

GEOFFREY ALAN LEE

## The Development of Italian Bookkeeping 1211-1300

The Florentine bank ledger fragments of 1211, the earliest surviving commercial accounts in Europe, have received considerable attention from historians of accounting. Transcribed by Pietro Santini (1887)<sup>1</sup> and Alfredo Schiaffini (1926),<sup>2</sup> discussed at some length by Mario Chiaudano (1930)<sup>3</sup> and Federigo Melis (1950),<sup>4</sup> and briefly by Raymond de Roover (1956),<sup>5</sup> they were translated into English, and commented on, by the present author (1972, 1973).<sup>6, 7</sup> This article takes a more comprehensive view of Italian (especially Tuscan) bookkeeping in the thirteenth century, and endeavours to trace the lines of evolution from the surprisingly sophisticated ledger of 1211 to the emergence of double entry, or approximations to it, about 1300.

The task is easiest in relation to Florence, thanks to Arrigo Castellani (1952)<sup>8</sup> who, in the interests of philology, transcribed virtually all extant Florentine prose texts up to 1300—most of them account-books or extracts therefrom. Other Tuscan accounts, besides being scarcer, are much less accessible, and the author has been compelled to depend upon extracts, mainly in Melis. Beyond Tuscany, and Tuscan firms abroad, there is practically nothing before the famous Genoese municipal accounts of 1340; but books have survived, from the first half of the fourteenth century, of several Florentine banking, commercial and industrial firms, at home and in Flanders, France and England.<sup>9, 10</sup>

### EVOLUTION OF THE PERSONAL LEDGER ACCOUNT

The 1211 fragments are confined, with one exception noted later, to debtors' accounts. In general they combine the functions of borrowers' ledger and loans register; the account for each loan (of any size) is headed with details of the borrower's name, amount advanced, rate of interest, witnesses, and sometimes guarantor(s), followed by particulars, in narrative form, of repayment of the principal. This was effected, sometimes in cash, sometimes by set-off against a deposit account, for the same customer or for some other person—probably by means of a bill of exchange or promissory note, frequently accepted or made by a third party. When an account was settled the paragraph was cancelled with oblique lines. There are no totals or balances, and calculations must have been done on the abacus or with counters. Many loans are complicated by transactions in non-

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GEOFFREY ALAN LEE is Lecturer in Accounting in the Department of Industrial Economics, University of Nottingham.

Florentine currency—principally that of Bologna, where the bank had a branch or resident partner—but all amounts are converted to the standard silver *denari* of Pisa, the money of account. On the other hand, interest (normally at 20 per cent per annum, often with one month's grace before it began to run) is not entered in the accounts, except as part of a balance transferred from another page. Such transfers are common, but the only cross-references are in the form 'x parchments further on (or back)'; there are no references at all to the cash book, which must have been indispensable.

After 1211 there is in Florence a gap of 48 years before one reaches the extract (1259-67) from the books of Castra Gualfredi and the Borghesi Company, and of 51 years to the next actual account-book, the first ledger of Bene Bencivenni (1262-75). Apart from public accounts in charge and discharge form, the only other Italian specimens are fragments of the accounts of Cambio and Giovanni di Detacommando (1241-72) at Poppi; of a creditors' journal at Imola (1260-2); and of a memorandum book of the Ugolini Company of Siena, trading to the fairs of Champagne (1255-62).<sup>3, 4, 6</sup> The language of all these accounts was the Tuscan dialect, already developing into the literary tongue by the efforts of Dante's precursors; public and ecclesiastical accounts were still kept in Latin.

The Detacommando accounts have survived in similar circumstances to those of 1211, as guard-leaves to a thirteenth-century MS. in the Biblioteca Comunale at Poppi. Only one leaf is in good condition, and of this Melis<sup>4</sup> offers an excerpt from 1261, in which a contract is made by Don Detesalvi, Rector of San Zeno, and other clerics to supply 105 *staie* of wheat and barley, in four annual instalments from 26 February 1261, at 10 *libre* per *staia*; followed by sundry deliveries, stated in quantities only, over an uncertain period, and amounting in total to 53½ *staie* of barley and 52½ *staie* (less one *bacino*) of wheat. This scarcely represents an advance in technique over 50 years; nor does the Imola journal of 1260-2, in which notes of indebtedness incurred are merely struck through, presumably as the creditors were paid. The Ugolini book is considered also, by those who have inspected it,<sup>3, 4, 6</sup> to be a series of memoranda, rather than accounts in proper form; but it may have constituted a basis for entries in regular ledgers, and is interesting for another reason, as explained later.

The main stream of development thus flows through Florentine channels. Extant ledgers from about 1260 onwards present many common features, and it is instructive to compare representative accounts with those of 1211. All are still in 'paragraph' form, with entries arranged consecutively down the page and amounts of opposite sign (indebtedness incurred and discharged) differentiated by the form of words employed. Sums of money are still expressed in Roman numerals (allegedly more difficult to falsify than Arabic ones), though the setting-out is generally neater than in 1211, with each entry started on a fresh line. It is still exceptional, though, for any totals to be provided, and settlement of an account, or the carrying forward of a balance to another page, is still denoted by striking through the paragraph with slanting lines. The lesson that a set of accounts should

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be in a single currency has, however, been well learnt; most use the reformed silver coinage (*fiorini grossi*) introduced in Florence from 1237, converting gold florins (*fiorini d'oro*), minted from 1252, at a rate of exchange stabilized, by 1277, at 29 silver *soldi* to the gold florin.

Three main advances in technique are noticeable. Firstly, the functions of register and ledger account have become separated. The elaborate headnotes of 1211 have largely disappeared, though it is still stated, on occasion, that the proprietor holds a bond (*carta*) for the sum lent—sometimes for a larger amount than was actually advanced—and the name of a guarantor (*mallevadore*) may also be given. Secondly, the accounting itself has become more comprehensive, by the inclusion of interest in the body of the account—under the euphemisms of *guadagno*, *prade* or *dono* (gain, profit, gift), to evade the (seldom enforced) ecclesiastical prohibition of usury. (The rates are also lower—generally 8 to 12 per cent per annum.) Thirdly, there is more systematic cross-referencing of items between two accounts (e.g. set-offs, or transfer of a balance to another page)—the leaves being generally numbered. However, there is still no cross-referencing to the cash book (which has in no case survived with the ledger)\*, perhaps because the date was sufficient in a book where all the entries were (more or less) in chronological order.

