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DIPARTIMENTO DI ECONOMIA ISTITUZIONI TERRITORIO

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during the Devolution

Emidia Vagnoni Enrico Bracci Laura Maran

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**Accounting and organization change at the Saint Anna Hospital in Ferrara
(Italy) during the Devolution**

Authors

Emidia Vagnoni

Enrico Bracci (corresponding author)

Laura Maran

University of Ferrara – Faculty of Economics

Via Voltapaletto, 11 – 44100 Ferrara

+39 0532 455053

Email: bracci@economia.unife.it

Abstract

The paper is aimed to give insights in the organizational change of the Saint Anna Hospital in Ferrara (Italy) as well as the evolution of its intertwined accounting practices from 1590 to 1620. In 1598, the Dukedom of Ferrara was devolved to the Papal State bringing about an institutional and political shift that affected the overall society and its main institutions, like the hospital. The research benefits from the State and private Archives materials, included the original XVI century accounting books, Statute and organization manuals.

This paper sought to contribute to the sparse literature on accounting practices in non-Anglo-Saxon countries between XVI and XVII centuries, and more specifically tries to trace a frame of how an institutional change impacted both on the responsibility definition among organizational levels and accounting development within Saint Anna Hospital.

Keywords: Accounting, organization, history, sixteenth and seventeenth century, hospital, Italy

Jel classification: M12; M41; N83.

Introduction

The aim of this study is to aid our understanding and description about the ways in which organizational and accounting issues of an institution can be affected by a broader political change.

In doing so, we conducted an in-depth analysis of their evolution in the Saint Anna Hospital in Ferrara (Italy) from 1590 to 1620.

Some accounting history contributions have already shed light on hospitals considering their reporting regulations (Cordery, Baskerville, 2007), their internal approaches to find funding (Berry, 1997) and the role of departmental accounting with respect to a uniform system of accounts (Robson, 2003), but they are all referred to the anglo-saxon context. One of the few exceptions, Lacombe-Saboly (1997) has focussed on accounting model of hospitals in a non-anglo-saxon environment, before and after the French Revolution, however it shares with the other contributions a relatively recent historical setting. Our analysis, while considering a non-anglo-saxon environment, focus also in an under-researched period.

The Saint Anna Hospital was chosen in relation to its specific nature whose charitable origins hide intertwined relationships between catholic Church and Civil and Judiciary Authority: indeed, both had always been two important parts of the institutional setting of the Hospital.

The choice of the timeframe (1590-1620) is tied to the devolution of the Dukedom of Ferrara to the Papal State (1598) that implied a deep change in the authority over the town, its territories and its institutions like the Hospital.

Thus the period considered is relevant for its historical significance: in analysing publishing patterns in accounting history William and Wines (2006) emphasize that only 1,7% of contributions published between 2001 and 2005 cover the XVI century and none cover the XVII century while between 1996 and 2000 none cover the XVI century, and only 2,2% are about the XVII century¹.

Drawing on direct archival evidence (statutes, manuals of internal organization, accounting books) and indirect sources, we attempt to interpret the organisational and accounting system development incurred in the Hospital, comparing the periods before and after the devolution.

Comparison will imply a visual flight over all offices and their attributions together with accountability relationships among organizational levels, accounting tools and level of detail and accuracy in book-keeping.

The relationship between structure and control (Ouchi, 1980) is covered by the study on the offices and their hierarchical relations that will result in a deeper understanding of the significance of their changes.

The results of the analysis will shed light on the development and change of accounting tools and concepts in a Hospital as charitable institution but also address new questions about their emergence as a result of internal need of planning and control, along with broader political issues.

The paper is structured as follows. The “Economic and social context” section summarises the economic and social context that led to the devolution, focussing on the most relevant historical events that affected the Dukedom of Ferrara. The “Brief history of the Arcispedale Sant’Anna” section allows to place Saint Anna Hospital in its specific institutional and historical context since its origins.

In the “Methodology and method” section the focus is about the methodological choices and limits tied to the availability of archival material while sections “The organizational changes from 1598 to 1620” and “The evolution of the accounting system from 1598 to 1620” develop the in-depth analysis on organizational and accounting issues straddling the devolution.

An “Organization and accounting 1598-1620: some reflections” section will emphasize the comparative results together with the interpretation of the evidences, and a final section “Discussion and conclusions” summarizes and stresses the specific contribution of this paper.

Economic and social context

The end of the XVI and the beginning of the XVII centuries represented one of the most relevant turning point on S. Anna Hospital's history because of the fall of the Estense's Court (Marini, 1973; Guerzoni, 2000; Zannini, Lodovico, 2000; Angelini, 1979; Baruffaldi, 1700; Muratori, 1783) and the Devolution to the Pope's State.

In general terms, Devolution means a transmission or transfer of rights and power from an authority to another on a legal basis. Such an institutional change was triggered both by European specific historical conditions and some Italian peninsula ones.

The XVI century marked for most of the European states a period of economic and social development. Especially trades were fostered by the improvement on agricultural production and in manufacturing (textile in particular). The exploitation of the Americas allowed the growth of wealthy and powerful absolute monarchies, and the feudal systems across Europe (Parker and Smith, 1988). The Italian economy, which was the most important in Europe from XII to XVI century when the Mediterranean Sea was the route for east-ovest and north-south commerce, progressively lost its centrality (Ciocca, Toniolo, 2002). The economy was still depended on agricultural output, thus, it was very sensitive to yields and demand. From 1550 to 1650 droughts and cold weather resulted in a drop in crop yields, up to 25% compared to the 1400's level (Allen, 2000). This led, together with an increasing population, to famine across Europe.

The consolidation of feudal states and feudalism passed through a continuous state of political distress. Indeed, the XVI century experienced only few years of Peace (e.g. seven), followed by a even more belligerent XVII century with the apex of the "Thirty year war" (1618-1648) with the Hapsburgs, the Spanish and English Crowns, and the Pope State striving to keep the supremacy.

In the period of interest, the influence of the Pope was still relevant for the European politics. The council of Trent (1545-1563) reaffirmed the absolutism of Catholic doctrine and the centrality of the Church (O'Connell, 1974). Indeed, the wars that spread all over the 1500 and 1600 were also religious driven. The Papal State was very active in extending, or trying to maintain, its power and

control over most of the monarchies and feudal states. Italy was even more affected as, differently from other European countries, it was characterized by a puzzle of small political authorities (dukedom, marquislands, baronlands, principdoms, etc.) like the Dukedom of Ferrara. Indeed, the diplomatic relationship between the Dukedom of Ferrara and the Papal State was characterised by periods of collaboration and tension. The Estense's Court in Ferrara was established when the Pope Eugenio IV gave to Borso d'Este the title of Duke of Ferrara, Modena and Reggio (1452). However, in 1509 Alfonso I was excommunicated by Pope Giulio II and in 1512, the Estense's Dukedom began a war against the Papal State conquering the city of Ravenna and other territories. Only in the mid of the XVI century the diplomatic liaisons were reopened even though the tensions about the dominance on Ravenna still remained. Indeed, when the last legitimate heir (Alfonso II) of Estense's family died without a male successor, the Pope Clemente VIII decreed the vacancy of the feud and sent its army to take possession of the Dukedom. In contrast with the Pope, Rudolf II, Holy Roman Emperor, recognized as heir the cousin of Alfonso II, Cesare d'Este, member of a cadet branch of the family. The recognition only by the Emperor, whose authority covered Modena and Reggio, automatically excluded Ferrara from the legacy. In 1598, Ferrara was, therefore, incorporated into the Papal State by Pope Clement VIII, on grounds of doubtful legitimacy, when its army trespassed the city's walls headed by the Archbishop Aldobrandini.

The rise and fall of the Estense's family can be observed also on its economic dynamics and the succession towards the Papal State represented the ending point of an hyperbole (Zucchini, 1967) that initially saw the development of Ferrara and its territories. During the XV century, the construction of important fields' drainage allowed the increasing of the agricultural production, attracting people from other, more depressed, surrounding areas. The Po river represented an important commercial route and Ferrara became a frequented naval port (Trevor, 1987).

The wars against Venice (1482) and the Papal State (1512) increased the weight of the Estense's army as well as the need for additional financial and human resources. The unrest rose at the end of the XVI century, when the financial pressure was unsustainable and corresponded to a period of

economic and political decline: the closure of several communication routes along the Po river and the inadequate maintenance of the drained fields reduced trades as well as the overall crop production, while the population kept increasing (Zucchini, 1967). Part of the population suffered from starvation, unemployment and deprived social condition.

Moreover the management of the city went into trouble because of the inefficiency and an even worse financial position of the Court (Marini, 1973). This situation was hampered by the administrative disorder and some corruption of the Court's apparatus (Guerzoni, 2000). Besides, the growing number of feuds (conquered during the war) fostered the increase of the banditry phenomenon. The malcontent among the population of Ferrara can partly explain the lack of resistance against the papal army when it approached Ferrara in 1596 (Guerzoni, 2000; Zannini, Lodovico, 2000). The Devolution brought about an institutional swift that affected society as a whole. Therefore, it is interesting to understand its consequences on the Hospital's organization and accounting system.

Brief history of the Arcispedale Sant'Anna (Saint Anna Hospital)²

The origins of modern health organisations should probably be found in the ancient hospices for pilgrims that, since the XII-XIII centuries, added to their original function of "hospitality" the services of assisting infantry, youngster, sick people and disable. The several charitable³ institutions mentioned in the historical archives⁴ were founded on the basis of Christian original principle of solidarity towards the people that were not able to take care of themselves, this principle was put in practice by the voluntary work of its members. These institutions, often connected to the ecclesiastic⁵ authority, were named "Opere Pie" (Pious Operas) but only in a subsequent period (and indeed very far from their origins) they had a formal and detailed regulation⁶. Since the origins, the management of assistance and health services revealed its complexity, due to the multitude of institutions and actors operating within the community. At the very beginning, in

Ferrara there were the "spedali" (namely "hospitals"), built up around X and XI centuries, whose vestiges remain in official writings and accounts.

The Saint Anna Hospital was conceived by the Marquee Estense Nicolò III but its construction was authorized by a Bull of the Pope Eugenio IV, in 8th October 1440. The need for a new hospital was motivated by the demographic increase of the local population and foreign visitors and their demand for shelters and health care services. Besides in the Ferrara area there were about forty small "spedali" for the paupers, disables and pilgrims, that were organized by Opere Pie for charitable purposes, but with limited resources, as a consequence, the construction of a new bigger hospital was aimed at substituting these small units.

