In the Name of God and Profit: An Analysis of Fourteenth-Century Foreign Exchange Gains in the Trade between Florence and England

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ABSTRACT

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Bills of exchange were ubiquitous in extra-territorial trade within Western Europe during the late medieval period. Merchant-banking firms such as the Bardi and the Peruzzi made abundant use of this legal instrument that circumvented the directive by the Catholic Church against the lending of funds for interest. Bills of exchange stated that the borrower had to repay the advance at a later time, in another location and in another currency. Because no implicit interest rate was stated on the agreement all gains and the occasional loss that were realized on this trade of currencies were foreign exchange. Although both the Bardi and the Peruzzi were large for their day, both declared bankruptcy within a short time of each other, in the mid-fourteenth century. The analysis of foreign exchange transactions during the fourteenth century reveals that although gains on the use of bills of exchange were reasonable, they were insufficient to ward off the combined effects of an economic recession combined with the after-effects of war, pestilence, a steadily declining gold/silver ratio and the quasi-mandatory loans made to the higher English nobility.

To Liliana, Rebecca and William

Table of Contents

List of Tables

CHAPTER I

INTRODUCTION WITH AN OVERVIEW OF THE MEDIEVAL ECONOMIC ENVIRONMENT

The Bardi and the Peruzzi in the late 1200s to the mid-1300s were merchant-banking firms having extra-territorial scope and repute; they were also considered financial and mercantile giants of their day. Both firms similarly suffered the ignominy of bankruptcy that, most believe, resulted principally from the issuance of loans to various high-ranking nobles and kings and from their subsequent refusal of requests for repayment. The study of the overall financial, business and managerial functions of these firms have been well investigated by Raymond De Roover, Robert Lopez, Reinhold C. Mueller, Edwin Hunt, among others; however, there still remains specific areas which are relatively unexplored. One of these is the extent to which foreign exchange gains affected the overall financial viability of these firms. The purpose of this thesis will be to explore how involvement in foreign exchange transactions, through the use of bills of exchange, impacted the bottom line of the Bardi and of the Peruzzi.

However, the study of medieval foreign exchange cannot be adequately pursued without first understanding the impediments existing within the economic environment and the societal restrictions prevalent at that time. An example that provides insight to these conditions is found in the opening phrase of business contracts with the words, *A nome di Dio e guadagnio*[1]. Indeed, under the auspices of these opening words, the partnership agreement that inaugurated the Alberti

[1] In the name of God and profit.

Company in 1308 went on to outline the terms, conditions and purpose of this mercantile firm as well as the responsibilities and duties of the respective partners.[2] This business document that bonded the three Alberti brothers in their pursuit of commerce was neither extraordinary nor unique for its day. Such documents, invoking the guidance of God in the pursuit of profit as their opening statement, go back to at least the mid-thirteenth century. However, what is important to note, in these opening words, is the strong influence religion had on trade in Western European society in the late medieval period.[3]

Canon law viewed the pursuit of trade with suspicion since, in the opinion of the Church, moneymaking endeavours unleashed the temptations of avarice and usury along with a host of other carnal vices upon the purity of the immortal soul of the merchant. However disconcerting to the Church fathers the pursuit of commerce was, they also recognized the pragmatic fact that neither individuals nor nations could exist in a vacuum, and as such, trade was deemed an essential aspect of the physical world. However, trade was only tolerated as long as the pursuit of profit could be justified at a religious level; this implied that commerce was not pursued for its own sake, but solely for the sustainment of the individual and for catering to the needs of the community. Therefore, the consciences of merchants were caught in a dichotomy pitting sacred wants versus secular desires, the worldly aspirations of merchants

[2] Raymond De Roover, *Business, Banking and Economic Thought in Late Medieval and Early Modern Europe: Selected Studies of Raymond de Roover,* ed. Julius Kirshner (Chicago: The University of Chicago Press, 1974), 71.

[3] Ibid., 72, 73.

toward the accumulation of goods and riches were constantly being challenged by their religious belief concerning the future bliss of their immortal souls.[4]

This struggle pitting spiritual wants versus fleshly desires seriously dampened the flow of entrepreneurial endeavours. In this regard, mercantile activity had no greater impediment than the religious imposition against the use of usury. This meant forbidding the lending of funds for a rate, or amount, of interest or indeed the borrowing of funds at interest for commercial purposes. The Catholic Church, up until the twelfth century, condemned the taking of usury as a sin against charity but not against justice; in fact, various civil codes actually permitted the lending of money at interest. However, the use of usury was severely censored from 1139 onwards. The Catholic Church held those guilty of usury condemned as sinners against justice and they were punishable by excommunication.[5] As referred to in Roy C. Cave and Herbert H. Coulson's *A Source Book for Medieval Economic History,* Thomas Aquinas reiterated the Aristotelian concept that money, in itself, is barren and is simply a medium of exchange. Interpreted in this manner, money could therefore bear no fruit or interest. A lender could only receive compensation for real damages, which could mean lost profits or actual losses incurred because he had lent the funds. On the other hand the borrower could only legitimately receive funds repayable with interest from one who was a usurer by profession, and by definition this meant someone who was not of the Catholic faith. The added proviso for this transaction was that the

[4] De Roover, *Business*, 72, 73.

[5] Roy C. Cave, and Herbert H. Coulson, eds., *A Source Book for Medieval Economic History* (New York: Biblio and Tannen, 1965), 169.

money be used only for his or someone else's immediate relief and not for business purposes.[6]

In practice, the prosecution of the crime of usury was not as straight-forward. For example, in England, although the Catholic Church claimed exclusivity in determining if usury had been committed, in reality there was an overlapping of jurisdiction which the ecclesiastical courts shared with secular courts when it came to actually prosecuting these cases. Since ecclesiastical, and for that matter secular, bureaucracy was lacking in England in seeking out usurers, cases were usually initiated when residents of parishes lodged a complaint with either the Church or with the secular authorities. In such cases involving public or manifest usurers brought before ecclesiastical courts the records show that few involved large loans rather the majority of cases loans consisted mostly of small amounts but bearing high rates of interest. For example, in a sample of twenty-eight legal cases, which were found of being guilty of usury, the largest amount involved was a little over £24, most amounts were far smaller, and the rates of interest charged annually ranged from 7.50% to 50.00% with a mean annual rate of interest of 16.67%. The small amounts involved implies that charges of usury usually implicated those individuals who loaned funds to small merchants or to private borrowers and all of whom resided within a reasonable distance from each other. What is noteworthy was that not all interest rates were considered usurious there was a societal distinction between moderate rates of interest, which was permitted, and usury. This differentiation was accepted at a secular level not only in England but also in various parts of Europe. Which rates

[6] St. Thomas Aquinas, *Summa Theologica,* translated by Fathers of the English Dominican Province (London: R.T. Washburne, 1918), 330 -340. Quoted in Cave, and Coulson, *Source Book*, 169, 182.

were deemed usurious and which rates were not was policed at a societal level by the local residents who brought, whom they deemed to be, a usurer to the attention of the authorities. In England, the Church courts tacitly accepted this distinction and did not seek out to prosecute those charging, what was locally accepted by the residents, a moderate rate of interest on their loans. Even if judicial proceedings were initiated in cases of usury, there seemed to be a certain amount of flexibility available to the accused. Judges permitted, perhaps even encouraged, private out of court settlements, since dismissals appeared frequently in the court records.[7]

For elite individuals such as merchant-bankers who dealt in large sums with a select clientele the rules were different, because they were not considered manifest usurers due nature of their business. This was a reflection of not only official policy but also popular sentiment in Northern Italy. These wealthy individuals, once the need arose to be absolved of their sins, admitted their errors in the privacy of the confessional. This procedure allowed them to bypass the strict sanctions of canon law against usury, in that they simply were allowed to make restitution to those whom they had allegedly defrauded. If, however, the victims were remote or even unknown then restitution was made to the poor, which generally meant that funds, the exact amount was determined by the confessor, went to an ecclesiastical institution. Because in the eyes of the clergy the poor, wherever they may be, were deemed to be but one member in the greater unity of the Catholic Church. Indeed, it has been argued that restitution to the poor was simply a means to finance construction projects and to enrich the Church. Also, restitution socially benefited the penitent merchant

[7] R.H. Helmolz, "Usury and the Medieval English Church Courts," *Speculum* 16, No. 2 (April, 1986): 365, 369, 370, 373 - 378.

because due to the secrecy of the confessional many of these elites who had made restitution did so under the public guise of philanthropy.[8]

On the surface, then, if merchants applied the formal rules against usury in the normal course of commerce, in order to avoid ecclesiastical scrutiny, this meant that a prospective purchaser of goods was in the unenviable position of either having ready specie for all his purchases, with the possible effect of scaling down the amount of goods that he was willing or able to purchase, or in the worst case foregoing the purchase of goods altogether due to being unable to purchase an economically viable quantity. A potential lender on the other hand, who may have excess funds available, but having no clear occasion open to him for the purchase of goods, was loath to advance money to someone else for no return. Even if he did lend his excess funds under those circumstances the possibility existed for the loss of potential profits on any foregone opportunities caused by his now cash-depleted position. The interdiction of lending money at interest was a clear impediment to merchants, in that it lowered the profitability of commercial transactions by severely limiting the amount of funds available on any given opportunity. Although the ponderous influence of the Catholic Church, in the enforcement of usury laws on business practices, continued to be a lingering factor in Western European commerce right down to the end of the eighteenth-century,[9] there was a means of subtly bypassing moral restrictions on usury. This involved simply not taking into consideration an implicit interest factor on

[8] Benjamin N. Nelson, "The Usurer and the Merchant Prince: Italian Businessmen and the Ecclesiastical Law of Restitution, 1100-1550," *The Journal of Economic History* 7 (1947): 108-111, 117.

[9] De Roover, *Business,* 185.

the advancement of funds, through the use of bills of exchange. This legal contract, which originated in Genoa during the twelfth century, ingeniously combined a commercial loan agreement with a foreign exchange component. This contract simply stated that a certain amount was advanced and had to be repaid by a certain date, in a different location and in a different currency.[10]

The abstract concept of foreign exchange is as enigmatic today as it was in late medieval Europe. There is no easy answer as to how foreign exchange actually came about in this early period. Raymond de Roover provided an explanation by indicating that foreign exchange rates during the Middle Ages were a function of the mint par. This denominator was difficult to determine due to the difference in the fineness of coins and to seigniorage[11] variations existing in the denominations of the various currencies of different countries. Additionally, the foreign exchange rates were also determined by the differences of interest rates between two or more financial centres for bills of exchange. The importance of these bills, besides the extension of credit, was the transference of funds without the actual transportation of specie. Bullion or coins were rarely shipped between financial centres to settle debts due to the hazards and to the costs involved. Indeed, as long as it was more expedient, merchant-bankers preferred to settle debts by bills of exchange rather than actual specie.[12]

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[10] Diana Wood, *Medieval Economic Thought* (Cambridge: Cambridge University Press, 2002), 201.