### SURVEY OF PERSONAL LEDGERS, 1211-96

#### 1. Unknown Florentine banking firm, 1211:

Two leaves of parchment, used as front and rear flyleaves to a fourteenth-century MS. of *Digestum Novum cum Glossa*, in Biblioteca Medicea-Laurenziana, Florence; transcribed by P. Santini (1887)<sup>1</sup> and A. Schiaffini (1926),<sup>2</sup> and translated, with a commentary, by G. A. Lee (1972).<sup>3</sup> Debtors' accounts only, except for one section of uncertain import (see later). The following extracts (translated) illustrate most of the points made earlier.

##### *Carta 1 recto, columna 1*

1211

Jacopo, son of the Barone degli Acquarelli, and Simone his brother are due to give us, each [for himself], £52. 0. Od. for £18. 0. Od. in Imperial *mezzani* which we gave them on 18 June at [the rate of] 35 less a third†; and they are due to repay us on 18 June. If [the moneys] are outstanding longer (*se più stanno*), [interest is] at 4d. in the £ per month, for as long as we may permit (*quanto fosse nostra voluntade*). Witnesses: Alberto Baldovini, Gagliette da Pecora, Buontalento Macchetti, and Ruggiero, stepson of Buonfantino of Borgo San Lorenzo.

*Item* Buonincontro, son of the Barone degli Acquarelli, gave us £14. 11. Od.; Cambio and Tornaquinci [partners?] brought it on 27 July. *Item* Arrighetto Arrigoni gave us

\* The earliest extant cash book is that of an unknown Siennese firm (1277-82); this, and the cash book of Ruggiero da Firenze (1279-80), Treasurer to Pope Nicholas III in the Marches, have receipts in the front half and payments in the rear half, with periodic netting-off of the smaller total against the larger.

† I.e. £34.13.4d. in *mezzani* ('halves' of an unspecified monetary unit) for £100 Tuscan.

£5. 0. 0d.: [signed] Buonincontro; Tegghiaio [partner?] brought it at the above date. *Item* Jacopo has given us £15. 0. 0d., of which Ricovero, partner of Piero Rossi of San Firenze, received £6. 0. 0d., Buonafede Varliani £5. 0. 0d., and Testa di Codarimessa £4. 0. 0d., on 2 August on our behalf (*per noi*). He also gave on our behalf to Cambio Morandi (?) £10. 3. 0d. on 19 September. *Item* Jacopo gave us £5. 6. 0d.; Jacopo brought it on 26 September. *Item* we were due to receive £2. 0. 0d. in respect of (*per*) Dato Guidotti (?) on 8 October. *Item* Jacopo gave us £1. 10. 0d.; Aldobrandino [partner?] brought it.

C. 1 r., col. 2  
1211

Donato, son of Ciaffero, and Guido della Spada are due to give us, each [for himself], in total £107. 7. 8d. for Bolognese coin which we gave them in Bologna for the fair of San Procolo, and are due to pay on 1 June; if [the moneys] are outstanding longer, [interest is] at 4d. in the £ per month.

Buonaccolto Salintorri has given us £17. 17. 10d.; Messer Aldobrandino, son of Rinieri Foresi, received £14. 0. 0d. of it on behalf of Simone Gianrolandi, and Albizzo [partner?] brought the remainder on 13 June, when Rinieri, son of Martinello the bin-maker\*(?), brought us the £14. 0. 0d. *Item* Rinieri (?) Rinucci gave us £17. 17. 11d.; we received £5. 10. 0d. of it from Corbizzo della Pressa; Jacopo [partner?] brought it, and Giannozzo [partner?] brought the remainder at the date aforesaid. *Item* he [Donato] gave on our behalf to Torsello Giugni £18. 0. 0d.; we paid it on behalf of Capo the dyer on 8 June. *Item* Donato gave us £9. 10. 0d.; Albizzo brought it at the date aforesaid. *Item* Ciaffero gave us personally (*di sua mano*) £18. 12. 0d. on 11 June. *Item* he is due to receive £17. 17. 10d. which Arrigo dell'Erro gave us; we deducted from his account what he was due to receive at the due date. *Item* he is due to receive £2. 0. 0d. in respect of Caro the goldsmith; we deducted it from the account of Guarnelletto, son of Gregorio, on 5 July. *Item* he gave on our behalf to Accolto, son of Ughetto of San Firenze, £4. 0. 0d.; Donato, son of Ciaffero, paid it on 9 July. *Item* Donato gave us £1. 12. 0d.; and his share of the interest he accounted for to (?) Tornaquinci on 9 July.

Each page of the ledger is ruled down the middle, and each of the two columns is divided into six or eight blocks. Each represents an account, with the writing fitted in as the bookkeeper could best contrive; hence, the various repayments are separated only by the word '*item*'. In the translation the spelling of proper names has been modernized, and the presentation of figures regularized.† Totals and balances are absent, but it is fairly obvious that the first set of entries in each account are effectively debits, and the second set credits, and that when the two were equal or deemed to be so, the account was cancelled with oblique lines,

\* *Arciolaio*—a word otherwise unknown, and given (it seems) in no dictionary. It seems to be derived from *arcile*, a Lucchese word for a flour-bin (per Parodi, in a commentary on Santini's original article (1887)).

† In the original, the days of the month are counted forwards in the first half, and backwards (from the end) in the second; e.g. 18 June is *tredecim di anzi kal [endi] luglio* (13 days before the kalends (1) of July), and 2 August is *due di intrante agosto* (two days into August). Sums of money, in *libre*, *soldi* and *denari*, have been rendered for convenience as pounds, shillings and pence, in Arabic instead of Roman numerals; in the original the enumeration is not always straightforward—e.g. £17.17.10d. stands as *lib' xviii meno den. xxvi* (£18 less 26d.).

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as stated above. (In fact, the first account has total debits £52.0.0d. and credits £51.10.0d., while in the second the two totals are £107.7.8d. and £107.7.7d.) There are no entries for interest, though the headnotes prescribe a rate of (in effect) 20 per cent per annum from the date of each advance; in other cases one or two months' grace is often allowed, so that the true rate is less.