The local Bishop, Giovanni da Tossignano, was in charge of the execution of the building, as representative of the Pope, however from the Pope's Bull it is clear that the administration and management of the new Hospital was attributed to the Civic and Judiciary Authority (otherwise named "Consiglio dei XII Savi"). For this reason, Giovanni da Tossignano was considered a mere executor and he passed his duty to the Civic and Judiciary Authority, just after the construction (1445) and with the agreement of the Marquee Estense Nicolò III (Chinarelli, 1940).

The Pope's Bull, that gave the authorization to build the hospital, also contained a detailed description on procedures and technical aspects of the setting-up. It was not a plain document of authorization but a full project structured in three plans: financial plan⁷, regimental plan⁸ and spiritual plan⁹. The Saint Anna Hospital was granted by the Pope of the same religious and economic privileges of the hospitals of Firenze and Siena. Moreover, the Estense's family exempted the Hospital from paying duty and customs.

From 1445 to 1598, a "Priore" (or "Rector"), appointed by the Civic and Judiciary Authority with the agreement of the Estense's family, was in charge of the general administration of the Hospital. The role of the Religious Authority was practically absent, except for the delivery of the religious services within the Hospital. In this period the healthcare services were limited and the revenues of

the Hospital had two main sources: the deeds, donations and the rents from the land and other economic properties (Chinarelli, 1940). As inpatients weren't charged, the cost of curing the poor was covered by the Hospital through its revenues.

The administration of the Hospital, at the end of the XVI century, was marked by the same problems affecting the Estense's Court: lack of accountability in the way activities were organised and difficulty to manage the link between input and output (Baruffaldi, 1700).

The economic and political conditions soon after the return of the Papal domination (1598) affected in several aspects the organisation and management of the Saint Anna Hospital: e.g. with the devolution, the Archbishop called upon him the governance of the hospital and gave more and wider grants to the Hospital, such as the royal right over bad debtors that remained until 1834.

Moreover, during the period of interest for the research (1598-1620) some important changes occurred (Chinarelli, 1940):

- from 1598 to 1613 a "Special Commission" completely overcharged the Civic and Judiciary Authority in the administration of the Hospital. The Commission, under the authority of the Archbishop, took over the appointment of the Priore and the control over the administration. This action was contested by the Civic Authority which started a legal suit against it. The political and judiciary dispute lasted until 1613, when the government and administration rights of the Civic and Judiciary Authority over the Hospital were re-assigned;
- from 1613 the Civic and Judiciary Authority returned in charge of the Hospital administration. This period, was characterised by the search of a continuum equilibrium between the Civic and the Religious Authority. The appointment of the Priore and four Presidents at the top level of the Hospital represented a political momentum within the town of Ferrara. The Hospital became, in that period, increasingly relevant in terms of healthcare services provided and assets, thanks to deeds and endowments received.

The historical development of the hospital can be appreciated analysing the evolution of the administrative official documents, such as statutes and internal organisational manuals. Indeed, up to the end of 1500 the functioning of the hospital was regulated by the first statute (1492).

A new Statute and internal organisation manual were approved and introduced respectively in 1614 and 1620, bringing about important changes in organization, accounting and its role for decisions and control over the hospital's activity and resource consumption.

Methodology and method

In order to shed light on the historical development of the Hospital we adopted both a historical narrative and interpretative method¹⁰. The latter involves explanations about reasons of episodes that took the forms identified from the explanations of the available evidence (Carnegie, 1997, Previts, et al., 1990: 2), specifically, it is important to recognize that phenomena are shaped by specific environmental conditions concerning location and time (Kitson, Clark, 1967: 25, 204-207, Tosh, 1991: 10-22). In so doing, the analysis helps in understanding the evolution of accounting practices in their organisational context (Roberts and Scapens, 1985).

Cinquini and Marelli (2007) stress that analysis of accounting practices related to description of relevant accounting issues is developed through the consideration of the characteristics of particular contexts or sites in order to understand economic and social activities and accounting practices developed in response.

In accounting history, Parker (1999) makes a deliberate reflection about links between accounting and management research, specifically, from Urwick (1956) and Fayol (1949), he observes direct and indirect intersections with aspects like planning and control, budgeting, decision-making as well as socio-political and behavioural dimensions. Flesher and Samson (1990) shed more light on those links with main reference to influences of organization components and outcomes, even if they refer to positivist researches. Indeed, literature on organizations deliberately links control and organizational structure even if both these issues are not clearly distinguished from each other

(Ouchi, 1980). The control system seems to consist of two parts: a set of conditions which govern the form of control to be used (e.g. Thompson's certainty about means-ends relationships and cristallization of goals) and the control system itself (e.g. Thompson's efficiency test, instrumental test and social test)¹¹.

From this point of view, analysis of accounting tools helps to focus on control system while analysis of offices within the organization under investigation allows description and interpretation of organizational system.

In order to gather the difference between periods under investigation and specifically, how do political change in environment and top strategic level of an organization impacted upon the organization itself and its control system, both accounting tools and organizational structure are compared along periods (before and after devolution).

The analysis on the accounting tools and organizational structure is specifically conducted using primary sources, and selecting them from a certain amount of material whose present warehousing do not match with past warehousing. Most of the material about the S. Anna Hospital is stored in the State Archive of Ferrara, in S. Anna Hospital Historical Library and in some private collections. While S. Anna Hospital Historical Library and private collections (often the latter belong to physicians who worked at S. Anna Hospital, they were interested in its history and incidentally took possession of some ancient documents) are not systematic and require the help of the Archivist or their owners to orientate within them, State Archive is more systematic. Concerning S. Anna Hospital, the State Archive contains both

- a collection of documents about the management of Ferrara dukedom, and
- a specific collection about S. Anna Hospital.

Within collection about the management of Ferrara dukedom it is possible to find some documents concerning the Hospital too as its top level were strictly intertwined with Civil authority (Consiglio dei Savi or otherwise named as Congregazione) of Ferrara dukedom. This collection is both systematic and unsystematic (*miscellanea*): all resolutions of Consiglio dei Savi (regarding the

Hospital too) are stored in the systematic part of that collection however, some other important documents, like Hospital Statute can be found only by a specific research on the unsystematic part with the help of Archivists.

By all means, and considering the position of Civil authority with respect to the Hospital, it is possible to observe that archival material within the whole collection is about strategic decisions and organization of the Hospital or its external representation. We tried to select the Statutes of S. Anna Hospital in both periods of interest (before and after Devolution), however as they were not both available, we studied Hospital's formal Regulations that derived from the Statute and enable to understand organizational structure of the Hospital.

While the Statute specifies both offices and legal privileges and assets of the Hospital (with reference to Church and Civil allowances) together with rules and offices, Regulations (or Internal Organization Books) are particularly concerned with internal organization (offices and behavioural rules).

Regulations are organized as follows:

- name of offices, from top to management and bottom levels,
- detailed description of their respective duties and activities (what they can do, they don't do or what results are expected from their office),
- detailed description of offices' accountability (who is accountable to whom, in which manner and, eventually, which accounting or other type of book he has to fill out),
- detailed description about patients' admission and treatment at Hospital, on one hand, and detailed description about the most important books of Hospital, on the other hand (over all the offices and whom it concerns).

Specific collections about S. Anna Hospital in State Archive is organized in the following sections:

- General Administration (from 1035 to 1936)
- University Hospital S. Anna (from 1937 to 1962)
- Land register, accounting books and other books and registers (from 1437 to 1960)

- Provision of Health Care services (from 1552 to 1936).

With regard to the period of interest only the sections “General Administration”, “Land register, accounting books and other books and registers” and “Provision of Health Care services” are likely to contain useful documents. These sections are divided into different sub-sections, specifically:

1. “General Administration” contains documents about accounting (from XVI to 1936), establishment of the Hospital (from XI to 1810), employee and their offices (from 1643 to 1936), estate (from XVI to 1936).
2. “Land register, accounting books and other books and registers” contains documents about Medicine and Surgery, Debtors and Creditors, inventories, balance sheets (from XX), last wills and a lot of data about flows of patients and deaths which become systematic only from XVIII.
3. “Provision of Health Care services” contains documents about furniture (specifically they are classified in water, oil, wardrobe, laundry and furniture as well), religious services, health care services (only from 1643) and room and board.

Moreover, as per the Archive filing system, accounting documents are tied to many different sections, according to the period or depending on the overlap of different filing system during Archive History.

After revising the different sections some specific documents were taken out and analysed, in particular, those concerning:

- establishment and prerogatives of the Hospital (specifically administrative decisions) before the Statute of 1614;
- book with a cross (XVI), a sort of day-to-day book;
- day-to-day book with debtors and creditors (of 1614);
- minute of special Congregation (from 1613 to 1637);
- room and board (of 1614).

The “Establishment and prerogatives of the Hospital” summarizes in some bulls the main prerogatives to which S. Anna is allowed by the Pope, according to the list of prerogatives granted

to the Hospital of Florence and Siena. They stress the charitable aim of the Hospital but don't tell anything about its organization.

The “Establishment and prerogatives of the Hospital” provides two synthesis of the historical milestones of the Hospital, in particular, it stresses the transition of Ferrara Dukedom from the Este's family (with the death of the last Duke without male heirs) to a Pope's “legato” moreover it points out the institution of a special Congregation within the Hospital for its administration.

Analysing the minute of that special Congregation (from 1613, just before the second Statute of S. Anna Hospital, to 1637) it's possible to find the following information:

- accounting principles (diligence and accuracy),
- some rules concerning physicians when they examine in-patients (e.g. it's necessary they personally do physical examination of the patients),
- some rules concerning behaviour of “fattore” and “soprastante”.

In order to compare systematically organizational structure (mainly from Hospital Statute) and control system (mainly from accounting tools), some relevant aspects have been considered.

Identification of those relevant aspects is supported by papers of Zambon, Zan (2007), Bergamin Barbato and Mio (2007), Antonelli et al (2007), Riccaboni et al (2006) who consider non-profit organizations¹².

Therefore, analysis of organizational aspects (Statute or Regulations) encompasses:

- name of specific office;
- role (kind of decisions and specific tasks);
- accountability relationship (it involves both hierarchical relationship and to whom an office has to be accountable to);
- name of accounting books each office is required to fill out.

Analysis of accounting tools aspects involve:

- kind of language (more or less technical, ancient Italian or dialect);
- type of data (main items, amount, debit or credit position, ...);

- orderliness (how accounting records are represented, taking into account double-entry book-keeping rules);
- level of detail (if it account for quantity and quality of items).

