Early accounting in northern Italy: The role of commercial development and the printing press in the expansion of double-entry from Genoa, Florence and Venice

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EARLY ACCOUNTING IN NORTHERN ITALY: THE ROLE OF COMMERCIAL DEVELOPMENT AND THE PRINTING PRESS IN THE EXPANSION OF DOUBLE-ENTRY FROM GENOA, FLORENCE AND VENICE

Abstract: This paper offers an explanation of why double-entry bookkeeping developed in the city-states of Northern Italy in the years 1200-1350, and then how it then spread from there to the rest of Europe. Increased economic activity initiated soon after the start of the Crusades, but then growing into an explosion of Italian trade by 1350, provided Genoa, Florence, and Venice with enormous trading opportunities. This expansion of trade created, in turn, the need for a much improved accounting technique. The spread of double entry was greatly abetted by the advent of cheap business arithmetics and grammars made possible by the invention of the moveable type printing. Venice was especially advanced in her printing industry during the years after 1500.

Thus, it was that the double entry system was created in Northern Italy between 1200-1350 primarily due to the development of the regional economy, and from there spread to the rest of Europe helped immeasurably by access to cheaply printed books.

1 A preliminary version of this paper was presented at the International Congress on Banchi Pubblici, Banchi Privati e Monti di Pieta nell'Europa Pre industriale, in Genoa, Italy, Oct. 1-6, 1990. This article is speculative, exploratory, unsettled and controversial. There is much research still to be done on these topics especially the relationship between privity, literacy and the precise mechanism by which double entry spread from Italy. I want to express my heartfelt and sincere gratitude to the Societa Ligure di Storia Patria for making the Congress possible. The conference was made excellent by the careful and diligent work of Giuseppe Felloni and Dino Punuh. I want to personally thank Professor Felloni, Ugo Tucci and Reinhold Muller of the University of Venice, and Richard Marshall, then a graduate student of Johns Hopkins, for their insightful and useful comments. They helped to make this paper much better than it would have been otherwise. I am especially in debt to Professor Felloni for time spent with me on this research. The comments of two anonymous
INTRODUCTION

The results of research on the origins and history of accounting techniques appear to have settled the issues of where and when the double entry accounting system was developed. Relatively little has been done to shed light on why this system of accounting practices emerged in Italy in the early thirteenth century or how it spread from there to the rest of Europe. These two issues are explored in this paper and preliminary results are provided to indicate that regional economic development and the technology of moveable type printing were primarily responsible for the rise and spread of double entry.

Historians of accounting agree that one of the two or three great advances in accounting technique was the development and subsequent implementation of the “double-entry” (hereafter DE) system. Furthermore, most accounting historians will agree that the initial successful presentation of DE in published form was Pacioli’s 1494 manuscript. So overwhelming is Pacioli’s book that he is celebrated as the “father” of modern accounting, and the conventional wisdom is such that accounting as a profession is typically dated from 1494. So great is this legacy that in the 1990s a group of accountants have formed a society to celebrate the 500th Anniversary of Pacioli’s book. Named after the master himself, this organization is complete with a newsletter, research notes and trips to Italy. The ironic feature of this celebration is that Pacioli denied any creative originality for the DE system; he was merely memorializing a system which he thought had existed for some two centuries or more in Northern Italy [Taylor, 1956, pp. 179-181].

The literature on the specific origins of DE has gone through cycles over the past century, at first crediting Pacioli and Venice with its discovery. Later research by Fabio Besta and Edward Peragallo has demonstrated that Florence, Genoa and other commercial centers had developed DE either independently of the Venetians, or through a process of intellectual cross fertilization and simultaneous improvement and development. A. C. Littleton, in his seminal book, described the neces-

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referees were most valuable in clarifying my thinking and the character of the paper. I am most grateful to these two individuals, as well as editor Dale Flesher, for the time, trouble and care they spent in reviewing and developing this manuscript. The errors, of course, are mine, but readers should know that much of this paper's contribution is due to these people.
sary preconditions for the invention of DE, and offers an explanation of the relationship between these factors, which determined the invention of this most useful piece of social technology [Littleton, 1966, pp. 13-21]. Academics have also focused their research on other accounting elements, such as the widespread use of the Hindu-Arabic number system, to shed light on the appeal for DE [Williams, 1978, pp. 29-39].