The 1211 accounts are equally interesting as witnesses to the existence in thirteenth-century Italian of a specialized vocabulary of bookkeeping, perhaps originating in literal translations from Latin. The most significant terms are those relating to positive and negative movements in the balance of the account, of which two pairs may be distinguished, viz.:

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|---|--|
| <p>1 (a) (no) <i>die/dino dare</i><br/>and<br/>is/are due to give (us)</p>              | <p>(b) <i>die/dino avere</i><br/>is/are due to receive;</p>                |
| <p>2 (a) (ci) <i>diè/diede/ha (nno) dato</i><br/>and<br/>gave (has/have given) (us)</p> | <p>(b) (li) <i>denmmo/avemmo dato</i><br/>we gave/have given him/them;</p> |

From the first pair is derived the modern Italian usage of *dare* and *avere* as the equivalents of 'debit' and 'credit'—a locution familiar to Pacioli. The thirteenth-century bookkeeper, however, did not think of them as direct opposites, but regarded 2 (a) as opposed to 1 (a), and 2 (b) to 1 (b)—that is, he thought on the one hand of a loan *to* someone, and its repayment, and on the other hand, of a loan *from* someone, and its repayment (or, in a mercantile business, of sale of goods and receipt of cash, and of purchase and payment therefore). The mediaeval ledger-keeper also became familiar with the procedures of offsetting the balance of a customer's loan account against that of his deposit account, and of using a transfer from a debtor's deposit account to his creditor's deposit account, or against his creditor's loan account (with the agreement of both customers), as a means of settling their reciprocal indebtedness. Examples of both types occur in the 1211 ledger, and thence arose two more pairs of opposed entries, viz.:

- |  |  |
|--|--|
| <p>3 (a) <i>ponemmo che die/dovea avere</i><br/>and<br/>we added what he is/was due<br/>to receive</p>     | <p>(b) <i>ponemmo che die/dovea dare</i><br/>we added what he is/was due to<br/>give;</p>      |
| <p>4 (a) <i>levammo ove die/dovea avere</i><br/>and<br/>we deducted what* he is/was<br/>due to receive</p> | <p>(b) <i>levammo ove die/dovea dare</i><br/>we deducted what* he is/ was<br/>due to give.</p> |

Thus, *ponemmo* meant 'we added (to the balance of the opposite account)', and *levammo* 'we subtracted (from the balance of the opposite account)'. If a

\* Or, 'we deducted (it) where', etc., according to context.

customer's deposit account balance was offset against his (or another's) loan account balance, there would be an entry of type 4 (a) in the debtors' ledger, and of type 4 (b) in the creditors' ledger; if he made a transfer from his deposit account to that of his creditor, there would be a 3 (a) entry in the debtor's account and a 4 (a) entry in the creditor's—both in the creditors' ledger of the bank. Hence *ponemmo* in a debtor's account (with a debit balance) came to mean 'we credited the (creditor's) account affected', and in a creditor's account, 'we debited the (debtor's) account affected'; while *levammo* had the meaning, in a debtor's account, 'we debited the (creditor's) account affected', and in a creditor's account, 'we credited the (debtor's) account affected'. Not all of these types of entry are found in the 1211 fragments.

## 2. *Castra Gualfredi and the Borghesi Company, 1259-67:*

Part of the notarial extract (1287) of deposit account of Gualtieri dal Borgo, guardian of the sons of Rinieri Ugelletti; like all the following extracts, it is translated from A. Castellani's transcripts (1952)<sup>3</sup> of MSS mainly in Archivio di Stato, Florence. Taken from 'old book' (1259-60) and 'new book' (1260-7).

### *Old Book*

#### [QQ] 1259

Gualtieri dal Borgo and Tuccio Saverigi, guardians of the sons of Rinieri Ugelletti, are due to receive (*deo [no] avere*) £133. 13. 4d. on 1 August on behalf of Messer Maccio dalla Badia; we added [it] in his account where he is due to receive, back in MM.

And they are due to receive for interest (*merito*) £16. 11. 8d. to 1 August [12] 60.

We have given (*hanno dato*) Gualtieri and Tuccio £150. 5. 0d. on 1 August [12] 60; we gave it to Gualtieri himself; we added what he is due to receive, further on in TT. 1260

Gualtieri dal Borgo, guardian of the sons of Rinieri Ugelletti, is due to receive £150. 5. 0d. on 1 August on behalf of Gualtieri himself and Tuccio Saverigi; we deducted [it] where they were due to receive, back in QQ.

And he is due to receive £236. 12. 0d. this day on behalf of Ser Arrigo Buonaccorsi and his partners; we added [it] where they are due to give, back in BB.

This account we have cancelled (*dannato*) and entered here above in one sum, and this day what he is due to receive here above we have added where he is due to receive in the new book at folio 23; and all these entries (*partite*) which he had here below, collected at one date in total, are added at the foot of the above account aforesaid in the new book, at 24 November [12] 61.

We have given Gualtieri £12. 0. 0d. on 14 August; Ugo Monaldi counted (*annoverò*) into his hand 20s. in florins for corn.

[There follow 18 such 'debit' entries, totalling £117. 7. 4d., mainly for corn, bread, wine, oil and clothes.]

### *New Book*

#### 1260

Gualtieri dal Borgo, guardian of the heirs of Rinieri Ugelletti dei Macci, is due to receive £386. 17. 0d. at 1 August [12] 60; they were written in the old book at TT.

We have given Gualtieri £129. 8. 0d. [sic] at 24 November [12] 61; they were written in the old book at the foot of the above account, where he was due to receive; they were

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written in several entries; we have brought them all to this day, making the dates the same.

We have given £17. 7. 0d. at 15 July [12] 63; we deducted [it] from his account in the old book, where he was due to give at GG.

[There follow four similar 'debits', totalling £28. 4. 0d.; then—]

We have given [amount left blank], which Gualtieri gave to Guiduccio, son of Rinieri Ugelletti, in Spain during the 28 months which he spent with him, and for all his expenses; when the total sum which he gave is known, it is desired to reimburse Gualtieri.

As compared with the 1211 fragments, the Borghesi extracts show many of the tendencies enumerated earlier—neater setting-out, simplification by removal of 'register' details, inclusion of interest in the body of the account, and proper cross-referencing to other ledger folios (here denoted by letters). The extracts are also important, as containing the earliest surviving account for a creditor or depositor. There are still no proper totals, but there is some attempt at balancing. It will be noted that the balance 'carried forward' (in modern terminology) is described as 'given' to the depositor, and that it is stated to have been 'added' on the new page; while on that page the balance 'brought forward' is conversely stated to have been 'deducted' on the old page. Likewise, in the 'new book', the debit of £17.7.0d. is stated to have been 'deducted' from Gualtieri's loan account at GG in the 'old book'; this must mean that it was credited to an account with a debit balance, thus reducing that balance. The summarization of the credits and debits in the old book, when carrying them forward to the new one, also shows some advance in technique, despite the arithmetical error of 8d. in respect of the debits. The blank in the last entry is partly explained by the narration; perhaps the amount was itself the subject of the litigation for which the notary (Lotte Formaggi) made the extracts. The money of account is the new Florentine silver currency, based on the *florino da dodici* of 12 *denari*; the excerpt gives an example of the contemporary idiom '20 *soldi* in florins', meaning 240 silver florins counted as one *denaro* each—though in reality they amounted to £12.0.0d. of standard money, as the rest of the entry makes clear.

