



Commentary

Bookkeeping, but not for profit: A special form of double entry in a 16th century Venetian charity

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ARTICLE INFO

Keywords:

Bookkeeping
Double entry
Diffusion
Social services
Charities
Venice
16th century
Stewardship

ABSTRACT

Double entry bookkeeping is considered to involve the recording of monetary amounts and is recognised as consequently facilitating financial reporting concerning the financial stewardship of an entity. This paper presents a unique example of double entry bookkeeping that responds to a different stewardship need, one where quantities are sometimes the focus of interest, while elsewhere it is monetary amounts. Duality is maintained throughout, even in cases where the debit entries are in monetary amounts and the credit entries are in quantities. These findings arose from an investigation into the diffusion of double entry from its banking and commercial roots into the not-for-profit sector in 16th century Venice. Its focus was the accounting practice and the management of a small charitable hospice within the context of its socio-political, economic, and commercial environment. Identification of this hybrid variant form of double entry bookkeeping in the account book of the charity confirms that diffusion of the method had occurred. And, it had done so in a tailored way that was more varied and nuanced by its purpose than might have been anticipated from the texts of Pacioli and the several authors of 16th century Venetian bookkeeping manuals. It is concluded that the differences identified were adopted to delineate responsibility and facilitate assessment of stewardship.

1. Introduction

This paper should be of interest to anyone who has ever considered why emphasis is always placed upon monetary amounts in bookkeeping and accounting despite other factors often being of equal, if not greater importance to those responsible for the affairs of an entity. Double entry systems dominate the discourse and double entry is recognised as the method to use if financial stewardship is to be easily evaluated from the bookkeeping system, typically following preparation of income statements and statements of financial position. The literature shows that the further back in time we consider, the less relevant is financial position to those who maintained the account books. Yet, identification of financial position has been the focus when evaluating or identifying the bookkeeping method in use from ancient times to the present day. This paper presents an example of an alternative approach. One where double entry was used but financial amounts are not the only focus of interest. Adopted to meet the demands of its stakeholders by a Venetian charity in the 16th century, it demonstrates how the rigour of double entry can be maintained even when some accounts are maintained in monetary amounts, some in quantities and, in some, debits were in quantities and credits in monetary amounts.

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Received 27 June 2022; Received in revised form 21 December 2022; Accepted 4 January 2023

Available online 10 January 2023

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The example presented belongs to the growing field of accounting history, in which an upsurge in interest is evidenced by the establishment of three major specialist journals during the past 30 years to complement the one that previously served the global English-language research community. This has also been reflected in a greatly increased presence of historical articles in mainstream accounting journals, such as the accounting history special issue published in *British Accounting Review* in 2021; the omnipresence of historical content in *Accounting, Auditing & Accountability Journal*, *Accounting, Organizations and Society*, and *Critical Perspectives on Accounting*; and the recent inclusion of two historical articles in *The Accounting Review*. Some will read those articles simply because they enjoy learning about the history of accounting. Others will be aware that understanding the historiography of their discipline enables enlightenment concerning why certain practices emerged or disappeared. It can highlight benefits and weaknesses long forgotten. And it can facilitate challenges to commonly accepted practice initially developed to meet no longer relevant needs, thereby loosening invisible constraints on innovation, and potentially leading to improvements in accounting practice. In addition, historical studies can reveal unknown forms of accounting practice that stimulate consideration, not just of why they failed to survive, but also of whether they may have relevance to present day practice.

In order for these benefits to emerge, researchers must ensure an appropriate historical method is used. For example, when seeking to understand an object, such as a painting, a book of account, or a report, not only must the surrounding context be identified, and its potential impact and influence assessed. The technical elements or characteristics of the object of study must also be analysed and interpreted. Both must be done if any meaningful insight is to emerge of its function or the needs it served (Arnold, 2021). This is the approach adopted in this paper.

The study reported in this paper and the findings it presents contribute on many levels. For example, in terms of the literature it contributes to the little investigated field of the history of accounting in not-for-profit settings, and to the even less explored field of the diffusion of double entry beyond commerce and banks. It also contributes to the literature on accounting for stewardship. “Stewardship” is used in its everyday meaning of “looking after property” (Collins Dictionary). With respect to stewardship accounting and use of charge and discharge, Lemarchand (1994, p. 119) notes that stewardship accounting in that form was “founded on the separation between capital ownership and management and centred on the notions of responsibility, accountability and control.” We argue that equivalent separation of ownership existed for the charity that is our focus, Ca’ di Dio: the state held the capital; the Prior and his subordinates managed its use on behalf of its owners, the State; and, to assess the quality of the stewardship, the records kept by the Prior and his subordinates were audited on behalf of the State. In contributing to the literature on double entry bookkeeping and to the literature on accounting for stewardship, this paper demonstrates that an appropriately adjusted double entry method may better meet the demands of stewardship than traditional monetised double entry. Furthermore, because of the added detail of constant double entries, it may arguably do so more effectively than the charge and discharge method for which meeting the demands of stewardship is its recognised primary function.

A review of relevant literature is presented in the next section. This is followed by an overview of the environment in which the Ca’ di Dio operated, and a description of the charity itself. The research method is then presented, followed by a section describing and critically analysing the bookkeeping practice of the hospice. This is followed by discussion combining critical analysis of technical practice with the surrounding context in order to understand and explain, in particular, the hybrid entries relating to sales of produce. Conclusions are then presented. The Appendix to the paper provides further examples from the account book.

2. Literature review

The dominant view in the literature is that double entry could always be used by merchants to facilitate computation of, and reporting of their financial result and financial position (De Roover, 1956), though it recognises that this was seldom done before 1800 (Hoskin & Macve, 1986). Instead, mercantile use of the method until the 19th century related to control over debt and, for wholesale and international merchants, the individual ventures in which they engaged, each of which was recorded separately (Lane, 1977; Yamey, 1949). No generally accepted explanation has ever been provided for this lengthy delay, perhaps due to the sources used by scholars: business records are the main focus in studies of periods before 1500 and bookkeeping manuals thereafter (De Roover, 1956; Goldthwaite, 2018). Not surprisingly given this emphasis on manuals, very few studies focusing on periods after 1500 have closely investigated the technical practice.

Concerning the earlier period, it is widely known that the emergence and rise in use of double entry bookkeeping is interwoven with (a) the growth and expansion of business in the credit-based economies of the 12th-15th centuries and (b) the related need to keep accurate records of transactions between debtors and creditors (Sangster, 2016).¹ For those studying the period between 1500 and 1800, the adopted focus on manuals is, at best, unreliable. While they may reflect actual practice, they do not replicate it either in detail or in depth; rather, they simplify it, standardise it, and truncate it into unrealistic timeframes (Pilla, 1974). Nevertheless, their use when primary sources are absent has been appropriately justified (see Carmona et al., 2004, p. 44) by some (e.g. Peragallo, 1956, p. 215; Yamey, 1964, p. 118). However, this is challenged by the existence of, for example, over 2,000 16th century Tuscan account books and almost 200 account books from 1551 to 1617 in the Simón Ruiz Archive in Medina del Campo, Spain, all apparently unknown to accounting historians, and predominantly in double entry. If we seek to know what bookkeeping and accounting was being done during this period, it is artefacts like those and the Ca’ di Dio account book, which is the focus of this paper, that need to be examined, not manuals.

¹ Within the accounting history literature, there is general agreement that bookkeeping can be defined as the skill or occupation of maintaining records of transactions.

2.1. Diffusion of double entry

Before 1500, virtually the only users of double entry were Italian (De Roover, 1963) and it was done differently in different regions of Italy (Antinori, 2004). Of the various approaches, it was the Venetian *libro doppio* double entry bookkeeping system uniquely based on two principal books, the journal and its ledger, that diffused across Europe before 1800 (Catturi, 2009; Sangster et al., 2008). Why this occurred can be traced to the printing of manuals on double entry that were almost exclusively based on 15th century Venetian practice (De Roover, 1955; Mari et al., 2020). Underpinning the diffusion of this system and method was a European printing industry that published almost 900 editions of manuals between 1494 and 1800 (Jeannin, 1991), most of which adopted the system of Venice. We can follow the pattern of publication of manuals and the pattern of formal teaching of bookkeeping across Europe, using them to trace the geographical diffusion of Venetian double entry bookkeeping, but not to an extent that could challenge the clarity attained if, instead, such a study involved examining accounting practice in actual account books. However, as mentioned above, very little research of that kind has been carried out, leaving us with almost no awareness of when, how, or where the method diffused.

On the rare occasions when account books dating from after 1500 have been studied, the focus has been almost exclusively on larger enterprises in market settings. Those that have been studied were primarily early joint stock companies: the Dutch East India Company (Robertson, 2011), the English East India Company (Baladouni, 1986, 1990), the Hudson's Bay Company (Sprakman, 1995), the 18th century Portuguese Pombaline companies (Rodrigues & Sangster, 2013; Vasconcelos et al., 2022), and large 18th century French companies (Lemarchand, 1994). A few exceptions involving smaller entities include the brief studies of more than a dozen English account books by Winjum (1970; 1972) and Yamey (1959; 1977), most of which were those of sole proprietors. In most cases, very little description or detail is provided of the bookkeeping practice. Instead, as highlighted by Goldthwaite (2018), for knowledge of accounting practice between 1501 and 1800, and even earlier, the theoretical norms contained in the manuals are consulted; Pacioli's treatise (1494) for the period up to 1500, and it and others published later for the period between 1501 and 1800.