It is not the purpose of this paper to reopen any of the old debates. There is an abundance of research on the alleged locus of invention, and the current state of research on this issue is inconclusive as to specifics [Yamey, 1949, pp. 99-113; Yamey, 1975, pp. 117-136; Yamey, 1927, pp. 260-292; Sombart, 1933, pp. 116-127; Schumpeter, 1942, pp. 119-126; Lane, 1973, pp. 140-141]. The literature is relatively silent however on a related question, i.e., why did DE emerge where it did and why did its use spread so rapidly? To propose answers to these questions this paper focuses on two phenomena which have heretofore been overlooked in the historiography of DE, namely: (1) the rise of relatively high speed moveable type printing, and the subsequent gradual spread of this print culture from Northern Italy to the commercial centers of Northern Europe and (2) the economic development of the area between the three great Italian city states — Genoa, Venice and Florence — which gave rise to a business climate and level of commercial sophistication that demanded a new and better form of accounting. It is the theses of this paper that the second element mentioned above, the economic development of Northern Italy, created the necessary business environment for the DE technique and that it was then spread to the rest of Europe via business and arithmetic grammars, written in local vernacular, by the new technology of moveable type printing. To be sure the new printing technology was not at all necessary for the creation of DE (recall that when Pacioli published his Summa, DE was already generally recognized as a superior accounting scheme), but it did greatly facilitate the spread of the new accounting after 1500. As Elizabeth Eisenstein, the notable historian of printing as an agent of change, has so aptly pointed out, religion was not the only area of human activity revolutionized by the printing press, there were others as well [Eisenstein, 1979, Chapters 3 and 4].

This article maintains that the origins of DE are rooted in its relationship to broad economic, technological and intellectual factors. While historians are not sure in exactly which Ital-
ian city-state double entry was initially used, they are positive the technique originated in the Genoa-Venice-Florence triangle in the years from 1200-1350. Using this as a point of departure, an explanation is offered of why DE both originated in and spread from this area and to place these events in the context of the regional economy and printing technology of Northern Italy.

Double entry is defined as any bookkeeping system in which there was a debit and credit entry for each transaction, or for which the majority of transactions were intended to be of this form. The proviso is needed to cover situations where the corresponding debit or credit item is missing, for whatever reason, but was intended to be present. This definition covers the systems of Medieval bookkeeping which most experts agree were in the double entry format. Initially, these were in paragraph form. The money values were most often kept in Roman numerals and in the local monetary unit. Paragraphs were sometimes kept vertically, one below the other, but the lateral method (debit on the left side, credit on the right) was also in wide use and eventually became universal. It was not unusual to find entries recorded in separate books or folios, which can make the identification of a double entry system more difficult. Merchants often recorded only that information which they regarded as most important or was specifically related to a credit item. Because profit, and hence retained earnings, were not yet fully recognized and defined; and because, in any case, they were often small, credit, usually short-term, was a critical element in many businesses and hence accorded a special place in a merchant's books.

The development, spread, and near universal adoption of double entry accounting helps bridge the late Medieval period with that of early modern Europe and forms a base upon which commercial development and modern management were built. The economic development of the regional economy of Northern Italy and the invention of the printing press influenced learning, the development of vernacular languages and enhanced business education, especially accounting practices [Eisenstein, 1979, Chapters 3 and 4]. The development of Renaissance thought, along with its economy, gave birth to a business ethos in which the accumulation of wealth and material objects was both important and encouraged. The implications of this for business, and accounting practices, are obvious.
COMMERCIAL EXPANSION

In explaining where and when modern bookkeeping arose, it is necessary to differentiate between the two economic spheres of Medieval Italy. The first sphere is comprised of small artisans and businesses conducting operations within a single village or town. Dealing almost exclusively with a fixed number of repeat customers, these businesses had little use for new and sophisticated accounting devices. The second sphere is made up of larger merchants mainly from growing urban centers. It was this group which built the large trading, commercial and financial firms where the need for modern accounting practices proved greater. Double entry bookkeeping was invented and implemented by large merchants for reasons specific to the economy and culture of Northern Italy. From there, it spread over the trading routes of Europe to become standard business practice.

Three related events conspired to cause the economy of Northern Italy to expand rapidly after 1100. One was a generalized and rapid (for the era) increase in population. This remained true until the plague years of the mid-fourteenth century reduced European population by a third. The second was the economic opportunities provided by the Crusades. After the Turks captured Jerusalem in 1075 and for two hundred years thereafter, wave after wave of European armies, and their camp followers, traveled to and from the Middle East. This interaction introduced the Crusaders to the delights of the Middle East and created a permanent demand for these products. Venice, Florence and Genoa all had a long history of trading contacts with the Middle East and their role and importance in this trade increased many fold. All three city states grew and prospered accordingly. Later, there was a derivative flow of trade and commerce in all of Northern Europe which, in turn, increased the demand for specialized commercial services, one of which was a superior accounting methodology.

