Accounting and banking practices in the fifteenth and early sixteenth centuries as illustrated by the career of Jacob Fugger the Rich

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Résumé : Cet article examine certains aspects de l'histoire de la comptabilité pendant les 15ème et 16èmes siècles, avec une emphase sur la carrière de Jacob II Fugger (1459-1525). Durant sa carrière Jacob Fugger engageait en des multiples entreprises variées, principalement orientées vers le prêt d'argent aux négociants et nobles.. Pendant les années 1473 à 1487, il habitait la République vénitienne où il est apprenti et associé dans une société d'import-export alémanique. Il semble qu'il obtienne une maîtrise de la comptabilité en partie double, du droit commercial, et des mathématiques financières pendant son séjour à Vénice. Après son retour en l'Allemagne il modelait la gestion de ses entreprises après ceux des villes-état italiennes. Cet article cherche à démontrer que Jacob Fugger était non seulement un banquier brillant, mais qu'il était un praticien bien informé de la comptabilité en partie double et qu'il avait l'habitude de combiner des comptes de treize branches d'un empire multinational d'affaires, permettant de ce fait un arrangement clair de la position financière et de la rentabilité de ses affaires internationaux.

Mots clés: Jacob Fugger, histoire bancaire, histoire de la comptabilité, 15ème et 16èmes siècles

Abstract: This paper examines certain aspects of accounting history in the 15th and early 16th centuries with a particular emphasis on the career of Jacob II Fugger (1459-1525). During his career Jacob Fugger was engaged in many different types of business enterprises primarily centered on the lending of money to merchants and aristocrats. It appears that Jacob Fugger learned about double entry bookkeeping, banking and commercial law, and financial mathematics, during the years 1473 through 1487 when he resided in the Venetian Republic. Upon his return to South Germany in 1487, he modeled his business practices after those of the Italian city-states. This paper seeks to demonstrate that Jacob Fugger was not only a brilliant banker, but that he was also a knowledgeable practitioner of double entry bookkeeping which he used to combine accounts from thirteen branches of a multi-national business empire, thereby allowing a clear understanding of the financial position and profitability of his international business affairs.

Key words: Jacob Fugger, banking history, accounting history, 15th and 16th century

1. Introduction

While prior accounting history scholarship has produced a number of articles focusing on bookkeeping in the Italian city-states in the late medieval and Renaissance periods, there have been few studies focusing on German accounting practices during the same time period. In particular there has been a lack of studies focusing on South Germany, a region that was closely connected with the Venetian Republic during the 15th and 16th centuries. During this period, the Fugger family firm was one of the most important enterprises in South Germany. The Fugger family rose from peasant roots in the 14th century to achieve recognition as the most prominent banking house in all of 16th century Europe. This paper focuses on the career of Jacob II Fugger (hereafter Jacob Fugger), who has often been referred to as Jacob the Rich (Strieder, 1931).

During his career, Jacob Fugger engaged in many different types of business enterprises, most of which involved lending to merchants and aristocrats. The associations that he developed with several Emperors of the Holy Roman Empire and the Vatican led to great wealth for Jacob Fugger and his family. Some authors have argued that he was the richest person who ever lived (Steinmetz, 2015). The historical evidence suggests that Jacob Fugger may have learned the elements of double entry bookkeeping, banking, commercial law, and financial mathematics while he was an apprentice and master merchant in the Venetian Republic during the years 1473 to 1487. In 1487, he returned to Augsburg, Germany and became a highly successful investor and industrial entrepreneur in silver and copper mines in Austria and Hungary. While pursing these activities he clearly modeled his business practices after those of the Italian city-states, adopting both accounting practices and legal forms of partnership that had been developed in Florence and other Italian cities (Strieder, 1931; Weber, 2002). This paper seeks to demonstrate that Jacob Fugger was not only a brilliant entrepreneurial capitalist and sophisticated banker, but also a knowledgeable practitioner of double entry bookkeeping which he used to combine accounts from thirteen branches of his multi-national business enterprise (Hartsough, 1932; Inoue, 1982).

The remainder of this paper is organized as follows. Section 2 surveys the historical context, including the origins of the Fugger family (Section 2.1), the political situation of Germany in the 15th century (Section 2.2), and the importance of Venice to the Fugger family firm (Section 2.3). Section 3 focuses on Jacob Fugger's early career in Venice during the years 1473 to 1487 (Section 3.1), and discusses his creation of mining enterprises in Tyrol and Hungary and the development of a lending relationship with the Hapsburg Family (Section 3.2). Section 4 surveys the accounting and business practices of the Fugger family firm under the direction of Jacob Fugger leadership. Section 5 discussed the rise of the Fugger firm to be the most important banking house in 16th century Europe. A conclusion follows.

1.1 A methodological note

While there is an abundant literature available in the English language regarding the life of Jacob Fugger (see for example: Ehrenberg, 1938; Häberlein, 2006, 2012; Hartsough, 1932; Inoue, 1982; Kluger, 2014; Steinmetz, 2015; Strieder, 1905, 1931; Yamey, 1967), apart from Hartsough (1932), Inoue (1982), Strieder (1905 and 1931), and Yamey (1967), there is a lack of literature describing the accounting practices of the Fugger family and in addition there are few surviving accounting archives. Most of what we know about the accounting practices of the Fugger family firm is based upon two surviving historical documents. The first document is document is a treatise written in 1518 by Mattäus Schwarz which describes the bookkeeping systems of the Venice and Augsburg branches of the Fugger family firm. A copy of Schwarz's manuscript is located in the Austrian National Library in Vienna. Weitnauer (1931), Hartsough (1932), Inoue (1982) and Yamey (1967) have commented upon this manuscript, but it is unclear whether these scholars, apart from Professor Weitnauer actually relied upon the original document. The second document is an inventory of the assets and liabilities of the Fugger firm drawn up in 1527, two years after the death of Jacob Fugger. A copy of this inventory is located in the archives of the Fugger Family Foundation in Dilligen an der Donau in Germany. Professor Jacob Strieder (1905) made a detailed analysis of this document and among other things he calculated that the average profit of the Fugger family firm between 1511 and 1527 under the leadership of Jacob Fugger was approximately fifty percent per annum.

Thus, it can be seem that the historical evidence regarding accounting practices in the Fugger family firm has been derived primary from secondary and tertiary sources rather than original archives. While some accounting scholars may regard this as a deficiency in accounting history research, the primary purpose of this paper is to draw the attention of accounting historians to a little known area of business history research and to promote further investigations into the history of the Fugger family firm. In addition, it can be argued that Jacob Fugger was one of the world's first multi-national business capitalists, and that the practices which he adopted in the 16th century foreshadowed by over 300 years later developments in international capitalism. A primary contribution of this paper is therefore to add to our understanding of the origins of early capitalism in Europe.