Clearly this narrow commercial focus and general lack of investigation of actual account books, seeking to identify and describe the technical bookkeeping practice in any detail, negatively impacts our knowledge of how bookkeeping was done after 1500. This is particularly the case in the 16th century (Winjum, 1970, p. 743), but also in the rest of the 300-year period to 1800. Consequently, even in Italy, where it is most likely to have first occurred, we know very little about the diffusion of double entry after 1500 beyond the merchants and the banks. This includes, as described in the next sub-section, its adoption in not-for-profit settings where activities were driven to provide social services without monetary exchange.

2.2. The literature on accounting practice in Italian not-for-profit entities before 1800

What is known of accounting practice in Italian not-for-profit settings before 1800, is largely contained in a recent stream of studies that can be grouped under four types of institution. **Religious:** Quattrone (2004), Montrone and Chirieleison (2009), Leardini and Rossi (2013), Bigoni et al. (2021); **Quasi-public:** Riccaboni et al. (2006), Mari and Picciaia (2014); **Charities:** Servalli (2013), Moggi et al. (2016), Takami (2017), Lusiani et al. (2019); and **Public good:** Orelli et al. (2013), Manetti et al. (2020). From these studies, three main motivations or explanations can be identified for the accounting practices that had developed.

The first concerns commercial activities of religious institutions where double entry bookkeeping was used to **regulate market transactions**. For example, Montrone and Chirieleison (2009) demonstrated that double entry was used not only by merchants and banks, but also by monastic communities *for their commercial activities*. Their analysis of the Journal and Ledger revealed traces of an advanced double entry bookkeeping system in a Benedictine monastic community in Perugia between 1461 and 1464. It was used to record the transactions relating to its market business, the largest farming entity in the region: the production and sale of vast amounts of land goods to marketplaces and fairs, as well as to end-consumers through a system of outlets under the control of the Monastery. In their view, double entry was widely adopted for this purpose in Benedictine Monasteries as a result of monks moving from-place-to-place, spreading knowledge and best practices on accounting techniques applicable to the management of such activities.

Other scholars reported the use of double entry bookkeeping in not-for-profit settings as a system **for regulating or balancing power relations**. For example, Riccaboni et al. (2006) and Mari and Picciaia (2014) studied the cases of different early modern Italian *Opere* – institutions founded by the Church, but chiefly financed by the Municipalities, for the construction and maintenance of city cathedrals. A common finding is that these quasi-public settings faced continuous struggles between the public administration and the Church for the control of the institution. Accounting was crucial to balance the relationship between the two parties (Riccaboni et al., 2006). The introduction of double entry paralleled the growing complexity of the organization and the progressive separation between the Church and the Municipality, which posed an increased need for transparency (Mari & Picciaia, 2014).

The issue of power is central also to the findings of Servalli's (2013) study on the role of 16th/17th century charities in the administration of the poor, with a focus on the case of Misericordia Maggiore, a charitable confraternity in Bergamo. She identifies advanced double entry accounting practices, including accounting for non-current assets – uncommon in non-profit entities – in a

system designed to maintain control over both financial (money) and non-financial (food) resources. In a similar vein, [Leardini and Rossi \(2013\)](#), argued that bookkeeping was well developed in not-for-profit settings, such as Monasteries, not only to keep track of events, but also to support their hierarchical organization. Their analysis of account books of a monastery of the Servite Order between 1340 and 1492 revealed how accounting facilitated power structures, by enforcing an asymmetrical distribution of authoritative and allocative resources. A focus on the role of bookkeeping for the internal functioning of not-for-profit organizations is also shared by [Lusiani et al.'s \(2019\)](#) finding about the role of accounting for balancing and keeping together the different logics (the spiritual, the private, and the public) that constituted the charitable confraternities in early modern Venice.

Bookkeeping in not-for-profit settings was also found to serve the purposes of **external accountability**. [Bigoni et al.'s \(2021\)](#), 14) study of the Benedictine Nonatola Abbey between 1350 and 1449 found that the accounting practice

was at the centre of a complex system of accountabilities whose main characteristic was not the accuracy of the records in detailing the assets, liabilities, expenses and revenue of the abbey but the maintenance of a control system to administer an extensive agricultural network and the identification of the relationships between the abbey and the stakeholders inhabiting its space.

[Moggi et al.'s \(2019\)](#) study on charitable confraternities in Verona in the 17th century, found that accounting was developed to manage the complex relationships with the vast and diverse network of their stakeholders, mirroring both economic bonds and spiritual aims. [Manetti et al. \(2020\)](#) analysed the case of the public/religious setting of the Opera del Duomo in 15th century Florence and found that bookkeeping responded to the need to be accountable to the constituents and the society, accounting for public money, while working also as a technology of government, providing citizens with an ideal, religious and imaginative goal. [Quattrone's \(2004\)](#) very brief coverage of bookkeeping in the Casa del Noviziato of the Jesuit Order in Palermo in 1655, which is accompanied and dominated by a more detailed overview of the Order as a whole in the 16th and 17th century, found use of double entry and indicated that the details of the system adopted can be seen in [Flori's \(1636\)](#) Jesuit bookkeeping manual. Like the one on which it was closely based – [Pietra's \(1586\)](#) Benedictine manual – Flori's adopts double entry for all activities, commercial, spiritual, and domestic. However, no known studies to date for that period have demonstrated that this was the case, either in Benedictine, or in Jesuit establishments.

All these contributions make use of detailed information from account books to maintain their arguments about the form, the place, and the role of bookkeeping and accounting in their various not-for-profit settings, but none of them focuses on bookkeeping as a technical practice *per se*. It is only through such analysis that we can define the parameters of the accounting system; know how the elements within it interact; identify the nature of the transactions that were recorded; ascertain how transaction data was processed and organised; identify what was important; identify what data was combined either in processing or in output, and when; and identify any subtle differences between technical practice over space and time, including the inputs, the processes, and the outputs. That level of knowledge is required in order to most clearly identify both the function of the accounting practice being observed and any class of data omitted or output not generated.

Only in the cases of [Orelli et al. \(2013\)](#) and [Takami \(2017\)](#) is a close analysis of account books undertaken, seeking to identify in detail the technical practice of bookkeeping in use in not-for-profit settings.

2.2.1. Studies that embrace close analysis of account books

[Orelli et al. \(2013\)](#) studied the case of a social setting in the 16th century, the *Monte di Pietà* in Bologna. It was a Franciscan institution created to facilitate credit access for the lower classes, the administration of loans to municipalities, the management of the treasuries of charities, and the delivery of gifts to the poor. They focused on its bookkeeping practices in 1577 and found that double entry was used to control a growing and complex activity while securing the achievement of its (social) objectives, rather than simply as a device to allocate, monitor, and administer resources.

[Takami's \(2017\)](#) 15th century study of the account book of the *Scuola Grande di San Marco* for 1430–1438 is the only indication we have of how Venetian not-for-profit institutions may have maintained their account books. It found that, despite the absence of a commercial purpose, a form of double entry bookkeeping was applied throughout most of the period covered. Apparently the only one in use, the charity's account book conforms to the Venetian bilateral style with debit on the left page and credit on the right. A cash account was the main account. Other accounts maintained included personal accounts of creditors and debtors. All entries in the cash account matched the corresponding contra entries in the other accounts. There was no periodic closure of accounts, not even when a new account book was opened. Takami concluded that the non-commercial purpose of the charity and its relatively simpler activities, in terms of transactions between debtors and creditors, might explain the deviations from what otherwise looks like an example of application of mercantile double entry bookkeeping in a not-for-profit setting: “*the differences in the structure of accounts may also depend on differences in the judgment given by the bookkeepers on how and to what extent the techniques normally used in company partnerships should be applied in the administration of non-corporate partnerships*” ([Takami, 2017](#), p. 236).

2.2.2. Use of double entry

Double entry is found in most of these 12 studies of Italian not-for-profit entities before 1800, especially in large institutions as their activity became more complex, and in the later ones. However, the bookkeeping served other and more complex roles than those it served in the mercantile world, with double entry being used not only for commercial purposes, or for regulating the market transactions of these entities, but also to govern external and internal power relations, to make these entities accountable and, more generally, to fulfil their social goals. More remains to be explored about the minutiae of what these practices looked like, especially in smaller social entities.

While this literature tells us nothing about use of double entry in not-for-profit organizations in 16th century Venice, we know that at some point between 1532 and 1550 the *Procuratori di San Marco*, the body responsible for auditing the stewardship of income, expenditure, and assets of Venetian trusts and charities, including the Ca' di Dio, was instructed by the Venetian Great Council to use double entry in the records it kept for all the estates under its control (Mueller, 1977, pp. 16–17), “since it was otherwise impossible to [easily] oversee the state of the administration” (Mueller, 2021, p. 32). It is known how the *Procuratori* maintained their account books in which they compiled their own record of income and expenditure for each estate. But, it is not known how this new policy was reflected, if at all, in the approach taken by the estates maintaining their account books for whom stewardship, not financial result, nor financial position, was the matter of interest. If, for example, they adopted double entry, did they do what Takami found happened in the 15th century, and copy the method of the Venetian wholesale merchants, or did they adapt it to better serve their needs? Before considering the records themselves, we first consider the role of social institutions in Venice before and during this period. We then present details about the Ca' di Dio, and the role it played in the first half of the 16th century.