[11] This term refers to the profit earned by the crown arising from the difference between the market value of the gold or silver bullion taken to the mint and the face value of the coins minted from this bullion.

[12] Raymond De Roover, *Gresham on Foreign Exchange: An Essay on Early English Mercantilism with the Text of Sir Thomas Gresham's Memorandum for the Understanding of the Exchange* (Cambridge: Harvard University Press, 1949), 10, 40, 154, 167.

The inner workings of the foreign exchange market proved to be a source of angst and suspicion to individuals who were not merchant-bankers. Writing in the middle of the sixteenth century, Sir Thomas Gresham, in his treatise on foreign exchange, provided an insight into the attitude that existed in his time. He believed that international financiers, who were mainly Italian merchant-bankers, were a nefarious and subversive group who were collaborating in a secret conspiracy to bring about the downfall of England through a subtle form of economic warfare. English merchants resented the competition provided by these foreigners, whom they accused of dabbling in a wide range of devious business practices such as keeping domestic prices of goods high and impeding English foreign trade, as well as a host of other questionable practices. In fact, Gresham marveled that the merchant-bankers were able to profit and live very well without venturing overseas or buying any sort of commodity and seemingly without engaging in any real work. This attitude of suspicion and distrust extended from the general population all the way to members of Parliament, the higher nobility, and even to the Privy Council.[13] The hostility toward the Italian merchants peaked in the years of 1456 and 1457 when London experienced a series of riots against foreign merchants. In subsequent years, particularly starting in the last quarter of the fifteenth century there was a gradual reduction in the number of Italian merchants operating in England.[14]

Most of the current scholarship on the medieval economic climate dates from the late 1940s to the 1960s. Of significant importance is the contribution of

[13] De Roover, *Gresham on Foreign Exchange*, 11, 104, 105.

[14] E.B. Fryde, *Studies in Medieval Trade and Finance* (London: The Hambleton Press, 1983), XIV 330, 331. [This volume reprints previously published articles with their original pagination, and thus here chapter numbers are given in addition to page numbers.]

Raymond De Roover whose books include *Business, Banking and Economic Thought in Late Medieval and Early Modern Europe; Gresham on Foreign Exchange; The Medici Bank: Its Organization, Management, Operations and Decline; L'Evolution de la Lettre de Change, XIV-XVII Siècles* and articles such as "Early Accounting Problems of Foreign Exchange*"* and "The Medici Bank, Financial and Commercial Operations.*"* De Roover's work extensively studied the management and operations of Italian merchant-bankers, especially the Medici. De Roover also provided important background information on the functioning of the bills of exchange and generalized the workings of the foreign exchange market. To this significant base, there were some important studies that contributed to the general scholarship of medieval economics within the last twenty years. Both Reinhold Mueller's findings on the Venetian money market through his book, *The Venetian Money Market: Banks, Panics and the Public Debt, 1200 – 1500,* and J.M. Murray's *Bruges, Cradle of Capitalism, 1280 - 1390,* explore the symbiotic relationships that existed between the various financial centres of Western Europe and their dealings with the rest of the Mediterranean basin during the late medieval period. The financial dealings of the Bardi firm of merchant-bankers in England during the thirteenth century is explored by E.S Hunt in his article "Dealings of the Bardi and Peruzzi with Edward III," additionally, and E.B. Fryde's *Studies in Medieval Trade and Finance,* delved into loan arrangements and various other methods of financing governmental and sovereign obligations by the English crown. Their studies are interesting due to the relationships undertaken by the English kings with various merchant-bankers. While

these investigations are important, they actually only provide background information to the foreign exchange transactions in which the merchant-bankers were involved.

The base of the research in this thesis, regarding medieval foreign exchange gains by the Bardi and the Peruzzi, will involve analyzing a sampling of source documentation as well as other contemporary sources for the years immediately prior and subsequent to their respective bankruptcies. While the existing data is incomplete, there is a sufficient amount in circulation in order to perform a valid study based on a statistical sampling of these source documents. Federigo Melis has printed two volumes highlighting these sources; *Documenti per la Storia Economica de Secoli XIII – XVI* and *Aspetti Della Vita Economica Medievale,* both based on his research in the Datini archives in Florence. These will form a foundation of the analysis by providing the raw material needed to calculate the range of selling prices for a select group of textiles, as well as providing the cost of the raw materials, labour and other expenses such as overhead, freight, insurance, etc. The relevant foreign exchange rates pertaining to the periods under investigation have been assembled by Peter Spufford in his *Handbook of Medieval Exchange*; additionally these foreign exchange rates are provided through the internet in a machine-readable format by Rutgers University. These volumes, as well as the documentation from Rutgers University, will provide the required information on prices, costs of various goods and services and the average rates of foreign exchange for the diverse periods being considered. The end result will provide an average foreign exchange gain on bills of exchange transactions. Hunt, in his *A New Look at the Dealings of the Bardi and Peruzzi,* and De Roover, in *The Medici Bank, Financial and Commercial Operations,*

have estimated how much of the total output of raw wool produced in England were purchased respectively by the Bardi, and the Peruzzi. In addition, the book *England's Export Trade; 1275 – 1547,* is the compilation of data, by E.M. Carus-Wilson and O. Coleman, from the original customs documents of England that recorded the amount of wool and cloth exported from the thirteenth to sixteenth centuries. This book will provide the necessary insight of the volume of exports in the English textile industry.

Therefore, what this thesis will accomplish is a detailed statistical analysis of foreign exchange transactions involving Florentine Florins and English Pounds during the fourteenth century. Unlike prior studies, this thesis will statistically follow the ebb and flow of foreign exchange rates as it relates to the two aforementioned currencies as the vicissitudes of war, pestilence, economic recession and liquidity in the form of silver affects the respective economies of Florence and England. This analysis will detail short to medium-term currency trends spanning intervals of fifteen and twenty years as well as a long-term trend, spanning seventy years. Whereas previous studies the effect on foreign exchange was simply estimated based on circumstantial documentation, actual statistical analysis was lacking. The strength of this thesis is the numerical analysis of the foreign exchange rates as they respond to the external stimuli affecting Florence and England both economically and socially.

Commerce in the Middle Ages witnessed an incremental increase in the flow of funds and commodities in extra-territorial trade. However, within this trade lies a mystery that has been simply glossed over or ignored and herein lies the crux of the matter. How did actual foreign exchange affect the real value of capital used in commercial transactions? A complete commercial cycle involved the tying up of

sums for relatively long periods of time and the transactions, once initiated, could not be altered or stopped very easily. The complete round trip from Northern Italy to the Levant, back to Italy then onwards to Northwestern Europe and then back again to Italy took a good two years.[15] Additionally, Italian merchant-bankers were habitually involved in what we now term a futures contract to purchase raw material years in advance from producers in order to keep the costs involved at their lowest possible level. As an example, English monasteries frequently mortgaged their future production of wool to these merchant-bankers, sometimes as far as twelve years in advance.[16] Once the commitment was made the merchant-bankers were obliged to go ahead with the transactions, whether foreign exchange rates were favourable or not. It is, therefore, important to know to what extent exchange rates affected the profitability of merchant-bankers based in Northern Italy. Only once this is analyzed can the financial picture provided be properly appreciated.

Besides the restriction on usury, an additional stumbling block that further decelerated the flow of funds, especially when it came to international trade, was the constant shortage of actual specie available for commerce. Northern Europe suffered an unfavorable trade balance with the Mediterranean region due to the constant flow of silver and gold to Southern Europe in order to satisfy the payment of imported goods. Further shortage was caused by the remittances of specie to the Papacy to satisfy various demands of religious dues and taxes. The amount paid to the Catholic Church was substantial. For the region of France alone it was estimated that the

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[15] Peter Spufford, *Money and its Use in Medieval Europe* (Cambridge: Cambridge University Press, 1988), 257.

[16] M.M. Postan, "Credit in Medieval Trade," *The Economic History Review* 1, No. 2 (Jan., 1928), 244.

equivalent of 300,000 écus were remitted by the French crown on an annual basis in this fashion.[17] However, this is not to say that Southern Europe was awash with precious metals. In fact, this area of Europe was simply a conduit that channeled a large percentage of this gold and silver further eastward, to the Levant, in order to pay for the trade imbalance created in large part by the importation of spices. Interestingly, these precious metals did not rest for long in the Levant either but continued their journey further east, first towards Persia and then onwards to India, each geographical zone having a trade imbalance with the area immediately to the east of it. At each stage during this route gold and silver increased in value and the trade imbalance for which payment was made was always for the same goods, spices and luxury cloth.[18]

Nor was the lack of precious metals the only physical impediment to the flow of specie for trade. The costs associated with the transportation and protection of gold and silver against the hazards of robbery and piracy were onerous. As an example, the relatively short distance from Naples to Rome could cost as much as twelve percent of the value of the transported bullion.[19] Furthermore, the uncertainties of sea transportation also carried the very real possibilities of dealing with inclement weather and shipwreck. Into this mix merchants also had to contend with a large array of European coinage representing a wide number of denominations being minted in three

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[17] Harry Miskimin, *The Economy of Early Renaissance Europe, 1300 – 1460* (Englewood Cliffs: Prentice-Hall Inc., 1969), 138 – 149.

[18] Rudi Mattee, "Between Venice and Surat: The Trade in Gold in Late Safavid Iran," *Modern Asian Studies* 34, No. 1 (Feb, 2000): 227-231.

[19] E.S. Hunt and J.M. Murray, *A History of Business in Medieval Europe, 1200 – 1550* (Cambridge: Cambridge University Press, 1999), 64.

different metals, gold, silver and billon. Billon was basically a debased silver coin which contained less than a twelfth portion, and in rare cases as little as a ninety-sixth part, of silver, the rest of the coin being composed of copper. More often than not, coins were also being minted in quarters, halves or even doubles of the standard denominations. [20] Therefore, the landscape of Western European commerce was hampered by the physical limitations imposed upon it by the relative shortage of bullion available for coinage due to a detrimental trade deficit. This reality was further exacerbated by an increasingly complex phalanx of currencies assaulting the commercial environment. These factors were serious obstacles for economic expansion due to their role in decelerating the flow of funds for trading purposes.

To summarize, then, the efficiency of Western European commerce was seriously hampered on at least two levels. The first, and perhaps the most important factor, was the moral impediment imposed by the Catholic Church on the use of interest-bearing loans. The second consisted of the purely physical limitations on the circulation of funds existing at that time, specifically the lack of sufficient quantity of precious metals in order to provide the raw materials for minting specie, the large and complex number of denominations then in existence, and finally, the high cost associated with moving bullion from one marketplace to another.