Considering both literature review and contents of archival material found, the above mentioned aspects about organization and accounting tools settle our interpretative scheme over S. Anna Hospital to hit its main management differences before and after Devolution.

The organizational changes from 1598 to 1620

This section will describe the changes in the organisation before and after the devolution. In doing so, the accountability relationship will also emerge as a result of the hierarchical and control ties detected through the analysis. The direct sources adopted are the original Statutes and the Hospital Internal Organisation Book of the periods, some indirect sources were consulted.

Organisation and accountability before 1598

The organisation structure up to the new Statute of 1614 appears small, with just some 25 people working in the Hospital (Chinarelli, 1940). Table 1 presents an analysis of the main roles included in the Statute and the Internal Organisation Documents, describing their functions and the accounting and accountability means adopted, if any. Curiously, most part of the human resources was represented by the Priests (7), symbolising the original orientation towards the spiritual assistance rather than the medical cure of the in-patients. Indeed, the exercise of the catholic cult was one of the condition within the Foundation Bull of Pope Eugenio IV so to provide spiritual assistance for the ill. Compared with the number of physicians (2 or 3) the charitable orientation appears more relevant than the sanitary one. In addition, up to the 1598 the physician performed their activity on a voluntary basis, they were not enrolled by the Hospital, receiving from the hospital some payment in kind. The daily assistance of the ill was conducted by the nurses, like cleanings, meals distribution, bandage, and the like.

As for the administrative function, during the Estense's domination, it was limited due to the fact that most of the administration was outsourced. The resolutions, formal acts and other administrative documents were produced externally by the officers of the Civic and Judiciary Authority, with the Hospital paying for this services (Chinarelli, 1940). Indeed, the Camerlengo, after the latin word *camarlingus* (treasure's room keeper), was not employed by the Hospital but from the Civic and Judiciary Authority to whom he was accountable.

Such a situation reflected on the internal organisation and the little development of formal accountability tool. From the analysis of the 1598 Statute and confirmed by Chinarelli (1940), the Prior had to supervise the activities delivered and, through the general inventory, had to account for the proper use of the assets and property of the Hospital. The Prior had also to visit the halls of the Hospital and controlling that the services were provided properly to the in-patients.

Table 1 - Roles, functions and accounting in 1598

<i>Role</i>	<i>Function</i>	<i>Accountability</i>
<i>Rector</i>	In charge of the overall functioning of the Hospital and responsible for the assets and property.	He reports to the Civic and Judiciary Authority
<i>Fattore</i>	In charge for the management of land, property and other assets. It authorize all the expenses and control over the way health, internal and religious services are delivered.	He reports to the Prior for every problem, misbehaviour or lack in the delivery of the services.
<i>Camerlengo</i>	In charge for the money-management and the record keeping of the expenses. He oversees the appointment of new personnel.	Camerlengo's book He reports to the civic and judiciary authority
<i>Guardiano e Guardiana (watchman, watchwoman)</i>	In charge for the keeping and use of the furniture of the hospital. They had to control over its utilisation during the provision of the health-care services.	He/She reports to the Fattore
<i>Spenditore</i>	In charge for the supply of all the goods that are required by the health, internal and religious services. Prime responsible for the delivery of spiritual and corporal needs of the in-patients. He must be present in the rooms every day controlling the way services are delivered both health, internal and religious. He must be present during the medical visits. He control the quality of the meals. He decided upon the acceptance of the ill	Daily expenses' book He reports to the Prior for every problem, misbehaviour or lack in the delivery of the services. In-patients' book
<i>Priests (7)</i>	In charge for the delivery of religious functions and services.	
<i>Physicians (2 or 3)</i>	In charge for the delivery of cure and assistance, through daily visit and prescription of medicines. They are assisted by the nurses in the daily visits.	They oversee the activity of the nurses.
<i>Nurses (3)</i>	In charge for the care of the in-patients	
<i>Cook</i>	In charge for the provision of the meals. Responsible for the keeping of the warehouse	
<i>Granary-keeper</i>	In charge for the keeping of the stock of grains	He reports to the Fattore

<i>Livestock keeper</i>	In charge for the keeping of the livestock	He reports to the Fattore
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Source: Authors' analysis from Statute and Hospital Internal Organisation's Book 1598.

The management of the assets, especially land and farms rented, was attributed to the Fattore. The maximization of the rents from the property was important for the hospital, given its charitable nature, they represented the main source of revenues. The Fattore was also in charge for the control of the spending and consumption, and he authorised all the expenses of the hospital. In particular, he authorised the expenditure of the Spenditore, and oversee the way food and other stock were kept and used. Moreover, he oversee the activity of three other roles, such as those of Granary and Livestock keepers, and that of the Watchman/woman. The former were two important sources for the provision of the services, but also for the generation of revenues through the trading of grains and livestock. Besides the Watchman and Watchwoman had to oversee the management and the keeping of the Hospital's furniture. In so doing, they had to control the way physicians, nurses and priests delivered the services to the in-patients. The Fattore was directly accountable to the Prior about the level of expenditures, the consumption of goods, and the consistency of the financial and patrimonial resources.

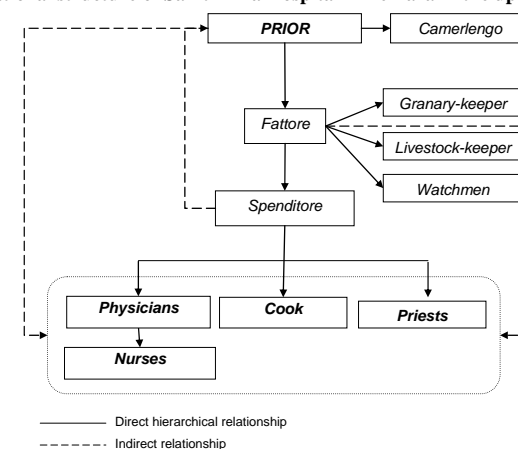
The Spenditore had the direct responsibility for the proper delivery of the services to the in-patients. He had to control over the daily activities of physicians, nurses, priests and cooks and make sure that they were provided with all the means to perform at best. The Spenditore had to authorise every expenses and account for them through the Book of Daily Expenses. Every Week he had to report to the Fattore for the expenses. It appears that the Fattore and the Spenditore had similar responsibility in order to guarantee cross-checking and internal controls on the allocation, use and consumption of resources.

Besides, the Spenditore had to keep the account of the in-patients, through a detailed book of arrivals and discharge of patients, with name, bed number assigned and the personal belongings. He

was not allowed to accept any patient without the Prior authorisation, with the exception of those ills whose conditions were not presentable for the society.

As represented in Figure 1, the Prior, the Fattore and the Spenditore were the main roles within the organisation, and had to oversee directly or indirectly the performance of the services, the revenue provisions and the level of resource consumption. In terms of accountability, the Fattore and Spenditore had to be accountable to the Rector to whom every misbehaviour or lack in the delivery of services had to be reported.

Figure 1 - Organizational structure of Saint Anna Hospital in Ferrara in the up to the 1614 statute



Source: Authors' elaboration from Statutes of Saint Anna Hospital (1492- 1675)

In the second half of the fifteenth century, up to the devolution, the organisational structure of the Hospital was mainly centred around the management of the assets, and the spiritual assistance of the in-patients. Indeed, the focus of control and accountability was on both the rent maximisation and the quality of the services. The two things were interrelated given the fact that the revenues sources came from the assets management, and from the legacy received from the in-patients, most of them were without heirs (Chinarelli, 1940).

Organisation and accountability after 1620

Following the devolution to the Papal State, the Archbishop of the time (e.g. Aldobrandini) intended to reform the administrative functioning of the hospital and its organisation. As described earlier, from the 1598 the governance of the Hospital was retained by the Bishop through a special commission, excluding the Civic Authority. The first consequence was on the administrative functions, previously delegated to the Civic and Juridical Authority. Some legal and administration activities, and the related accounts, were thus internalised in the Hospital organisation, soon after 1598. The dispute over the management of the Hospital ended only with the new statute of 1614 and the internal organisation book of 1620.

Table 2 presents an analysis of the roles, functions, accounting and accountability means as of the 1614 Statute and the 1620 Hospital Internal Organisation Book. The organisation of the Hospital seems now more structured and with an increased number of personnel, particularly in the administration.

The main changes introduced relates to three different aspects: the governance, the administration and the accounting and control systems. In that period, the Hospital was ruled by four presidents appointed by the Giudice dei Savi for four years. Routinely every year one of the Presidents was given the role of Prior (Hospital Internal Organisation's Book, 1620). In this way, the new elected Prior received from the former the General Inventory and the Accounts' book, controlling on the financial position and performance of the Hospital. The short staying, both of the Prior and the Presidents, can be considered as an effective means of reducing the risk of power concentration and information asymmetry within the governing body. The Prior was the highest administrative authority of the Hospital. He had the duty to control the way the assets and property were managed by the Fattore, and the services were provided both by physicians, nurses, cooks, priests and so on. He had the power to appoint and lay off the personnel in case of misbehaviour or misconduct in the delivery of services. The Hospital started having salaried personnel as a normal organisational means, thus justifying the introduction of a Personnel's account book. The latter was an innovation

that created a formal means for controlling and managing the human resources working for the Hospital. With the new internal organisation the Prior authorized every expenditure, having to sign the *mandates* prepared by the Fattore. Indeed, from the XVI the use of mandates to authorize expenditure was introduced as a means of accounting and control. The Prior was supported on the legal affairs by the notary and the solicitor that had to deal with acts like deeds, legacies, disputes and trials. The importance for the hospital of the preservation and accumulation of its assets justified their presence on a full-time basis, and availability on the need.

The three remaining presidents collaborated with the Prior in controlling that the quality of the cure of in-patients corresponded to the required level. They were requested to be present every day in the rooms when physicians operated, the meals were served and medicines and other cures provided. The Presidents had to report directly to the Prior in case of any lack in the delivery of services.

The Fattore, as previously, was in charge of the proper management of the assets, property and rights of the Hospital. He kept the control on the functions of the Granary keeper and the Livestock keeper. The internal documents explicitly talked about rent maximization as a primary goal for the Fattore. He was granted a generous amount of autonomy in carrying about the statutory duties and in the management of the assets and funds received. As the Prior, he could be supported by the solicitors and notary employed, in the new organisation, in case of trials or legal matters. Indeed, the rents represented for the Hospital the main source of financial resource, together with the legacies and deeds from the patients. In this period, the administration became more structured and systematic, for instance, the Fattore had to prepare a weekly expenses report for the Prior, and every expenses had to be authorised through a mandate by the Prior. A general ledger was also introduced.