3. Background

3.1. The role and oversight of social institutions in 16th century Venice

At the end of the 15th century, Venice was a powerful and aristocratic Republic, with wealth flowing from both its commercial activity and territorial conquests. Its empire extended from the Adriatic coast to the eastern Mediterranean, through the Po Valley up to the edge of the Duchy of Milan. However, the Portuguese discovery of the sea route to India in 1498 ultimately had a great impact on the Venetian economy, as its privileged position in the Mediterranean, together with its intermediary role in the Levant, were compromised over the course of the 16th century. The Venetian naval industry, which constituted its main industrial activity up to this time, gradually declined. The crisis affecting Venice's traditional businesses led to a period of instability and depression in the labour market, which affected the first thirty years of the 16th century (Pullan, 1971). Additionally, wars, famines, and recurring epidemics² exacerbated the difficult conditions facing the city. The resulting problems of poverty and a need for social assistance were priorities for the Republic. It was during this period that the Republic of Venice began to rely heavily on the charitable activities of its system of hospices, *Scuole* (lay confraternities), and charities of all kinds (Pullan, 1982). These institutions provided free welfare services to specific sectors of the needy population, employing funds from various sources including legacies, donations, alms, private investments, and some commercial activity (Semi, 1983; Vio, 2004).

3.2. The Ospizio della Ca' di Dio³

The *Ospizio della Ca' di Dio* was established in 1272 by a Franciscan friar, Fra' Lorenzo, as a result of a bequest from a Venetian citizen. Its mission was to provide hospitality and care, initially to pilgrims. After 1367, this was restricted to aiding poor Venetian women. By the middle of the 16th century, the Ca' di Dio housed 24 guests who were granted spiritual assistance, accommodation and a monthly income. In the mid-fourteenth century, the hospice was placed under the authority of the Doge, the highest ranking official of the Republic of Venice. It had full managerial autonomy under a Prior who had responsibility for its administration and its assets. He was appointed for life by the Doge and the Minor Council of Venice which, in turn, also supervised and could veto the actions of the Doge. Every year the Prior's stewardship of the hospice was assessed. As part of that process, he had to make an annual report on what he had administered and spent, and the *Procuratori di San Marco* conducted an annual audit.⁴

In the period of this study, the Prior was at the top of the organizational structure, supported by two management assistants (*fattori*). Zuanbatista de Zorzi – the hospice factor – assisted him with general administrative tasks. The other, Agustin de Scolari, the estate factor, was responsible for managing its estates outside the city and organizing the supply of both wood and sustenance – such as wheat, wine, meat, etc. produced on those estates – to the hospice and the women it hosted. In addition, some of the products from the estate were sold. The staff also included a doctor, a priest (*zago*), a chaplain, a housekeeper, one or more assistants dealing with daily

² Between the mid-14th and mid-16th century, Venice experienced 22 outbreaks of plague (<https://windowstoworldhistory.weebly.com/the-plundering-plague-and-the-downfall-of-the-republic-of-venice.html>).

³ The primary sources used to reconstruct the history of Ca' di Dio and the context in which it operated were retrieved from the fund *ASVe, Cancelleria Inferiore, Archivio del Doge* (bb. 209–213 and 262–264). It mainly contains administrative documents: deliberations of the Republic of Venice governing bodies exerting influence over the institution (Doge, Minor and Great Council, Senate, *Procuratori di San Marco*, etc.); and other documents, such as notarial acts of property acquisitions and location, proof of ownership of land, dispositions, transcriptions of judicial documents, etc.

⁴ *ASVe, Cancelleria inferiore, Archivio del Doge, b. 213, fasc. B, c. 28: Amministrazione dei beni.*

errands and maintenance work (*fanti*), and, occasionally, a baker for the poor women when unable to cook for themselves.

4. Research method, primary sources, and motivation

The research method adopted in this paper sought to overcome some of the limitations of previous studies. For example, while there are many examples of sound scholarship in accounting history, with respect to the period before 1800 several features of the historical methods adopted have overemphasised certain aspects to the detriment of others, which has left much undiscovered, misunderstood, or not understood at all. A combination of a focus on form and procedure (De Roover, 1956) – the technical accounting practice – and reliance since the 1950s on bookkeeping manuals as evidence of accounting practice, rather than primary evidence in the form of account books (see De Roover, 1956, p. 174; Yamey, 1964, p. 118), both with little consideration of the surrounding context or the function served by the practice identified (Goldthwaite, 2015; Lane, 1944), has left many questions unanswered. These include, for example, what caused double entry to emerge in the 13th century (Dobie & Oldroyd, 2020; Yamey, 1940), and why any entity would adopt double entry before 1800 (Yamey, 1949, p. 113; 1975, 717–719).

To overcome some of the shortcomings of this traditional accounting history research, beginning in the 1980s, a different, socio-politically-contextualised historical approach was adopted by several “new accounting historians” (Hopwood, 1983; Miller & Napier, 1993; Napier, 1989). These scholars sought to answer questions with an emphasis on the social dimension, recognising that accounting is far more than a technical discipline or practice, and that it impacts “human behaviour and organisational and social functioning and development” (McBride & Verma, 2021, p. 1). They look at what accounting was used for – the function of the record or report in the context of the surrounding environment, aiming “to uncover the socio-political setting[s] that issue, or give rise to, specific accounting practices” (Carmona et al., 2004). However, their approach, while seeking answers and explanations, often makes only superficial reference to technical practice (*ibid*). Much therefore remains to be explored in terms of identifying, interpreting, and critically analysing the technical side of accounting history, particularly before 1800. Other gaps in our knowledge and understanding of the historiography of accounting arise from its dominant focus on accounting practice in commerce and banking (De Roover, 1956). Many sectors have been neglected, particularly those in non-commercial settings, such as religious institutions, charities, and other not-for-profit organizations.

Embracing awareness of these acknowledged methodological weaknesses in, and omissions from historical accounting studies, this paper follows the recommendations of Arnold (2021) and adopts a traditional history approach. Its focus is on the technical accounting practice of the charity within its socio-political, economic, and commercial context. In doing so, it embraces recommendations implicit in criticism from other historians of the accounting history literature: a lack of understanding of accounting practice, the function it served and the needs it met, particularly before 1500 but, also, up to 1800. First voiced 80 years ago (Lane, 1944), that criticism has been justified and repeated several times up to the present day (e.g. Goldthwaite, 2015). Yet, little has been done to address it. It is hoped that those who read this paper will see the benefits it illustrates of being aware of both the technical dimension of accounting practice and its surrounding environment, and of combining them when seeking explanations and understanding of that practice, irrespective of when it occurs. The question, “why do they do that?” is as relevant today as it was in the 16th century.

Although often not consulted in favour of manuals in accounting history studies between 1500 and 1800, primary sources have always been “a fundamental element of accounting history research” (Carmona et al., 2004, p. 44). The primary sources used in this study are the account book and expenses book of the *Ospizio della Ca' di Dio*, a Venetian 16th century charity. It was selected for several reasons, not least its social role that provides a contextual variable much sought after by accounting historians in recent years. Firstly, very little is known about how accounting was used in the management and control of 16th century charities in locations where double entry was in use, such as Venice. Secondly, we know very little about how double entry diffused beyond the commercial and banking sectors where it originated; and, thirdly, Venice is the acknowledged location from where the method of double entry bookkeeping that is used today originated and spread after 1500. Consequently, if diffusion of that method beyond banking and commerce had occurred early in the 16th century, Venice was the most likely place for that to have taken place. Further support for this assumption can be found in the introduction to Pacioli's (1494) bookkeeping manual which indicates that the method was well-known there in the 15th century (Sangster & Santini, 2022); and the description of the earliest known Florentine bilateral ledger as being “in the Venetian form” in the late-14th century (De Roover, 1956, p. 139) indicates that this had been the case for some time.

Finally, taking into account that an estimated 2,000 copies of Pacioli's Venetian book containing his instructions on how to apply the method were sold between 1494 and 1523 (Sangster, 2007), that two editions of Tagliente's 46-page manual were published in 1525 and 1533, and that two editions of Manzoni's 181-page manual were published in 1540 and 1554, it would be reasonable to consider that during that period, if not before, its use may have spread beyond the commercial sector and banks in which it originated, particularly considering where these books were printed and primarily sold: Venice.

In this traditional history archival study, data collection and analysis were articulated in two main phases: [1] archival research on primary sources (statutes, board meeting deliberations, balance accounts and other administrative documents) supported by, [2]

secondary sources (Black, 1992; Ortalli, 2001; Pullan, 1971; Semi, 1983), aimed at reconstructing the socio-political context of Venice in the 16th century and mapping the types of entities engaged in social services provision. This provided the socio-political environmental context for the study, to which we added economic and commercial factors from the wider literature. The research method adopted involved transcribing the entries in another primary source, the Ca' di Dio account book that is the focus of this research. These were then entered into a spreadsheet, maintaining the original sequence. Although the final part of the account book was partially mutilated, we were able to reconstruct the missing text by comparison with similar entries elsewhere. For the sake of clarity, all the abbreviations in the original text were expanded but spelling was not adjusted, other than when clear spelling errors might hinder interpretation of the text. The use of capital letters and punctuation was adapted to modern rules. To facilitate understanding, the transcription was translated by one author and then both the transcription and the translation were checked by another who has many years of experience reading the form of handwriting and the technical bookkeeping terms then in use.

