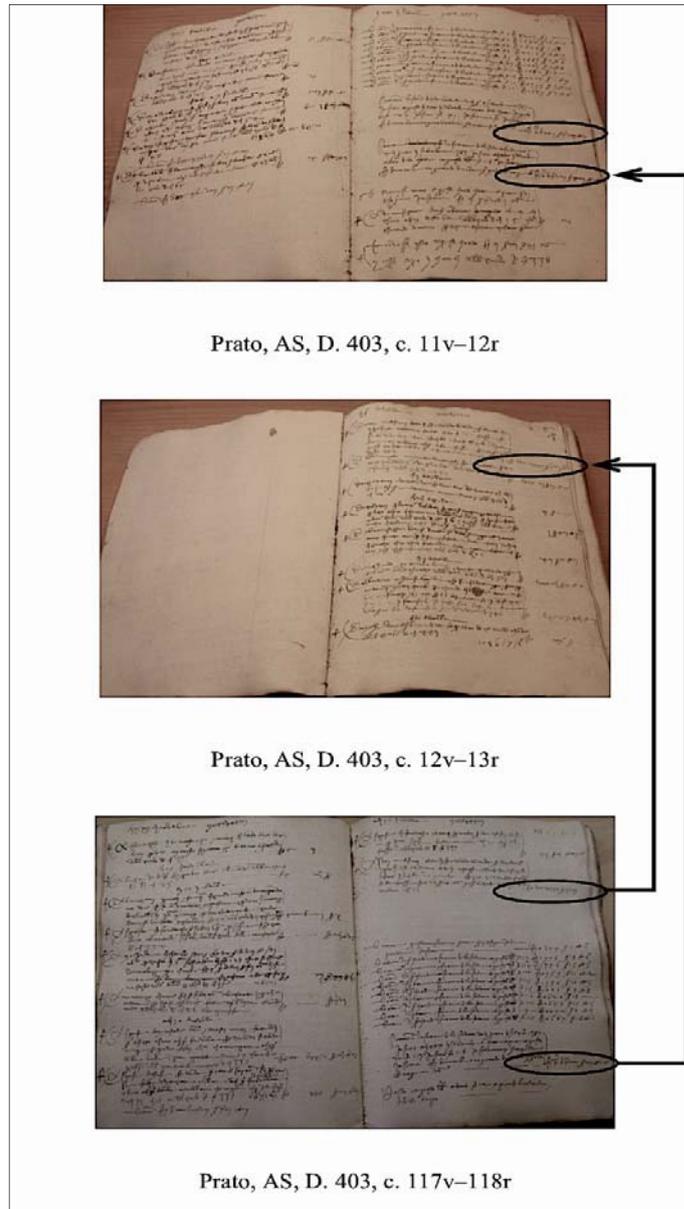


Figure 1. The procedure of closing Entrata e Uscita

In the upper part of Prato, AS, D. No. 403, c. 12r 10 results from pages 7r-12v are recorded. The first ellipse under the page-by-page totals marks the grand total of the cash inflow over the period – f. 10521 s. 19 d. 6. The second ellipse indicates the total amount of cash (f.10519 s.4 d.5) transferred from “Uscita” from Prato, AS, D. No. 403, c. 118r. Further, there is explained the absence of equality for the sum of f. 2 s. 15 d. 1:

- And we found less in this account as it can be seen here above in sum of f. 2 s. 15 d. 1 *a oro*;
- To Boninsegna di messer Rinucio f. 5 *d'oro* until October 25th as in the Yellow Book B at c. 15, at Gherardo di Mano for insurance we took for Rome;
- We found more in this account f. 2 s. 4 d. 11 *a oro* and we put them in the Profit on exchanges account in the Yellow book B at c. 338.

So in other words, the transaction on the cash disbursement in the sum of f. 5 for the insurance was not entered. Additionally, similarly to the aforementioned case the accountant designated the cash surplus in the amount of f. 2 s. 4 d. 11 as profit on exchanges.

Prato, AS, D. №403, c. 118r also shows 10 page-by-page totals of cash expenses. The last entry before the totals is the cash balance (f. 840 s. 10 d. 7), which was transferred to Prato, AS, D. №403, c. 13r.

Thus, it is possible to state that the cash accounting system in the Datini enterprises in Pisa became sophisticated by 1383.

Conclusion

Despite the absence of the cash account, it impossible to state that in the First Datini Enterprise the cash transactions were registered outside the system of double-entry bookkeeping. It can be proved by the fact that the account book intended to register the cash flows, Entrata e Uscita, contained the cross-references on every cash deal to the corresponding entries in the Memorial or the General Ledger.

The accomplished research let us identify the mechanism for cash accounting, i.e. the way the medieval accountant used to keep the records of cash inflows and outflows, as well as to determine the cash balance.

In contrast to the cash accounting system in Avignon, where the cash receipts were reflected in the accumulated sums over one or several days and each entry of cash disbursements was written down in one certain amount, including its alignment with the transaction date, in the Pisan enterprise of Francesco Datini both every cash income and every cash expenditure were carefully entered into “Entrata e Uscita”.

The procedure for determining the cash balance in the first reporting period in the enterprise in Pisa resembles the analogous to it algorithm, which took place in Avignon. Yet, this one had its own peculiarities. In Entrata the cash receipts total was calculated, under which there was put the page-by-page total of the cash disbursements. After that the accountant was balancing the income and the expenditure parts of the cash-book by explaining the reasons for the occurred difference.

The operations the accountant made in Entrata in connection with the closing of the next periods are identical to those that were implemented in the previous one. Although this time Entrata e Uscita was balanced according to the following rule: *The cash receipts are equal to the cash disbursements plus the cash balance*. This is exactly the indicator, “*the cash disbursements plus the cash balance*”, which was transferred from Uscita under the total of Entrata. In its turn, the cash balance was allocated from the mentioned figure and brought forward to the next reporting period as the opening balance.

Thus, the paper testifies that in the early companies in Pisa belonging to Francesco Datini the cash accounting system was quite developed and complex.

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