### 3. *Bene Bencivenni* (first ledger), 1262-75:

Domestic ledger of a wealthy Florentine who died between 1296 and 1298;<sup>s</sup> comprises mainly debtors' accounts, but includes one for a large investment in a firm (see later). Extracts consist of the religious formula at the beginning, and one page of accounts.

#### C. 1 verso

*In Dei nomine,\* amen*, and of profit and good fortune, of increase of persons and goods, and of every good thing which God may give us, amen.

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\* In the original, *In Dei domine*.

C. 2 recto

1263

Currado and Lutieri, brothers, sons of Benevieni da Petriuolo, are due to give us £12. 0. Od. which we lent them on 15 May of the above indiction. They had from us 20s. in *forini da dodici*; Bene Bencivenni counted it into their hands. We have a bond in respect thereof by the hand of Ser Ruggieri who lodges with Ser Parisci in Borgo Sant'Apostoli, and I have the bond by me.

Currado and Lutieri have given us £6. 13. Od. in florins at 15 May [12] 64; we received £7. 3. Od. in *piccioli*. We added it (*ponemmo*) to their account where they are due to receive, in the large book, in respect of a piece of land which we bought from them in Le Sciabbe, five *staiora* and five *panora*.

Currado has paid us for the third part.

Ferrante has paid us for his part.

1263

Ser Martinello di Balla is due to give us £6. 0. Od. which we lent him on 1 November, in three instalments (*tra tre volte*) personally; he said that someone else would repay us, for his hose and shoes and his other expenses.

He is due to give 10s. Od. at 15 December, which we lent him personally at Cisti's shop in Porta Santa Maria.

He is due also to give 10s. Od. on 10 June, which we lent him personally in the Mercato Vecchio at [blank]'s bank (*tavola*).

Ser Martinello has given us, himself, £7. 0. Od. on 1 November [12] 64, in that we received from him two *cogni* of new wine, at £3. 10. Od. per *cogno*.

Arriguccio, son of Bellondani da Petriuolo, is due to give us £1. 10. Od. for one mantle and some skins which we sold him, [the mantle?] of Arras cloth, on 15 October.

Guccio has given us £1. 10. Od. at the due date (*al termine*); we added [it] where he was due to give, two parchments further on.

These accounts, being private ones, are less sophisticated than those in the previous extract, and show somewhat less evolution from the standards of 1211. There is still, for example, mention of the security for a loan, and interest is not entered; nor are there proper cross-references. There also appears some inconsistency in the use of *ponemmo*, in the first account. It will be noted, too, that some debts are settled in kind, and that there is now a divergence between the purchasing power of the silver florin and of the old Pisan currency (*piccioli*), since £6.13.0d. of the first are taken as equal to £7.3.0d. of the second. The pious formula at the beginning of the ledger (and repeated annually) was common form by 1262; a similar sentence occurs in the Borghesi transcript, dated 1253. More significant, though, is the practice (not illustrated above) of balancing, at each 1 January, those debtors' accounts which were still open; earlier books of account are too fragmentary to prove or disprove any hypothesis as to its prevalence before 1262.



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### 4. Estate of Baldovino, son of Jacopo Riccomanni, 1272-8:

Accounts (in Biblioteca Nazionale, Florence) of the administrators of a citizen of Florence who died on 14 September 1272. They begin with lists of legacies, creditors' claims and expenses paid out of the estate, and continue with collection of debtors' balances, investments in banking firms on behalf of the heirs, and purchases of land on their account. Extract shows the latter part of the account for the principal investment, in the family firm.

#### C. 8 recto

1276, 1 January

Simone Baldovini, Riccomanno Jacopi, Nero Cambi del Tedesco & Co. are due to give in florins, on 1 January, £1,978. 1. 0d.; we deducted [it] from their account where they were due to give, one and a half sheets back, and these moneys belong to the brothers Giovanni and Donato, sons of the late Baldovino Jacopi.

Simone, Riccomanno & Co. have given in florins, on 1 January [12] 76, £725. 13. 7d., which moneys they have withdrawn for their [Giovanni's and Donato's] petty expenses; for the dowry of their sister Tora, which she had when she married Lapo, son of Messer Uberto di Rovinoso; for the dowry of their sister Bice, which she had when she married Ciaïno, son of Inghilberto Acciai; and for other expenses which they have incurred up to this day, just as they are written in their book of the bank by the hand of Nero Cambi. And these are all the expenses incurred by them with the Commune of Florence; and also they had of us moneys which were paid to Canci dei Visdomini for rent of the land which we bought from him, since two years' rent were taken by him, amounting to £45. 0. 0d. in florins.

Simone, Riccomanno & Co. have given in florins, on 1 January [12] 76, £1,252. 7. 5d.; we added [it] where they are due to give on this same page.

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1276, 1 January

Simone Baldovino, Riccomanno Jacopi, Nero Cambi del Tedesco & Co. are due to give in florins, on 1 January [12] 76, £1,252. 7. 5d.; we deducted [it] from their account where they were due to give on this same page, above.

Simone, Riccomanno & Co. are due to give in florins, on 10 February [12] 75, £573. 10. 0d. Lamberto dell'Antella & Co. gave them to them on our behalf; we deducted [it] from their account where they were due to give, two sheets back.

Simone, Riccomanno, Nero Cambi & Co. have given us, at the [above] date, £1,825 17. 5d., the which moneys they paid to Giovanni and Donato for their share in the bank of the said firm, as is contained in the articles (?) and in a book entry (*si come si contiene per ordine e per partita di libro*) of the said firm. Everything which has passed, before and since, will be found written in that book.

The accounts for the lesser debtors (some of them inherited from the deceased) are fairly similar to those in the Bene Bencivenni ledger; interest is charged at 10 per cent per annum, and there is the additional complication, in some cases, of conversion from gold florins to silver, taking the *fiorino d'oro* as 27s. 0½d. The proceeds of these debts were distributed to the heirs, or invested on their behalf, and the accounts closed. The need to charge interest on a compound basis with yearly rests appears to be the main reason for the systematic balancing of the

debtors' accounts at every 1 April. Cross-referencing is less sophisticated than elsewhere, perhaps because of the small number of leaves, nine in all.