That bookkeeping and accounting are inherently pragmatic affairs hardly needs elaboration, but is underscored by the fact that a systematic body of accounting theory was not developed until well into the nineteenth century. Before then, accounting was in the hands of practitioners who were concerned with practical business problems. Bookkeeping developed in response to, was dependent upon, and adaptable from the nature of the firm in question. To some extent this is, of course, still
true. It has only been in the last century or so that academic theorists have caught up with professional business people in the application of, and writing about, accounting practices.

Werner Sombart indicates that medieval businessmen only infrequently balanced their books. This assertion may not be true in a technical sense, but it is more important to point out that businessmen of the period had a clear idea of capital and profit, and were able to manage large, diverse and international operations with available accounting principles. The lack of a uniform tax system, the church's ban on usury, thin and underdeveloped capital markets, and an uncertain idea regarding the nature of long-term capital, all mitigated against an annual balancing of a firm's books as is understood today. But as Lane points out in his famous article, partnerships did close their books on various projects and reconcile profits to the various principles [Lane, 1945, pp. 164-172]. However, as accounting practices developed in this environment, they became useful for immediate problems and laws and business conditions did not yet require a generalized, uniform system of books. The most typical forms of Medieval books were two: a simple cash account and a form of venture accounting. The cash account was merely a listing of cash items, inflows and outflows, which were conducted with little or no consideration to the nature of the transaction. Conversely, venture accounting was different and grew from a customary method of financing international trade to be perfected by the Venetians and Genoese [Lane, 1977, pp. 177-191; Lane, 1945, pp. 164-172]. Most venture accounting schemes were often made in paragraph form with long, flowing narratives describing the transaction. Medieval books can also be found in a number of different forms. For example, merchants used single entry systems for cash receipts and disbursements. Some small merchants could simply keep their books in their heads, so regular and ordinary were their operations. As business expanded in complexity beyond the capability of an individual memory, simple receivable and payable ledgers became more common. This was particularly needed by those who traveled to the fairs of the late Medieval period. As these fairs grew, trade ledgers came to include assets, liabilities, plus other accounts besides cash. Such transactions required more sophisticated accounting devices. Journals appeared and were used to record entries from many ledgers and to consolidate certain types of information. The need for double entry was gradually increasing, and by 1200 a critical mass had formed.
Fabio Besta, his students and a few others generally are recognized for creating the idea about the origin of modern accounting. This wisdom holds that double entry was invented or developed in Northern Italy perhaps as early as the first decades of the thirteenth century. The extant sources and current scholarship does not support a more precise dating. What is clear is that by 1340, the Masari of the Commune of Genoa had a well developed double entry system whose origins are unclear. The Masari, elected officials and managers, who had legal responsibility over certain Treasury business. The Masari were officials of the Commune for a period of one year. At the end of their tenure, they had to pass control over cash, and other accounts, to their successors. This meant they had to justify cash balances at least once per year, which created a fundamental need for responsibility and control over the public trust. This annual political and accounting cycle undoubtedly helped explain why accounting methods in Genoa were so advanced.