2. Historical Context

2.1 Origins of the Fugger Family

In 1367, the tax register of the city of Augsburg records the arrival of Hans Fugger, a cloth-weaver by trade, from the small village of Graben (Jansen, 1907, p. 8). In addition to being a weaver, Hans Fugger was a trader of textiles. Through his ability in textile trading, by 1396 he was listed among the most important taxpayers in Augsburg (Kluger, 2014). After his death, his sons Andreas, Lucas and Jacob I (known as Jacob the Elder) carried on the trade in textiles and became rich burghers. Jacob the Elder founded a branch of the family known as the "Fuggers of the Lily" because the family coat of arms showed a flowering lily on a gold and blue background. Jacob the Elder was a master weaver, merchant trader, and alderman. He married Barbara Basinger, the daughter of a goldsmith, and by 1461, he was listed as the twelfth richest man in Augsburg (Steinmetz, 2015). Jacob and Barbara had either ten or eleven children, depending on the source, including seven sons (Jensen, 1907). After the death of Hans Fugger in 1469, Ulrich, the eldest son of the family, took over the business and formed a partnership with two of his brothers, George and Jacob II (subsequently known as Jacob the Rich)(Steinmetz, 2015). The focus of this paper is on the life of Jacob the Rich, who was born in 1459. Jacob the Rich was the grandson of Hans Fugger who arrived in Augsburg in 1367.

2.2 Germany in the 15th Century

In the 15th century, Germany was not a unified political entity; instead, it was constituted by various sub-entities scattered throughout the region from the Alps to the North Sea and east of the Rhine River. The Holy Roman Empire was the overarching political entity at that time and it represented the royal power in the German territories. The Holy Roman Empire had been established in 800 AD when Pope Leo III crowned Charlemagne as Emperor and successor to the historic Roman Emperors. In the 15th century, the Holy Roman Empire encompassed present day Germany, Switzerland, Austria, the Czech and Slovak Republics and parts of Hungary and Poland (Bryce, 1913).

While frequently controlled by hereditary dynasties such as the Hapsburgs, the title of Holy Roman Emperor was elective. The German prince-electors, who were the highest ranking noblemen of the empire, elected one of their peers as "King of the Romans" (i.e. Germans). The King of the Romans would later be crowned as the Holy Roman Emperor by the Pope (papal coronations were discontinued in the 16th century under Maximillian I). The Holy Roman Empire never achieved political integration comparable to that of the Kingdom of France. Rather, it evolved into a decentralized, limited elective monarchy composed of hundreds of principalities, duchies, counties, free imperial cities, and other domains. The power of the Holy Roman Emperor was not as great as that of the kings, dukes, margraves, bishops, and counts who ruled specific territorial sub-divisions of the empire (Bryce, 1913).

In 1473 Ulrich Fugger, the elder brother of Jacob Fugger, had an opportunity to provide rich fabrics to make wedding garments for Frederick III, the Holy Roman Emperor, and his son Maximilian I (who subsequently became Emperor as well). This led to a profitable lending relationship between the Fugger family and the Habsburg family which lasted for over one hundred years (Steinmetz, 2015; Strieder, 1931).

2.3 The Venetian Republic in the 15th Century

Commercial and cultural connections between South Germany and the Venetian Republic in the 15th and 16th centuries were of great importance to the career of Jacob Fugger. By the early 15th century, the Venetian Republic had expanded to encompass large parts of north-east mainland Italy and also along the Dalmatian coast. This expansion was in response to external threats from the Duchy of Milan and also to the weakness of the Byzantine Empire which was surrounded by the Ottoman Turkish Empire. By 1410, Venice possessed a navy of 3,300 ships (manned by 36,000 men) and it controlled cities such as Verona and Padua (Norwich, 1982). Under doge Francesco Foscari (1423–57), Venice reached the height of its power and territorial extent, controlling Lodi, Piacenza, Brescia, Vicenza, and Bergamo on the Italian mainland, as well as Ravenna, Istria and Ragusa on the Dalmatian coast.

In 1453, Constantinople fell to the Ottoman Turks, thus threatening the primary source of trading revenues for the Venetian Republic. Nevertheless, Venice managed to maintain a trading colony in Constantinople as well as some of its former trading privileges which had been granted previously by the Byzantine Empire. Despite the apparent truce between Venice and the Ottomans, later in the 15th century there was intermittent warfare which led to the loss of the Venetian stronghold in the Aegean Sea, Negroponte, on the island of Euboea in Greece. The Ottomans eventually conquered all of Greece and launched an offensive against Venetian territories. In 1479, a peace treaty was signed with the Ottomans, but Venice had to cede several trading colonies and pay an annual tribute of 10,000 golden ducats (approximately US$1,220,000, see Appendix I). In spite of these strategic setbacks, by the end of 15th century, the city of Venice had a population 180,000 which made it the second largest city in Europe after Paris and one of the richest cities in the world. The territory of the Republic of Venice extended over approximately 70,000 km^2 (27,000 sq. mi.) with 2.1 million inhabitants (by comparison England had a population of 3 million, the whole of Italy 11, France 13, Germany/Holy Roman Empire 10) (Norwich, 1982). Because of the commercial and cultural prominence of the Venetian Republic in the 15th century, it was common for South German merchants to send their sons to Venice to study commercial practices. In 1473, Jacob Fugger began an apprenticeship in Venice where he eventually remained for fourteen years (Strieder, 1931, p. 15).

3. The Career of Jacob Fugger

This section provides a brief outline of the career of Jacob Fugger and summarizes certain key elements which contributed to his financial success. Fugger's career can be divided into three periods: 1459-1487, youth and residence in Venice (discussed in Section 3.1); 1487-1511, investment in silver and copper mines in Austria and Hungary and lending to the Hapsburgs (discussed in Section 3.2); 1511-1525, reorganization of the Fugger firm after the death of Jacob's elder brothers and emergence of the firm as the most important merchant banking house in 16th century Europe (discussed in Section 4.5).