The account for the main investment extends over two full sides of parchment, of which the second is translated above. Into it (as from 2 January 1274) have been fed the balances from six other accounts receivable (all appearing elsewhere in the ledger), as well as sundry amounts in cash and, as at 1 January 1276, interest allowed by the firm at 8 per cent per annum. Just over a month later the account is closed, its balance having been used to purchase a share in the bank for the deceased's two sons.

### 5. *Gentile de' Sassetti and Sons, 1274-1310:*

Mainly domestic accounts, but include a large investment in the family business. Consist of 27 leaves of debtors' accounts from front of ledger, and 5 of creditors' accounts from back of it. Extracts are from the debtors' section, and include an account for rent receivable. (N.B. There is evidence that Gentile regarded 25 March as the official New Year's Day—as in England up to 1752—and the years have, where necessary, been renumbered accordingly).

#### C. 9 verso

*In nomine Domini, amen.* 1280 [-81], 1 January. May God give us good, this [year] and all others, and grant them for increase of persons and of property and for joy and good fortune which God give us, amen! and grant them to be for great profit of soul and body.

Borgo Corbaccioni and Cione da Campi, his son, of the San Martino quarter, are due to give, on 9 January 1281 [-82], 67 gold florins for 60 gold florins which I gave him on 9 January 1280 [-81]; guarantors Nazzo his brother, Puccio Romei, Tuccio Albaggi, and Pietro Monti da Campi, of the San Martino quarter; bond by the hand of Ser Jacopo Orlandi da Campi, of the San Lorenzo quarter. Borgo fetched [the money] himself; Gentile counted it into his hand; we have the bond executed, and Borgo paid for it.

Borgo himself gave us, on 9 March 1283 [-84], 4 gold florins; Borgo brought them himself, and gave them to my lady (*madonna*) personally.

Borgo himself gave us, on 21 August 1284, 70 gold florins; Nardo Gunte the dyer in orchil\* (*oricellaio*) gave them to us on his behalf, and Lapo and Pino, sons of Lo Strozza, gave them to us on behalf of Nardo Gunte; we added [it] where Lapo and Pino themselves are due to give, at [folio] 19.

Borgo himself gave us, on 1 September, 3 gold florins; we added [it] where Borgo is due to give, further on at [folio] 19.

#### C. 11 recto

1281 [-82]

Caino the blacksmith is due to give, on 1 January of the above indiction, £5 0. 0d. for the fourth part of the rent of the shop where he lodges, for one year.

Caino gave us, on 20 July, £2. 7. 6d.; he counted them to Gentile.

Caino gave us, on 1 January, £2. 7. 6d.; he counted them to Gentile.

\* Orchil (*oricello*) is a lichen extract, used in dyeing. The word *oricellaio* does not seem to be otherwise known, and is found in no dictionary; but Petrocchi\* gives *oricellare* as an obsolete word, 'to dye'. Castellani defines *oricellaio* as 'merchant of orchil'; but he adduces no proof, and his interpretation seems to me less likely than my own.

## DEVELOPMENT OF ITALIAN BOOKKEEPING

These accounts show rather less system than some earlier ones. In particular, there is no real attempt to reduce all entries to a single currency. They are in a mixture of gold florins, silver florins, and *piccioli*, with a general propensity to express the first in terms of the third, at rates varying from 33s. 0d. to 36s. 10d. to the gold florin. The second of the two accounts illustrated shows a debt of £5.0.0d. discharged by two payments totalling £4.15.0d. The first sum must have been in *piccioli*, the other two sums in *fiorini da dodici*; at a rate of 33s. 0d. *piccioli* to 29s. 0d. *fiorini*, the £4.15.0d. would become £5.8.1d. in *piccioli*—the extra being perhaps regarded as interest.

The loan account, also, is not balanced in any obvious way, except that a residual sum is carried forward to another page. A debt of 67 gold florins is payable in one year's time against an actual advance of 60 at 9 January 1280-1; in effect, interest is charged at 11.67 per cent per annum. The total receipts, plus the balance at 1 September 1284, are 77 florins. The extra 10 must represent further interest charged; but compound interest at 11.67 per cent per annum, with annual rests, would come to more than 10 florins, and one can only suppose that the charge fluctuated. All in all, the Sassetti accounts are inferior in technique to some of their contemporaries; yet they are important evidence, as will be seen, for the development of equity accounting, as well as being the first proven example of a ledger with debtors at the front and creditors at the back.

### 6. *Bene Bencivenni (second ledger), 1277-96:*

A continuation, after a short interval, of (2) above. Similar to the 1262-75 volume, but contains some novel features, as shown below.

#### C. 4 verso

1277

Guadagnino Soldi, of Porta San Pancrazio, is due to give us £2. 0. 0d. in *piccioli*; we deducted them in the other ledger (*quaderno*). I lent him them in Pisa, personally, when he was there with Count Guido Novello, on 8 May, when King Charles went to Rome; there is no bond (thus would I have it done!) which remains in my favour.

I do not think that I shall ever get any money.

---

Secca of Peretola is due to give us 10s. 0d. in *piccioli*, which I lent him in Florence when he paid a fine of his, £5. 0. 0d., to the Commune, in the time of the Ghibellines in [12] 65.

This man is dead; I do not think that I shall ever get any money at all.

---

Donna Albanese, widow of the late Melliorello della Riccia, of Petriuolo, is due to give us £1. 0. 0d. in *piccioli*, which I lent her husband on 15 June, personally at Petriuolo.

The husband is dead; I do not think that I shall ever get any money at all.

I do not think I shall ever get any money.

These are the earliest unmistakable instances of the writing off of debts as bad; several more occur, in 1277 and later. This ledger, like the preceding one, is important also in the history of equity accounting.

Of several other domestic ledgers transcribed by Castellani,<sup>5</sup> the most remarkable is that of Lapo Riccomanni, brother-in-law of Dante Alighieri; there is regrettably no mention of the poet. Extending from 1281 to 1297, it is if anything even less systematic than the Sassetti ledger, with accounts in a mixture of currencies, unconverted. Like the Baldovino Riccomanni accounts, it includes a loan to the family firm.