Table 2 - Roles, functions and accounting in 1620

<i>Role</i>	<i>Function</i>	<i>Accountability</i>
<i>The presidents</i>	They are in charge for 4 years and by rotation they are nominated Prior every one year. They are responsible for the proper delivery of services and the management of property.	They report to the Prior for any problem or lack in the delivery of services.

<i>The Prior</i>	Responsible for the use and management of all the property of the Hospital. Responsible for the overall quality of the services. He is the main authority and he appoints and manage the personnel. He authorize every expenditure and control over the Fattore's activities, but also the expenses authorized to the Spenditore.	He reports to the Civic and Judiciary Authority (from 1598 to 1614 he reported to the special commission) General inventory General ledger Personnel's account
<i>Fattore</i>	Responsible for the cure of the Hospital's assets, and the rent generated through their use. He is in charge for the maximization of the revenues and rents. He has to guarantee the regular provision of the goods required by the health, internal and religious services. He oversee the trials in which the Hospital is involved. He is responsible for the maintenance of the buildings. He keeps the keys of the Hospital. Every months he has to control the consistency of the warehouse, the canteen and chicken. Control of the inventories every three months.	Weekly expenses report to the Prior. Expenses mandate Inventory of all property Debtor's book General ledger Rents' inventory He reports to the Prior for every problem, misbehaviour or lack in the delivery of the services.
<i>Notary</i>	Responsible for the legal assistance to the Hospital in case of deeds, legacies and other matters. He had to be always available to account for the wills of the in-patients	He reports to the Priore
<i>Solicitor</i>	Responsible for the legal assistance to the Hospital in case of litigation and trials.	He reports to the Priore
<i>Soprastante</i>	Prime responsible for the delivery of spiritual and corporal needs of the in-patients. He must be present in the rooms every day controlling the way services are delivered both health, internal and religious. He must be present during the medical visits. He control the quality of the meals. He decided upon the acceptance of the ill	He reports to the Prior for every problem, misbehaviour or lack in the delivery of the services. In-patients' book
<i>Spenditore</i>	Responsible for the acquisition of the supplies and their quality. He receives the money from the Fattore, to whom is accountable presenting a list of the purchases weekly. He controls on the way the cooks uses the supplies. He is responsible for the keeping of the warehouses.	Account of all the supplies bought and authorised Warehouse inventory
<i>Priests</i>	They provide the religious functions and service. They give the blessing to the meals and help the inpatients, if necessary.	
<i>General Physicians</i>	In charge for the delivery of cure and assistance, through daily visit and prescription of medicines.	
<i>Surgeons</i>	In charge for the surgery interventions	
<i>Nurses</i>	In charge for the care of the in-patients	
<i>Cook</i>	In charge for the provision of the meals. Responsible for the keeping of the warehouse	
<i>Granary-keeper</i>	In charge for the keeping of the stock of grains	He reports to the Fattore
<i>Livestock keeper</i>	In charge for the keeping of the livestock	He reports to the Fattore

Source: Authors' analysis from Hospital Internal Organisation's Book 1620

A new intermediate function was created, that of Soprastante, who was in charge for the delivery of the services to the in-patients. He had to supervise the activity of physicians, nurses, the quality of the food and he decided upon the acceptance of the ill. Indeed, the Internal Organisation documents required the in-patients to contribute to the Hospital expenses during the staying or through the patrimony at the end of the staying. From the new statute it is possible to read the following original: "*Se (gli infermi) dovessero morire nell'Ospedale senza testamento, i loro beni, specialmente mobili, restano di proprietà dell'Istituto, il quale non sarà mai tenuto al soddisfo di debiti lasciati ceduti; intendendosi in questo caso che i beni passano di proprietà dell'Ospedale a titolo di legato a beneficio dell'animo loro*" ("If the ill were to die in the Hospital without testament, their legacy, especially goods, remains property of the Institution. The latter can not be called to refund debts left unpaid, so that the goods passed as Hospital's property is to be considered a legacy on their own" *our translation*). As a consequence, the acceptance of a patient was normally subject to a prior evaluation by the Prior and the Soprastante on the economic viability, to refund the Hospital from the expense (Chinarelli 1940). This was achieved normally after the death of the patients as a form of deeds or legacies. The statutes and the apostolic privileges granted the Hospital to be bound by the debts of the dead. The Hospital could receive legacies of any nature and value, without responding to the creditors. A notary had to be always available to receive the will of the in-patients, and in case of his absence the Father-priests could account for it during the confession.

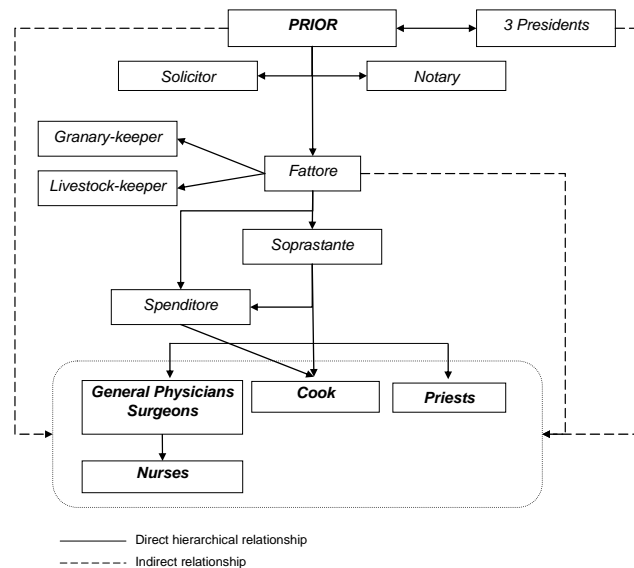
The Spenditore maintained the role of managing the acquisition of the supplies needed by the services. He was responsible for the warehouse and kept an inventory of the goods stored. He received the money by the Fattore to whom he prepared a weekly report of the goods and services bought and the request for the following week. The Spenditore has, also, to control the way cooks and other personnel used and stored the supplies.

Also the health services innovated after the devolution. In 1598, for the first time, a physician was appointed and charged on the payroll of the Hospital. Besides, the role of Surgeon was introduced

signalling the scientific development of the period, but also the shift of the focus of the Hospital from spiritual-centred type of assistance to a medical-centred type of assistance. As a consequence, the physicians and surgeons were requested a more regular, detailed and additional requirements in the way they used to perform their duty. The strategy of the Hospital, explicated on the Statute of 1614 and Internal Organisational Document of 1620, was to “deliver the best quality on the cure and assistance” of the ill (Hospital Internal Organisation Book, 1620).

In addition, the Soprastante was in charge for the control over the quality and quantity of health services provided. However, the control was not on technical and scientific matters, on which the physicians were autonomous, but on the respect of the Statute and Internal Organisation Book requirements.

Figure 2 Organizational structure of Saint Anna Hospital in Ferrara after the statute of 1614



Source: Authors' elaboration from Statute and Internal Organization Book of Saint Anna Hospital

The evolution of the accounting system from 1598 to 1620

The analysis of accounting tools shows that nature and availability of primary sources are problematic issues, above all if we refer to the period straddling the passage of Este's dukedom in Ferrara to Papal State. Problems are due both to the state of maintenance of accounting records in Archives and their unsystematic bookkeeping before XVIII century: balance sheet, income statement and financial statement of S. Anna Hospital that should represent the most interesting and systematic accounting reports are filled up only starting from 1700.

Re-enacting and interpreting the accounting system of the Hospital before and after the Devolution is particularly difficult due to the lack or wracking of some documents, the scratch of some others (all the accounting documents are hand-written) and, above all, the great differences in Archive filing system with respect to the ancient Hospital accounting system.

However, starting from the same Regulations analysed in the previous paragraph and maintaining an accounting point of view it's possible to shed light on the specific accounting system and its main books.

Accounting before the Devolution

Devolution characterized the Dukedom of Ferrara a century and a half after the foundation of Saint Anna Hospital. The opportunity to understand how much it involved the accounting system of the hospital requires a first insight on the accounting system of the different offices in the Regulation of 1598. Table 3 summarizes these rules in connection with each cited office: *accounting system* refers to accounting books and book-keeping rules considering also conjoint responsibilities in filling out the books and/or to whom the main offices have to report.

Table 3 – Accounting system before the Devolution

Role	1598 Statute and Regulation Accounting system
Presidents	Not present
Rector/ Prior	“together with the Camerlengo, he has to account for all the matters and things of the Hospital” (p.10 of the 1598 Regulation)

	(it's likely he has to fill out a <i>general inventory</i>)
<i>Camerlengo</i>	<p>“together with the Rector, he has to account for all the matters and things of the Hospital” (p. 10 of the 1598 Regulation)</p> <p>(it's likely he has to fill out a <i>general inventory</i>)</p> <p>He can vote together with the Rector for hiring new personnel</p> <p>He has to record “all the Hospital provisions: money, fodder, flour” in the <i>Camerlengo's book</i></p> <p>“The records has to account for the name of the supplier, the commercial order, the time of goods acknowledgment, the connected stock variances and the cause and name of the person who withdrew the stocks.</p> <p>Recording must be held in chronological order, in order to remember, each time, the leftover stocks.</p> <p>The cause must always be connected with the usefulness or need of Hospital services and persons who receive Hospital goods to provide services must be authorized by the Rector.</p> <p>Camerlengo's book can record other remarks, too.” (p. 22 of the 1598 Regulation)</p>
<i>Guardiano and Guardiana (Watchman and Watchwoman)</i>	<p>They have to check up on the provision of health care services to patients and fill out the “appropriate books”,</p> <p>They have to fill out the <i>annual furniture inventory</i></p>
<i>Fattore</i>	We can't find him in the Regulation (maybe because of the damages of the document as secondary sources evidence his presence)
<i>Soprastante</i>	We can't find him in the Regulation (maybe because of the damages of the document as secondary sources evidence his presence)
<i>Spenditore</i>	<p>He must specifically report to the Rector about patients who enter and/or die and about their things (cloths, weapons, shoes, money).</p> <p>(it's likely he has to fill out a <i>daily expenses book</i> and an <i>in-patients' book</i>)</p>
<i>Cappellano</i>	He must avoid to take things or make services outside the Hospital if not authorized
<i>Speziale</i>	We can't find him in the Regulation (maybe because of the damages of the document as secondary sources evidence his presence)
<i>Nurses</i>	They are present but don't have any role in the accounting system

Source: Authors' summary from 1598 Statute and Internal Organization Book (Regulation) of Saint Anna Hospital

The 1598 Statute and Internal Organization Book refers to a relatively simple accounting system whose main reports are:

- the annual general inventory and
- the in-patients book.