3.1 Residence in the Venetian Republic (1459-1487)

Little is known about the early life of Jacob Fugger, except that he was originally intended to become a canon (i.e. a minor ecclesiastical order) (Steinmetz, 2015). His father died when he was ten years old, and several of his brothers also died at an early age. Perhaps as a result of these deaths, his mother decided to send Jacob to Venice in 1473 at the age of 14 to become an apprentice merchant (Steinmetz, 2015, p. 7). In Venice, he resided in the *Fondaco dei Tedeschi* (Homburger et al., 1974; Strieder, 1931), adjacent to the Rialto Bridge, which was the commercial heart of Venice at that time. The *Fondaco dei Tedeschi* was a residence for German merchants, as well as a warehouse and market showroom. Unmarried German men were required by the Venetian Republic to live in the *Fondaco*. The ground floor was accessible by water and was used for storage. The first floor was dedicated to offices and an upper area contained about 160 living quarters, which made the *Fondaco* something like a university dormitory. However, it was also one of the city's most powerful colonies of merchants, and as a result it became an important trading center for goods passing from Asia over the Alps and into Southern Germany and the rest of Europe (Steinmetz, 2015, p. 9). While we can only speculate regarding the activities that Jacob Fugger engaged in during his stay in Venice, it is probable that he learned to read and write in Italian, as well as obtaining a practical knowledge of Italian commercial practices such as double entry bookkeeping, business law and commercial arithmetic (Grendler, 1989).

3.2 Mining investments and lending to the Hapsburgs (1487-1511)

After his return to South Germany in 1487, Jacob's older brothers asked him to investigate new investment opportunities for the family firm. As a result, Jacob travelled to trade fairs in Nuremburg, Champagne, Lyon, Venice and other cities (Strieder, 1931). Jacob also investigated investment opportunities in silver mining in Austria.

3.2.1 Silver mining in Austria

In the 15th century, the town of Schwaz in Tyrol, Austria was the richest silver mining region of Europe, and it was among the richest silver mining areas of the world prior to the discovery of the western hemisphere. At its height in the 15th and 16th centuries, Schwaz had a population of

20,000, which made it the second largest city in the Holy Roman Empire after Vienna (Strieder, 1931; Steinmetz, 2015).

Upon his arrival in Schwaz Jacob Fugger began making loans to silver mine operators. In order to avoid the charge of usury, he took a "Kuxe" position in the mine operations. The term "Kuxe" originated in the late middle ages in German mountain mining regions where a union was formed through a cooperative agreement among several mine operators. The joint operation had a fixed number shares or "Kuxe", typically 128. However, unlike shareholders who only received a percentage of the profits, Kuxe owners were required to make a capital contribution to the mining operation if needed (Liessmann, 2010).

3.2.2 Lending to Archduke Sigismund

As a result of this lending activity in Tyrol, Jacob Fugger became acquainted with Archduke Sigismund, who was first cousin to the Holy Roman Emperor Frederick III and second cousin to Archduke Maximillian I. As the ruler of Tyrol, Sigismund was the legal owner of the Tyrol mines, but he had granted licenses to private investors to operate the mines in exchange for a share of the profits. Despite his significant income, because of a lavish lifestyle Sigismund was constantly in need of money. In 1485, Jacob Fugger loaned Sigismund 3000 florins (gulden) (approximately US$250,000, see Appendix I). Pursuant to the loan agreement, Fugger was granted the right to buy 1000 pounds of silver at 8 florins per pound, a discount from the market price. Fugger re-sold the silver in Venice at 12 florins per pound, thus earning a profit of 4000 florins (Steinmetz, 2015, p. 18).

While this transaction was profitable, it seemed unlikely to be repeated due to competition from other Italian and German bankers who were also interested in lending to the Hapsburg rulers. However, an event took place which allowed Jacob Fugger to obtain an advantage over his competitors. In March 1487 Sigismund started a war with the Venetian Republic. His Tyrolian forces seized silver mines in the Valsugana valley owned by Venice, and in April 1487, Sigismund angered Venice further when he imprisoned 130 Venetian merchants traveling to a trade fair at Bozen (modern day Bolzano) and confiscated their goods. The Venetian Republic had a much larger army and it easily defeated the Tyrolian forces, resulting in 100,000 gulden of war reparations which Sigismund owed to Venice (approximately US$8.2 million, see Appendix I).

Because no Italian banker was willing to loan money to Sigismund, Jacob Fugger agreed to advance the funds. This was a highly risky loan, and in order to provide assurance of repayment, the loan agreement specified that Fugger would receive all of the output from the Schwaz mines, at a discount, until the loan was repaid. In addition the agreement prevented Sigismund from taking possession of the silver, and the mine operators of the Schwaz mines were required to cosign the loan. In addition, the funds were advanced to Sigismund only in installments. Finally, Fugger insisted on control of the state treasury in order to prevent Sigismund from defaulting (Strieder, 1931; Steinmetz, 2015, p. 21). However, because of his continuing mismanagement and lavish lifestyle, in 1490 Sigismund was forced to resign in favor of his cousin Maximilian I, who promised to repay all loans to the Fuggers and others (Pölnitz, 1999). Maximillian I had been elected King of the Romans in 1486 and was therefore the heir apparent to the Emperorship of the Holy Roman Empire. As a result, the Fugger firm became one of the primary lenders to the Emperor of the Holy Roman Empire.

3.2.3 Investments in copper mines and lending to Maximillian I

Jacob Fugger was reluctant to extend further loans to Maximillian because of the risk of potential default, and consequently he sought out alternative investments. As collateral for loans to the Habsburgs, Jacob had not only demanded the output from the Tyrolian silver mines, but also the transfer of certain copper mining rights in Hungary. The copper mines were located in the village of Arnoldstein situated at the intersection of modern day Austria, Hungary and Slovenia. This area was in the border region between territories controlled by the Holy Roman Empire, the Kingdom of Hungary, and the Ottoman Empire, and was therefore highly contested. In the first part of the 15th century, the Ottoman Turks had captured ten thousand peasants in this region and sent them as slaves to the Ottoman Empire.

Fugger persuaded the abbot of Arnoldstein to allow him to develop the copper mines and to construct a smelting works. With his business partner Hans Thurzó he founded the Hungarian copper trade in 1494. In Arnoldstein, they constructed a large smelting operation which required cutting down forests in the nearby mountains and polluting rivers with the smelting waste.

Nevertheless, they eventually established monopolistic control over the copper trade in Central Europe. Additional mines funded by Fugger and Thurzó were constructed in Neusohl, in the Kingdom of Hungary. This expansion continued with the construction of smelting plants in Neusohl, Hohenkirchen in Thuringia, and Moschnitz. The copper was distributed through factories in Breslau, Leipzig, and Cracow and eventually entered into trade with India via river transport to Antwerp and Lisbon (Strieder, 1931).