#### DEVELOPMENT OF CAPITAL AND NOMINAL ACCOUNTS TO 1296

It will have been observed that most surviving thirteenth-century Florentine ledgers related to domestic, rather than business, concerns. They are essentially memoranda of financial matters which it would have been imprudent to commit to memory alone—principally debtors' and creditors' balances, and changes therein, with cash movements recorded in separate cash books, of which very few have survived. Some account books include notes of real property purchased, but without the prices. In no case are there materials for ascertaining the proprietor's wealth at any date, let alone any form of capital or equity account; neither are there any 'nominal' accounts—the entries in the cash book, plus interest charged/allowed in debtors'/creditors' accounts, would be sufficient for the bookkeeper's purposes.

Nothing like a complete set of business accounts has come down to us from before 1296. The art of bookkeeping was most highly developed among the bankers, merchants and clothworking firms of Florence. Their businesses showed a high degree of continuity from year to year (unlike the mercantile enterprises of Venice or Genoa, with their concentration on separate trading ventures), and they were carried on by stable partnerships, who needed to ascertain and divide profits from time to time, as well as to record the drawings of each partner for deduction from his share. Unfortunately such partnerships tended to be shortlived, being wound up and re-formed (sometimes with the same partners) every four or five years as a rule. Once the old firm had been 'liquidated' and the partners' claims agreed and the new set of books had been opened (often with assets and liabilities transferred from the old firm), no-one was very interested in preserving the old books; on the contrary, since parchment was expensive the pages were often washed or scraped, and reused. Thus it is that most thirteenth-century business accounts have reached posterity only by fortunate accidents, or in brief extracts prepared for legal purposes.\*

For this reason it is difficult to find any direct evidence as to how proprietors'

\* Castellani has, however, transcribed some accounts of a Florentine cloth-merchants' firm for 1278-9, relating to goods and money sent to branches in Pisa and Lucca, and debts collected there. The inventories of stocks of cloth, in quantities and values, occupy many pages; the extended values are neatly ranged in columns, with a total at the foot of each page.

shares of equity and profit/loss were accounted for, or how the books were balanced. The earliest clue, albeit equivocal and hard to interpret, is found in the 1211 ledger, in a section inserted abruptly among the debtors' accounts, but plainly not of the same nature with them. It may be translated thus:

C. 2 verso, col. 1

*In nomine Domini, amen.*

Arnolfino is carrying with him to the Badia £103. 15. 0d. in Veronese coin which we took for him from Gualterotto. *Item* he is carrying £31. 0. 0d. in Veronese coin . . . [illegible] *di cambio* (?). *Item* he is carrying £1. 0. 0d. in Bolognese coin for expenses. The Veronese coin amounts to £78. 0. 0d. *Item* he is due to give £8. 17. 0d. which we gave on his behalf to Guascone, son of Rinieri Ubertini, for the exchange (*storamento*) of the Veronese coin. We added what he is due to receive: *item* from (*per*) Paganello del Garbo, £90. 2. 1d.; *item* from Bene Prestasini, £47. 17. 3d.; *item* [from] Buoninsegna dell' Anguillaia, £45. 4. 1d. (?); *item* from Ser (?) Arrigo, [son of] Rinieri Medici (?), £94. 5. 6d.; *item* from Ruggiero, stepson of Buonfantino, £69. 13. 4d.; *item* from Arrigo, son of Rinieri Medici (?), £53. 2. 0d.; *item* he is due to give for the interest £14. 3. 0d.; *item* from Bencivenni, partner (?) of Guarniero, £2. 6. ?d. . . . [illegible] It amounts in total to £504. 9. 2d. *Item* we recovered, including payments by those whose debts had been remitted (?) (*ravemmo trappagatori per quelli di laska*), £504. 12. 0d.

As is explained at greater length in the author's two previous articles,<sup>7, 8</sup> his opinion is that this obscure sequence of entries (whose Latin headnote suggests something of special importance) relates to the introduction of capital, in cash and in the form of debtors of his own, by a partner named Arnolfino. He carries to the 'Badia' (probably the meeting-place of the bankers' gild in Bologna) two sums in Veronese coin totalling £134.15.0d., plus £1.0.0d. in Bolognese coin for expenses. The Veronese coin is apparently exchanged for £78.0.0d. Florentine; then it is stated that Arnolfino owes the bank £8.17.0d. for a payment on his behalf for exchange of the money. The bank then states that it has 'added' what Arnolfino is owed *per* ('on behalf of', or in this context, perhaps 'by') six persons (one of them named twice); the total due from them is £416.13.3d., plus an uncertain number of *denari* from the last-named. Another name and amount appear to have become illegible; after which the text reads, 'It amounts in total to £504.9.2d.' Lastly comes the statement tentatively rendered as 'We recovered, including payments from those whose debts had been remitted, £504.12.0d.'—the recovered write-offs presumably accounting for the excess of 2s. 10d.

Arnolfino's contribution appears to have been £78.0.0d. in cash and £504.9.2d. (or £504.12.0d.) in debtors (assuming one more account of about £88.0.0d. in the second lacuna), less refunded expenses of £8.17.0d. (if the £1.0.0d. was the firm's money)—a net sum of £573.12.2d. (or £573.15.0d.). The inconspicuous position of these entries in the middle of the debtors' ledger, and the fact that they are struck through as settled, are strong arguments for the existence elsewhere of capital accounts for Arnolfino and the other partners, at least in note form; otherwise it is hard to see how a proper settlement could have been made on winding up the firm. The last 'item', too, seems to be the earliest extant reference to the

writing down of debts as bad—66 years before the first *undoubted* entries of this nature, in the second ledger of Bene Bencivenni (1277).

No authentic, fully-balanced capital accounts have come down to us from the thirteenth century; the oldest are in the *libro segreto*, or private ledger, of the Alberto del Giudice bank of Florence (1302-29). The oldest apparent reference, after 1211, to equity accounts occurs in the memorandum book kept by a partner in the Ugolini Co. of Siena (1255-62); the relevant entries, as transcribed by Melis,<sup>4</sup> may be rendered thus:

*C. 60 recto*

Our old firm is due to receive £6. 2. 6d. in coin of Provins, at the Tresetto fair [12] 61, for our share of £20. 0. 0d. which we collected from the Abbot of Flavigny.

*Item* it is due to receive £35. 5. 3d. in coin of Provins, at the fair of Bar [-sur-Aube], [12] 62, for our share of £150. 0. 0d. which we collected from the Abbot of Flavigny.

*Item* [it is due to receive] £9. 10. 0d. in coin of Provins, at the said fair, for our share of £38. 0. 0d. which the Bishop of Toul paid us.