Scholarly attention has shifted in the last 70 years to two other Italian city-states, Venice and Florence, as possible origins of the double entry method. However, nothing so unique or tidy has risen to replace Besta’s thesis, and researchers are left with a confused and complicated picture. Both Venice and Florence have advocates extolling their claims for fathering DE, but no one is (yet) able to make an irrefutable case for uniqueness. What emerges is the view that DE was developed in several locations, simultaneously, in response to similar pressures from regional economic, social, and cultural conditions. For example, Florentine economic growth dates from around 1100 and succeeded in transforming the city from a provincial agricultural and feudal town to a cosmopolitan banking and mercantile center [Goldthaite, 1981, pp. 107-115; Miskimin, 1969, pp. 68-75; Polonio, 1977, pp. 1-91]. Origins of the modern business, enterprise can be traced to the large commercial partnerships which were established in Tuscany in the late Middle Ages. In 1252, Florence coined the first gold piece of Europe. This has traditionally marked the Florentine rise to the pinnacle of European business and commercial success, especially in banking, and was aided by the unique Florentine system of raising capital. Large associations, based on family ties, accumulated hitherto unheard-of sums of money. These funds helped to foster the flowering of industry and banking in Tuscany. As Florence became a major European commercial center, its need for a modern system of bookkeeping arose.
The prevailing mode of partnership finance gave rise to bookkeeping practices which meticulously recorded each partner's contribution and responsibilities. Books of account were opened, and early fourteenth century manuscripts reveal debits and credits in vertically placed paragraphs. There is some evidence in the Peruzzi ledgers of a double entry system as early as 1335 [Pelagallo, 1938, pp. 18-22; Ceccherelli, 1910, Chapter 3]. One also notes the use of a cross indexing system akin to Genoa's but not as detailed. Thus, the available manuscript evidence indicates that Florence by 1330 or 1340 had independently developed a relatively sophisticated system of DE bookkeeping. The available evidence does not allow scholars to determine the antecedents of the Florentine system. However, its sophistication and widespread use both are indicative of a long developmental process of perhaps a century or more.

Florentine businesses were also the first to use a type of branch accounting to keep touch with their overseas operations, and the silk and woolen manufacturers pioneered a type of cost accounting unique in Medieval Europe. These firms had, by 1350, two sets of books, one for the production or purely industrial side of the business and the other for its commercial operation. Before the discovery of the Florentine industrial accounting practices in textile houses, cost accounting was thought to have originated in England with the Industrial Revolution about 1785. This is an important finding because it indicates that accounting practices were more advanced in Medieval Italy than had previously been suspected [Elder, 1937, pp. 228-231].

Before the locus of international trade shifted to the Atlantic, Venice was the uncontested trading center of Mediterranean Europe. As a maritime city, it was able to reap huge profits from its trading and carrying activities and consequently developed a large commercial population. It was natural that Venice would develop a system of accounting to record the financial condition of her businessmen. Furthermore, it was the Venetian trading network, coupled with her intellectuals and the printing industry, which was in large part responsible for spreading the DE system over Europe. Although the earliest extant records of Venetian DE are from a later period, it should be noted that by 1494 the DE system was sophisticated, well known and widely applied. As Pacioli was primarily an academic on these matters, its safe to conclude that his writing followed the best practice of the day, it did not show the way. As such, its then logical to assume that Venice, despite its lack of archival evidence, was
utilizing a DE system on about the same time table as other important commercial and traveling centers in Italy.

Modern accounting was, therefore, the end result of a long and arduous problem-solving effort, itself related to the increasing complexities of trade in early modern Italy. Three cities — Venice, Florence, and Genoa — provided the seed bed for modern accounting practices, and became the centers from which the new discipline spread. The years from 1200 to 1350 saw a burst of economic activity, a sharp break from the past, which the historian Robert Lopez called “the Commercial Revolution” [Lopez, 1976, chapters 1 and 2]. The larger merchants of this region were subject to a common set of commercial pressures which forced them to seek an accounting system superior to that of the Middle Ages. By approximately 1200, conditions were ripe for the invention of DE. Merchants, especially those in the active trading centers, began experimenting with a variety of expense, capital and equity account whereby all that remained (essentially) was to never debit without crediting.

The economic revolution of the twelfth and thirteenth centuries greatly retarded feudalism and transformed its wealth into resources for a world economy. This economic expansion fueled the progressive development of business and industry and created the wealth of the Renaissance. Production for profit and an expanding market made possible the national economic systems which underlie the growth of the modern state. In short, this great burst of economic activity helped to push Europe from feudalism toward capitalism. With this increase in trade and other commercial activity went a demand for more advanced accounting system. Capital began to accumulate in Northern Italy, and this necessitated institutions to safeguard and invest it. These funds were funneled into the expanding commercial sector as productive investments or used to finance working capital. The economic development of the thirteenth and fourteenth centuries was an “explosion of Italian trade,” which stretched from Greenland to Peking [Lopez, 1976, Chapter 3-5].

This explosion drew additional energy from technological developments in navigation and transportation which greatly reduced transportation and insurance costs. Thus did this great movement of people and commodities encourage the invention of the Italian system of venture accounting, and in turn the spread of Italian multinational enterprise (to use modern terminology), especially of banks, motivated the development of more
elaborate accounting systems [Lane, 1945, pp. 164-172]. The banking and textile industries required meticulous attention to detail, and found it profitable to use double entry early. This superiority as a management tool was quickly recognized, and entrepreneurs were eager to adopt it.