The copper mining projects required enormous amounts of capital, which was beyond the means of the Fugger firm. As a result, in 1496, Cardinal Melchior von Meckau became a secret investor in the Fugger firm. The Cardinal invested 150,000 guilders (approximately US$12.45 million) in the Fugger firm. When the Cardinal died in Rome in 1509 this loan remained unpaid. The Pope, the Bishop of Brixen, and the family of the Cardinal each claimed the inheritance and demanded the repayment of the loan which would have bankrupted the Fugger firm. This situation prompted Emperor Maximilian I to step in and assist Jacob Fugger. On the condition of aiding Pope Julius II in a war against the Republic of Venice, Maximillian I was recognized by the Pope as being the rightful heir of Cardinal Melchior von Meckau. This inheritance received by Maximillian I was used to settle his debts to Jacob Fugger. In return for this support, Maximilian I demanded additional loans from the Fugger firm in order to finance his military and political campaigns (Strieder, 1931; Steinmetz, 2015).

4. Accounting Practices of the Fugger Firm

4.1. Introduction: Accounting and bookkeeping in the Italian city-states in the 15th Century

Accounting historians generally agree that the use of double entry bookkeeping emerged in the Italian city-states in the 13th century (Sangster, 2014, 2016; Lee, 1977; Yamey, 1967). Sangster (2016) indicates that bankers in Florence were among the first to adopt double entry bookkeeping and that it was the specific characteristics of banking in Florence in the 14th century that led to its widespread adoption. The Medici Bank, created in Florence in the early 15th century, was the largest and most respected bank in Europe at that time. Soll (2014) suggests that the success of the Medici Bank was due in part to its use of double entry bookkeeping. Cosimo d' Medici (1369-1464), who was the *Maestro* of the Medici bank from 1429 until his death in 1464, learned double entry bookkeeping as an apprentice in the Rome branch of the Medici bank (Soll, 2014, p. 35).

The Medici bank was not just a bank. Much like the Fugger family firm, the Medici bank was a multi-faceted and multi-branched trading entity. The Medici bank was established initially when a factor (i.e. agent) was sent to Venice in 1402 to seek investment opportunities. In addition to banking, the Venice factory's investments included the production of woolen cloth and trading in other commodities (De Roover, 1963). The branches of the Medici bank also engaged in issuing bills of exchange. In the middle ages and early Renaissance, usury was banned by the Catholic Church (Beer, 1938). Consequently, the Medici Bank could not openly charge interest; instead, bills of exchange may have been used as one way to circumvent the laws against charging interest on loans (De Roover, 1948). In addition, Sangster (2014, p. 14) indicates that cash books were not kept by bankers in order to avoid charges of usury (Sangster, 2014).

4.2 Commercial arithmetic and bookkeeping in Venice in the 15th century

According to Swetz and Smith (1987) and Sangster (2014), during the period of Jacob Fugger's stay in Venice, two different manuscripts appeared which dealt respectively with commercial arithmetic and double entry bookkeeping. The first of these books was *Treviso Arithmetic*, published in Venice in 1478. This book dealt with commercial arithmetic, involving the use of Hindu-Arabic numerals, algorithms using such numerals, and the use of algorithms to solve commercial problems. The sample problems included in this book focused on topics relevant to merchants in the late fifteenth century, such as payment for goods received, currency exchange, and the determination of shares of profit derived from a partnership (Swetz and Smith, 1987).

The second book was Cotrugli's *Libro de l'arte dela Mercatura*, which Sangster (2014, p. 4) indicates was written in 1458 in Castello di Serpico (near Naples), but subsequently taken in manuscript form to Venice in 1484, although not printed until 1573. A treatise on double entry bookkeeping, which was apparently written by Marino de Raphaeli was bound into Cotrugli's book. According to Sangster, de Raphaeli constructed his manuscript from previously existing texts written in the 1430s. De Raphaeli combined the prior texts into one volume using dates and scenarios set in Venice in 1475 and 1476, which was precisely the time when Jacob Fugger resided in Venice. Sangster (2014, p. 12) also indicates that the manuscript was written in the Venetian dialect and that the paper bears a Venetian water mark. Thus, while it cannot be conclusively proven that Jacob Fugger learned double entry bookkeeping in Venice in the period from 1473 to 1487, the use of double entry bookkeeping throughout the Fugger family firm in subsequent years provides evidence supporting this hypothesis.

4.3. A description of double entry bookkeeping in the Fugger firm

In 1516, Mattäus Schwarz was hired by Jacob Fugger as a bookkeeper in the Augsberg head office of the firm (Hartsough, 1932; Yamey, 1967; Inoue, 1982). In 1518 Schwarz wrote a manuscript describing the bookkeeping system used in the Venice "factory" of the firm. In this manuscript, Schwarz contrasted the double entry bookkeeping system used in the Venice branch with what was called the "German practice" which followed a single entry approach. Schwarz also provided a third example of the "Hauptbuch" (general ledger) which was kept in the Augsburg head office (Hartsough, 1932; Yamey, 1967).

Schwarz illustrated how the Venice double entry accounts were combined into the head office accounts, as well as those of the other branches of the Fugger firm. The Venice Branch engaged in transactions in three kinds of commodities: textiles, copper, and silver. The Venice Branch received copper and silver from certain branches of the Fugger firm and sent these metals to other branches. In the Italian double entry system, monetary values were assigned to these inter-branch movements of commodities. In the German system, monetary values were omitted and only a quantity entry was made for the inter-branch transactions. Consequently no profit calculation could be made in the German system (Yamey, 1967; Inoue, 1982).