If these sums represent interest received on loans made at the fairs of Champagne, then 'our old firm' may indicate the existence, in the ledger proper, of an account similar to those found in many fourteenth-century Florentine books of account. In these the ledger was opened, on the setting up of a new firm, by making the 'old firm', now liquidated, a creditor for assets, and a debtor for liabilities, taken over from it; individual accounts being opened, with debit balances for assets and credit balances for liabilities. The 'old firm' account then functioned, in effect, as a single equity account for all partners, being annually (or more frequently) credited with income and capital introduced, and debited with expenses, partners' salaries, and drawings. The individual partners' shares were analysed separately, so that a proper settlement could take place when the firm was wound up—often by transferring its assets and liabilities to yet another 'new firm'. The 1261-2 fragment is evidence of the antiquity of this practice; but it is hazardous to argue, as Melis does,<sup>4</sup> that it indicates the presence of double entry bookkeeping, or any close approach to it, at so early a date.

Apart from the Ugolini memoranda, the best evidence for early capital accounting is found in domestic ledgers. These include several accounts for investments in business firms, usually as lenders, but in two cases as partners. These records, which may well be 'mirror images' of accounts in the firm's books, are described below.

1. *Gentile de' Sassetti & Sons, 1274-1310:*

Contains the only fully-developed account for a partnership share which survives from this period. It relates to the share of (presumably) Gentile himself in the firm of Sassetto Azzi & Co., from 1 January 1278-9 to 1 January 1289-90—thus 'leapfrogging' from page to page through the ledger. It is summarized below in modern form, the original being in the old 'paragraph' layout. One or two arithmetical errors are noted in their places.

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## Sassetto Azzi & Co.

	£	s	d		£	s	d
1279				1280			
Jan. 1 Balance b/d	2,583	12	0	Jan. 1 Drawings	63	13	0
1280				" 1 Balance c/d	3,446	13	0
Jan. 1 Interest	206	13	0				
" 1 Profit	720	0	0				
" 1 [Error]		1	0				
	<u>£3,510</u>	<u>6</u>	<u>0</u>		<u>£3,510</u>	<u>6</u>	<u>0</u>
1280				1281			
Jan. 1 Balance b/d	3,446	13	0	Jan. 1 Drawings	408	16	0
1281				" 1 Balance c/d	3,805	9	0
Jan. 1 Interest	275	14	0				
" 1 Profit	400	0	0				
" 1 'Other account'	91	18	0				
	<u>£4,214</u>	<u>5</u>	<u>0</u>		<u>£4,214</u>	<u>5</u>	<u>0</u>
1281				1283			
Jan. 1 Balance b/d	3,805	9	0	Jan. 1 Drawings	1,380	17	0
1283				" 1 Balance c/d	4,537	18	0
Jan. 1 Interest (2 years)	639	6	0				
" 1 Profit (2 years)	1,400	0	0				
" 1 'Two other accounts'	74	0	0				
	<u>£5,918</u>	<u>15</u>	<u>0</u>		<u>£5,918</u>	<u>15</u>	<u>0</u>
1283				1284			
Jan. 1 Balance b/d	4,537	18	0	Jan. 1 Drawings (per detailed account)	99	0	0
1284				" 1 Balance c/d	4,802	8	0
Jan. 1 Interest	364	10	0	" 1 [Error]		1	0
	<u>£4,902</u>	<u>8</u>	<u>0</u>		<u>£4,902</u>	<u>8</u>	<u>0</u>
1284				1284			
Jan. 1 Balance b/d	4,802	8	0	May 6 Cash	4,926	14	0
1284							
May 6 Interest (4 months)	124	6	0				
	<u>£4,926</u>	<u>14</u>	<u>0</u>		<u>£4,926</u>	<u>14</u>	<u>0</u>
1284				1285			
May 8 Cash	4,000	0	0	Jan. 1 Balance c/d	4,206	0	0
1285							
Jan. 1 Interest (8 months)	206	0	0				
	<u>£4,206</u>	<u>0</u>	<u>0</u>		<u>£4,206</u>	<u>0</u>	<u>0</u>

# A B A C U S

1285				1287			
Jan. 1	Balance b/d	4,206	0 0	Jan. 1	Drawings	749	1 0
1287				" 1	Balance c/d	4,156	16 0
Jan. 1	Interest (2 years)	696	17 0				
" 1	[Error]	3	0 0				
		£4,905	17 0			£4,905	17 0
1287				1288			
Jan. 1	Balance b/d	4,156	16 0	Jan. 1	Drawings	1,048	13 0
1290				1290			
Jan. 1	Interest (3 years)	904	14 0	Jan. 1	Cash	3,327	17 0
				" 1	Cash	685	0 0
		£5,061	10 0			£5,061	10 0

All amounts are in silver florins. The interest (*prode*) works out, very closely in most cases, at 8 per cent per annum, compound with annual rests at 1 January. In the first four years there are also shares of profit (*guadagno*)—evidently estimated, in view of the round amounts allowed, with the mysterious 'other accounts' (*altre ragione*) perhaps representing later adjustments. On the other side are drawings (*danari per ispe*), which continue even after 'profit' dries up. At 6 May 1284 the 'old' firm was apparently liquidated, with a final balance to Gentile of £4,926.14.0d.; two days later a new firm was set up, and a round £4,000.0.0d. invested in it, until the second liquidation on 1 January 1289-90. The drawings for the year ended 1 January 1283-4 are shown in detail in a separate account, whose balance is transferred to the investment account; otherwise the annual drawings are given in one sum, probably derived from statements rendered by Sassetto Azzi & Co., and/or from a memorandum book (or cash book analysis) kept by Gentile. The 'errors' noted in the summary are net discrepancies in the figures as transcribed; it is not clear whether they are scribal, editorial or typographical in origin.

## 2. *Bene Bencivenni* (second ledger), 1277-96:

This contains a lengthy account (1285-96) of the proprietor's drawings (*tratta*) from the family business, more detailed, but less sophisticated, than the 'capital' account in the Sassetti books. Most sums are stated to be taken 'from the warehouse' (*dal fondaco*), and are expressed in gold florins, converted to silver at 29s. 0d. each. A few small amounts in *piccioli*, unconverted, are said not to be from the warehouse, and are excluded from the page totals. The latter are carried forward and summarized, up to 1292, at each 1 July—evidently the balancing date for the firm's books; after 1292 there seems to be no regular balancing date for the drawings account. In no case, though, is the grand total for the year transferred to any other account, nor is there any specific reference to a share of partnership; probably the firm's books were also under Bene Bencivenni's control,



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he saw no reason to duplicate the capital account therein, and he debited it annually with his total drawings as summarized in his private books. In other words the private ledger was merely one part of a larger system, imperfectly articulated. The first page of the drawings account is translated below; the total is 4s. 0d. too much (as the figures stand in Castellani,<sup>3</sup> and for the first balancing period (23 October 1285 to 1 July 1286) the total is given as £120.2.0d., though the recorded drawings add up to £170.14.0d. (Did the book-keeper, or the editor, write *lb. cxx s. ij* instead of *lb. clxx s. ij*?) In the rest of the account, though, the arithmetic is generally accurate.