Accompanying the account book was a smaller book copied from a *vacchetta* (a small leather-bound notebook) containing a list of expenses, and provision of products distributed to the women it hosted and to the Prior. The copy was probably made because the original was needed for the activities continuing while the account books were being inspected by the *Procuratori*. The original *vacchetta* has not survived. Nor has a Rent book we identified in our analysis. Missing evidence is a typical element of historical studies and represents a limitation that must be acknowledged. To address this, a traditional historical approach was adopted. Gaps were filled using the information that was available, such as when we reconstructed the entries that had been lost from the end of the account book using other entries in the book to which we knew they related. This was made possible by the consistent use of double entries we had identified in the book.

5. Bookkeeping practices at Ca' di Dio

Two mid-16th century account books of the charity have survived in the State Archive of Venice (ASVe).⁵ One is for February 1543 to the end of January 1544. The other is for the next 14 months, from 1st February 1544 to Easter Sunday, 31st March 1546.⁶ The two books have similar features, including the structure of a bilateral double entry ledger, debits on the left page and credits on the right; and both are stored separately, without covers, in the same folder. Traces of binding suggest that they were at some time bound together. During this period, refurbishment was taking place at the Ca' di Dio, something for which the *Procuratori* were ultimately responsible. The present location of these books in the *Procuratori* section of the Archive indicates that they were not returned after the *Procuratori* audits were completed.

The existence of one account book for each period is consistent with what Takami (2017) found in his examination of the bookkeeping of the *Scuola Grande di San Marco* a century earlier. Also consistent with Takami, neither of the Ca' di Dio account books is closed; and there is no evidence of transfers being made from one to the other.

Neither of the Ca' di Dio account books contains accounts for non-current assets, perhaps because they belonged to the State, not to the charity. There is also no account for profits and losses, not because Ca' di Dio was a charity but, because the purpose of such an account in Venice was to facilitate closing of a ledger (Pacioli 1994), something that was not done in either of the two account books.

In the next three sections, we present our analysis of the structure of the Ca' di Dio account book (5.1), the recording process adopted in its bookkeeping (5.2), and reflect on the function it served (5.3).

5.1. The Libro dei Conti

The hospice factor was not just its manager, he was also the bookkeeper and responsible for the cash box, which is indicated in the title of the Cash Account: "cash of me, Zuanbatista de Zorzi". The bookkeeper of another similar-sized Venetian hospice, the Ospedal de Messer Gesù Cristo, was granted an annual salary of 15 ducats in 1518.⁷ In contrast, the account book shows that Zuanbatista was paid a salary of 80 ducats, most of which would have been for his primary role as manager of the hospice. It was only in 1595 that Ca' di Dio first employed a specialist bookkeeper.

The *Libro dei Conti* has twelve unnumbered double pages. The entries are made in chronological order into the following accounts.

- *conto cassa* (Cash Account), to which several other accounts are linked;
- *conto ospedal et priorado* (Hospital and Priory Account), including all expenditure from the hospice in favour of the poor women and the Prior ("spese de casa");
- *conto farina in monte* (Flour Account), the amount of flour available in storage;
- *Ospedal et priorado de la Ca de Dio conto de farine* into which the total of all flour used or distributed was transferred at the end of the period;
- *conto vin in monte* (Wine Account), the amount of wine received from the factor *fora*, all of which was transferred to a wine account for the staff of the hospice and priory;
- *Ospedal et priorado de la cha de Dio conto de vin*, the amount of wine delivered to the cellar for use of the priory;

⁵ ASVe, *Procuratori di San Marco, de supra, Chiesa, atti, busta 109*.

⁶ In a modern calendar, February 1544 to January 1545 and February 1545 to the end of March 1546. The reason for the different length of accounting period of the two account books could be due to a decision to align it with Easter in 1546.

⁷ ASVe, *Procuratori di S. Marco, de supra, Chiesa, atti, busta 107*.



Fig. 1. Extract from the Cash Account with the location of the dates indicated (*carta 1: debit and credit*).

- three accounts relating to wood: *legna in monte* (*morelle*, *zochi*, and *fascine*), representing the amount of each type of wood received;
- each of the *legne in monte* accounts was linked to a *Ospedal et prioridado* account for that item to which amounts were transferred upon receipt, effectively identifying them as being for the use of the priory.
- several personal accounts, including accounts for *Francesco il fante* (one of the Prior's assistants), *Domenego Trentin* (haulier of goods from the estates to the hospice), *Agustin de Scolari*, the *Procuratori di San Marco*, *Doge Pietro Lando*, *Prè Fabrizio* (teacher and chaplain of the church), the *mastro former* (baker), *Santa sua massera* (housekeeper) and *Zuanbatista de Zorzi*.

On each page, the year is shown at the top. The day and month of each entry is included in the middle of the first debit and credit entry in each account but inserted just before the entry in all other cases. When another transaction occurs in the same month, the month is replaced with the term “*detto*” (as above). An example can be seen on the debit side of the extract from the first double page of the Cash Account shown in Fig. 1. As can be seen on the credit side of the account, *detto* is also used within entries to avoid repeating the same text on each line.

For each entry made in one account, an opposite entry was made in another account, under the same date, together with a description of the transaction. Where the related monetary amount was recorded, it was in the money of account in use in Venice at that time: *ducato corrente* (or *ducato di conto*), *lire*, *soldi* and *denari piccoli*. Based on 1 *ducato* = 6 *lire* and 4 *soldi* or, as there were 20 *soldi* in 1 *lira*, 1 *ducato* = 124 *soldi*. However, as will be described later, in some cases entries were recorded in quantities, not amounts.

Periodicity was recognised in the account books as a result of the requirement for an annual report and audit. However, it did not embrace the mercantile practice of balancing all the accounts. Only the Cash Account was balanced, while the total disbursements of flour were calculated and entered as a debit in a new account for all the flour consumed or distributed by the hospice during the period, in effect completing the double entries initiated by the individual credits in the flour account. All other accounts were left unbalanced, and there is no indication that any accounts or entries were transferred from one period to the next. Consequently, each account book contained only entries relating to transactions in the period to which it relates.

However, as evidenced by the flour account which shows disbursements being made before flour was received, any inventory remaining appears to have been available for use in the following period. Further support for this interpretation can be seen from over 6 per cent more flour being distributed in the period than was received, though some of this may have been due to inaccurate measurement. In the case of the cash account, there was no closing balance at the end of the previous period. Nevertheless, 7 *ducati* 5 *lire* 9 *soldi* were paid out before any cash was received, most likely paid personally by the bookkeeper without any note being recorded. Once each period ended, the cash account was closed and the *Procuratori* began their audit, presumably beginning with a comparison between the balance of the cash account and the cash held by the bookkeeper.

5.1.1. The treatment of income, rent and repairs, and donations

The Prior was responsible for ensuring that the hospice had sufficient income, which came from rent (54 payments), two (apparent) donations, and seven receipts from sales of items from the country estates. While the dominant stream of income came from rent, the sales from the country estates generated 87 per cent of the income. In the account book, only in the case of rental income is duality not explicit. Entries for it were recorded only on the debit side of the Cash Account. This, however, is consistent with the existence of a separate Rent book from which receipts were transferred. As maintaining control over the use of the assets of the Ca' di Dio was one of the roles of the Prior, it would be surprising if one were not. A similar approach was adopted with respect to sundry expenses, which were recorded in a separate *vacchetta*. Each month the total spent was debited to the Hospital and Priory Account. For example, an entry reads: “... for extra expenses made from the beginning of [month] until today, for daily errands, for the priory, for clothes, as it appears from the *vacchetta* containing the expenses.” By mentioning the *vacchetta*, a direct link between the two books is evident. In the same way, identifying each entry for rent in the Cash account as relating to rental income, which was the wording in the entries, establishes a direct link between the entry in the Cash account and a Rent book.

On seven occasions, property repairs were charged to the Hospice and Priory account. These were always recorded on the same date as rent was received on the related properties. However, there is no corresponding credit entry in the Cash account, which suggests that the repair was paid from the rent received. As shown in De Raphaeli's double entry bookkeeping manual of 1475, The Venetian

practice was to charge expenses on property against rental income (Sangster, 2018b, p. 71). Observing that practice, assuming the existence of a Rent book, when rent was received it would have been recorded as a credit against the account of the tenant in that book and as a debit in the Cash account. When a repair was done, the rent received would have been credited to the tenant's account and the repair was then paid, with a debit for the repair entered in the Hospice & Priory account and a debit for the net amount received to the Cash account. The alternative explanation that the tenant paid for the repair and then deducted it from the amount paid is unlikely given that tenants were not responsible for the upkeep of their accommodation.