This oversimplification of barriers to the velocity of funds in no way belittles the complexities that existed at that time. However, economic processes do not exist in isolation, rather they respond and adapt to the stimuli of supply and demand affecting the marketplace at any given time. Starting in the twelfth century, Western Europe experienced a period of continual commercial and population growth that did

[20] Peter Spufford, *Handbook of Medieval Exchange* (London: Royal Historical Society, 1986), xx.

not end until the onset of the Black Death in 1348.[21] The simultaneous growth of these two denominators, of commerce and population, occurred within a symbiotic relationship that fed off each other's economic inputs. As a result, the face of the marketplace was profoundly changed, significantly affecting the production process. The textile industry was an early participant and beneficiary of this change where production went from being simply a cottage industry to one where labour became increasingly specialized under a putting-out system. This shift is also significant in that the labourer no longer produced for the consumer, but rather for the entrepreneur who provided the work. Here an important economic factor was inserted; that of the labourer being paid in cash wages that fed the nascent money economy, which in turn was dependant on the markets and the fluctuations associated with supply and demand.[22]

Within the confines of this money economy, with the specialization of labour, the concept of value enters the thought process of both the producers and the consumers. Value now has acquired the attributes of objectivity, a trait that is both quantifiable for analytical purposes and also provides the basis for social interaction based on the fluid exchange of goods and labour. As a result of this process, money also acquires a quantifiable objectivity; this creates the foundation where wage-labour, price, and cost with their relationship with money, as a quantifiable agent for value, contribute to the idea of capital. This quantifying of the marketplace also facilitated the exchange of goods by providing the ability to record values associated

[21] De Roover, *Business,* 18, 128.

[22] Richard Hadden, *On the Shoulders of Merchants: Exchange and the Mathematical Conception of Nature in Early Modern Europe* (Albany: State University of New York Press, 1994), 57, 58.

with the production and selling of goods and ultimately with calculating the profitability or deficiency of any given transaction.[23] The acceptance of the concept of value also changed dramatically how money itself was viewed. No longer was the valuation of coins based solely on their role as a commodity, which was simply a reflection of the amount of precious metals they contained.[24] Rather, money now acquired an artificial function as a measure for value; as such it became a medium where the concept of value achieved standardization. The acceptance of the standardization of money based on the quantifying nature of value was one of the key ingredients in the growth of national sovereignty. The other factors in the exercise of a realm's sovereignty also involved a quantifying process, that of achieving a uniform standard of weights and measures.[25] Therefore, the rise of the money-market economy was an important contributor to the idea of nationalism, in that it provided the parameters that defined the uniformity of quantitative standards necessary to achieve a hegemonic imprint over a given geographical area. Thus, with the growth of the money-market economy, the continued use of bills of exchange and of double-entry bookkeeping, money was transformed from having a subjective value based on the weight and purity of the commodity on which the reigning monarch stamped his image to a coin having a stated face-value and being accepted as such for the purchase of goods and services and for the payment of labour. This establishment of the societal construct of money having a quantified objectivity facilitated economic

[23] Richard Hadden, *On the Shoulders of Merchants*, 14, 22, 23, 32, 39.

[24] Marc Bloch, *Esquisse D'une Histoire Monétaire de L'Europe* (Paris: Librairie Armand Colin, 1954),9.

[25] Wood, *Medieval Economic Thought*, 70, 87–89.

growth by stabilizing financial transactions through the acceptance of value based on objectivity.

Nonetheless, for the purposes of extra-territorial commerce, money proved to be a stumbling block for valuation purposes due to the large number of denominations then in use. Originally, in the early Middle Ages, large portions of Western Europe operated in a monometallic monetary environment based on silver, which Charlemagne had reformed and legislated into use. The minting of these silver coins was based on the duodecimal system that operates on the multiple of twelve, where 240 deniers or pennies were minted from one pound of pure silver. However, coinciding with the aftermath of Charlemagne's death, the minting of coins in certain parts of Western Europe became extremely decentralized. Now, the right for a noble to hold a market on his land equated with his right to mint coins. This passage of the minting process from the monarch to these lesser nobles created the situation where eventually a penny came to have a different value even in neighbouring areas.[26]

The debasement of the bullion content in coin was an inescapable fact of economic life for the vast majority of individuals. This practice tended to have an inflationary effect on prices because, while the number of coins in circulation increased, the actual value of individual coins declined in relation to the value of goods purchased. One reason for debasement was a lack of bullion and the resulting disappearance of coin from circulation, due to wear, defacement, and export, and the resulting restrictions to everyday economic transactions.[27] Another reason for the use

[26] Henri Pirenne, *Economic and Social History of Medieval Europe,* trans. I.E. Clegg (London: Routledge & Kegan Paul Ltd, 1953), 105 - 109.

[27] Wood, *Medieval Economic Thought*, 81, 103.

of debasing was that it was a lucrative source of profit for those nobles who had received the prerogative to mint coins. This caused monetary havoc, if regularly abused, both for the general population and for merchants who had to keep abreast of the latest changes. Flanders was one notorious example of coin debasements extensively used to a detrimental effect. Starting in 1337, the silver content of the groot was gradually reduced by 50% stretching across nineteen different coin issues over the relatively short period of only twenty-seven years. At that time the groot existed in conjunction with a variety of other silver coins that Flanders also had in circulation. The resulting economic chaos from these debasements forced a much needed reform of the Flemish monetary system. However, the end result was desultory at best. The response consisted of issuing the double groot in 1365 which actually contained less silver than the original groot of 1337. In fact, the double groot coin was issued a total of six times over a nineteen year period; unfortunately, each incarnation contained less bullion than the previous one.[28] The foregoing example of the silver coinage of Flanders, although a relatively extreme one even for the Middle Ages, sheds light on the multiplicity of coins and denominations in existence at any given time in any given location. The resulting dizzying economic conundrum is multiplied several times over once the rest of Western Europe is taken into account as well as the inclusion of gold and billon coins in circulation.

The European use of a bi-metallic currency, through the minting of gold coins along with those of silver, was well under way by the mid thirteenth century. The commercial city-states of Genoa, Florence and Venice had gradually alleviated the

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[28] James M. Murray, *Bruges, Cradle of Capitalism, 1280 – 1390* (Cambridge: Cambridge University Press, 2005), 125, 126.

Byzantine Empire of its hegemonic economic position within the Mediterranean basin. These three city-states were, in effect, forced to mint high quality gold coins for trading purposes due to debased quality of coins that the beleaguered Byzantines had started issuing, and on which they had previously relied upon for such transactions.[29] Although both monetary systems, the gold and silver currencies, existed concurrently in Western Europe, they were in effect independent from each other. Gold coins had too great a value to be used on a daily basis for ordinary transactions; only sovereigns, nobles and merchants used these coins to effect large payments, usually extra-territorial in nature. Silver coins, on the other hand, were used for mundane commercial transactions by the vast majority of individuals.[30]

The inherent inefficiency of the monetary system in Western Europe curtailed but did not derail the economic flow of supply and demand. The newly emerging money-market based economic environment was undaunted as it grappled with the concept of value, the notion of capital, and the realities of the cost of production, of wage-labour and of price. A major handicap in this process was that the duodecimal currency system, then predominately in use, was more of a coin counting system because it followed the societal habit of counting coins in dozens, rather than a true, value-based monetary system. Thus, allowing for regional differences in coinage terminology, this meant that twelve pennies would equal one shilling and twenty shillings would equal one pound which itself would equal 240 pennies. However, due to the complexities involving the various and arbitrary rates of debasement for the large numbers of different coins in existence meant that the process of reconciling the

[29] Robert Lopez, *The Shape of Medieval Monetary History* (London: Variorum Reprints, 1986), 219.

[30] Spufford, *Money and its Use in Medieval Europe,* 321 – 323.

values of coins from different regions was problematic at best. Therefore, for commercial valuation and accounting purposes a theoretical standard was established called money of account, which provided a standard of reference of value for the labyrinth of coinage then in existence. Indeed, for extra-territorial trade the function of money had to be more than simply a localized medium of exchange and a store of wealth. Money, as a viable tool for commerce, needed to be transformed into a measure of value that merchants could understand and relate in proportion to marketable goods.[31]

Briefly, in order to clarify the process, within the borders of a given territory the accounting for commercial transactions was recorded in the local money of account.[32] For example, in England this meant that values for commercial goods were recorded in shillings and pounds sterling. As actual coins, shillings and pounds did not come into existence until the end of the fifteenth century.[33] For extra-territorial trade within Western Europe the common denominator used was the gold florin issued by Florence. This coin was used as the standard because the vast majority of individuals concerned with the recording or the transference of funds across territorial jurisdictions were papal officials or merchants of Italian origins. However, for transactions between Western Europe and the rest of the Mediterranean basin, the ducat from Venice and the genovino from Genoa were actually preferred.[34] Interestingly, even as the genovino fell to one-sixth and the florin to only one-seventh

[31] Spufford, *Handbook of Medieval Exchange*, xx – xxiii.

[32] Ibid., liii.

[33] L.F. Salzman, *English Trade in the Middle Ages* (Oxford: Clarendon Press, 1931), 8

[34] Spufford, *Handbook of Medieval Exchange*, liii, liv.

their original values between the thirteenth and fifteenth centuries through the effects of debasements, as money of account they were immune to their actual devalued states. For trade and accounting purposes they retained the fineness and weight of the coins on which they were originally based.[35] The transformation of money from just a representation of a certain number of coins to an instrument of value was being firmly established.

The acceptance of money of account based on the original fineness and weight of the original gold coin provided the standard denominator for the establishment of value and the base for local and extra-territorial transactions to be recorded on a systematic set of well-defined protocols. Thus, with the increased use and acceptance of wage-labour, price, and costs involved in commercial transactions, merchants were becoming acutely aware of the need to assess the relative merits, as well as keeping track of information on goods used in any given trade. The concept of value was instrumental in providing the stimulus for the need for accurate information, through the use of double-entry accounting in order to achieve this goal.[36] Because the hub of extra-territorial trade was centered in the Northern Italian region of Lombardy and Tuscany, due to the high-quality of the gold coins issued by Genoa, Florence and Venice, the main strides in the development of double-entry bookkeeping occurred in this area. However, the original purpose of bookkeeping was not the determination of profit or loss of a given fiscal period or of a particular commercial transaction. Rather, the original purpose for bookkeeping was for tracking inventory used in production or shipped overseas and for calculating piece-rate wages and commissions due to

[35] P. Einzig, *The History of Foreign Exchange* (London: MacMillan and Co. Ltd., 1962), 83, 84.

[36] Hadden, *On the Shoulders of Merchants*, 94 – 96.

agents.[37] What is interesting in the use of accounting records at this early period is the importance given to the concept of value. Although the information was on hand for the calculation of the abstract notion of profit and loss and indeed this was calculated when required, principally the values of goods and expenditures were given a higher priority as balance sheet items as reflected in the original usage of bookkeeping procedures. The value for the goods used in production or exported were recorded as goods-in-process or inventory, and this amount also reflected at the same time the amount receivable by them for the merchandise in question. The value of accrued wages and commissions were also a function of goods used in the inventorial process. Thus, the values of transactions were stated as amounts owed or owing, rather than amounts earned or expensed.