PRINTING

The other crucial element of this analysis was the invention in Germany of movable type printing in 1454. While printing did not aid the invention of modern accounting, it certainly abetted its spread. Printing affected all of Northern Italy, but its primary impact, for our purposes, was on Venice. The relationship between accounting and printing is understandably obscured by the profound effect printing had upon religion. Martin Luther ingeniously used the printing press as a tool to spread his crusade against the prevailing Catholic dogma. However, printing presses were also used to help educate merchants on the details of double entry. While prosaic in comparison to theological issues, the new business arithmetics and bookkeeping manuals certainly helped to educate and convert many businessmen to double entry [Eisenstein, 1979, chapters 1-2 and 6-8; Davis, 1960, pp. 18-48]. Printing greatly increased the availability of instruction in the double entry technique, thus giving Northern Europeans a practical guide to the new accounting. To be sure there were some sources of information on DE before the printing press, but they were few in number and relatively expensive.

Italy also sponsored a revival of secular learning which, Fernand Braudel suggests, grew out of the need to train merchants’ apprentices [Braudel, 1983, chapters 11-13]. He mentions that Florence had as many as 10,000 children learning to read in primary school at a time when the cities population was not larger the 100,000. Braudel continues to make the point that as many as 1,200 boys went on to study accounting and arithmetic until they were fifteen years old [Braudel, 1983, chapters 11-13]. Given the available resources and population base these are very large numbers of students. It is clear from this research that Northern Italian city-states were leaders in education and that this education typically took the form of reading, writing, and arithmetic. All of these mental endeavors were crucially aided by the spread of grammars and arithmetics made possible by the printing press. The specific intellectual linkages are com-
complicated in this instance and any scholar of this period must constantly remind himself or herself there is no simple cause and effect relationship among these variables. The demand for output of printers was dependent upon the educational level of the population. However, to a certain extent the literacy rate was related to supply of affordable books. Both, variables were dependent upon the great increase in the desire for knowledge, fostered by the Renaissance. Further complicating these relationships is the fact that secular humanism itself rested upon the ability of interested individuals to read the texts they wished. Thus, it is not an easy problem to sort out.

One method which could be used to document this claim regarding the spread of double entry would be to count and note the locations of printing various business arithmetics and grammars. Estimates could, in theory, be made of the number of students who were schooled in the commercial arts and this data could in turn be compared with business records of the day to link the two events. While its certainly true that early printed books were expensive, they were cheaper and more accessible than materials of a comparable nature before the printed book.

Such a research design is not available due to a lack of extant records, especially on literacy rates and enrollments in business education curriculum. However, drawing on the research of Elizabeth Eisenstein, it is possible to construct a pattern for the rest of the continent. This data is summarized in the table below.

<table>
<thead>
<tr>
<th>Establishment of Printing Centers</th>
<th>Before 1471</th>
<th>1471-1480</th>
<th>Total to 1480</th>
<th>1481-1490</th>
<th>1491-1500</th>
<th>Total at 1500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Italy</td>
<td>2</td>
<td>33</td>
<td>35</td>
<td>9</td>
<td>5</td>
<td>49</td>
</tr>
<tr>
<td>Rest of Italy</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>Germany*</td>
<td>7</td>
<td>28</td>
<td>35</td>
<td>20</td>
<td>11</td>
<td>66</td>
</tr>
<tr>
<td>Switzerland</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Iberia</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>14</td>
<td>9</td>
<td>30</td>
</tr>
<tr>
<td>France</td>
<td>1</td>
<td>8</td>
<td>9</td>
<td>11</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>England</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Scandinavia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>89</td>
<td>104</td>
<td>73</td>
<td>44</td>
<td>221</td>
</tr>
</tbody>
</table>

* Includes present day Austria and Benelux

This data represents the spread of printing in the years immediately preceding 1500. Printing centers is a term used to indicate the location of printing presses, and associated services, such as a translation, editing and book selling, which were carried with printing during this era. This table is primarily descriptive, not inferential, and is used here to indicate a general pattern of development.

Printing per se, spread from two areas, Northern Italy and Germany, (mainly present day Central Germany), North and then West. Before 1480, the majority of growth of printing centers was primarily in Northern Italy and Germany which accounted for fully 70 of the 104, or 67%, of all the printing centers in Europe. In the case of Northern Italy, these centers were concentrated in Venice, Genoa and Florence, including their suburban networks of towns and villages. These were also the urban areas where DE was being developed, refined and implemented, and represented and opportunity for business people to put down in book form their methods of accounting.