Damages of the original Regulation disallow the recognition of specific accounting issues above different offices but the emphasis on Camerlengo's rules suggests that the administration of the Hospital is a part of Dukedom administration (indeed Camerlengo is the most important managerial role within the Estense's *Corte*). Camerlengo's book seems to record chronologically all the main transactions with specific indications about debtors, creditors, time, cause and a summary description of the transaction itself.

Concerning availability and comparability of specific accounting documents during the period of interest, a first insight on Archive materials suggests to concentrate on day-to-day books: before

XVIII century, accounting was organized in two stages. Operations were written up chronologically in a day-to-day book, then regrouped periodically in T-counts. Before 1614 there are not any periodical clustering (even if it's possible to find random synthesis calculations or inventories) and we can find only chronological recording, moreover difference between chronology and subjects is not so clear. After 1614 chronology prevails and clustering (in T-counts) seems to obey to both subject and object relevance principles.

Therefore, day-to-day book is the only accounting report which covers all the organization transactions as it is used to state also debt or credit position and even if the differences in value units (monetary units and/or quantity of merchandise in their most convenient measurement unit) block the possibility of assessing their exact amounts, we hypothesize that if a record is book kept it has economic relevance for top level management of the Hospital, therefore an increase on accuracy and detail of bookkeeping means an increased efficiency on management control of objects and transactions recorded.

The most ancient accounting book of S. Anna Hospital, before Devolution, seems to be Book with a cross (XVI century). Its name derives from an evident cross traced on its cover, which is recurrent on its various pages. The function of those crosses is not clear as even trying to square them with accounting records of same or previous pages it's impossible to calculate the same balance.

More probably they reflect control calculation over multiplications (e.g. prices per quantity, like “the nine square” as check control for manual multiplications) or they don't take only into account records of the specific book but they try to balance minor transactions from accountant's experience as records seems to be very random. In both cases, information contained in Book with a cross are underspecified and preservation of that book don't allow a comprehensive reading even with the help of an Archivist expert in ancient Italian and Ferrarese dialect and there're not other accounting book with the same level of detail to check for its calculations.

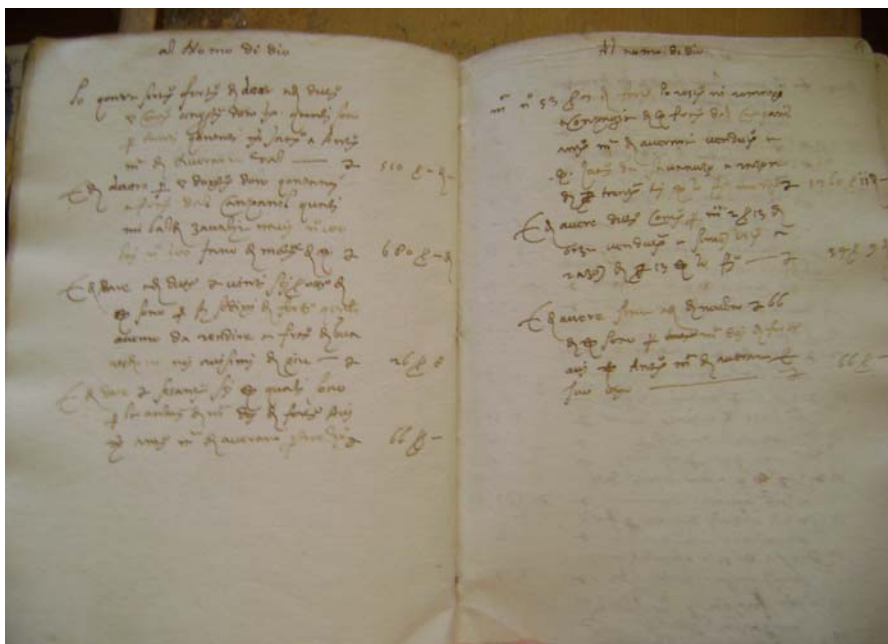
Table 4 and Photo 1 show main aspects of Book with a cross on the basis of analysis variables spotted in methodological and method paragraph.

Table 4 - Main aspects Book with a cross (XVI)

	<i>Book with a cross (XVI)</i>
Period	1532
Kind of language	Ancient Italian and Ferrarese dialect, random use of technical language
Type of data	Date, name of creditors or debtors, (more often they're the holders or good-carriers), object of the transaction, amount of the transaction, some random counts of synthesis
Orderliness	A little White pages, White spaces among the records Time jumps
Level of detail	Less detailed Debtors and creditors: sometimes their main activity is specified, Object: it's possible to read these recurring objects oil, cloth, barley in bags, cheese

Source: Authors' summary from *Book with a cross (XVI)*

Photo 1 – Records from Book with a cross (XVI)



Source: *Book with a cross (XVI)* – Archival material from the State Archive – Reproduction licence ASF n. 8/V.9.4 -

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Accounting after the Devolution

As showed in Table 5, the 1620 Hospital Internal Organization's Book is certainly more detailed than the 1598 one in describing the accounting issues tied to a fair and accurate administration.

Again, the main reports are:

- inventories (annual general inventory is a synthesis of many internal and external inventories that defines specific responsibilities among a more structured organization and many different offices) and;
- in-patients book.

The further presence of a personnel book (for salaries) suggests a growing organization that needs more than a charitable soul to guarantee the provision of services: indeed the 1620 Regulation makes a specific reference to the need of a careful and well-advised administration in order to preserve the durability of S. Anna Hospital.

Accounting responsibilities and accountable relationships are well defined through inventories and sub-inventories, and a system of mandates that entitles the top level of the Hospital administration (Prior and Fattore) to systematically parcel out the management rules.

Need of control over Hospital estates and incomes and over expenses and debtors still remains. The increasing systematic reference to time, description of transactions and check-out notes suggests more accuracy in book-keeping and increasing articulation in accounting system (e.g. together with the book of debtors we can hypothesize to find a general ledger and certainly a detailed day-to-day book of transactions) whose extent involves Hospital Church, internal Pharmacy (Speziale) and Nurses who were not so overburdened in the previous Regulation.

Table 5 – Accounting system after the Devolution

Role	1614 Statute and 1620 Regulation Accounting system
<i>Presidents of the Congregation</i>	"As the Congregation of the Hospital is continuously challenged by the expenses generated from providing health care and charitable services (provisions, salaries, and other fees) the Civil and Judiciary Authority of Ferrara gave them the task of monitoring and decreasing such expenses" (p. 1 of the 1620 Regulation) "together with the introduction of a careful administration" (p. 3 of the 1620 Regulation).

	<p>“Taking into account that the aim of the Hospital is providing care to in-patients, using at this aim the rents from Hospital’s properties the management attention has to be mainly devolved to in-patients and to such assets” (p.3 of the 1620 Regulation)</p> <p>They have to define and monitor the strategic goals of the Hospital</p> <p>They hold the <i>Book of Hospital board</i> (containing votes and decisions taken over the Hospital)</p> <p>They hold the <i>Table</i> that indicate a list of services provided by the Hospital</p>
<i>Rector/ Prior</i>	<p>He has to guarantee accuracy and fairness in Hospital’s administration and care of in-patients.</p> <p>He receives from the Fattore the following mandatory books: <i>Annual general inventory</i> (about Hospital properties inside and outside Ferrara’s walls, livestock, all the liabilities and credits of the Hospital, habits over Hospital’s properties, including rented assets), <i>Annual general inventory of the furniture</i>, <i>A book about expenses (fodders, money, other) and incomes of the hospital (mainly from rents)</i>, <i>Inventory of the Hospital Church</i> <i>Check-book of Hospital Bankers</i></p> <p>He must guarantee appropriate stock turnover with respect to provisions time. He must guarantee that all incomes are deposited in the Hospital Bank and all the expenses are authorized by a <i>mandate</i> which specifies person and cause of the expense, Fattore’s signature (after approval of Prior) and shopping list.</p> <p>He must guarantee that Fattore revises each week Sponditore and Dispensiere’s expenses and he must guarantee that each month Fattore supervises payments of Sponditore and Dispensiere and accounts to the Accountant (Computista).</p> <p>He must annually receive from the Fattore all records about Hospital state of the art and all information concerning suspended dealings</p>
<i>Camerlengo</i>	Not present
<i>Guardiano and Guardiania (Watchmen and Watchwomen)</i>	Not present (their role is likely to shift to Soprastante and Sponditore)
<i>Fattore</i>	<p>He has to fill out the <i>mandatory books</i> previously described in correspondence with Prior/Rector</p> <p>He’s in charge of ordering all the provisions (for in-patients e.g. wine, flour, bread, salt, wood, and for other offices, e.g. tools and instruments for <i>Speziale</i>, Sponditore, Dispensiere, Room and Board, Kitchen, Wine cellar, Farms) in the most suitable time and assuring that goods are fresh and of high quality.</p> <p>He personally delivers wheat to Baker in order to have the bread for the in-patients (Dispensiere is then in charge for management of bread stocks)</p> <p>He has to sign and number all the <i>mandates</i> in order to receive from the Banker of the Hospital Bank the necessary money for ordinary (included salaries) and unwitting expenses. He <i>weekly and montly reports</i> for such mandate expenses to the Prior and he must keep a <i>book of mandates</i> to check with <i>Banker’s book of expenses</i> (for this reason that book has to be kept using double-entry principle)</p> <p>He has to fill out a <i>personnel book</i> containing the names of any offices persons and their salaries</p> <p>He must fill out the <i>book of debtors</i> indicating time and amount of payment, cause of transaction, name of debtors and of the authorized Notary who holds the contracts</p>

	<p><i>Specific inventories: e.g. inventory of livestock, quarterly inventories of tools, instruments and other things given to each office</i> (management of these inventories is then assigned to each office), <i>inventory of all goods that enter or exit from the warehouse, inventory of all cloths that Hospital gives to in-patients</i> (all those inventories are then summarized in the annual general inventory). He personally check for all the goods in stock</p> <p>He detains all the records and accounting books of the Hospital</p>
<i>Soprastante</i>	<p>He’s directly responsible for the provision of health care services to in-patients.</p> <p><i>Annual in-patients’ book</i> (containing name and nationality of patients, their own things: cloths, money, weapons, and things given them by the Hospital, day of entrance and day of exit from the Hospital or death)</p>
<i>Sponditore</i>	<p>He must buy the necessary provisions (beyond Fattore’s mandate) and fill out a <i>weekly shopping list</i> for in-patients care</p> <p><i>Warehouse inventory</i> (containing quantity, description and quality issues of goods, warehouse transactions together with indication of time and person who charged or discharged the warehouse)</p>
<i>Cappellano</i>	He’s in charge for the management of <i>Hospital Church inventory</i>
<i>Speziale</i>	<i>specific inventory of drugs</i>
<i>Nurses</i>	They must notice any Physician prescriptions at each patient (identified with name and number of bed) and any drugs required to <i>Speziale</i>

Source: Authors’ summary from 1614 Statute and 1620 Hospital Internal Organization’s Book (Regulation)

The most recent accounting book of S. Anna Hospital after Devolution, which is comparable (due to its accounting contents) to Book with a cross is a Day-to-day book with debtors and creditors (1614). It’s about four size bigger than Book with a cross (in terms of number and size of its pages) and more readable thanks to its conditions. From a first overview, Day-to-day book with debtors and creditors seems to be tied to other accounting books (e.g. specific references to a ledger book), however we weren’t able to find the respective ledger book of the same year (1614).