The commercial acceptance of the concept of value not only provided the concurrent development of monies of account and double-entry bookkeeping, but perhaps more importantly, the acceptance of value allowed the introduction of bills of exchange. The use of bills of exchange held several advantages, perhaps the most significant of which was its response to the economic challenge imposed by the Catholic Church on the forbidding of usury. The mercantile environment was forced into rationalizing new business concepts and trading procedures into the framework of the accepted religious orthodoxy. This sought after conformity with religious scrutiny was a foremost concern for merchants in order that the pursuit of commerce became morally legitimized at a societal level. The basic concept of these bills, actually a contract between lender and borrower, was relatively simple. The merchant-bankers

[37] F.C. Lane, *Andrea Barbarigo, Merchant of Venice: 1418 – 1449* (New York: Octagon Books Inc., 1967), 164.

advanced funds in a certain currency and place; however, repayment of this loan was due at a future date, in another territorial location and in another currency. The length of the loan was basically established by consensus and was known to all, and was established depending on the distance from the place of issue and the location where repayment had to be made. For instance, a usance bill drawn in Italy and repayable in London was established for a duration of three months. These contracts had no provision for an interest charge; because of this fact and that foreign exchange gains were deemed uncertain, this transaction was not seen as a direct loan with interest and was therefore, on the whole, acceptable to the Church authorities.[38]

The acceptance of the use of the Florentine florin as the basis for valuation in commercial transactions as a money of account for Western European trade and the introduction of double-entry accounting provided only a partial stimulus for trading transactions. A much more important stimulus was provided by the overall acceptance of the bill of exchange as a legitimate tool for commerce by the Catholic Church. This outcome paved the way for bills of exchange to become an important economic accelerant in two ways. First, bills of exchange multiplied the amount of actual coins in circulation simply by writing on the loan contract the amount advanced, tantamount to stamping high quality gold florin coins. In effect, this created paper money through the use of the loan component of the bill of exchange. This is similar to the ability of modern banks to advance funds up to several times the actual amount of money they have in reserve. Modern banks in this manner expand the volume of currency that circulates throughout the economy at any given time. Thus, in foregoing the use of

[38] Raymond De Roover, "The Medici Bank, Financial and Commercial Operations," *The Journal of Economic History* 6, No. 2 (Nov., 1946), 154.

actual specie, the loan component of the bill of exchange contract created funds available for trade. Secondly, their use increased the velocity of money flowing through extra-territorial trade, because individuals were now able to borrow funds enabling larger trades that could be completed in less time, thus expanding the potential for profit and increasing the flow of funds. Another advantage to using bills of exchange was that specie was not shipped in payment to complete trades. This not only saved the actual costs of shipping coins but it also addressed prohibitions from territories like England that had a bullionist policy against their export. Italian merchant-bankers actually preferred using bills of exchange since they were more convenient and less expensive.[39] In addition, for the Italian merchants who used bills of exchange they also provided sound business advantages; their use eased the spread of risk over larger number of individuals who were basically approved by the lenders and the amounts lent could be easily controlled to stay within a certain comfort level.[40]

It was these Northern Italian merchant-bankers that pioneered and evolved the usage of monies of account, double-entry accounting and bills of exchange. In these commercial tools the abstract concept of value was quantified, thus becoming real and malleable. This systematization of business and commerce revolutionized the face of the marketplace, thereby establishing an economic paradigm. Now the nuances of supply and demand of the marketplace were able to be addressed within a relatively short period of time, in this manner satisfying the perceived needs and wants of the

[39] De Roover, *Gresham on Foreign Exchange*, 40, 43.

[40] Raymond De Roover, *The Medici Bank: Its Organization, Management, Operations and Decline* (New York: New York University Press, 1948), 38.

new money economy. In addition, with the notion of value finally becoming a concrete denominator, merchant-bankers began optimizing their financial resources for both effectiveness and efficiency. For example, their extra-territorial commercial ventures were now being justified based on a rational set of expectations whose end results would increase the initial value of invested capital. This systematic use of resources embodied at least the beginnings of a capitalistic business attitude: an attitude which Max Weber believed contained the following attributes:

> We will define a capitalistic economic action as one which rests on the expectation of profit by the utilization of opportunities of exchange….The important fact is always that a calculation of capital in terms of money is made….Everything is done in terms of balances…before every individual decision a calculation to ascertain its probable profitableness, and at the end a final balance to ascertain how much profit has been made.[41]

In the above definition of capitalism Max Weber noted that the calculation or the recording of values in terms of money for the amount of invested capital as well as the profit or loss of a given transaction is an important component of a capitalistic commercial environment. In this sense, the Italian merchant-bankers were the first in laying the rudimentary groundwork for modern risk management, financial reporting and the processes involved in modern international trade.

However, the progress made in the establishment of the money market economy in Western Europe occurred in spite of being handicapped by short-sighted and ill-advised governmental economic policies, when policies existed at all. Positive economic legislation was considerably lagging until the latter part of the Middle Ages when the beginnings of the centralization of power seeded the

[41] Max Weber, *The Protestant Ethic and the Spirit of Capitalism,* trans. T. Parson (New York: Charles Scribner's Sons, 1958), 17.

establishment of the modern sovereign state.[42] Indeed, the normal extent of economic planning for state purposes usually extended no further than contributing to the personal wealth of the king and to his favorites. Thus, merchant-bankers who wanted to establish trading privileges in a foreign territory had to be in a position to offer loans to kings and to the higher nobility in order to obtain their consent as well as their protection.[43] In fact, the mingling of politics and large-scale business was ubiquitous and was the standard operating procedure. These types of dealings were also necessary, because to be truly profitable merchant-bankers were more than content to have this type of symbiotic relationship with the nobility. However, once the trading volume of these merchants grew to a certain size, these quasi-obligatory loans had to be continued in order for them to keep their acquired trading rights and privileges.[44]

In spite of the societal and political obstacles the Italian merchant-bankers were able to use to great effect the commercial tools of monies of account, double-entry accounting and especially bills of exchange. As these tools evolved to become more commercially efficient, the types of business partnerships which these merchants entered into also started achieving a higher level of sophistication. This was especially true with the move towards the establishment of a more permanent form of business partnerships known as the *compagnia* which, in Venice, started in the twelfth century and became prominent by the fourteenth century. These semi-

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[42] N.J.G. Pounds, *An Economic History of Medieval Europe* (London: Longman Group Limited, 1974), 430, 431.

[43] Hunt and Murray, *History of Business*, 92, 93.

[44] R.L. Reynolds, "Origins of Modern Business Enterprise: Medieval Italy," *The Journal of Economic History* 12, No. 4 (Autumn, 1952), 364, 365.

permanent partnerships replaced the *colleganza* or sea loan profit-sharing partnerships which usually lasted the time a trading voyage took to complete a round-trip.[45] These *compagnia* partnerships were legal entities with partnership agreements, such as the one described at the outset of this thesis, established not only the obligations that each partner had toward each other, but also predetermined the division of the actual profits and of the accumulated capital upon the dissolution of the partnership.[46] The relative permanency of these entities enabled the partners to build on existing trading relationships, thus creating goodwill as well as expanding their operations based on this continuity.

For extra-territorial trade, transactions were more complex due to the exchange factor involved in dealing with different currencies. Ironically, it was this multitude of currencies that specifically created the opportunity to bypass the religious restriction on usury. The very nature of bills of exchange provided the answer, by allowing the advanced funds to be repayable at another time, in another place, and in a different currency. By combining both the credit function and the exchange component, the issue of charging interest was simply not addressed. This type of credit transaction developed the need for banking functions to be included within the range of services offered by these partnerships.[47] Merchant-bankers were not specialized organizations. They dealt strictly with perceived opportunities: besides trading in all types of commodities and banking, they also delved into insurance

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[45] F.C. Lane, "Recent Studies on the Economic History of Venice," *The Journal of Economic History* 23, No. 3 (Sep., 1963), 316.

[46] De Roover, *Medici Bank,* 14.

[47] Wood, *Medieval Economic Thought*, 197.

underwriting, and even in such esoteric activities as recruiting choir boys and hunting for lost classics, literally no stone was left unturned. It must be noted that, unlike the modern meaning of the term, banking in the medieval period meant dealing with bills of exchange. For these organizations, usually profits from trade were more important than those that came from the credit and exchange process. Regardless, of this fact, dealing with bills of exchange provided the opportunity for increasing the value of one's investment simply by the stroke of a pen. In these transactions, the merchant-bankers had the advantage because the inherently speculative nature of exchange transactions were offset by the concealment of interest charges within the foreign exchange rates. Interestingly, the inclusion of an interest factor within the bill of exchange transaction was vehemently denied. Merchants successfully argued that gains were not assured on loans that were involved with an exchange factor. This was, in fact, true; losses by the merchant-bankers did occasionally occur in bill of exchange transactions in spite of the efforts to avoid them.[48]

Foreign exchange transactions dealt strictly with the concept of value. Bills of exchange did not directly involve the use of coins or commodities, or anything that had any real intrinsic value other than the paper that the bill was written on. Trades were completed, profits calculated, and commodities shipped, simply by the indication of the agreed value of funds shown in a certain currency on a document.

[48] Raymond De Roover, "Early Accounting Problems of Foreign Exchange," *The Accounting Review* 19, No. 4 (Oct., 1944), 394, 397, 402, 403.

CHAPTER II

THE EFFECT OF GOLD/SILVER RATIOS ON BILLS OF EXCHANGE

Relative value or rather, more appropriately, the perception of relative value is the cornerstone in the foundation of establishing a foreign exchange rate between two different currencies. Interestingly, this statement is as true today as it was in the late Middle Ages. However, the major divergent point with today's financial landscape is that the Western European economy during the late Middle Ages was a hard currency environment, based on gold and silver. Therefore, theoretically, any change in the ratio of the metallic content of coins would tend to proportionally affect the relative valuation of any given currency. However, in fact, the gold/silver ratio of a given currency was only a lagging factor in this equation in the early part of the fourteenth century.[49] The main determinant in establishing the various rates of exchange, given that extra-territorial trade was dominated by the use of bills of exchange, was the liquidity available in the money-market.[50]

At this early period in the development of the Western European economy, gold and silver coins formed the backbone of all medieval economic transactions. Thus, as the fourteenth century advanced, the availability of gold bullion also

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[49] Michael Prestwich, "Early Fourteenth-Century Exchange Rates," *The Economic History Review* New Series 32, No. 4 (Nov., 1979), 481.