Furthermore, each printing center could support a number of separate printing houses. Indeed, the economic phenomenon of agglomeration economics coupled with external efficiencies explain the rapid growth and low cost of printing in Venice. Venetian printers were able to learn from each other, and to learn by doing which allowed them to rapidly capture a sizeable share of the printing market via superior quality at a lower cost. The political climate in Venice was generally tolerant, and this, plus the city's role as a commercial and intellectual center, attracted a wide range of scholars who could be employed as translators and advisors to the printers.

From Northern Italy, after 1480, printing spread to other commercial centers mainly in France and Iberia. The majority of the growth in printing came from only four countries: France, Spain, Italy, and Germany, which accounted for 185 of the 202 printing centers, fully 91% of the total, by 1500. Since printing was a quintessentially urban activity, during these years all centers were simultaneously associated with business and commercial growth.

The spread of printing was associated with two crucial elements which abetted the wide adoption of DE. In all cases, new printing centers were established and operated in urban areas. In order for this new technology to survive, a critical mass of population, literacy and the demand for printed works in local
vernacular all had to be present. These could only be found together in urban areas. Secondly, and more importantly for DE, these urban areas had to be commercially active and involved in trade in order for there to be a subsequent demand for the new accounting technique.

Throughout the thirteenth and fourteenth centuries, the economies of the great Northern Italian city-states developed rapidly. Population and urban growth were both high as was the advancement of trade and manufacturing. This process was temporarily interrupted by the Black Death Plague, but by the early years of the fifteenth century, Venice became the trading capital of Europe with factors and subsidiary operations stretching from London to the Levant. In conjunction with economic growth, the Renaissance helped to foster free thinking and broader education. The end result of this process was increased literacy and specialized educational institutions, especially in urban areas [Sarton, 1930, Chapter 5].

Venice became the printing center of Southern Europe and was more urbane and cosmopolitan than either Genoa or Florence, or even Rome, all of which still retained a certain Italian provincialism. The Church had less influence in Venetian affairs, and, in conjunction with a liberal government, large skilled labor force and vibrant intellectual community, provided the conditions in which a vigorous printing industry could thrive. A large percentage of the titles in business, commerce and accounting books were first published in Venice; and then Venetian merchants carried them to all of Europe. Such printers as Aldo Manuzio quickly took advantage of this comparative advantage in printing and translation. The city had acquired an impressive array of ancient and contemporary scholars eager to assist fledgling printers. These unique advantages allowed Venice to become the premier printing center of Europe. To illustrate Venetian dominance of printing south of the Alps, consider the following: by 1500, 2,835 books had been printed in Venice, while Rome could claim 925, Milan 629 and Florence 300 [Symonds, 1933, p. 369; Grendler, 1977, Chapters 2 and 3].

CONCLUSION

This article was written to achieve two purposes: first to locate the region — Italy's Golden Triangle — where DE was originally developed and to explain why it initially occurred in Northern Italy. Second to develop a plausible theory of the
mechanism by which DE was spread from Northern Italy to the major trading centers of Europe.

Simply put, double entry developed in three Northern Italian city-states between approximately 1200 and 1350. The need for a new accounting system stemmed in large part from the economic forces of the Commercial Revolution. From Northern Italy, double entry spread along European trading routes to other commercial centers first by way of example and then through the use of new business manuals from the printing industry. The increase in economic activity was fueled by commercial contacts from the Crusades, advancements in agriculture and trade, population growth and the rise of urban areas. While Luca Pacioli and his followers were behind practitioners in commerce, they did provide an educational medium from which others could learn the new art of double entry. This method of keeping books allowed for a more precise definition and calculation of profit, and, at the same time, it gave managers better financial tools with which to make decisions.

There is more to the story of Italian dominance of accounting's early years than can be told here. However, the main character of the play and the essentials of the plot and setting have been established. Two events — the Commercial Revolution and printing — came together in Northern Italy to create the conditions whereby the region could invent, perfect and disseminate double entry. Raymond de Roover, the distinguished Belgian historian of accounting, sums up these events best: "Under the spur of necessity, accounting developed spontaneously and reached a remarkable degree of perfection in the Italian communes of the Middle Ages. . . . and the invention of printing and the publication of manuals helped the diffusion of double entry bookkeeping outside Italy" [de Roover, 1955, p. 417].

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