Day-to-day book with debtors and creditors continues to record crosses (in page spaces left blank by accounting records) randomly. However in this case, numbers into crosses seems to be tied to a ledger book as same numbers represents sometimes specific accounts (to a debtor or a creditor) within the book.

Analysing only Day-to-day book with debtors and creditors it is not possible to understand how accounts were really classified (e.g. only financial and personal account or else cost accounts entitled to specific material). Doing a double-check with a ledger book of a different year (1640),

number of accounts with very similar description do not match so doubts about reason and specific use of crosses remain unsolved.

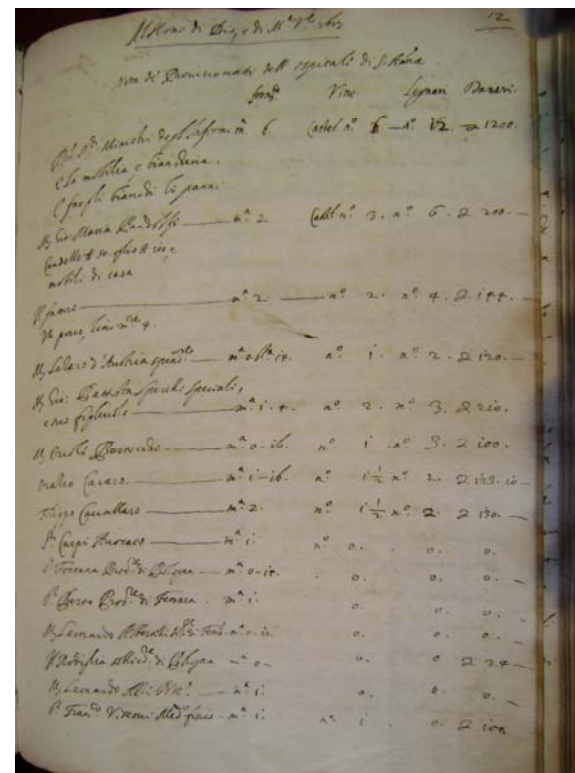
Finally, it is important to remark that, differently from Book-with-a-cross, 1614 day-to-day book is tied to the board and room where the detail is increasing: wine is distinguished according to the type of grapes, floor is detailed according to the type cereal, legumes include beans, broad beans, spelt, while cloth are better specified in simple cloths, dresses, socks. Moreover, expenses and incomes distinguish different type of services (internal or external): infirmary expenses, type of hand out (direct hand out or hand out by relatives of the deceased), type of rent (of a house or of a land), wage earners and security. Table 6 and Photo 2 show main aspects of Day-to-day book with debtors and creditors (of 1614) on the basis of analysis variables spotted in methodological and method paragraph.

Table 6 – Main aspects Day-to-day book with debtors and creditors (XVII)

	<i>Day-to-day book with debtors and creditors (XVII)</i>
Period	1614
Kind of language	Ancient Italian and Ferrarese dialect, technical language
Type of data	Date, name of creditors and debtors, reference to their specific account in the accounting Ledger, reference to specific Fattore mandate (if any), object of the transaction, type of income or expense, systematic counts of synthesis in correspondence with the specific debtor of creditor who close a financial record
Orderliness	Very systematic No white pages No white spaces among records Ordered indication of the different amounts Ordered arrangement of the accounting spaces
Level of detail	Very detailed Debtors and creditors: their names are always followed by their work Object: it's possible to read these recurring objects wine, oil, meat, legumes, floor, other expenses, cloth, hand out, wage earners, rents, pillows, wood, church expenses

Source: Authors' summary from *Book with debtors and creditors (XVII)*

Photo 2 – Records from Day-to-day book with debtors and creditors (XVII)



Source: *Day-to-day book with debtors and creditors (XVII)*– Archival material from the State Archive - Reproduction licence ASF n. 9/V.9.4 - 11/02/08

A systematic comparison between the two accounting systems as described above through the Regulations of 1598 and 1620, and another comparison between Book with a cross and Day-to-day book with debtors and creditors (1614) would shed light on some accounting similarities and differences between periods under investigation and in connection with organizational changes. If we consider that these books are the most common and used in Hospital realities in that period, comparison help also to make an interpretation about possible reasons of those similarities and differences depending on Devolution.

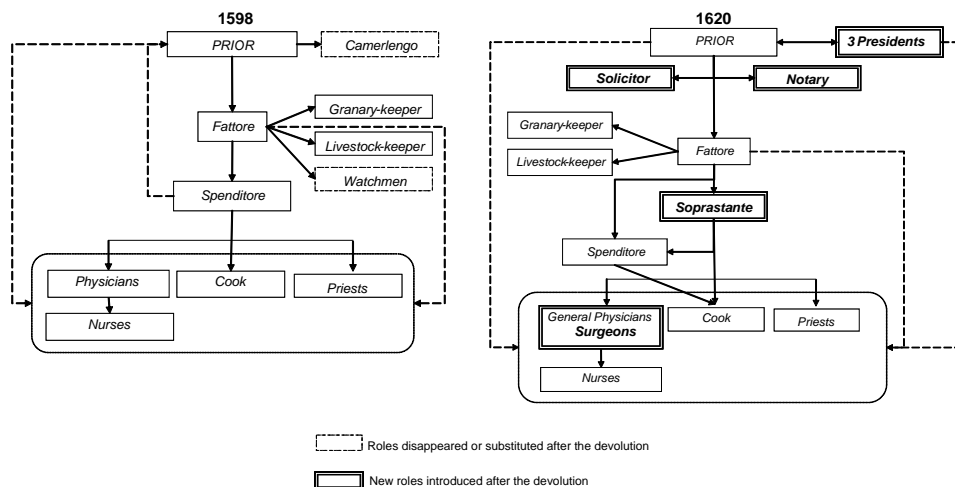
Organization and accounting 1598-1620: some reflections

Regardless of the devolution, the organisational structure of the Saint Anna Hospital can be interpreted as composed in three main parts: administration, religious services and health-care services. From the previous analysis it appears that the administration was the most affected by the advent of the Church domination, that seems to have represented the occasion to introduce a more formalised system of coordination and control.

With the devolution, the hospital services were directly or indirectly controlled by five different bodies (Prior, presidents, Fattore, Soprastante and Spenditore), some of which substituted and/or integrated the previous Camerlengo, and Watchman and Watchwoman. Hierarchical and indirect relationships were formally stated and supported by more systematic accounting means.

Figure 3 highlights the evolution of the internal organisation revealing at a glance the increased complexity brought about by the new Statute of 1614. Indeed, new roles and functions appeared from 1620 (like notary, solicitor, presidents, soprastante and surgeons), while others were substituted (like Watchman and Camerlengo).

Figure 3 – The organization of the Saint Anna Hospital 1598-1620



Source: comparison between previous figures 1 and 2

The enrolment of a notary and a solicitor represents the keen attention to the legal defence of rights and properties of the hospital. They had to assist the Prior and the Fattore in taking maximum care of the assets, rents and other legal rights from which the Hospital derived its financial sustainability. About the health-care services, we can interpret that they developed a more sanitary orientation through the enrolment on a regular basis of physicians and the introduction of some surgeons. Moreover, after the devolution, the Hospital put for the first time a physician on its payroll, symbolizing the intention to exert more strict control over the health-care services.

A bureaucratic apparatus began to take shape around the governmental body (Prior and Presidents) to fulfil the need of overseeing the overall administration more closely. In particular, the delivery of health services, internal services and religious services were put under direct and indirect control by several subjects at different organisational levels. Besides, also innovations in the accounting means were introduced.

Comparing Regulations' analysis of both periods it is possible to say that accounting was an early fundamental issue for a charitable organization like S. Anna Hospital and changes in its top level management left unchanged or even increased this need.

A patrimonial point of view dominates both accounting systems before and after Devolution as we can understand from the great attention to estate and other Hospital inventories, moreover book of in-patients continues to represent the main book of the organization.

Even if only after Devolution the accounting system tries to encompass religious (church inventory) and health care aspects (notes of nurses about physicians' prescriptions and drugs to patients), the management of the Hospital is mainly concentrated on charitable aspects that means providing board and room to in-patients and guaranteeing that goods of the Hospital are always separated from those of persons in their offices activity.

In both periods provision of care services is developed among other activities: S. Anna Hospital sums to its institutional aim the direct management of farms and real estates inside and outside

Ferrara walls so Hospital administration accounts for the related rents and goods when directly or indirectly used for the in-patients.

The Devolution period matches with a more structured Hospital organization where accounting relationships and responsibilities are well defined by an increased articulation of inventories, sub-inventories and a system of internal mandates. It is not clear if this articulation is connected to the common evolution of such a charitable institution or more tied to the political aim of the Pope's shift. However it's evident that with the Devolution there is a great need of control that is expressed by the formal establishment of more accounting rules, request of detail and extension of accounting over hospital church and physicians activity.

Correlatively to the disappearance of some previous roles (Camerlengo, Guardiano, Guardiana) probably too tied to the dukedom administration, the number of new labelled roles seems to require an accounting system tied to the external transactions as well as internal relationships.

After Devolution economic concerns appear to dominate the system, enhancing the use of double-entry principle in check-out notes and systematising a high level of detail about quantity, quality and time of transactions and inventories. This claim is supported by the comparison between accounting documents (day-to-day book with a cross and day-to-day book with debtors and creditors).