[50] Bernardo Davanzati, "Notizia De' Cambi", in *Le Opere di Bernardo Davanzati - Vol II,* ed. Enrico Bindi (Florence: Felice Le Monnier, 1853), 436.

increasingly became the dominant factor in establishing foreign exchange rates. However, it was the availability of silver that reflected directly on the amount of coinage in circulation that, in turn, translated proportionately into a given level of liquidity of the money-market.[51] Although the use of bills of exchange was imperative in extra-territorial trade and, indeed, was important in increasing the velocity of commercial transactions, they were, in the end, no substitute for actual coins in intra-territorial trade. It was this overwhelming dependency on silver coins at this juncture that proved to be problematic for the economic needs of the Western European economy. This situation was due to a chronic shortage of silver bullion caused, to a lesser degree, by normal wastage through gradual wear and tear, by hoarding, and occasionally through shipwrecks. But the overwhelming reason the shortage of bullion existed in Western Europe during this period was due to the large unfavourable trade deficit that annually existed with the Levant. As mentioned in the previous chapter, this massive export of bullion was required in payment for the much desired commodities of spices and silk by Western Europeans. As an illustrative sample, for the period 1376-1377, Genoese merchants imported slightly more than £626,000 worth of spices from various areas of the Middle East, while at the same time exporting only £248,500 worth of European goods to this same area.[52] The magnitude of this shortfall had to be paid in bullion. If we extrapolate this shortfall to include the dealings with the Levant from other mercantile republics such as Florence and Venice, as well as from

[51] Prestwich, "Early Fourteenth-Century Exchange Rates," 478, 481.

[52] John Day, "The Great Bullion Famine of the Fifteenth Century," *Past and Present,* No. 79 (May, 1978), 3, 5, 7.

other trading areas, we could well imagine the total effect on liquidity for Western Europe. This bullion shortage was so acute, it was estimated that in the case of England, prior to the Black Death, the loss of precious metal amounted to £250,000 per decade. In order to appreciate the magnitude of this problem, one needs to put this number in its proper perspective: for the period 1311-1324 this figure was equivalent to 25% of all the coins in circulation in England, and by 1348-1353 this ratio had grown to an astounding 50%.[53] In addition to the massive export of bullion to the Levant, this increasing scarcity of precious metals was exacerbated by the decline in the mining of silver in all the relevant mining areas of Europe. At first glance, it would seem illogical that given the economic situation of declining liquidity and a shortage of bullion that silver mining would in fact be decreasing. However, the reasons for the decline in silver mining at this particular period were twofold. The first was purely economic and was, in all probability, related to the general increase in the cost of labour that occurred across Western Europe subsequent to the Black Death. This made the mining of silver, even with its relative scarcity, a losing proposition. Secondly, the lack of sufficient technological advancements in the field of mining could not overcome the physical obstacles, such as flooding and cave-ins that occurred as silver mines went deeper into the earth, thus further compromising the economic viability of these mines. These factors led to the rapid over-exploitation and depletion of those silver ore deposits that were still economically feasible for mining. Further compounding the dilemma of the Western European bullion shortage was severe

[53] N.J. Mayhew, "Numismatic Evidence and Falling Prices in the Fourteenth Century," *Economic History Review* New Series 27, No. 1 (Feb., 1974), 1-15.

political destabilization and warfare in the gold-producing area in Western Sudan which were the major source of bullion for Europe prior to the discovery of the New World. As a consequence, gold deliveries to Europe, although never eliminated completely, became severely constricted. Estimations have the total shortfall of gold shipments to Europe from Africa falling in the same proportion as the production of European silver. However, even when the Tuaregs conquered the gold producing kingdom of Mali in the Western Sudan in the late fourteenth century, the victors were unable to re-establish the former level of gold shipments to Europe.[54]

A noteworthy point in the relative scarcity of gold and silver is the circular interdependence of extra-territorial trade between Europe and the Middle East. After the gold shipments basically ceased arriving from the Sudan travelling across the Sahara, the Mamluk sultanate in Egypt was forced to rely almost exclusively on European gold bullion in order to supply its needs. Egypt likewise was at the mercy of its trade with Europe in order to be supplied with silver and like Europe, it too was suffering in the midst of a silver famine. However, it seems that the dearth of silver was much more extensive in Egypt than it was in Europe. Increasingly as time went on the value of silver in relation to gold became much dearer in Egypt than it was in most of Europe. The value and scarcity of silver reached such a point that copper coinage become more prominent in daily

[54] Day, "The Great Bullion Famine of the Fifteenth Century," 35 – 38.

transactions, indeed, so much so that Egyptian gold coins, the dinar and the ducat, were increasingly being quoted in copper dirhams of account.[55]

Interestingly, Venice was the only polity in Western Europe not to suffer severely from a scarcity of gold bullion, although the scarcity of silver was felt in its economy to a certain extent. The reason for Venice's fortunate situation was due solely to the geographic location of its founding. Situated at a confluence of trade routes, Venice was able to secure, in effect, the annual gold production of both Hungary and the Balkans. Additionally, Germany also exported a large percentage of its silver production to Venice. As a consequence, Venice was able to achieve and maintain a hegemonic position in the spice trade, since this city was the only mercantile centre that could finance the imbalance in trade with the East. In fact, up to 25% of her gold ducats and 10% of her silver, either in bullion or coins, ended up being exported to the Levant. The rest of Europe also benefitted somewhat from this situation, by receiving of up to 25% of the silver coins minted in Venice, recycled through trade, thus alleviating to a certain extent the overall lack of liquidity.[56]

However, this lack of liquidity in the fourteenth century did not affect all Western Europe to the same extent or degree. The gold/silver ratios for any given kingdom or mercantile republic were generally affected not only by their relative proximity to sources of gold and by the relative demand of silver against gold bullion, but also by internal restrictions. Table 1 below offers a snapshot of these

[55] Boaz Shoshan, "Exchange-Rate Policies in Fifteenth-Century Egypt," *Journal of the Economic and Social History of the Orient* 29, No. 1 (Feb., 1986), 28, 30, 42.

[56]Day, "The Great Bullion Famine of the Fifteenth Century," 32, 38.

gold/silver ratios over a period of about one hundred-sixty-five years for territories covering most of Western Europe and Egypt.

At first glance the table below graphically reveals that the European liquidity problem started as early as the 1340s and continued well into the second half of the fifteenth century. Although the liquidity crises started in the mid fourteenth century, the situation became especially critical during the sixty-year period starting from 1370 to 1429, during this period the average gold/silver ratio for the combined territories sampled remained consistently below 1:11. The peak of this crisis occurred during the decade of 1410-1419, when the gold/silver ratio actually fell to below 1:10 for the first time since the height of the Black Death epidemic in the late 1340s.

TABLE 1

OVERVIEW OF GOLD TO SILVER RATIOS – 1310 to 1475

LOCATION	~1310	~1340	1345-50	1360-69	1370-79	1380-89	1390-99	1400-09	1410-19	1420-29	1450-75
ENGLAND	(a)17.0	(a)13.5	11.5	11.5	-	-	-	-	10.7	10.7	11.5
FRANCE	(a)13.5	(a)11.5	(a)7.9	-	-	10.5	-	-	9.4	9.8	-
BARCELONA	-	-	-	13.1	-	-	-	10.0	-	10.5	12.0
VALENCIA	-	-	-	-	-	-	9.0	8.8	-	9.3	10.0
GENOA	-	-	-	10.2	-	-	10.0	10.8	10.1	10.4	12.5
FLORENCE	-	-	-	-	10.5	11.5	-	10.1	10.7	10.2	-
VENICE	-	-	-	-	10.2	11.4	11.3	11.2	-	10.6	10.6
FLANDERS	-	-	-	-	-	10.2	10.0	10.0	9.6	10.8	12.0
EGYPT	-	-	-	-	(a)11.3	(a)11.6	(a)11.2	-	(a)9.4	(a)11.0	-
AVERAGE	15.25	12.50	9.70	11.60	10.65	11.04	10.30	10.15	9.98	10.37	11.43

The above figures are based on the following:
Prestwich,"Early Fourteenth-Century Exchange Rates," 476,477,480.
Day,"The Great Bullion Famine of the Fifteenth Century," 34,40.
Note: The ratios above represent the average amount of silver, in ounces, during the decades being considered which would purchase one ounce of gold.
(a) These represent market rates for bullion, all other rates quoted are mint rates.

In the second decade of the fifteenth century both France and Egypt were paying, in comparative terms, premium rates for silver in terms of gold: here the ratios for both these countries bottomed out at 1:9.4. However, it also may have been possible that in Valencia, although the data is missing for this particular period, the ratio may actually have been worse, if we visually extrapolate the data from the prior and subsequent decades. In the case of Valencia, gold was always in relative abundance compared to silver due to her historical role as an intermediary in the African gold trade.[57] This role as a gold way-station for Europe apparently still existed in spite of the fact that the gold producing region of Western Africa was in a state of turmoil; as noted earlier, although the gold shipments from Africa declined, they never completely stopped. Due to this fact Valencia was seemingly willing to pay a premium from her relatively abundant gold position in order to receive an adequate supply of silver bullion.

At the opposite end of the spectrum were the mercantile republics of Genoa, Florence and we may also include Venice. If we here again extrapolate the data from the surrounding periods, they had the better of it, in relative terms, even if they too suffered from the restrictions of liquidity. Venice, it must be noted, had very little fluctuation in the gold/silver ratio from 1370 to 1429: if anything the gold/silver ratio actually increased during these years, whereas in the rest of Europe this ratio declined. This peculiarity was due precisely to the city's proximity both to the Hungarian gold mines, and to the German silver mines, as was discussed earlier. Both Florence and Genoa may have benefitted from their close trading and geographic relationship with Venice to alleviate their liquidity

[57] Day, "The Great Bullion Famine of the Fifteenth Century," 40.

issues. An interesting note with these republics: although they did not suffer liquidity problems as much as others in this period, their overall situation remained relatively stagnant, while other territories, such as England, Barcelona, Flanders and Egypt, regained some of their lost liquidity in the decade ending in 1429. This lagging trend continued well into the following decades at least for Venice, whereas Genoa eventually recovered to a ratio of 1:12.5 in the latter end of the fifteenth century. In the case of Florence, while the data is lacking, we can estimate the general trend if we take into account the data from the other territories in the last half of the fifteenth century, omitting Venice; such an estimation suggests that Florence had also recovered to a similar degree.

The question of note is why did Venice not increase her liquidity position as had the other territories, especially when this city had access to ample silver and gold bullion from Hungary and Germany? Apparently, it seems that Venice was a victim of its own success. The very advantage that had allowed Venice to achieve a hegemonic position in the trade from the Levant also contributed to a continuation of its liquidity issues. The decade of the 1420s was one of continuing economic depression, prices for spices and other items imported from the East simply collapsed, citing only the case of pepper where prices fell by as much as 40%. By the second half of the fifteenth century, while other countries were recovering to a degree, Venice was mired in a liquidity rut. A major contributing factor was the 1453 fall of Constantinople to the Ottoman Turks, as a consequence of which it has been estimated that Western Europe lost at least 4,000,000 ducats. Even if not all of this huge loss belonged to Venice, we can surmise that almost

certainly a very large portion of it did. Venetian merchants who had heavily invested in the Levant were financially devastated, because unlike Florence, Venice did not recognize the notion of limited liability pertaining to outstanding debts owing in commercial transactions, thus leaving merchants personally liable for all their outstanding debts. Further aggravating the situation, that year also saw Venice expel Florentine merchants from within its boundaries; this action resulted in a deep drop in both bullion and credit.[58] Furthermore, Venice was left economically reeling when additional bullion was siphoned off to finance military operations when outright war broke out against the Turks from 1463 to 1476.[59]

Egypt by the 1420s seemed to have recovered reasonably well from the previous decade, although the figures are not entirely commensurate: the gold/silver ratio quoted for Egypt on Table 1 is the market rate whereas for the other territories the mint rate was used. Due to this fact, it seems that the mint rate may have been lagging to a certain extent in respect to the supply and demand of actual market conditions. It should be noted that for all territories, the market rate could never be below the mint rate, due to the fact that the authorities set the mint rate. Therefore, mint rates represented the minimum for any market rate.