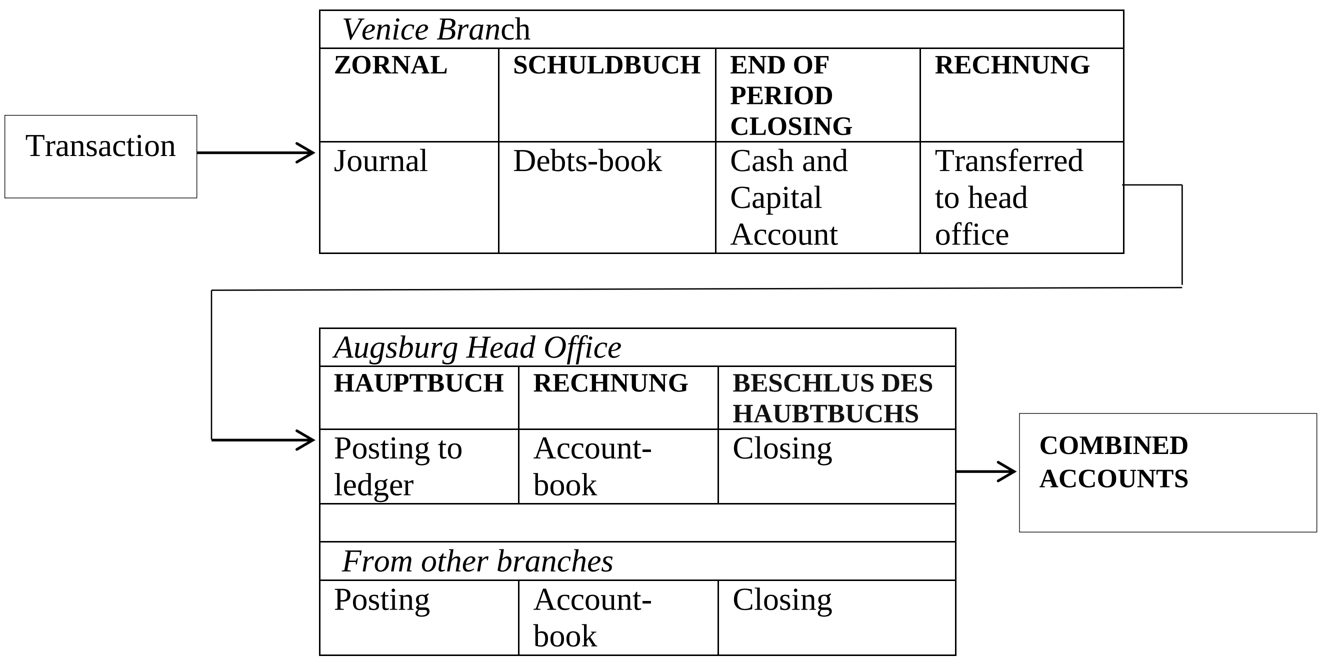
In his manuscript, Schwarz demonstrated the bookkeeping system by dividing the calendar year into two periods. The first period ran from January 1 to September 30 and described the Italian system used in the Venice branch. The second period ran from October 1 to December 31 and described the “the German system”. The description of the Italian system began with an entry recording a cash investment in the Venice branch from the Fugger Head Office in Augsburg (i.e. Jacob Fugger's capital account). This entry was made in a “Zornal” (journal) and it showed a debit to Cash and a credit to Jacob Fugger's capital account (Inoue, 1982). It is important to note here, that the credit was to a personal account, and that Jacob Fugger, as head of the Fugger family firm was the sole named holder of the capital account (Hartsough, 1931; Yamey, 1967; Inoue, 1982).

Subsequent entries for purchases and trading transactions were made in the Zornal and then posted to a "Schuldbuch" (debts-book or ledger). The Schuldbuch was a single ledger that included a cash account, thus perhaps contradicting Sangster's (2016) observation that cash accounts were not kept. The ledger also included various goods or inventory accounts, receivables from and payables to other Fugger branches, and Jacob Fugger's capital account. There was no separate profit and loss account. The profit on trading in a commodity such as silver would be credited directly to the capital account (e.g. debit cash 100 florins, credit silver inventory 80 florins, credit Jacob Fugger capital 20 florins). On September 30 all accounts were closed into Jacob Fugger's capital account. Therefore if all entries were made correctly the Cash Account and Fugger's Capital Account should be equal. As a further proof of the correctness of the entries, another book called a "Rechnung" (account-book) provided a detailed listing of the entries made into the capital account. The left-hand side of the Rechnung was headed "outgoings" (*Ausgehen*), and the right-hand side was headed "incomings" (*Einnemen*). The outgoings constituted a chronological list of all debit entries in Fugger's capital account and debit entries to the accounts of the various Fugger factories with which the Venice factory had dealings. The incomings showed the credit entries in these same accounts (Yamey, 1967; Inoue, 1982).

The German system also used a "Zornal" (journal), but there were two separate ledgers, a "Schuldbuch" (debts-book) and a "Capus" (goods-book). These ledgers did not use a debit and credit approach. Instead all transactions were entered as increases or decreases in quantities. For example, the "Einnemen/Empfahung" (incoming/receiving) side of an account was used when a commodity was purchased. At the end of the period, accounts were not balanced; instead, they were summarized in a statement with the left-hand side showing "Summa Einnemen" (sum of incomings) while the right-hand side showed "Summa Ausgeben" (sum of outgoings) (Inoue, 1982; Yamey, 1967).

A "Haubtbuch" (general ledger) was maintained in the Fugger Head Office in Augsburg. No journal was needed here because the balances transferred from the branches provided the same information as a journal. In the head office ledger, all accounts were summarized in a "Rechnung" (account-book). Based upon the accounts in the ledger, a "Beschlus des Haubtbuchs auf ein general rechnung" (closing of the ledger at the end of the period) was prepared. Essentially this was a trial balance which could be used to prepare a balance sheet. Schwarz's manuscript explains how a combined statement could be prepared at the head office in Augsburg from the statements (Rechnung) sent to the head office by the branches. Figure 1 shows the transaction flows in the Fugger bookkeeping system.

Figure 1: Flow of transactions in the Fugger bookkeeping system



Even though Yamey (1967) and Inoue (1982) have focused a great deal of attention on the manuscript written by Schwarz and its significance for accounting history, it is unlikely that Schwarz was the originator of the bookkeeping system described in this manuscript. In the first place, Schwarz was only 19 years old when he began working as a bookkeeper for the Fugger firm, whereas Jacob Fugger was 57 years old and the undisputed head of an international business empire. He was also a Count of the Holy Roman Empire and an immensely wealthy and powerful business leader. Therefore it is improbable that Schwarz was the originator of the bookkeeping systems used in the Fugger firm. Schwarz readily admits that his knowledge of double entry bookkeeping when he began working for Jacob Fugger was very limited. In addition, Schwarz never rose to any position in the Fugger family firm other than bookkeeper, thus, he was describing a system in which he did not participate as a merchant or banker. It is therefore logical to argue that Jacob Fugger was the originator of the bookkeeping system that was used in the Fugger family firm from 1494 onward and subsequently throughout the 16th century.

4.4 Reorganization of the Fugger Firm

In 1494, the Fugger family firm was organized by Ulrich Fugger as a German family partnership. The name of the company at that time was "Ulrich Fugger of Augsburg and brothers" with the following capital accounts (Strieder, 1931, p. 86).

Ulrich:	21,656 Rhenish gold gulden				
George:	17,177	"	"	"	
Jacob:	15,552	"	"	"	
Total	54,385	"	"	"	(US$4.894 million)

After the deaths of his brothers George in 1506 and Ulrich in 1510, Jacob Fugger assumed complete control of the firm and he completely reorganized the legal form of the firm based on a model which originated in the Italian city-states in the 15th century.