Ancient Italian and Ferrarese dialect characterize the description of transactions in both the books, remarking that:

- accounting language is developed on a local basis (Ferrarese dialect is typical of Este's dukedom),
- tracing administrative boundaries means tracing Este's dukedom boundaries as a fundamental issue of homogenization for accounting too,
- despite local importance of language, accounting needs remain the same.

In both periods day-to-day book with debtors and creditors seems to be the most important accounting book as it's always filled up. It begins to be coupled with other accounting reports only more recently.

This importance, we argue, is tied to its capability to sketch overall organization's transactions and main aspects of internal administrative relationships: indeed, it gathers a lot of information about type, quality and value of hospital's operations.

The widespread use of indicating name of creditors or debtors for each accounting record proves that bookkeeping is substantially tied to a subject principle, so recognition of costs beyond the financial transaction can not be so methodical.

Indeed in both periods considered, accounting records always account for some most important information:

- date,
- name of person (debtor or creditor),
- transaction object,
- value of the object.

Moreover, in both periods some transaction objects are always the same and, in general, they refer to heating, room and board while drugs or surgical instruments do not appear.

A possible interpretation is that the Hospital, despite change in its top level management still sticks to its charitable origins: according hospitality to beggars and needy persons.

Comparing accounting records about the two periods considered, main differences are tied to the use of a more technical language while accounting records become more detailed and systematic.

Despite the accounting evolution along the time and possible introduction of more tighten rules (e.g. avoidance of blank spaces) in the period after devolution attention to expenses seems more and more important.

The enrichment of details and specification in accounting records can be read as an opportunity of settling out an analytical accountability in order to get better control over the hospital organization.

From 1614, in day-to-day book with creditors and debtors many records identify specific Fattore's mandates, so day-to-day book with creditors and debtors documents internal relationships at least between Fattore and General Administration.

Among the different records from 1614, the further categories of church expenses and wages seems to be important in order to define a formal structure of hospital, with recognition of non-voluntary but systematic work within it. Finally, labour cost is an important part of analytical accountability so its recognition further extends and increases the rationalization of the cost concept. On the other hand, emphasis on church expenses can be interpreted as the need to point out its role.

Our interpretation is that from 1532 to 1614, the passage of Este's dukedom to the Papal State impacted on Hospital accounting increasing the attention on expenses details and analytical accounting. Accounting records on day-to-day book with creditors and debtors doesn't only provide further quality on accounting control over expenses but allows a better control of the whole organization. Specifically, it sheds light on internal relationships and regulates by mandates the transaction power of Fattore and its reflexes on hospital administration. The increased detail on board and room expenses clarify the importance of those expenses more as a reflex of charitable aims than as a reflex of health care institution.

The very notion of cost seems to some extent "emerge" beyond transactions as a tighter form of control while accounting is seen to be slowly transformed into a tool for controlling and managing a complex organization.

Indeed, in both periods any reference to surgical instruments or contracts with physicians is completely avoided. We wonder if this avoidance can be read for benefit of physicians' activity or for benefit of the other charitable aims. In both cases independence of physicians isn't brought back to hospital accounting, while interest of Church on hospital is stated by the introduction of separate records for church expenses.

Discussion and conclusion

The analysis highlighted how the organisation, accountability and accounting in the Saint Anna Hospital changed after the institutional shift brought about by the demise of the Estense's Dukedom and the devolution to the Papal State.

This evolution, in a relatively short period of time, can be understood in two intertwined ways. Firstly, the economic difficulties of Ferrara and Italian economy in the period may be considered a stimulus for the new order to introduce more powerful device to allocate, monitor and administer scarce resources in an efficient and effective way. In short, the development of the system can be considered to be a result of an economic rationale *per se*.

Secondly, with reference to Quattrone (2004), the evolution can be linked to the specific aim of the Church to re-establish its centrality. Quattrone (2004), in particular, describes the importance in XVI-XVII centuries that the absolutism of the counter-reform of the Roman Catholic Church had in the development of hierarchical structures and accounting systems.

Indeed, the devolution of Ferrara Dukedom to the Papal State happened soon after the council of Trent in which the leadership of the Church was reinforced (Davidson, 1987), generating several religious wars that devastated Europe in those centuries.

As the first act by the Bishop of Ferrara after 1598 was to remove the Judicial and Civic Authority from the governance of the Hospital, this can be interpreted as a clear sign of dominance. From 1598 and 1613, a Special Commission was in charge of the administration of assets and the internal organisation of the hospital. However, it was just after 1663 that the Juridical and civic authority was reintroduced in the government of the Hospital. The Bishop maintained in that period a direct control on the hospital administration.

The analysis of the primary historical sources more interestingly describes and reflects both the organisational and accounting changes in the Hospital during the XVI and XVII centuries. It highlights the emergence of a centralised accounting system to record the transactions among the different areas of activity (Administration, Health care Services, Religious Services), the increasing

number of administrative offices and more attention to the accuracy in book-keeping. Notwithstanding, it is interesting to note a divide among administrative personnel, physicians and priests. Despite the increased call for account details over the *Fattore*, *Spenditore* and *Soprastante*, the evidences seem to confirm that physicians were not affected by these technologies and priests only partially: even present researches show similar findings in studying the relations between accounting and professionals in hospitals (e.g. Abernethy and Vagnoni, 2004).

Independently from the Rector or the Presidents of the Hospital, the Administration remained concentrated on patrimonial and financial aspects (the flows of incomes and expenses, the maintenance and management of the assets and the charitable services like room and board, drugs consumption and consumption of candles, incense, etc by internal religious services). Beyond the strictly accounting information, the historical documents provide many qualitative, physical and technical information. For instance, records on debtors and creditors are very detailed and they can potentially provide a risk rating of such debts and credits, while the detailed book-keeping can potentially be used for a micro-costing control.

However, the Statute and organizational manual are mainly focussed in determining the accounting technologies (system of mandates, inventories and sub-inventories) to exert hierarchical control, together with the formalization of the level of responsibility over the results of the different offices.

The evidences show also how accounting was used to define areas of direct control or autonomy allowing a certain lack when professionals are involved while requiring detailed information when administration is involved. Together with tracing a separation among organizational levels, accounting would have contributed to the identification of hierarchies (Jonson and Kaplan, 1987).

This paper sought to increase the sparse literature on accounting practices in non-Anglo-Saxon countries in an under-researched period (XVI and XVII centuries). The analysis of how an institutional change impacted on the evolution of accounting system in Saint Anna Hospital does not simply describe practices. Rather, it attempts to provide interpretations to the relations existing between accounting, organisation and institutional setting.

Tracing the history of Saint Anna Hospital, this study allows to appreciate the sophistication and actuality of accounting technologies within its organizational context. On the light of these historical evidences, future research could further explore the relationship between physicians and administration and the way in which they changed overtime.

Moreover, the study helps to understand the complex interrelationship between the accounting system and the organisation but it leaves open the possibility to understand and compare the definition of responsibilities within hospitals in a diachronic perspective.

Finally, the provided frame can be useful for a synchronic comparison among hospitals in different institutional settings.

Bibliography

Primary Sources

Statute	1598
Statute	1615
Internal organization manual	1598
Internal organization manual	1620
Book with the Cross	1570
Day-to-day book with debtors and creditors	1614
Minute of special Congregation	1613-1637
Room and board book	1614

From the State Archive in Ferrara folders:

General Administration	1035-1630
Land register, accounting books and other books and registers	1437-1630
Provision of Health Care services	1552-1630

References

- AA.VV., (1995), *Catalogo della sezione antica P.G. Corradini della Biblioteca dell'Arcispedale Santa Maria Nuova (XV sec. – 1850)*, cataloguing by Filippo Ghiacci.
- Abernethy, M. A., Vagnoni, E. (2004), "Power, organization design and managerial behaviour", *Accounting, Organization and Society*, Vol. 29, No.1, pp. 207-225.
- Allen, R.C. (2000), Agricultural productivity in Europe, 1300-1800, *European Review of Economic History*, Vol. 4.
- Angelini, W. (1979), *Economia e cultura a Ferrara dal Seicento al tardo Settecento*, Argalia, Urbino.
- Antonelli, V., D'Alessio, R., Iuliano, G. (2007), "Art and Accounting History: The Teatro San Carlo of Naples, 1734-1786", *Accounting, Business and Financial History*, Vol. 17, No. 1, pp. 165-186.
- Baruffaldi, G. (1700), *Dell'istoria della città di Ferrara dal 1655 al 1700*. Ferrara.
- Bedeian, A.G. (1998), Exploring the Past. *Journal of Management History*, Vol. 4, No. 1, pp. 4-15.
- Bergamin Barbato, M., Mio, C. (2007), "Accounting and the Development of Management Control in the Cultural Sphere: the Case of the Venice Biennale", *Accounting, Business and Financial History*, Vol. 17, No. 1, pp. 187-208.
- Berry, A. (1997), 'Balancing the books': funding provincial hospitals in eighteenth-century England. *Accounting, Business and Financial History*, Vol. 1, No. 7, pp. 1-30.
- Carmona, S. (2004), Accounting history research and its diffusion in an international context. *Accounting History*, Vol. 9, No. 7, pp. 7-23.
- Carnegie, G.D. (1997), *Pastoral accounting in colonial Australia – A case study of unregulated accounting*, Garland Publishing Inc., New York.
- Castelmola, D. Onorato Gaetani d' Aragona (1885), Scritti circa la Casa Santa della Annunziata, tn: *Memorie storiche della Città di Gaeta*, Volume unico edito dallo Stabilimento tipo-litografico della Minerva, Caserta.