The case of France is interesting because, through most of the periods considered on Table 1 and against most other areas, silver was consistently expensive compared to gold. In this respect, France seemed to be out of step with the other European territories. The period covering the years 1345 to 1350 is

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[58] R. C. Mueller, *The Venetian Money Market: Banks, Panics, and the Public Debt, 1200-1500* (Baltimore: Johns Hopkins University Press, 1997), 96, 211, 214.

[59] Harry Miskimin, *The Economy of Early Renaissance Europe: 1300-1460* (Englewood Cliffs: Prentice-Hall, Inc.), 158.

intriguing: the gold/silver ratio is especially skewed, and as such is not truly representative, compared to the both the preceding and subsequent periods, as well as to the overall data shown on this table. It must be noted that the ratio for France on Table 1 is the average for the period shown: the gold/silver ratio actually hit a low of 1:7.5 in 1348.[60] Nonetheless, this aberration is very telling in regards to the existing social and economic situation at that time in France. Of the several factors that played significant roles in establishing a high premium for silver during this period, an intriguing social factor which may have caused the hoarding of coins is the coinciding of the occurrence of the Black Death in Europe, which peaked during the years 1348 to 1350, with this period of relative high silver value in France. Other external factors that siphoned silver from circulation, and which also applied to England, included the continuing military expenditures required to finance the Hundred Years War, and the adverse balance of trade with the economic zones to the east.[61] This dearth of silver in France was addressed by aggressive debasements of the currency which focused on solving at least two main problems resulting from this situation. In the first instance, debasements not only introduced new coins into circulation with a diminished silver content, but more importantly, increased the volume of coins available for regional intra-territorial trade, thereby in turn increasing the velocity of monetary transactions. Secondly, the issuance of these coins also provided much needed revenue for the French crown to finance military expenditures as well as other incidental spending necessary for the functioning of government. These revenues resulted from

[60] Prestwich, "Early Fourteenth-Century Exchange Rates," 480.

[61] Ibid., 478.

increased seigniorage income due to the minting of those new coins. Additionally, the realm was able to pay expenses and lower outstanding debts at face value with the debased coin, thereby achieving a net saving in actual value. This would be true, however, only in the short-term before the markets adjusted themselves to the new reality. Apparently, debasements were standard fiscal policy for France. Between the years of 1285 and 1490, France initiated a series of 123 different debasement of its silver currency, of which 112 reduced the silver content by more than 5%. The largest during the period considered on Table 1 happened during the years 1349, 1418, and 1420, which saw revenues from seigniorage dramatically increase as a proportion of total income, representing from 71% to 91% of total revenues for the realm during the aforementioned years. Ordinarily, seigniorage revenue would be almost immaterial, representing only 5% or less of total revenue for the kingdom of France. Seigniorage revenue was tied in directly with increased mint production of the new debased coins, and thus during these periods of debasements seigniorage fees did not decline, rather, more often than not, they increased. Additionally, the high percentage of seigniorage income must also be compared with the realities of the economic and social conditions at the time. For example, during the debasement of 1349, France was at war and regular tax collection may have been sporadic and for the years of 1418 and 1420, France had, just a few years previously, abolished a wide range of taxes, thereby proportionately increasing income from seigniorage for the realm.[62] However, these constant debasements wreaked havoc on the economy. With each episode of

[62] Arthur J. Rolnick, François R. Velde, and Warren E. Weber, "The Debasement Puzzle: An Essay on Medieval Monetary History," *The Journal of Economic History* 56, No. 4 (Dec., 1996), 793 – 797.

debasement the market prices for various commodities, as well as wages, were subjected to inflationary pressures that forced their constant re-evaluation creating uncertainty and economic stress for the local merchants and population.[63]

In comparison England had relative monetary stability, as the crown subjected its economy to far fewer debasements during the periods considered on Table 1.[64] Moreover, unlike France, England's silver currency was considered of high quality and was eagerly accepted as payment in extra-territorial transactions.[65] The stability and high standard of English currency was a contributing factor to England's predicament of the dearth of silver within its regional economy. Other factors which continually stressed the English economy due to the lack of silver were the continuing unfavourable balance of trade with economic zones to the east, and increased military spending, especially in the conflict against France. However, unlike France, which tried to deal with the shortage of silver with a dedicated policy of debasement, England, in 1344, set out to attract silver by the minting and exportation of gold coins. This pioneering attempt at a bullionist policy backfired because the English crown did not issue these gold coins at market value: rather these coins were fixed at a rate too high in comparison with the falling value of gold on the continent. As a result it was not silver but rather gold that was being imported into England, which further deepened the English dilemma concerning the scarcity of silver. Consequently, the decision to mint gold coins had long-term ramifications because once the

[63] Wood, *Medieval Economic Thought*, 103.

[64] Rolnick, Velde, and Weber, "Debasement Puzzle," 793.

[65] Spufford, *Money and Its Use in Medieval Europe,* 218.

momentum of gold importation started it proved difficult to stop. Evidence clearly suggests that the bullion market in England for the remainder of the Middle Ages consistently reflected a premium for gold compared with the rest of Europe.[66] This is confirmed by the gold/silver ratios for England, shown on Table 1, for most of the periods being considered until the second half of the fifteenth century.

However, England's economy, unlike France, was in a state of flux. The economy of England was changing from being an exporter of wool to an exporter of cloth; the timetable of this transition is clearly demonstrated by the graph in Table 2 below. Note that Table 2 does not demonstrate the relationship between sacks of wool, which consisted of shorn wool each having a standard weight of 364 lbs, and finished cloth, which was measured in rolls measuring 24 yards by 1.5 to 2 yards wide.[67] As a point of interest, from one sack of raw wool a little more than four rolls of finished cloth could be produced.[68] What is being compared on Table 2 is the relationship of annual exports of wool and finished cloth to the total exports for each commodity for the 220 years being considered. If we exempt the decade ending in 1350 for both wool and cloth, due to incomplete data, what we notice is that raw wool was exported in proportionally higher volume during the late thirteenth and early fourteenth-centuries, fluctuating from 3.91% to 9.22% of total wool exported. By the last seventy-years of the fourteenth-century wool exports were basically flat, having evened out at roughly

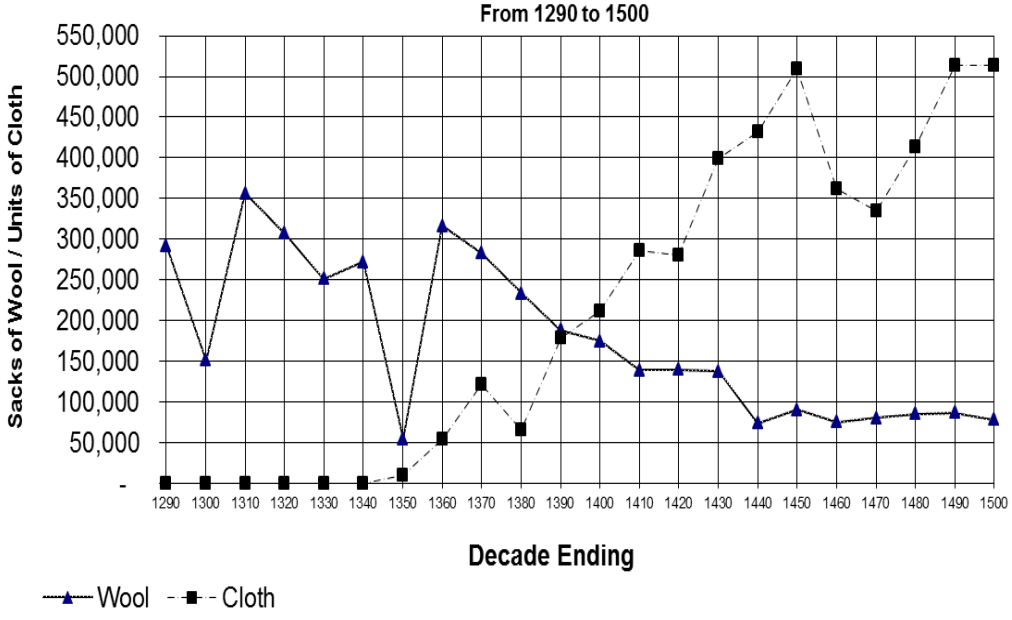
[66] Prestwich, "Early Fourteenth-Century Exchange Rates," 478, 480, 481.

[67] E. M. Carus-Wilson and O. Coleman, *England's Export Trade: 1275 – 1547* (Oxford: Oxford University Press, 1963), 13, 14.

[68] Mishkimin, *Economy of Early Renaissance Europe,* 96.

80,000 to 85,000 sacks per decade representing about 2.0% to 2.4% of total wool exports, whereas the proportion of cloth exports grew with each passing decade of the fourteenth century. While raw wool never disappeared from being exported, the relative increase of cloth demonstrated its increased importance to England's export economy. The proportional importance of the exportation of finished cloth to the whole economy is evident on Table 2. At a glance, the data indicates that the decade ending in 1390 was the period that delineated the transition in England's textile industry from being principally a producer of raw material to where finished goods started becoming increasingly important. What is also

TABLE - 2
England - Volume of Wool and Cloth Exports
From 1290 to 1500



The above graph is based on the data compiled in Carus-Wilson and Coleman, *England's Export Trade: 1275 - 1547*.
NOTE: For the decade ending in 1350; Data is missing for wool exports for seven of the ten years and for six of ten years concerning cloth exports.

striking is that within a relatively short span of time, in the seventy-years, ending in 1390 England was able to build the necessary infrastructure of the finished cloth industry. The adoption and implementation of the necessary technologies

and skills required to succeed in such a short time frame indicates not only the abundance of labour, but also the increased monetization of the economy within the limits of scarcity of local silver.

Although it was English merchants who originally introduced domestic finished cloth to Europe, increasingly this role was taken over by Hanseatic and Italian merchants. By 1347 the exportation of cloth had reached sufficiently elevated levels that the Cloth Custom was imposed.[69] This change toward the production of finished goods was a major shift which contributed to the early monetization of the English economy. Individuals that were involved in the agricultural process of wool production were still employed in harvesting wool as the first stage of cloth production. The difference was that the wool was now being produced domestically into cloth instead of being exported to be processed elsewhere. This meant that not only were more individuals employed but that labour, as a whole, became more specialized. This transition further meant that silver as a unit of quantifiable value in the form of money used in the payment of wages, became increasingly an important factor in the equation of manufacturing.[70] Cloth production at that time did not depend strictly on demand from foreign markets in order to be successful; rather the importance lay in the easy availability of labour and of wool. The problem encountered in this period of transition was insufficient liquidity in the form of silver in order to address properly the heightened need for labour. As a result, the shortage of silver

[69] Carus-Wilson and Coleman, *England's Export Trade*, 2, 13.