5.1.2. Omissions and mistakes

In a few cases, contra entries are missing. No credit entries were made for two apparent donations received totalling 11 *ducati 4 lire 16 soldi*, possibly in error but, it could also have been because it was not thought necessary. Nor was a debit entry made for 1 *lira 10 soldi* given to a poor woman, or for some *morelle* wood given to another poor woman. There are only three missing contra entries that are clearly mistakes.

- when two credit entries in the estate factor's flour account were posted to the flour account, the date of the first was entered in the flour account, but the details entered were for the second;
- a credit entry for 11 *ducati 5 lire 6 soldi* in the Cash account was omitted from the Hospice and Priory account.
- A credit entry in the *Morelle* wood account for the Hospice and Priory *morelle* account was not entered as a debit in the latter.

There were also two instances where the debit and credit entries differ by small amounts – one by 1 *soldo*, the other by 6 *denari*. It is not known why these five errors were not identified and corrected by the bookkeeper – from Pacioli's manual, and as attested by analyses of other coeval ledgers, various methods for correcting errors were in use at that time.⁸ However, apart from checking the cash balance, the consistent adoption of duality meant that the auditors could establish the validity of all the entries, ensuring that no mismanagement had occurred, referring to the Expenses book and the Rent book when appropriate. Perhaps the bookkeeper was content in knowing that any errors would be identified and corrected during the *Procuratori* audit and decided not to spend any of his own time checking the entries made.

The next section compares what is found in the bookkeeping practices at Ca' di Dio against how the accounting history literature defines, or recognises double entry. It does so within the context of the account book, and its purpose and function.

5.2. The recording process in the *Libro dei Conti*

To ensure consistency in our labelling of the bookkeeping system, an appropriate definition of “double entry” was selected. This was necessary because there is no agreement over the definition of double entry bookkeeping in the literature. Some, such as Lane (1977), seek only duality while Sangster (2016) seeks duality plus an indication of the location of the contra entry. Others, such as De Roover (1956), require duality plus the recording of *all* transactions in double entry such that it is possible to produce financial statements from the data held in the bookkeeping system. Others, including Yamey (1994), seek duality plus financial statements. This study adopts a definition of double entry bookkeeping consistent with Pacioli's (1494) description because it was of bookkeeping by 15th century Venetian wholesale merchants who never used bookkeeping to prepare financial reports. At the core of Pacioli's description was duality as evidenced by recording the equal (i.e. equivalent) impact of transactions on the two elements of those transactions: the item exchanged and the form of settlement, one as a debit and the other as a credit (Sangster, 2018a).

The first issue we encountered in determining the nature of the bookkeeping was the absence of page numbers combined with none of the entries including any indication of on which page the contra entry was located. While most of the definitions of double entry bookkeeping in the literature do not specify the need for this feature, some may nevertheless view this as disqualifying the bookkeeping from being described as double entry. However, this has been encountered previously and the absence of the location of contra entries has been accepted by accounting historians as **not** disqualifying a ledger from being considered to be in double entry when the location is obvious (De Roover, 1955). In this 12-page account book, our investigation found that identifying contra entries was straightforward.

The next feature requiring consideration was the use in some accounts of entries made, not in quantities of money, but in quantities of other things that could be measured, such as weight or volume.

5.2.1. Non-monetary accounts

Dobie's (2015) study of the charge-and-discharge-based accounting practices at Durham Cathedral's Benedictine Priory between 1270 and 1539, found that accounts for grain, wheat and rye, and bread were kept in quantities, not monetary amounts, as were those of malt, brewing, and ale; and that these were subject to quarterly audit. He concluded that, “accounting at Durham Cathedral Priory shows an adaptability which allowed its extension well beyond the immediate function of a charge and discharge statement in the management of the house ... **a flexibility in the way in which accounting forms were adapted to respond to new needs**” (Dobie, 2015, pp. 210, 218, bold emphasis added). Similarly, the Ca' di Dio account book includes accounts for wine, flour, and each of three types of wood, accounts for the factor who supplied them for each of these as well, and also accounts for the hospice and priory for each

⁸ See for instance Takami (2017, p. 230).

1544							
	Farina	in monte die dar a di 9 marzo 1545 per Agustin de Scolari fator ale cose de fuora, mandò stara 10 disse Francesco fante esser sta mandata per darla al miedego de l'ospital			stara	10	-
	01-Apr	per	ser Agustin detto mandò stara 20 per uso de le povere et per uso de case del priorado	stara	20	-	
	03-Apr	per	ser Agustin detto mandò stara 19 per uso ut supra	stara	19	-	
	31-Jul	per	ser Agustin detto mandò stara 22 per uso ut supra	stara	22	-	
	01-Aug	per	ser Agustin detto mandò per uso ut supra	stara	11	-	
	19-Aug	per	el detto ut supra	stara	7	-	
	11-Sep	per	el detto ut supra	stara	21	-	
	14-Nov	per	el detto ut supra	stara	9	-	
	16-Nov	per	el detto ut supra	stara	31	-	
	22-Jan	per	el detto ut supra	stara	40	-	
1546	19-Mar	per	el detto ut supra	stara	5	-	

1544							
	Farina	in monte allincontro die aver a di 4 febraro per ospedal et priorado fo li mesurado ale sue massere de casa: mastelete sie tiene mezo ster (staro) l'uno per uso de le povere			stara	3	-
	10-Feb	per	ospital et priorado detto fo li mesurado mastelete sie ut supra	stara	3	-	
	17-Feb	per	ospital et priorado detto fo li mesurado mastelete sie per uso de le povere et per uso de casa del priorado	stara	3	2	
	26-Feb	per	ospital et priorado detto	stara	3	-	
1545	02-Mar	per	el detto	stara	3	2	
	09-Mar	per	el detto	stara	3	2	
	09-Mar	per	messer Zuanfranco Moresini miedego de l'ospital	stara	10	-	
	22-Mar	per	ospital et priorado detto	stara	6	-	
	27-Mar	per	ospital et priorado detto	stara	3	2	
	27-Mar	per	ospital et priorado detto	stara	3	-	
	03-Apr	per	el detto per dar ala Foschola	stara	1	-	

Fig. 2. Extract from the flour account (carta 8), with debit on the left and credit on the right.

of these items. All these accounts are maintained in units of quantity, not value. Flour, for example, as shown in Fig. 2, is kept in *stara*,⁹ a measure of quantity.

Similarly, the account for wine is received in *bote* (approximately 500 L¹⁰) and is recorded in *cara* (barrels). Two types of wood are recorded in *pasa*, possibly a length of c.1.7 m¹¹ though, given that 180 *pasa* were sold for 12 lire each, it is more likely to relate to weight. The third type of wood, *fassine*, is recorded in *mira*. All transactions between these accounts are recorded in units of quantity. Recording these entries in quantities, not monetary values, must reflect the function of those accounts, which appears to have been to record the hospice's receipts of wine and wood for internal consumption; and its receipts and distribution of flour. The resultant aid to management control this provided may have been internal to the hospice but, given that the *Procuratori* audit no doubt defined what records were to be kept, keeping these records of quantities was also presumably something required by them in assessing the stewardship of the hospice.

Thus, for example, they would have been interested in ensuring the Prior was not being extravagant in the quantities of wine received for consumption within the Priory; ensuring that the quantity of wood received was what would be expected for an enterprise of this size, nature, and population; that the quantities distributed of flour were appropriate, neither too generous, nor too meagre; ensuring that resources were not wasted; and ensuring that the income and expenditure of the Ca' di Dio was efficiently managed. Details of all these are contained in the account book. The wine, flour, and wood sent by the estate factor could all have been given prices and recorded but funds to purchase anything beyond what is already recorded in monetary amounts was impossible – the cash balance at the end of the previous period was zero and, in this account book it was only 7 *ducati* 2 *lire* and 6 *denari*. However, this is to forget that these items came from the Ca' di Dio's own vineyards, forests, and land. Placing a value on them would have served no purpose whereas, verifying that the quantities received and distributed were appropriate would have been a natural check to make when assessing the stewardship of Ca' di Dio.

The Hospice and Priory wine account has a further feature relating to stewardship, not financial result. The wine recorded in this account is described in the first debit entry as being for the use of the house of the priory, not for distribution to the poor, and that any wine distributed to the poor was, instead, purchased for that purpose. This practice is evidenced by entries for the purchase of wine for the poor in the Book of Expenses. Each month, a credit entry was recorded in the wine account of zero. Not surprisingly, there are no contra entries for these nul transactions in the Hospice and Priory wine account. These entries appear to have been made to satisfy recording requirements established by the *Procuratori*, real or perceived, and serve no other purpose than confirming every month the policy adopted in the hospice, to issue none of this wine to the poor.

Apart from the phantom entries on the credit of the Hospice and Priory wine account, which can be discounted for this purpose, all the entries in quantities apply duality. In each case, one element of the transaction is treated as a debit and the other as a credit, and the debit entry is equal to the credit entry. It is consistent with how Pacioli viewed double entry and with how we define it in this paper.

⁹ The *ster* or *staro* (pl. *stara*) was a Venetian unit of measurement, mainly used for flour, wheat, and forage for livestock. One *staro* was about 132 Venetian pounds; one pound corresponded to 477 g, therefore a *staro* was approximately 63 kg.

¹⁰ <http://www.naplesldm.com/archaic%20measures.php>.

¹¹ https://en.wikipedia.org/wiki/Italian_units_of_measurement.