- Chinarelli, G. (1940), *L'arcispedale Sant'Anna di Ferrara in cinque secoli di storia: 1440-1940*. republished, Menini C. (ed.), TLA Editrice, Ferrara. 2003.
- Cinquini, L., Marelli, A. (2007), "Accounting History Research in Italy, 1990-2004: An Introduction", *Accounting, Business and Financial History*, Vol. 17, No. 1, pp. 1-9.
- Ciocca P., Toniolo, G. (eds.), (2002), *Storia economica d'Italia*. Volume 3, Bari: Laterza.
- Cordery, C.J., Baskerville, R.F. (2007), Charity financial reporting regulation: a comparative study of the UK and New Zealand. *Accounting History*, Vol. 12, No. 1, pp. 7-27.
- Davidson, N.S. (1987), *The Counter-Reformation*. Oxford: Blackwell.
- Fayol, H. (1949), *General and Industrial Management* (translated by C. Storrs), Pitman, London.
- Fleishman, R. K., Mills, P. A., Tyson, T. N. (1996), A theoretical primer for evaluating and conducting historical research in accounting, *Accounting History*, Vol. 1, No. 1, pp. 55-76.
- Flesher, D.L., Samson, W.D. (1990), "What is Publishable Accounting History Research: An Editorial View", *The Accounting Historians Journal*, vol. 17, n. 1: pp. 1-4.
- Gentili, G. (1961) "Le origini degli ospedali di Imola", in Mario Santoro (ed.), *Atti della IV Biennale della Marca per la storia della medicina*, Fermo, Sede dell'Antica Università, 28th-30th April 1961, Unique edition from Isidori printers, Montegranaro.
- Guerzoni, G. (2000), *Le corti estensi e la devoluzione di Ferrara del 1598*, Modena: Archivio Storico.
- Kitson Clark G. (1967), *The Critical Historian*, Heinemann, London.
- Hopwood, A.G. (1990), Accounting and Organisation Change. *Accounting, Auditing and Accountability Journal*, Vol. 3, No. 1, pp. 7-17.
- Jonson, H. T., Kaplan, R. S. (1987). *Relevance lost. The rise and fall of management accounting*. Harvard Business School Press
- Lacombe-Saboly M. (1997), "Hospital accounts and accounting systems: a study in the French region of Toulouse from the seventeenth to the nineteenth century", *Accounting, Business and Financial History*, vol. 7, n. 3: pp. 259-280.

Marin, L. (1973), *Per una storia dello stato estense: 1. dal Quattrocento all'ultimo Cinquecento*, Patron, Bologna.

Molini, G. (1885). "Scritti circa la Casa Santa della Annunziata", in Conte di Castelmola D. Onorato Gaetani d'Aragona, *Memorie storiche della Città di Gaeta*, Unique volume from Minerva editors, Caserta.

Muratori, L.A. (1783), *Gli annali d'Italia*, Napoli.

Napier, C. J. (2001), Accounting History and accounting progress, *Accounting History*, Vol. 6, pp. 7-31.

Napier, C. J. (2006), "Accounts of change: 30 years of historical accounting research", *Accounting, Organization and Society*, Vol. 31, pp. 445-507.

O'Connell, M.R. (1974), *The Counter-Reformation*. New York: Harper.

Oldroyd, D. (1999), Historiography, causality and positioning: an unsystematic view of accounting history, *The Accounting Historians Journal*, Vol. 26, No. 1, pp. 83-102.

Ouchi, W. G. (1977), "The Relationship Between Organizational Structure and Organizational Control", *Administrative Science Quarterly*, vol. 22, n. 2: pp. 95-113.

Ouchi, W. G. (1980), Markets, bureaucracies and clans, *Administrative Science Quarterly*, Vol. 25, pp. 124-141.

Parker, L. D. (1999), Historiography for the new millenium: adventures in accounting and management. *Accounting History*, Vol. 4, pp. 11-42.

Parker, G., Smith L.M., (1988), *La crisi generale del XVII Secolo*. ECIG Genova.

Previts, G.J., Parker, L.D., Coffman, E.N. (1990), "An Accounting Historiography: Subject Matter and Methodology", *Abacus*, vol. 26, n. 1: pp. 136-158.

Quattrone, P. (2004), Accounting for God: Accounting and Accountability Practices in the Society of Jesus (Italy, XVI-XVII Centuries), *Accounting Organizations and Society*, Vol. 29, No. 7, 647-683.

Riccaboni A., Giovannoni E., Giorgi A., Moscatelli S. (2006), Accounting and power: evidence from the fourteenth century, *Accounting History*, Vol. 11: pp. 41-62.

Roberts, J, Scapens, R. W. (1985), "Accounting Systems and Systems of Accountability – Understanding Accounting Practices in their Organizational Context", *Accounting, Organization and Society*, Vol. 32, No. 4, pp. 443-456.

Robson, N. (2003), "From voluntary to state control and the emergence of the department in UK hospital accounting", *Accounting, Business and Financial History*, Vol. 13: pp. 99-123.

Tosh, J. (1991), *The pursuit of History: Aims, Methods and New Directions in the study of Modern History*, 2nd edition, Longman, New York.

Trevor, D. (1987), *Land and Power in Late Medieval Ferrara: The Rule of the Este, 1350-1450*, Cambridge University Press.

Urwick, L.F. (1956), *The pattern of Management*, University of Minneapolis Press, Minneapolis.

Williams B., Wines G. (2006), "The first 10 years of *Accounting History* as an international refereed journal: 1996-2005", *Accounting History*, vol. 11, n. 4: pp. 419-445.

Zambon, S., Zan, L. (2007), "Controlling Expenditure, or the Slow Emergence of Costing at the Venice Arsenal, 1586-1633", *Accounting, Business and Financial History*, vol. 17, n. 1: pp. 105-128.

Zannini, M., Lodovico, G. (2000), *La capitale perduta : la devoluzione di Ferrara 1598 nelle carte vaticane*, Ferrara: Corbo.

Zerbi, T. (1955). *Moneta effettiva e moneta di conto nelle fonti contabili di storia economica*, Marzorati, Milano.

Zucchini, M. (1967), *L'agricoltura ferrarese attraverso i secoli : lineamenti storici*, Roma: Giovanni Volpe.

¹ See also Carmona (2004) for an analysis of the international diffusion of accounting history research.

² The historical description of the foundation of the Saint Anna Hospital is mainly based on Chinarelli (1940), as secondary source.

³ Lord MacNaughton, in 1891, classified charitable purposes under four heads as: the relief of poverty; the advancement of education; the advancement of religion; and, other purposes beneficial to the community, in Cordery and Baskerville (2007: 8-9).

⁴ See the *Catalogo della sezione antica P.G. Corradini della Biblioteca dell'Arcispedale Santa Maria Nuova (XV sec. – 1850)* revised in 1995, following the work of Filippo Ghiacci.

⁵ The link between hospital and religious institutions is a common denominator in all assistance organisation, since the end of X century. See, for example Gentili, G. (1961) "Le origini degli ospedali di Imola", in Mario Santoro (ed.), *Atti della IV Biennale della Marca per la storia della medicina*, Fermo, Sede dell' Antica Università, 28th-30th April 1961, pp. 269-276. See also Castelmola, D. Onorato Gaetani d' Aragona (1885), *Scritti circa la Casa Santa della Annunziata*, tn: *Memorie storiche della Città di Gaeta*, Volume unico edito dallo Stabilimento tipo-litografico della Minerva, Caserta.

⁶ In Italy, the Art. 2 of the R.D (Royal Decree) 27 November 1862, n. 1007, promulgated the regulations of law 3 August 1862, n. 753, related to the administration of Opere Pie. Each area of intervention reminds the organisation of modern health systems (developed in the last century), and allows to state that probably Opere Pie are their real antecedents.

⁷ It was based on: (a) the principle that the hospital treasury was the place made by all donations, regardless the size and the nature of the donors, and this included the assets donated by the physician Pellegrino di Arquà and the promised donations of the Estense's Marquesses; (b) the principle of wide autonomy of the administrators of the hospital in receiving, acquiring, selling and disposing of the assets

⁸ It was related to the internal structure of the hospital, and suggested the following guidelines: (a) the preparation of an adequate building with "all the necessary settings for the services"; (b) the construction of a church and an oratory, with belfry and bell, and one or two cemeteries; (c) the recruitment of directors, physicians and auxiliaries, and the definition of detailed norms to regulate their enrolment, their duties and responsibilities.

⁹ It guided the selection of good and suitable priests, the prescription of norms to celebrate the different offices, to gain the ecclesiastic privileges and how to use of indulgences.

¹⁰ Reflecting on the status of historical research in the contemporary accounting and management research literature, Parker (1999) revisits some fundamental methodological dimensions. «*These include the historical narrative, macro literary style narrative histories, business history lesson for accounting and management history, critical theory, informed researched, emerging social history and opportunity for research employing oral and visual history*» p. 11. Napier (2006) reviews the ways in which a literature of accounting history developed in AOS but, in the meantime gives deeply interesting insights in the arrangement of the discipline though the different theoretical approaches. Specifically, he refers to three myths as the double-entry bookkeeping, the accounting profession and the role of accounting in the emergence of capitalism and he describes five motivations for the research in this field (antiquarian scientific, intellectual, debunking myths, utilitarian, response to environmental change), all coming from the Hopwood's (1990: 365) questions: "How had accounting become what it now is? How can we understand the processes of change? How have wider issues and concerns impacted on accounting practices?". For a broader understanding of methodologies, methods and recent developments on accounting history research see also Fleishman et al (1996), Oldroyd (1999) and Napier (2001).

¹¹ It's important to remark that control system itself consists primarily of a process for monitoring and evaluating performance, while preconditions specify reliability and validity (Ouchi, 1977). Of course, shape of control system depends on type of organization, desirable output and understanding of transformation process (e.g. «the business school dean, wanting the research produced by his faculty to be well-regarded by their peer group can simply survey that peer group for their evaluations [...] the dean can count the number of jointly-authored articles produced by his faculty, but he cannot attribute contribution to that output to each collaborator individually» Ouchi, 1977, p. 97). It's necessary to take into account that organization under investigation is like a charitable institution whose main interest is the treatment of patients and beggars. As such, control system has a well-defined but instrumental relevance. Moreover, in historical works, control mechanisms can be reviewed only ex-post focussing on most important variables they consider and interpreting their value for the whole architecture. In this specific case, we don't control for the whole control system of the Hospital organization in past centuries but we focus both on accounting method as a part of control system and on organizational structure as established by Hospital Statute as a part of organizational structure.

¹² Zambon and Zan (2007) started from an archival document (1586 deliberation by the Venetian Senate, which imposed on Venice Arsenal the need for a stocktaking annual exercise with a requirement of ad hoc work-in-process accounts) and shed light on impact of a new governmental rule on shape of accounting tools and main variables of their architecture. Bergamin Barbato and Mio (2007) investigated Venice Biennale (an organization that grew covering activities like art, architecture, dance, music and theatre) and how its relevant organizational changes affected its accounting system. Antonelli et al. (2007) examines characteristics of the activities of Teatro S. Carlo in Naples in XVIII century tracing the evolution of its organizational structures, administrative activities and accounting practices.

Riccaboni et al (2006), analysing institutional and organizational change within Opera della Metropolitana of Siena (cathedral) in Middle Ages, emphasize role played by accounting practices in shaping and balancing power relations among different organizational roles.