[70] Michael D. Bordo and Lars Jonung, *The Long-run Behavior of the Velocity of Circulation: The International Evidence* (Cambridge: Cambridge University Press, 1987), 29.

liquidity tended to lower the selling prices of the manufactured cloth without, however, proportionally increasing the foreign demand. The cloth industry was in this manner retarded in its expansion. Ordinarily, the existence of the cloth export industry would have been an attraction for bullion into the English economy and an offset against the unfavourable trade balance that existed.[71] The problem was that the infusion of bullion was in the form of gold, whereas, wages, wool, and the production processes at the local level had to be paid in silver; additionally, the local market economy, in order to be properly monetized, also required silver.

Money as a useful economic tool to measure value for goods and services could only achieve its full potential if sufficient quantity existed to facilitate daily mundane economic transactions. Without this requirement for monetary volume the monetization process slows down and the coins themselves become less a stated measurement of value than an asset in themselves, perhaps even to be hoarded for their bullion content. Since the English marketplace lacked an optimal volume of silver coins the overall pressure on the economy was deflationary. This is the opposite of what we noticed in France where the inflationary consequences were due to the continual debasements to which their coins were subjected in order to maintain sufficiently high volume. Ironically, France and England although following divergent policies regarding their silver coinage, produced similar results for their silver currency. In both cases silver coins were behaving more as a commodity based on their bullion content rather than a storehouse bearing a stated value. Nicolas Oresme, an early monetary theorist, maintained the

[71] Karl H. Niebyl, *Studies in the Classical Theories of Money* (New York: Columbia University Press, 1946), 8.

importance of an adequate supply of coins advocating that gold and silver should not be used for any other purposes until the monetary requirements are met. However, regarding what level of coinage supply would be considered adequate, Oresme provided no insight.[72] This point underlies the importance of money as a key ingredient in any given economy, as an accelerant in the transaction process and as a medium of exchange, if it is easily available in sufficient volume and in consistent quality. Unfortunately, the general unfavourable balance of trade existing in Western Europe provided the scenario where the scarcity of silver bullion created increasing competition for this commodity, which in turn initiated rudimentary mercantilistic thought to take root. For example, in the thirteenth and fourteenth centuries, England in exasperation could do little more than to enact a host of statutes and to issue proclamations against the exportation of silver bullion, which, on the whole, did not produce any real effect. Besides being difficult to enforce, this type of legislation did more harm than it provided actual economic relief: however, this fact was only recognized in the seventeenth century. Besides, the Italian merchant bankers, who had a major share of the textile market in England, not only were generally exempt due to their having permanent establishments in England, but they also preferred not to ship actual specie at all. Instead, they used bills of exchange to transact the transference of funds when settling their commercial debts.[73]

However, in the situation involving France and England, due to their close geographic proximity, the discrepancies in their respective monetary policies

[72] Arthur E. Monroe, *Monetary Theory Before Adam Smith* (New York: Augustus M. Kelley, 1966), 36.

[73] De Roover, *Gresham on Foreign Exchange,* 36 – 40, 44, 49.

simply exacerbated the liquidity crises to which England was being subjected. A report, quoted by Arthur E. Monroe in his book, *Monetary Theory Before Adam Smith*, from the University of Paris on the effects of debasement written for the French king Charles VI in 1412, stated that, "…*la bonne monnaie est explusée, car les changes et les Lombars cueillent tout le bon or, et font payment de nouvelle monnaie*."[74] Likewise, Oresme also believed that debasements caused gold and silver bullion to be attracted to economic zones where they have higher value. He also believed, as did the French, that foreigners were responsible for the orchestration of such movements of bullion. The belief that foreigners were solely responsible for taking advantage of the difference in the gold/silver ratio existing between these economic zones only reflected a general mistrust of foreigners that was prevalent in western medieval culture.[75] In fact, it is economic logic that any given commodity would naturally gravitate towards a location where it was more highly valued, thereby increasing profits for the merchants, be they foreigners or local subjects. Such outflow would also leave in its wake a relative scarcity of this commodity. One could also assume that the greater the price difference, the more aggressive the outflow would be. This situation would hold true until a relative equilibrium in price for this commodity was attained in both locations, thus making its export uneconomical. Depending on the commodity, equilibrium could be attained only when the destination location would be saturated or when demand, for one reason or another, would no longer exist. However, in the case of precious metals such as gold, it would be difficult to foresee a scenario where gold

[74] Monroe, *Monetary Theory Before Adam Smith,* 39.

[75] Ibid., 38, 39.

would actually reach a saturation point or where demand would precipitously fall. The reality was that the exportation of gold and silver went on in spite of any laws or of embargos prohibiting their export that may have been in place.[76] Gold and silver then were exchanged for each other extra-territorially where the difference in the gold/silver ratios were sufficiently large, as was the case between France and England. Table 3 below highlights these ratios that were previously discussed, for the years in which concurrent data exists for both countries.

TABLE 3

OVERVIEW OF GOLD TO SILVER RATIOS - SELECTED PERIODS

LOCATION	~1310	~1340	1345-50	1410-19	1420-29
ENGLAND	17.0	13.5	11.5	10.7	10.7
FRANCE	13.5	11.5	7.9	9.4	9.8
DIFFERENCE IN RATIOS	3.50	2.00	3.60	1.30	0.88
PERCENTAGE DIFFERENCE	25.93%	17.39%	45.57%	13.83%	8.91%

The above figures are based on the following:
Prestwich, "Early Fourteenth-Century Exchange Rates," 476-480.
Day,"Great Bullion Famine," 34.
Note: The ratios above represent the amount of silver, in ounces, that would purchase once ounce of gold.

The only requirement in this physical form of arbitrage was that the profit be sufficiently large to compensate not only for the risks and costs of transportation but also for the seigniorage fees that needed to be paid to the merchants in the importing territory and the premiums that had to be remitted in the exporting territory to goldsmiths and others who handled bullion.[77] Table 3 highlights the significant discrepancies in the gold/silver ratio that existed especially in the years

[76] Nicolas Oresme, *The De Moneta of Nicholas Oresme and English Mint Documents,* Trans. Charles Johnson (London: Thomas Nelson and Sons Ltd, 1956), 32.

[77] De Roover, *Gresham on Foreign Exchange,* 81.

prior to 1350. Gross profit ratios of 17.39% to 45.57%, before transportation and other costs, would have been large enough to entice all but the most timid of merchants. In the fifteenth century although the ratios narrowed they were still wide enough to produce a tidy profit. However, by no means was the physical exchange of bullion between England and the continent a phenomenon limited only to the late Middle Ages. This primitive form of arbitrage was in fact practiced long afterwards by those who took advantage of the variations that existed between the gold/silver ratios of the different territories. So common was this occurrence that even late in the seventeenth century the existence of this practice was subject to intense debate. In an anonymous letter to John Locke, the writer bitterly complained that,

> Artful money-mongers….found that by melting down our weighty silver money …and sending it over as bullion to Holland, they could either pick up the guineas that had been formerly transported and scattered there, or buy gold (in the Ingot) at moderate prices, and have it coined here into new guineas; which return produced them above 30 per cent profit.[78]

Nor was the trading of gold and silver limited to that between France and England; there was also abundant trafficking of bullion between Western Europe and the Levant. In 1453 the French merchant Jacques Coeur stated that, "*Il a proufitt a porter argent blanc en Suyrie car quand il vault 6 escus par deca il en vault 7 par dela*."[79] The small difference of one écu meant that the return on investment from this single voyage to Syria amounted to 16.67%, but much smaller margins were also alluring to these bullion merchants. As quoted by John

[78] *A Review of the Universal Remedy for all Diseases Incident to Coin: With Application to Our Present Circumstances – In a Letter to Mr. Locke* (London: A. and T. Churchill, 1696), 23.

[79] Quoted in Andrew M. Watson, "Back to Gold-and Silver," *The Economic History Review* New Series 20, No. 1 (Apr. 1967), 21.

Day, in 1503, Bartolomeo di Pasi in his handbook for merchants wrote that, "…Venetian gold ducats, Hungarian gold pieces and silver money…are exported to Damascus at a profit of 4 to 5 per cent on the silver money….Standard Venetian silver…is exported to Alexandria…normally at a profit of 4 to 5 per cent."[80] These somewhat lower rates of return were deemed acceptable for ferrying coin and bullion over the fairly large distances between Europe, Egypt and the Levant. Therefore, it was not surprising that gold/silver ratios between France and England in the fifteenth century, as per Table 3 above, seemed even more attractive due to their close geographic proximity.

However, the above discussion demonstrates that the difference in the gold/silver ratio between any given territories was only one factor in establishing the rates of exchange between the various sovereign coins. If this was the only factor, then any change in the gold/silver ratio of the coins would only have a relative change in the exchange rates in proportion to the variation in the gold/silver ratio. In such a scenario the exchange rate would tend to gravitate towards a relative par rate, and any advantage gained or loss suffered would be temporary as the market rates would quickly adjust to the new par. As was discussed earlier, a stronger weighing in the foreign exchange equation was given to the relative liquidity of the currency of a given territory. This was due to the extensive use of bills of exchange that served a dual purpose in extra-territorial trade. In the first place, in order to increase the velocity of transactions, these instruments were used to transfer funds extra-territorially without shipping actual

[80] Bartolomeo Di Pasi, *Tariffa de Pesi e Misure* (Venice: 1557 edition), 67, 73 quoted in Day, "Great Bullion Famine," 6, n. 12.

specie, and secondly, they provided a source of short-term financing in the form of a bridge-loan for periods ranging from one to six months.[81] The market for these bills of exchange was dominated by Italian merchant bankers who underwrote these instruments in a given currency and in a given location for funds to be reimbursed at a later time in another currency at another location. It must be noted that these bills of exchange had territorial and cultural boundaries that did not extend towards extra-territorial trading beyond Europe. These bills of exchange were not an option to be used for European merchants dealing with Ottoman Turks in the Levant; trading in that area was on a cash basis only. Indeed, the seeds of mistrust ran deep: for example, one quickly notices this attitude in the correspondence left behind by those Italian merchants who lived and traded in the region. An attitude of condescension is especially revealed when Italian merchants are referring to their Turkish counterparts in their letters.[82]

While the use of bills of exchange, by greatly augmenting the quantity of available currency, was of the utmost importance for trade in Europe, they came with a price attached to them. Although the charging of interest on any loan was specifically forbidden by the Catholic Church and was considered usury, this fact did not deter the merchant bankers from advancing funds with an almost certain expectation of turning a profit. The seeming contradiction of this situation was solved by these merchant bankers who took advantage of the differences existing between the various economic zones. In simple economic terms they purchased

[81] Mueller, *Venetian Money Market*, 290.