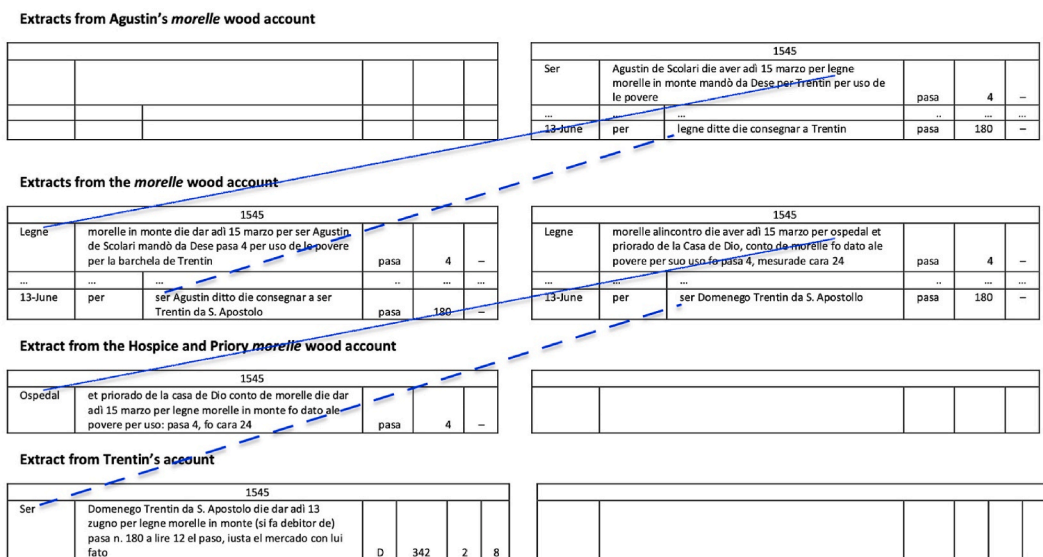


Fig. 3. Extracts of entries for *morelle* wood.

These are examples of double entries, and therefore of double entry bookkeeping in a variant¹² form, as also was the form of charge and discharge identified at Durham Cathedral Priory by Dobie (2015).

5.2.2. Hybrid¹³ entries for wood sold on credit

Our investigation also identified another form of variation not reported by Dobie. This related to transactions involving sales of wood. Normally, wood was sent to the hospice by the estate factor, Agustin de Scolari. The supplies received were recorded as transfers from the credit of the factor’s account into the debit of the account for that wood; and the entries were both recorded in quantity, such as *pasa* in the case of *morelle* wood. The debit entries in the wood account were then cancelled-out with credit entries transferring them to the Hospice and Priory account for that type of wood.

On 13th June, instead of sending wood to the hospice, Agustin gave quantities of three types of wood to Domenego Trentin, the haulier who transported goods for the estate factor to the hospice. The treatment of these transactions was the same for each type of wood and each of the entries made indicated that they had been given by Agustin to Trentin. First, the transaction was entered as usual as a credit to the estate factor’s account and as a debit to the account for that wood, both entries in quantity. The debit entry in the wood account was then cancelled-out using a credit entry in quantity, but the contra debit entry in Trentin’s account was recorded as a monetary amount, thereby showing the amount of the debt. Fig. 3 shows examples of both types of entries. The solid lines indicate the “normal” entries. The dashed lines are used for the entries made when a transaction of this hybrid type occurred.

As can be seen in the final entries on each side, the entry recorded in Trentin’s account is in ducats while the contra entry is in *pasa*. The amount shown in Trentin’s account is equivalent to the 180 *pasa* at 12 *lire* per *pasa*, which is the rate shown in the entry. Thus, although the two entries are not in the same unit of measurement, duality is observed. In each case, one element of the transaction is treated as a debit and the other as a credit, and the unit of measurement recorded in the debit entry is equivalent to the unit of measurement recorded in the credit entry. This is double entry. It is consistent with how Pacioli viewed the relationship between the debit and credit in double entry. But, it is not the mercantile form of double entry he described.

5.3. The function of the Libro dei Conti¹⁴

From the preceding analysis, it should be clear that the bookkeeping system was not intended to provide data to enable calculation of the financial result, or of the net worth of the inventory, or the hospice. None of the accounts for wine, flour, or wood contain sufficient information to identify the actual amount of these items held at the end of the period. If balanced the flour would have a credit balance and the wine and wood accounts would inform us that all that was received is still held. Neither reflects reality. Most of

¹² “Variant” is used in its normal meaning, as something that is slightly different from other similar things (Cambridge Dictionary): in this case, some items are recorded in monetary amount and some in quantities. That is also how the term “variant” was used by Dobie (2015) in his discussion of the bookkeeping at Durham Cathedral Priory.

¹³ The term “hybrid” is used in its normal meaning: a mixture of two different things (Cambridge Dictionary) which, in this case, was the recording of quantity on one side of a double entry and monetary amount on the other.

¹⁴ Further examples from the account book are included in the Appendix.

the wine would probably have been drunk because wine was the staple drink of the period, not water. Most of the wood also would have been used, in construction, repair, or burnt as firewood for cooking and heat. Even though Ca' di Dio did occasionally sell some of its resources, what it sold only ensured that it did not exhaust its cash. Any profit or loss made on those transactions was not identifiable from the account book but, as described above, control was exercised by recording the quantity sold, the debt, and the payments received. This is very much an account book maintained with the function of enabling the stewardship of the income and expenditure and the management and use of resources to be assessed, with the unit of measurement selected for each entry being the most appropriate for that purpose.

Our decision to critically analyse the technical accounting practice presented in the account book revealed further support for this conclusion. Stewardship is not just something to be assessed at the top of an organisation. In the case of Ca' di Dio, the entries made in some of the accounts indicate it was also assessed at the level of the two factors. For example, as discussed above and illustrated in Fig. 3, when anything was received from the estate factor, it was entered as a debt in an account dedicated to it, e.g. *morelle in monte*, and immediately credited out of the account and into the debit of an account for it in the name of the hospice, e.g. *Ospedal et priorado de la casa de Dio, conto de morelle*. The supplies were the responsibility of the estate factor who sent them, which the first account was used to record. Once in the hospice, they became the responsibility of the hospice factor, which the second of these accounts was used to record.

6. Achieving understanding and explanation by combining critical analysis of technical practice with the surrounding context

Several contextual factors were considered in our analysis of the technical practice of accounting in Ca' di Dio. From a social perspective, the role of the charity in addressing poverty helped us to identify and understand how repairs to the rented properties were recorded. It also guided us in classifying, as charitable donations, two receipts of cash for which no credit entry was recorded. These were not payments of rent. One was too large an amount to be rent, and neither entry either mentioned rent or any of the people identified elsewhere as renting the properties, which was essential if an entry for the payment was to be found in the Rent book. Had they been payments for sales of any of the products of the hospice estate, the focus on stewardship, whereby the purpose or nature of every transaction is recorded, would have resulted in that being clear from the entries made.

From a political perspective, the Prior was appointed for life, unless he neglected his duties. These included ensuring that the hospice and its estates were efficiently managed, which embraced its financial viability. This was, in part, assessed by his having to prepare a report annually of the income and expenditure of the hospice to the Doge and Minor Council, which was audited by the *Procuratori*. If the expenses for a period exceeded the income, he would have been deemed to have failed in his duties (and may have lost his position). From a social perspective, there was too much poverty in Venice at that time for him to hope that donors would make-up any shortfall. Selling products from the estates was the device available to him to prevent that occurring. But, those sales also had to be effectively managed. Our critical analysis of the technical practice adopted in the charity's account book enabled us to identify both how this was done, and the organisational structure adopted to achieve it. The resulting interpretation only became apparent after we located the technical practice within the context of the surrounding environment.

From a commercial perspective, the three transactions involving wood on 13th June with Trentin, the haulier, appeared to be typical examples of sales on credit to a third party. The use of credit, even though the hospice relied on and needed cash for its daily activities, would be expected given their value and the shortage of sufficient coins in circulation that dated back several hundred years (Cipolla, 1956; Schaub, 1906). The use of credit also explains the detail in Trentin's account about these three transactions, which is consistent with mercantile practice, as is the recording of the monetary amount, not the quantity of wood. However, the closer we examined them, the less these appeared to be commercial sales.

The three transactions amounted to the very large sum of 574 *ducats*. Given the level of incomes and costs in that period, these could not possibly have been for Trentin's personal consumption, though he could have bought them and then sold them. There is no indication in the account book of how Trentin was paid for his services as a haulier. Instead of a salary, he may have received the wood at a discount, but that would have been expected to have been noted in the entries. A more plausible explanation for the absence of any record of his salary relates to his working for and being the responsibility of the estate factor: any payment to him may have been in records the factor maintained for the estate that have not survived. But, when we looked in detail at the amounts received in payment from Trentin during the year, and at how the accounting practice dealt with balances on accounts at the end of the period, it became very apparent that there was something unusual about these sales: while they had generated a debt of 574 *ducats*, Trentin had settled it in an irregular series of 7 payments in cash totalling 739 *ducats*, leaving a credit balance of 165 *ducats* at the end of the period. From our analysis of the bookkeeping system across both the surviving account books, we know that this was not carried forward to the next period.