4.4.1 Origins of the limited liability company in the Italian city-states in the 14th and 15th centuries

In his doctoral dissertation completed at the University of Berlin in 1898, Max Weber discussed how general commercial partnerships and limited commercial partnership came into existence in the late 14th century in the Italian city-states. Weber based his dissertation on Italian legal statutes and trading documents and he demonstrated how partnership laws contained features that eventually began to separate personal wealth from pooled capital and rendered partners liable only for the debts of the partnership itself (thereby avoiding general liability). In his dissertation, Weber identified three kinds of partnerships: the *commenda*, in which a participant in an economic undertaking advanced the capital and shared the risk with an agent who carried out the commercial side of the enterprise without incurring liabilities; the *societa mares* (or bilateral maritime partnership) in which the investor and the agent both engaged in the venture and both contributed capital and shared the risk; and the *compagnia palese* or family partnership in which family members shared a common pool of capital and risk distinct from their personal wealth. This latter form of partnership developed in the inland cities of Italy such as Florence and it was used primarily with respect to production and not commerce. Weber demonstrated how the legal concept of a business enterprise with its own capital account distinct from the personal assets of the owners developed from the *compagnia palese*. The accounting records of these early commercial partnerships showed a clear designation of capital accounts of the business entity (Weber, 2002).

4.4.2 Reorganization of the Fugger firm based on the Italian model

The primary reason that Jacob Fugger reorganized the family firm in 1512 as a *compagnia palese* was to retain capital in the firm and solidify his control of the firm. While he was evidently willing to provide large sums of money as endowments or dowries for the widows and female heirs of his brothers, he wanted his nephews to reinvest their capital in the business and to participate actively in the firm (Haberlein, 2012). In a document entitled "Articles of Association between Jacob Fugger and his four nephews" dated 30 December 1512, Jacob Fugger invited four of his nephews: Ulrich, Hieronymus, Raimund, and Anton Fugger, to join him under the name of “Jacob Fugger and his Brothers’ Sons.” In these articles of association, the nephews were required to leave their capital in the Fugger family firm and to commit themselves to unconditional obedience to their uncle’s orders, as well as to maintain absolute secrecy about the company’s affairs. Jacob Fugger reserved for himself the right to fix profit shares, exclude associates, and dissolve the firm. The 1512 reorganization agreement demonstrates the shift in the balance of power from three equal brothers to the sole leadership and control by Jacob Fugger. In addition, the agreement documents the restriction of associates to the male descendants. An inventory of the net assets of the Fugger firm in 1511, just prior to the reorganization, showed the balances indicated in the following exhibit (Strieder, 1931, p. 88):

Exhibit 1: Balance Sheet of the Fugger firm in 1511 (source Strieder, 1905)

Assets:					
Fixed property, houses, furnishings, silver:	70,884	Rhenish	gold	gulden	
Goods and money	213,207	"	"	"	
Total assets	284,091	"	"	"	
Less liabilities:					
Endowments	15,000	"	"	"	
Payments to be made to Ulrich's heirs	39,800	"	"	"	
Payments to be made to George's heirs	32,500	"	"	"	
Total liabilities	87,300	"	"	"	
Capital Accounts:					
Jacob's capital	88,875	"	"	"	
Capital of Ulrich's sons	52,257	"	"	"	
Capital of George's sons	55,659	"	"	"	
Total capital	196,791	"	"	"	(US$17.711 mil.)

The average annual rate of return of the Fugger family firm from 1494 to 1511 under the leadership of Jacob Fugger was 10.2% (based on total capital of 53,385 in 1494 and total capital of 284,091 in 1511). While this was an attractive rate of return, it represented only the beginning of the great wealth that was to come.

5. Rise of the Fugger firm to be the most important banking house in Europe

5.1 The election of Charles V as Holy Roman Emperor

Emperor Maximilian I died in January 1519 and bequeathed the hereditary lands of the Habsburgs and also a disputed claim to the throne of the Holy Roman Empire to his grandson Carlos I of Spain. Jacob Fugger decided to support the election of Carlos I as Holy Roman

Emperor, as a way to secure his loans. This was risky and contentious course of action, because in addition to Carlos I, the English King Henry VIII, the French King Francois I and Frederick III, Elector of Saxony announced their candidacy. The Prince-electors included the three archbishops of Mainz, Cologne and Trier, the King of Bohemia, the Electorate of the Palatinate, the Margrave of Brandenburg and the Duke of Saxony (Steinmetz, 2015). In order to influence the election, Fugger transferred more than 850,000 guilders (US$750 million, see Appendix I) to the Prince-electors and this led to the election of Carlos I as Holy Roman Emperor in July 1519. Out of the 850,000 guilders, Fugger funded 550,000 while another merchant banking house of Augsburg, the Welser family, contributed about 150,000 and three Italian bankers provided the rest (Strieder, 1931, p. 151). Upon becoming Emperor Charles V, Carlos I reigned over a territory which included large portions of Europe as well as Spain's colonial empire in both the Western Hemisphere and in Asia (i.e. literally *where the sun never sets)* and he became highly indebted to Jacob Fugger. In 1521 the debts amounted to more than 600,000 guilders (US$49.8 million, see Appendix I). Charles paid 415,000 of this sum and granted Jacob Fugger ownership of the silver and copper mines of Tyrol.

In summary, because, Archduke Sigismund was notoriously uncreditworthy, the Fuggers took an unusual type of security interest in the silver mines of the Tyrol, known as a “Kuxe”. This was the beginning of the Jacob Fugger’s involvement in mining operations and trading in metals as well as lending to the Hapsburgs (Strieder, 1931). This lending relationship extended to Maximillian I when he became Holy Roman Emperor in 1486, and also to Charles V, the grandson of Maximillian I, who not only became the Holy Roman Emperor but also King of Spain and ruler of a vast colonial empire (Strieder, 1931; Steinmetz, 2015). As a result, by the early 16th century Jacob Fugger had become perhaps the richest person and certainly the most important banker in all of Europe.

5.2 Commodity trading

Commodity trading played a smaller role in the Jacob Fugger’s activities as compared with banking and mining. However, he was forced to enter into the commodity trade in a significant way. This was because Vasco da Gama had developed a sea route to India in 1498. This led to a virtual monopoly of the spice trade by Portugal which a posed a major threat to the spice trade coming through Venice. In order to compete, in 1503, Fugger opened a spice trading factory in Lisbon. He also received permission to trade pepper, other spices, and luxury goods such as pearls and gemstones through Lisbon. Along with other merchant banking houses in Germany and Italy he contributed to a fleet of 22 Portuguese ships led by Francisco de Almeida that sailed to India in the year 1505 and returned in 1506. Even though one third of the imported goods had to be given to the King of Portugal the operation still made a large profit (Hümmerich, 1922). However, the King quickly declared the spice trade to be a monopoly of the Portuguese crown which excluded foreign merchants. Nevertheless, the Portuguese were still highly dependent on the copper delivered by Fugger which was needed to facilitate trade with India (i.e. the Indians would not accept any other exports from Europe). The copper came primarily from the Fugger mines in Fuggerau (Arnoldstein) and Hofpuech, which was then transported on the Danube and Rhine Rivers to Antwerp and from there to Lisbon (Strieder, 1931; Steinmetz, 2015). Jacob Fugger was therefore significantly involved in the trade with India.