### C. 17 verso

1285

Bene Bencivenni is due to give for his drawings £26. 2. 0d. in florins at 23 October, which he had of us from the warehouse, 18 gold florins for new wine and other household expenses.

And he is due to give £52. 4. 0d. in florins, at the above date, which he had of us from the warehouse, 36 gold florins, which they gave on my behalf to Galluzzo Orlandi, who received them on behalf of Messer Bernardino and Cecco de' Caponsacchi, brothers, in respect of half of the 13 *staiora* of land which I bought from them, jointly with Guccio Bellondani, and for which I have a deed by the hand of Ser Pepo, notary, of [blank].

And he is due to give £8. 14. 0d. at 17 November, which he had of us from the warehouse, 6 gold florins, of which he gave 2 gold florins to Messer Giovanni Angiolini, and the others were for his expenses.

And he is due to give £5. 16. 0d. at 24 November, which he had of us from the warehouse, 4 gold florins for expenses.

And he is due to give £5. 16. 0d. at 28 November, which he had of us from the warehouse, 4 gold florins, from which he paid the levy (*libbra*) of 25s. 0d. per cent for the term [of office] of Messer Giliuolo da Padova\*; collectors Ser Berlinghieri, notary, and the late Arrighetto Doni of Porta Rossa, both of them.

This page (*faccia*), £98. 16. 0d. [*sic*]

Tuscan accounts up to 1296 afford little evidence of the keeping of nominal accounts; there are none in the domestic ledgers, and few traces in business books. The Ugolini fragment suggests that items of income and expenditure were carried direct to a quasi-equity account; but more than this would be needed if annual profit, and the sharing thereof, were to be regularly ascertained. At a minimum, interest receivable and gains on the sale of goods would be credited to an account for 'profit' (*avanzo*), and interest payable, losses on sales and expenses debited to 'loss' (*disavanzo*)—the totals of each for the year being transferred to 'capital' under whatever name. The earliest direct testimony to such practices is found in a notarial transcript of 1298 (in Archivio di Stato, Florence), of a loan account of 1292-3 in the ledger of Filippo Peruzzi & Co., the great Florentine banking house;<sup>4</sup> it may be translated thus:

\* Evidently the *podestà* for the year.

Fo. 49

1292

Giovanni Gianfigliazzi is due to give us, at 29 July [12] 92, in florins, £76. 6. 3d.; he had from us 52 gold florins, and 18s. 4d. in [silver] florins; he said that he was giving them to Messer Ispinello Gianfigliazzi, who said that Rosso left them to him.

[14 more debits of the same nature, then—]

Total £837. 19. 1d. in florins, with this page below, 29 September [12] 92.

And he is due to give for interest (*guadagno*) up to 25 February 92 [i.e. 1293], in florins, £27. 10. 0d.; we added [it] to profit (*avanzo*) in the small ledger (*quadernetto*) at [folio] 3.

Giovanni has given us, at 25 February 92 [i.e. 1293], in florins, £865. 9. 1d.; we deducted [it] where he was due to receive at [folio] 451.

From other references in the extract, it would seem that Rosso had died, and that the account was that of his administrator. Mention of a ledger folio 451 indicates the scale of operations of the Peruzzi bank; but Melis's assertion<sup>4</sup> that the firm probably kept its books by double entry goes far beyond the evidence.<sup>5</sup>

#### DID THE FLORENTINES INVENT DOUBLE ENTRY?

All the trends so far described are brought together in what Melis<sup>4</sup> and Castellani,<sup>5</sup> but not de Roover,<sup>6</sup> regard as the first sets of books kept by double entry—those of Rinieri Fini & Brothers (1296-1305), and of Giovanni Farolfi & Co. (1299-1300), both in Archivio di Stato, Florence.<sup>5</sup> Consideration of these celebrated accounts raises questions too complex to be disposed of at the end of an article; the author intends to make them the subject of a further paper, and only his general observations can be given here.

Both sets of books relate to Florentine mercantile firms operating in France—the Fini Brothers at the fairs of Champagne, and the Farolfi Co. at Nîmes and other towns in Provence; both kept their accounts in *livres tournois*. Both still use the paragraph layout, and both ledgers have accounts with debit balances at the front, and with credit balances at the back. Most are for debtors or creditors, with interest included; but in addition there are accounts for sales, with the balance of profit or loss transferred (along with interest) to *avanzo*, *disavanzo* and related accounts, which also survive. In the Farolfi ledger there are even allocations of prepaid expenditure to successive years—surely an advanced concept for the late thirteenth century.

The two ledgers are indeed in double entry, in the sense that, so far as can be observed, there is (supposed to be) a debit for every credit, with full cross-references—except that in Farolfi there are no specific references to the cash book, now lost. Both ledgers contain accounts of an 'equity' nature—a capital account in Fini, and a head office account in Farolfi, whose books relate to the Salon branch only. The Fini books, however, do not appear to be regularly

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balanced, but run on from year to year, without any closing-off of the nominal accounts. Those of Farolfi, on the other hand, are closed by means of a 'balance account' (unfortunately incomplete), as is the common practice today on the Continent. Examination of the accounts has nevertheless revealed to the author several errors, of principle and of arithmetic, which would have made proper balancing impossible; and his tentative opinion is, that the profit or loss for the year was found by a refinement of 'single entry' methods, involving a comparison of total assets with total liabilities plus capital, as at the year-end—a type of 'quasi-double entry' commonly used in fourteenth-century Florence. It therefore seems premature to claim that the Tuscans had discovered double entry before 1340; but they had certainly worked out all the underlying principles by trial and error, and it needed only a more rigorous application of them, and the use of two-sided accounts, to achieve complete success. It may even be that the *massari* of Genoa, or their bookkeepers, built on the foundations laid in Tuscany, and that it is no exaggeration after all, to designate Florence as the original home of the key technique of modern accounting.

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