We then looked at the entries for Trentin in the previous account book for 1543–1544. Again, that June he had been given three types of wood, for 693 *ducats*; and he made 5 payments in the year totalling 673 *ducats*. The account was not balanced and the 20 *ducats* debit balance was not carried forward to the next period. However, his first 2 payments in the following period, totalling 350 *ducats*, were made before the sale to him on 13th June. If those transactions each June were commercial sales, these two payments were either deposits, or they were settlements relating to previous sales, but that did not explain why the balance at the end of the first period was not carried forward to the second, nor why the account of this debtor, the only one in the account book, was not balanced.

The explanation for this became apparent when we examined the wording of the credit entries in Trentin's account. They do not indicate they relate to payment of his debt. Instead, they reveal that the payments related to market transactions: "cash from him *abonconto del mercado*". Taking all this information and applying it to the managerial structure of the Ca' di Dio, the onus on the Prior

and his two factors to ensure everything was managed effectively, the responsibility of the Prior to ensure that sufficient cash was received each year to meet all expenses paid, plus the fact that almost 90 per cent of cash income had to be generated from estate sales, those sales had to be managed carefully: Trentin was not buying wood to resell on his own behalf, he was acting as agent of the Ca' di Dio responsible for selling the estate wood. It was given to him each June and recorded as a debit in his account, so establishing the cost relating to the subsequent revenues which were also recorded in his account. This enabled his performance as agent to be assessed by the *Procuratori* in the course of their audit, just as they assessed the bookkeeper's management of the cash using the cash account as their primary written source. Given the number of similar audits they performed, they would have been aware of how much each batch of wood should have been worth in the marketplace. This interpretation is also consistent with our interpretation of the "normal" process of entries for wood discussed earlier in the paper.

Thus, the purpose for maintaining Trentin's account in money was not primarily for commercial reasons, i.e. to control his debt. Rather, it was to facilitate monitoring and assessment of the stewardship of the Ca' di Dio relating to its income from sales of its estate products. While stewardship motivated the accounting practice of recording products in quantities, stewardship also motivated the accounting practice of recording the agent's account in money. In each situation, the nature of the amount recorded – quantity or money – was the most appropriate indicator that could be used in assessing the efficiency of the stewardship over those activities of the Ca' di Dio. It was the demands of stewardship that defined the accounting practice in Ca' di Dio.

7. Conclusion

Beside its mercantile businesses, the domestic economy of 15th-16th century Venice relied on diffused forms of welfare support provided by hospices, guilds, confraternities and charities of various sizes and scope. To date, very little research has been conducted on the form of bookkeeping in use in these entities, on whether it resembled mercantile practice, or had peculiarities of its own. Positioned in the accounting history literature on bookkeeping and not-for-profit institutions (charities, social, or religious institutions), this paper focused on the practice of early modern bookkeeping in a small social setting. It did so, by examining the account book for 1544–1546 of a small hospice operating in Venice: the *Ospizio della Ca di Dio*, seeking to investigate the form of bookkeeping it used in meeting the demands of its auditors, and discovering whether the bookkeeping practices of Venetian wholesale merchants had diffused into the world of charities, just as it had into the world of their auditors.

In the reported study, a traditional history approach was adopted involving investigation and critical reflection of what was found within its known socio-political, economic, and commercial context, including critical reflection on what function the artefact, the accounts within it, and the bookkeeping method served. In doing so, an in-depth analysis was conducted to explore, interpret, and understand the technical bookkeeping practice in use. The cash account was the main account. It had contra entry correspondence with other accounts also considered important enough to record for the management of the charity, or for purposes of accountability to the State. Double entry was consistently used, and a culture and logic of duality permeated the bookkeeping practice to the point of being applied in a variant form of double entry to non-financial entries for quantities of flour, firewood, and wine. This finding supports a conclusion similar to [Takami \(2017\)](#), that some form of duality was evident in bookkeeping in use beyond the merchant world and – with variances and nuances – of a form different from those presented in the theoretical textbooks and mercantile records of the period. Overall, it testifies to the existence of a diffused culture and practice of double entry bookkeeping in Venice at that time.

In 2015, Alisdair Dobie reported finding a variant form of charge and discharge accounting in his study of Durham Cathedral Priory that embraced both accounts kept in money, and accounts kept in quantities, all for the purposes of stewardship. One contribution of this paper is similar, but for double entry, a method of bookkeeping not typically associated with stewardship. It can be broken down into several components, including its contribution to the new accounting history literature on "giving an account", such as can be seen, for instance, on the theme of early modern slavery (e.g. [Silva et al., 2020](#)).

More specifically, it contributes to the literature on technical accounting practice in early modern Europe by revealing in detail for the first time the bookkeeping practice of a small Venetian 16th century not-for-profit organisation. In doing so, it reveals the manner in which double entry had diffused from the commercial sector but, in the process, had transformed to meet the needs of a different sector. This includes a new dimension it brings to the broader literature on double entry bookkeeping through its identification, also for the first time, of a unique hybrid variant form of double entry bookkeeping system suited to the purpose of charitable institutions and the stewardship-related demands of those to whom they were responsible. In it, the function or purpose of the record determined which of the financial amount or the quantity of a transaction was recorded. These findings uniquely demonstrate that double entry can be used in a different form to the one established for its use in commercial settings, without compromising the primary benefits of the method relating to management of an entity, including both control over debt and the security provided by a closed system of bookkeeping through the assurance it gives of the completeness of the information recorded.

This assurance cannot be derived from other bookkeeping systems, such as charge and discharge, that do not record the impact of each transaction on the two elements that are involved: the item exchanged and the form of settlement ([Sangster, 2018a](#)). Being able to assess the consistent duality of entries is one of the benefits of a double entry system, one that auditors rely on, which was just as relevant to the auditors of Ca' di Dio for whom, as mentioned in Section 2 of this paper, without double entry "it was otherwise impossible to [easily] oversee the state of the administration" ([Mueller, 2021](#), p. 32).

As to for how the diffusion of double entry into Venetian charities had been developing, the similarities between what [Takami \(2017\)](#) described of the 15th century account book of the *Scuola Grande di San Marco* and what we see in the *Ca' di Dio* account book is consistent with a response to a central authority. This may have resulted in a shared practice developing among the Venetian charities and other non-commercial entities in how they maintained their account records – the size of the account books (p. 228); the lack of a journal; the format of entries; the dominance of the cash book; the period-end aligned with Easter; the ledger not closed when a new ledger was opened; and the links to other specialized record books (p. 238). As both these charitable institutions are believed to have been subject to the control and audit of the *Procuratori*, the bookkeeping method and system adopted in these cases clearly met the needs of that authority; and, with respect to *Ca' di Dio*, because the technical bookkeeping practice was the same in the earlier account book from 1543 to 1544, the *Procuratori* had approved, if not requested that it adopted the hybrid variant identified in this paper.

A lack of other examples means that we can only speculate on the implications of our findings beyond *Ca' di Dio*. However, our findings about the bookkeeping in the hospice are not speculative. Because the *Procuratori* defined parameters to be met by the bookkeeping in use, and had approved this one, double entry of this form was probably also in use in a large number of similar Venetian institutions at that time. While due to a lack of surviving evidence this cannot be confirmed, it is hoped that this study will pave the way for further research exploring early modern bookkeeping practice, especially in the composite not-for-profit world of hospices, guilds, confraternities, and charities, of which we know so little, despite their representing an essential pillar of early modern European economies.

One further contribution of this paper lies in its demonstration of how detailed critical analysis of technical practice within its socio-political, economic, and commercial context can facilitate knowledge, understanding, and explanations for that practice and of the function it served. It is hoped that this study may encourage scholars to apply this approach in revisiting the examples of accounting practice of commercial entities and banks of the same and earlier periods previously studied. And that in doing so, they may provide understanding of those practices and their function, so addressing a major gap in the historiography of accounting first identified by Raymond de Roover in [1958](#) and never subsequently investigated.

So far as the absence of other examples like *Ca di Dio* is concerned, Pacioli's printing of a manual of instruction on Venetian wholesale mercantile double entry bookkeeping in 1494 led to that method and form of double entry diffusing across the mercantile world and replacing all those previously in place. It is not improbable that the reason the hybrid variant of double entry identified in this paper has not previously been identified lies in the publication of the bookkeeping manuals of [Pietra \(1586\)](#) and [Flori \(1636\)](#) for religious institutions. Both those manuals monetised all transactions, setting "common" prices on products delivered from a priory's estates into the priory even though those "prices" were irrelevant to any assessment of the use made of that produce. From a stewardship perspective, it is difficult to imagine how that could have been helpful though, doing so did mean that financial performance and financial result could be, and were identified.

Finally, *Ca' di Dio* adjusted a monetary-based method of bookkeeping to bring it into line with the demands of the needs it served. In doing so, it mirrored what the Benedictine monks at Durham Cathedral Priory had done in their version of charge and discharge. Everything was recorded in a form best suited to the demands the records met. In today's highly computerised environment, it would be routine for any entity, including not-for-profit ones, to emulate the approach of *Ca' di Dio*. However, perhaps the main lesson for today is the importance of matching the design of an accounting system to the needs that it serves, and not being afraid to go against convention in how that is achieved.

Data availability

Data will be made available on request.