5.3 Inventory of Jacob Fugger's wealth

An inventory of the assets and liabilities of the Fugger firm was drawn up in 1527, two years after the death of Jacob Fugger. A copy of this inventory can be found in the archives of the Fugger Family Foundation in Dilligen an der Donau. Professor Jacob Strieder made a detailed analysis of this inventory which was published by Verlag der H. Laupp'schen Buchhandlung in Tubingen, Germany in 1905. Page 11 of Strieder's book shows a Balance Sheet and Profit Calculation (*Bilanz und Gewinnberechnung*) for the year 1527. This Balance Sheet shows net assets of 2 132 791 Rhenish Gold Gulden ($191.95 mil.) (See Exhibit 2). What can be seen from Exhibit 2 is that the largest sources of incoming revenues of the Fugger firm were from the silver mines in Schwaz, commodity trading of copper and spices through Augsberg and Antwerp, copper mining in Hungary and Hofpuech (Austria), and mining in Spain. While the inventory does not correspond with the description of the bookkeeping system prepared by Mattäus Schwarz in 1518, it does resemble the "Beschlus des Haubtbuchs auf ein general rechnung" (closing of the ledger at the end of the period), which was one of the books described by Schwarz.

Despite the lack of a clear connection between the bookkeeping system described by Schwarz and the detailed inventory described by Strieder, it is important to note the immense size of Jacob Fugger's fortune. Steinmetz (2015) claims that Jacob Fugger was the richest person who ever lived. In order to assess the credibility of this claim, it is important to note that the price of silver in the early 16th century before the discovery of silver mines in Peru and Mexico was about $600 an ounce. By this measure, if Fugger's wealth was measured in silver, it would amount to about $1.2 billion (2.1 million florins*27.2 grams of silver per ounce per florin*$600*.0035 grams per ounce). Maddison (2007) has estimated the European gross domestic product for the year 1600 in 1990 dollars was US$57 billion (US$74 billion in 2015 dollars adjusted for inflation). By this measure, Fugger's net worth was about 1.6% of European GDP in the 16th century. This compares with 1.5% for John D. Rockefeller and 0.44% for Bill Gates. If Fugger had 1.6% of U.S. GDP, he would be worth about $290 billion, thus perhaps making him the richest person who ever lived (Steinmetz, 2015).

Conclusion

This paper has certain accounting and business practices in the 15th and early 16th centuries with a particular emphasis on the career of Jacob Fugger. As discussed in the paper, during his career Fugger was involved in many different types of business enterprises, but most of these enterprises involved lending to merchants and aristocrats that earned great wealth for Fugger and his family. Some authors have claimed that Jacob Fugger was the richest man who ever lived (Steinmetz, 2015). The paper has argued that Fugger learned the elements of double entry bookkeeping, financial arithmetic, banking and commercial law during his residence as an apprentice and master merchant in the Venetian Republic in the years 1473 through 1487. The paper has also discussed how Jacob Fugger returned to South Germany and became a successful investor, lender and developer of silver and copper mines. In undertaking these activities he modeled his business practices on those of the Italian city-states. The paper has also indicated that based on the knowledge acquired during his period of residence in Venice, Jacob Fugger was not only a brilliant entrepreneurial capitalist and sophisticated banker, but that he was also a knowledgeable practitioner of double entry bookkeeping which he used to combine the accounts from thirteen branches of his multi-national business enterprise, thereby allowing a clear understanding of his financial position and profitability at virtually any time.

The historical evidence regarding the life and career of Jacob Fugger used in this paper has been derived from secondary and tertiary sources rather than primary archives. While some accounting historians may regard this as a deficiency, it is important to note that the primary purpose of this study has been to bring a little known area of business history to the attention of accounting history scholarship. In addition, it is evident Jacob Fugger was one of the world's first multi-national capitalists, and that the practices he adopted in the 16th century foreshadowed by over 300 years subsequent developments in international capitalism. His career is therefore worthy of study by accounting historians.

Exhibit 2: Balance Sheet and Profit Calculation (Bilanz und Gewinnberechnung)
For the year ended 31 December 1527

Outgoing (Ansgeben) (currency)(müntz)			**Incoming (Ainemen) (currency)(müntz)**	
4 512. 9. 4	Hall		4 185. 12. 3	Pozen
2 237. 19. 4	Schwaz		50 358. 9. 2	Hall
871. 6.	Fuggerau		213 402. 5. 8	Schwaz
438. 4. 5	Vienna		5 524. 4. -	Fuggerau
100. 12. 6	Leipzig		14 612. 13. 9	Vienna
2 928. 6. 3	Hochkirch		3 070. 5. 7	Leipzig
6 077. 4.	Ofen		6 074. 19. 7	Hochkirch
1 988. 2. 8	Newsol		48 345. 6. 8	Newsol
889.	Venice		163 446. 11. 10	Augsberg
53 952. 13. 4	Hungarian mines		26 064. 17. 10	Nürnberg
73 995. 17. 10			481. 13. 9	Köln
			25 524. 4. 9	Venice
			651 638. -. 8	Hofpuech
			251 083. -. -	Hungarian mines
			1 429 812. 14. 2	

Outgoing (Ansgeben) (gold)			**Incoming (Ainemen) (gold)**	
2 852. 9. -	Breslau		2 000. - -	Leipzig
55 830. 11. 9	Augsburg		26 433. - -	Breslau
8 689. 9. 7	Nürnberg		400 000. - -	Augsburg
100. - -	Köln		20 000. - -	Nürnberg
16 960. 19. 7	Antwerp		16 350. - -	Frankfurt a/M
71 376. 16. 1	Rome		363 889. - -	Antwerp

337 210. 9. 11	Spain		37 103. 13. 4	Rome
200 780. 7. 7	Exchange book		510 869. 8. 8	Spain
10 000. - -	Employees		66 229. 2. 4	Wexlpuech
793 801. 3. 6			127 902. - -	Ligender guetter
73 995. 17. 10	From above		1 570 776. 5. 4	
867 797. 1. 4	Total outgoings		1 429 812. 14. 2	From above
			3 000 707. 19. 2	Total incomings
			867 797. 1. 4	Less: outgoings
			2 132 791. 18. 2	Net position

Bibliographie

Beer, M. (1938). *Early British Economics from the XIIIth to the Middle of the XVIIIth Century*. London: Frank Cass.