Appendix

Examples of double entry in the account book of Ca' di Dio

The *Libro dei Conti* opens with the Cash Account. It takes-up the first four facing pages. All the credit entries represent a cash outflow. The contra entries are recorded in the debit section of the Hospital and Priory Account, which contains entries for all the expenses incurred in the period.

CARTA 1: CASH ACCOUNT - DIE AVER

CASSA AL INCONTRO DIE AVER			
1544	07-feb	per cassa al incontro die aver ad 7 febbraio per Francesco suo fante	0.14
1544	11-feb	per ospedali et priore della Casa de Dio	1.4.13
1544	13-feb	per al detto	0.2.7
1544	14-feb	per al detto	0.2.18
1544	14-feb	per al detto	5.0.16
1544	25-feb	per Santa sua massera de casa	4.0.0
1544	27-feb	per al detto	0.4.17
1544	27-feb	per al detto	3.5.0
1544	27-feb	per al detto	0.1.10
1544	27-feb	per al detto	8.3.16
1544	27-feb	per al detto	9.6.14
1545	05-mar	per Francesco suo fante	7.0.0
1545	30-mar	per ospedali et priore della Casa de Dio	3.2.1
1545	30-mar	per al detto	5.5.0
1545	30-mar	per al detto	0.3.16
1545	30-mar	per al detto	0.3.7
1545	30-mar	per al detto	8.1.11
1545	30-mar	per al detto	9.0.14
1545	31-mar	per al detto	10.0.14

CARTA 12: HOUSEKEEPER'S ACCOUNT (SANTA SUA MASSERA) - DIE DAR
PORTER'S ACCOUNT (FRANCESCO IL FANTE) - DIE DAR

1544	27-feb	Santa sua massera de casa die dar ad 27 febbraio per cassa contata a lei	4.0.0	14
1544	10-mar	per Francesco suo fante	1.0.4	15
1544	07-feb	Francesco fante die dar ad 7 febbraio per cassa contata a lui per compiere le scritte	1.0.4	14
1545	05-mar	per	2.0.0	15
1545	25-mar	per	1.0.0	16
1545	18-ott	per	8.0.0	14
1546	08-mar	per	1.0.0	15

CARTA 3: HOSPITAL AND PRIORY ACCOUNT - DIE DAR

CARTA 3			
1544	11-feb	per ospedali et priore della Casa de Dio	1.4.13
1544	13-feb	per al detto	0.2.7
1544	14-feb	per al detto	0.2.18
1544	14-feb	per al detto	5.0.16
1544	25-feb	per Santa sua massera de casa	4.0.0
1544	27-feb	per al detto	0.4.17
1544	27-feb	per al detto	3.5.0
1544	27-feb	per al detto	0.1.10
1544	27-feb	per al detto	8.3.16
1544	27-feb	per al detto	9.6.14
1545	05-mar	per Francesco suo fante	7.0.0
1545	30-mar	per ospedali et priore della Casa de Dio	3.2.1
1545	30-mar	per al detto	5.5.0
1545	30-mar	per al detto	0.3.16
1545	30-mar	per al detto	0.3.7
1545	30-mar	per al detto	8.1.11
1545	30-mar	per al detto	9.0.14
1545	31-mar	per al detto	10.0.14

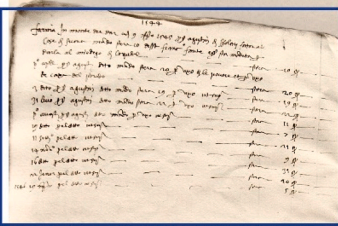
Exhibit 1. Examples of double entries between the Cash Account and the Hospital & Priory Account and the Cash Account and personal accounts

As shown in Exhibit 1, on page 1 of the account book there is a credit entry for a cash outflow of 1 *ducato*, 4 *lire* and 13 *soldi* on February 11th, 1544. The contra entry is recorded on page 3 as a debit to the Hospital and Priory Account on the same date. The amount of money is the same in both entries. The entry in the Hospital and Priory Account provides full details of the payment, revealing it was for provisions for the women hosted and the Priory, including honey, eggs, meat, cheese, and saffron.

The exhibit also shows two examples of transactions involving the Cash Account and personal accounts, in this case those of *Francesco fante*, the handyman, and *Santa sua massera*, the housekeeper, both employed at the hospice. The first item of the Cash Account credit section reads: “Cassa al incontro die aver ad 7 febbraio per Francesco suo fante: lira 1, soldi 4” (translated literally: “Cash as opposite shall have, on February 7th, for Francesco the handyman: 1 *lira* and 4 *soldi*”). This entry was recording cash paid to Francesco so that he could buy a pair of shoes, as described in the related debit side of his personal account on page 12 (framed in yellow). An entry in the Cash Account dated February 27th reveals that the housekeeper was paid her salary in cash on that date. The contra entry is recorded on page 12, in the debit section of her personal account (framed in blue): “[...] per cassa contata a lei, aconto de suo salario: ducati 4” (“[...] from cash to her, for her salary: 4 *ducats*”).

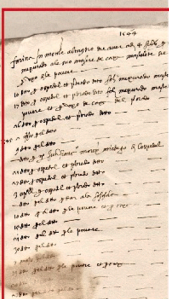
Exhibit 2 presents examples of double entry bookkeeping between accounts related to the products in storage (*in monte*), such as flour, wine and wood. The flour, wine and firewood in storage have the same function as the Cash Account described in the previous examples but, instead of money, a quantity of products flows into and out the storage, directed to the hospice. For instance, on the debit side of page 8, is an entry stating: “Flour in storage shall give on April 1st, 1545, to Mr Agustin de Scolari [responsible for] sending 20 *stara* for support of the poor women and the priory: *stara* 20”. The contra entry is recorded on the credit side of the account of Agustin de Scolari (on page 9), who organized the supplies of flour and timber. The credit side of the Flour Account records the amount of it distributed to the poor women, the priory, and the doctor, for a total of 219 *stara*. As shown in the exhibit, the related contra entries are all aggregated in a single debit item in the Hospital and Priory Account on page 9. The duality of double entry is constantly and consistently observed when recording entries for the hospice’s inventory and supply activities.

CARTA 8: DIE DAR - FLOUR ACCOUNT



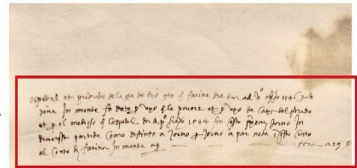
CARTA 8	DIE DAR	ster/stara	quarta/e
1545	09-mar	Farina in monte die dar a di 9 marzo 1545 per Agustini de Scolari factor che cose de luora, mandato stara 10 disse Francesco fonte esser sta mandata per dalla al mediego de l'ospital	10
	01-apr	per Ser Agustini detto mandò stara 20 per uso de le povere et per uso de casa del priorado	20
	03-apr	per Ser Agustini detto mandò stara 20 per uso ut supra	19
	20-lug	per Ser Agustini detto mandò stara 20 per uso ut supra	22
	01-apr	per Ser Agustini detto mandò per uso ut supra	11
	22-ago	per el detto ut supra	7
	11-set	per el detto ut supra	11
	14-nov	per el detto ut supra	4
	16-nov	per el detto ut supra	31
	22-gen	per el detto ut supra	40
1546	19-mar	per el detto ut supra	5
			206

CARTA 8: DIE AVER - FLOUR ACCOUNT

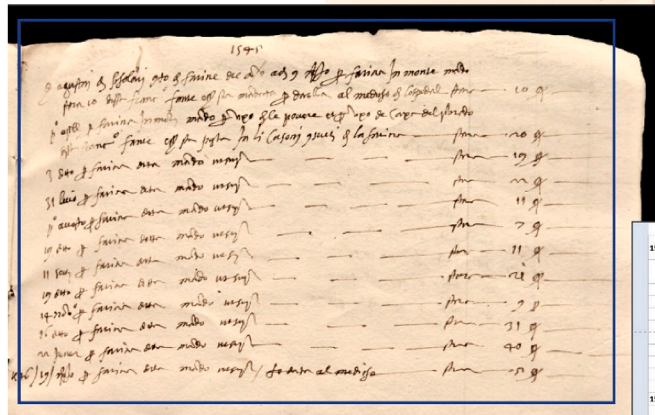


CARTA 9	DIE DAR	ster/stara	quarta/e	
1546	31-mar	Ospedal et priorado de la Ca de Dio conto de farine die dar a di ultimo marzo 1545 per la farina in monte fo dato per uso de le povere et per uso de casa del priorado et per el mediego de l'ospital da di primo febraro 1544 fin questo presente zorno in diverse partite como dictato a zorno per zorno a par nota in questo conto al conto de farina in monte spar	219	2

CARTA 9: DIE DAR - HOSPITAL AND PRIORY ACCOUNT



CARTA 9: DIE AVER - FACTOR'S ACCOUNT (AGUSTIN DE SCOLARI)



DIE HAVER	ster/stara	quarta/e
1545	09-mar	10
	01-apr	20
	03-apr	19
	20-lug	22
	01-ago	11
	19-ago	7
	11-set	11
	19-set	11
	14-nov	4
	16-nov	31
	22-gen	40
1546	19-mar	5
		206

Exhibit 2. Example of duality applied in double entry when quantity, not value was recorded

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