Braudel, F. (1982). *Civilization and Capitalism: 15th - 18th century. Vol. 2, The wheels of commerce.* New York: Harper & Row.

Bryce, J. (1913). *The Holy Roman Empire.* New York: The MacMillan Company.

Coxe, W. (1847). *History of the House of Austria* (3rd ed.). London: Henry G. Bohn.

Chambers, D.S. (1970). *The Imperial Age of Venice, 1380-1580.* London: Thames & Hudson.

Curtis, B. (2013). *The Habsburgs: The History of a Dynasty*. London: Bloomsbury.

De Roover, R.A. (1948). *Money, Banking and Credit in Medieval Bruges*. Cambridge, MA: The Medieval Academy of America.

De Roover, R.A. (1963). *The Rise and Decline of the Medici Bank 1397-1494.* Cambridge, MA: Harvard University Press.

Ehrenberg, R. (1938). *Capital & Finance in the Age of the Renaissance*. New York: Harcourt Brace.

Elliot Wave Technician Blog (2010). The historical price of silver- from the Renaissance. http://blog.elliottwavetechnician.com/2010/06/historical-price-of-silver-from.html.

Grendler, P.F. (1989). *Schooling in Renaissance Italy Literacy and Learning, 1300-1600*. Baltimore, MD: Johns Hopkins University Press.

Häberlein, M. (2006). *Die Fugger. Geschichte einer Augsburger Familie (1367–1650).* Stuttgart: Kohlhammer.

Häberlein, M. (2012). *The Fuggers of Augsburg: Pursuing Wealth and Honor in Renaissance Germany.* Charlottesville: University of Virginia Press.

Hartsough, M. (1932). A new treatise on bookkeeping under the Fuggers. *Journal of Economic and Business History*, Vol. 4, pp. 539-551.

Homburger, R., Kellenbenz, H. and Gassmann, R-H. (1974). Summaries of papers presented at the first international accounting history symposium, *The Accounting Historians Journal*, 1(1/4)(January – October): 13-15.

Hümmerich, F. (1922). *Die erste Deutsche Handelsfarht nach Indien 1505/*06. Berlin: Verlag von R. Oldenbourg.

Inoue, K. (1982). Threefold bookkeeping by Matthäes Schwarz. *The Accounting Historians Journal*, 9(1)(Spring): 39-51.

Jansen, M. (1907). *Die Anfäge de Fugger*. Leipzig: Dunker and Humblot.

Kaelber, L. (2004). Book Review: Max Weber "The History of Commercial Partnerships in the Middle Ages. *Canadian Journal of Sociology Online*, May-June, http://www.cjsonline.ca/reviews/weber.html.

Kluger, M. (2014). *The Fugger Dynasty in Augsburg - Merchants, Mining Entrepreneurs, Bankers and Benefactors*. Augsburg: Context Verlag.

Lee, G.A. (1977). The coming of age of double entry- The Giovanni Farolfi leger of 1299-1300. *Abacus*, 4(2): 79-95.

Leyshon, A. and Thrift, N. (1997). *Money/Space: Geographies of Monetary Transformation*. London: Routledge.

Liessmann, W. (2010). *Historical Mining in the Harz Mountains*. Berlin: Springer Verlag.

Maddison, A. (2007. *Contours of the World Economy, 1–2030 AD. Essays in Macro-Economic History*. Oxford: Oxford University Press.

McGuigan, D. (1966). *The Habsburgs*. New York: Doubleday.

Miller, P., Hopper, T. and Laughlin, R. (1991). The new accounting history: An introduction. *Accounting, Organizations and Society* 16(5/6): pp. 395–403.

Norwich, J.J. (1982). *A History of Venice*. New York: A.A. Knopf

Pölnitz, G. (1999). *Die Fugger*. Tübingen: J.C.B. Mohr.

Sangster, A. (2014). *Libr. XV: Contruli and de Raphaeli on Business and Bookkeeping in the Renaisance*. Stirling: Lomax Press.

Sangster, A. (2016). The genesis of double entry bookkeeping. *The Accounting Review* 91(1): 299-316.

Steinmetz, Greg (2015). *The Richest Man Who Ever Lived*. New York, NY: Simon and Schuster, http://www.richestmanwhoeverlived.com/#!about1/c1kh2.

Strieder, J. (1905). Die Inventur der Firma Fugger aus dem Jahre 1527. *Zeitschrift fur die gesamten Staatswissenschaften XVII* (Vienna).

Strieder, J. (1931). *Jacob Fugger the Rich*. New York: Adelphi.

Swetz, F.J., Smith, D. (1987). *Capitalism and Arithmetic: The New Math of the 15th Century*. La Salle, IL: Open Court Publishing.

Weber, M. (2002). *The History of Commercial Partnerships in the Middle Ages*. (Translated by Lutz Kaelber. Originally published in German in 1898 at the University of Berlin). Lanham, MD: Rowman and Littlefield Publishers.

Weitnauer, A. (1931*). Venetianischer Handel der Fugger, nach der Musterbuchhaltung des Mathäus Schwarz.* Munich.

Yamey, B. (1967). Fifteenth and sixteenth century manuscripts on the art of bookkeeping. *Journal of Accounting Research,* 5(1)(Spring):. 51-76.

Appendix I
Comparisons among late medieval coins and their modern equivalents
(Source Ehrenburg, 1928, p. 17)

A variety of gold and silver coins circulated in Europe during the 15th and 16th centuries including the *Rhenish Florin (also called the Gulden or Guilder)* and the Venetian *Ducat.* The term *Gulden* was used in the Holy Roman Empire during the 14th to 16th centuries as generic reference to gold coins. The *Rhenish gold gulden* was of key importance to the German monetary system. It was the most common trading coin in the Hoy Roman Empire as well as in the Netherlands, France and Spain. The Venetian *ducat* was a gold or silver coin used as a trading coin in Europe from the 14th century until as late as the 20th century. The gold ducat of Venice gained wide international acceptance.

The weight of these coins in gold or silver and their approximate modern equivalents are as follows:

Coin	Metal	Weight	Location of Origin	Approximate Modern Equivalent
Rhenish gold Gulden	gold	37 1/6 English grains	Germany	US$90 (based on a gold price of $1,070 per ounce in January 2016, thus $2.25 per English grain) (1 grain = 0.00228571 ounce)
Rhenish silver Gulden	silver	27.2 grams	Germany	US$13.58 (based on a silver price of $14.15 per ounce in January 2016) (1 gram = 0.035274 ounce
Venetian gold ducat	gold	4.454 grams	Venice	US$155 (based on a gold price of $1070 per ounce in January, hence $35 per gram) (1 gram= 0.035274 ounce)