[82] E. Peragallo, "The Ledger of Jachomo Badoer: Constantinople September 2, 1436 – February 26, 1440," *The Accounting Review* 52, No. 4 (Oct., 1977), 889.

where there was abundance and sold where there was want. This economic fact also applied if the commodity they were dealing with was currency, although their methods did not involve the exchange of tangible gold and silver specie in the same manner used by traders in bullion. Rather, they indulged in the use of the virtual currencies created by bills of exchange. The addition of this level of sophistication elevated the status of currencies into intangible units of worth acceptable at face value. This financial instrument further reinforced the representation of currencies as bearing numerical units of value and not as mere commodities. Therefore, in order to increase the probability of turning a profit on exchange dealings and not be accused of usury, these merchant bankers preferred to advance funds, on paper, from territories that had relative abundance while ensuring that these loans were repayable in those areas that had a relative scarcity of liquidity. This play between the waning and waxing in the liquidity of various currencies created the necessary deviations from par which established the underlying basis for the market of foreign exchange dealings. These deviations from par represented the possibility of profit in the form of foreign exchange.[83]

However, the use of bills of exchange also provided merchant bankers with an instrument that could be used to export bullion indirectly without fear of legal penalties from territories that had instituted bullionist legislative measures. To illustrate this point, once a bill of exchange arrived in England and funds were advanced to a merchant from the local branch of the merchant bankers who originally issued it from Florence, this merchant was free to purchase whatever goods he deemed profitable for export. In this case the bill of exchange would be

[83] Davanzati, "Notizia," 436.

originally denominated in a gold currency, but exchanged for silver sterling, and as was discussed previously, gold was valued at a premium against silver in England compared with the rest of continental Europe. The goods purchased, for example wool, would be bought at a relative discount and exported. This transaction would be tantamount to importing gold bullion and exporting silver bullion in return. The downside to using bills of exchange was that the merchant bankers were exposed to the uncertainties surrounding economic conditions in territories far removed from one's home base. It seemed that even in the best of times providing a relatively accurate estimation of future exchange rates was as challenging as it was an art for the merchant bankers. For example, during the early part of the fourteenth century a small Italian firm of merchant-bankers, the Gallerani, recorded the rapid and extreme fluctuations that a currency could undergo. They noted that in a ten-month period in 1305, the rate of exchange for the florin against the English mark sterling increased by 36.6%.[84] The real danger in this circumstance was that, if the exchange rate quoted on the bill of exchange did not fully anticipate the rapidly diminishing value of the English mark, the merchant bankers would lose substantially in the transaction by providing too many marks versus the florin.

Besides the state of liquidity of a given currency, the actual time allotted for credit on the funds advanced was another factor that heavily influenced exchange rates. The maturity dates of bills of exchange were set in such a way as to be longer than the average time it took to deliver ordinary correspondence to a given location. The delay to effect payment was the critical loan function of a bill of

[84] Prestwich, "Early Fourteenth-Century Exchange Rates," 471, 472, 475.

exchange. This can be illustrated by considering two examples of the time delay given, or usance, between Florence and two cities; for bills of exchange payable in Venice the usance was twenty-days and those due in London three months. Furthermore, bills of exchange were usually payable "on sight" between Italian cities because they are located close to each other; this terminology meant that in these cases that they had an extra grace period of five days added on. The average time for correspondence to travel to those two cities were six and thirty-three days respectively. The usance effectively gave short-term loans of roughly one month for Venice (20 days usance plus six days travel time with an additional five days grace) and two months for London. As a rule the usance between Florence and various other cities were well known to Florentine merchants and were not specified on bills of exchange used between them.[85]

But to really appreciate the elegant sophistication surrounding the use of the bill of exchange, one has to realize that frequently the credit cycle that a bill of exchange produced usually involved two or sometimes three different currencies as well as a host of different individuals. For example, let us briefly consider this credit cycle as described by Bernardo Davanzati in the sixteenth century, which was also valid regarding the operation of bills of exchange prior to 1500.[86] Davanzati describes, using an actual example, as well as a diagram, how an original bill of exchange issued for 104 ⅔ scudi in Florence is to be exchanged for 100 sols in Lyon. In Lyon the rechange portion occurs, which basically is the

[85] Mueller, *Venetian Money Market*, 293 – 296.

[86] Ibid., 301, 302.

reverse transaction of the original bill of exchange. At this point a new bill of exchange is issued for 99 ⅔ sols to be exchanged for 106 ⅔ scudi to the original issuer in Florence.[87] This business cycle from Florence to Lyon and back to Florence netted a profit of 2 scudi or 1.911%; if we assume that a bill of exchange would have a usance of one-month for Florence to Lyon and another month for the reverse transaction to occur, the annual return would be roughly 11.62%.[88] The very nature of transactions involving bills of exchange required that they be reinvested as quickly as possible in rechange operations or in the issuance of new bills of exchange in order to maximize profitability. This requirement through necessity promoted the velocity of transactions for extra-territorial trading in Western Europe and minimized idle funds for merchant bankers.

The rate of return on bills of exchange is lower in comparison to the gross profit earned by the bullion traders in Europe, who had gross returns ranging from ~17% to ~45%. But conversely, merchant bankers also did not run the risk of running afoul of territories with bullionist policies that forbade the export of bullion, nor did they have to handle and ship gold and silver with all the downside that it would have entailed. Additionally, dealing with actual bullion necessarily involved greater personal involvement, as well as actual investment by the entrepreneur, with perhaps lower overall volume of transactions due to the inability to leverage the amount of funds required. Conversely, the return on bills

[87] Davanzati, "Notizia," 433 – 436.

[88] This assumption is based that the usage to Paris is two months as per Mueller, *Venetian Money Market*, 295. Since Paris is about 1,200 km distant from Florence, whereas, Lyon is about 750 km from Florence therefore, a usage of one month is assumed. The annual return is based on six transactions per year: 6 X 1.911% = 11.62%

of exchange compares very favourably with the ~4% to ~17% that satisfied the bullion traders that travelled to the Levant and this without the added risk associated with the handling and shipping of bullion overseas. However, the nature of medieval trade dictated that the shipping of bullion was a necessary requirement when dealing with the Levant, since credit was not extended between Catholic and Muslim traders. As was mentioned earlier, this traffic of bullion to the Levant was substantial and directly contributed to the unfavourable balance of trade existing in Europe.

Bills of exchange, unlike bullion, created an intangible asset in form of virtual currency that was accepted and exchanged for local denominations of money at the satellite offices of the merchant banker who issued them, or his agents. As leveraging financial instruments, they had the ability to extend and multiply the available cash reserves that the merchant bankers literally had on hand. Because they were only a promissory note, not guaranteed by bullion, but whose stated value was solely based on the signature and reputation of the person who issued it, they signalled a foretaste of paper money in Western Europe. These bills of exchange compensated, at least to a certain degree, for the dearth of liquidity that existed in Western Europe by providing a type of generally acceptable alternate currency for extra-territorial transactions. Additionally, through their inherent credit functions, the velocity and magnitude of these transactions created a self-sustaining business cycle that increased marketplace demand and ensured its ability to supply it.

CHAPTER III

CALCULATION OF FOREIGN EXCHANGE GAINS BETWEEN FLORENCE AND ENGLAND

With the growing societal acceptance of the abstract concept of value the monetization of the Western medieval economies now became increasingly possible. What this meant was that coins, as a medium of exchange, were undergoing a fundamental transformation. No longer were coins seen as a strictly commodity-based asset whose value fluctuated according to the market demand of the precious metals they contained. Rather, coins were being transformed into a true currency, bearing a commonly accepted denominated value. This change of perspective signalled a paradigm shift in the societal quantification of value involving daily economic transactions. Indeed, although the abstract nature of quantified value is strictly social, it nevertheless became very real in economic transactions.[89]

One of the necessary stimuli in this process in the quantification of value involved the interaction of supplying the increased demands made on the marketplace caused by the growth of population in Western Europe. However, the continued use of the traditional cottage-based production was proving inadequate to meet the increased demand for manufactured goods. Therefore, through necessity, production evolved into a putting-out system, where labour became increasingly specialized and task-oriented. As a result, labourers became responsible only for their portion of the production process to the merchant who supplied them with the necessary raw materials. Additionally, these labourers were also increasingly being paid in cash

[89] Hadden, *On the Shoulders of Merchants*,14.

wages in currencies that had a quantifiable value. As well, these labourers were also consumers who expected that their cash wages would be able to purchase goods at a given stated value proportional to their labour input. The growing economic cycle of supply and demand along with the increased synergic interaction between labourers and consumers reinforced the monetization process of the Western European economies. Additionally, for business purposes the putting-out system of production also provided several advantages for the entrepreneur-merchant. Production of goods could now be better regulated and standardized in order to establish a consistency of output in order to meet rising market expectation. More importantly, labour now became a quantifiable unit of cost which could be directly associated with the production of goods. Therefore, for the merchant-entrepreneur, labour could now be expressed with a quantitative objectivity represented in terms of money and became an essential element in the equation for calculating profitability, and in the evaluation of business risk.[90]

However, the growth of the money-market economy at the local level did not evolve independently without the stimulus provided from extra-territorial trade, carried on in large part by the merchant-bankers. As discussed in the previous chapter, this type of large-scale trading was typified by the use of money quantified through bills of exchange. As a result, the cost of goods could be calculated in terms of the stated face-value of money.[91] The problem with quantifying currency in Western Europe during the period from 1250 to 1500, especially for the merchant-bankers, was the frequent debasement of coin that occurred within the various sovereign territories.

[90] Hadden, *On the Shoulders of Merchants*,14, 56, 57, 61.

[91] Pounds, *An Economic History of Europe*, 99.

In order to address this situation a currency-tabulating system known as money of account was instituted by the Northern Italian merchant-bankers. In effect, this created for all states that used it two systems of currency bearing the same name; on one hand the money of account was the measure of value for accounting purposes and in actual fact did not physically exist, whereas the actual coins were used as the exchange medium. Basically, the system worked as follows: initially, transactions were accounted or valued on paper as money of account that represented the fineness and weight of the denomination of coins as they were originally minted. Subsequently, when time for actual payment arrived, either goods or the actual currently circulated coins were then valued in terms of money of account. In this respect, therefore, actual coins were considered a commodity along with any other goods. This treatment of actual coin caused frequent variations in its value compared to the accounting value of any given transaction. For transactions within a sovereign economic zone, accounting for business transactions occurred in the local money of account. However, during this period, for extra-territorial transactions within Western Europe, the Florentine florin was the predominant money of account.[92] The importance in the use of money of account was due to the uncertainty surrounding the stability of any given currency; as such these accounting funds represented only an equivalent sum, which denotes a qualitative value, and not an equalizing sum, which denotes a quantitative value.[93]

Regarding the various branches of merchant-banking firms situated in foreign territories, notwithstanding the large number of different currencies then in use, for

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[92] Spufford, *Money and Its Use in Medieval Europe,* 411 – 414.

[93] Federigo Melis, *Aspetti Della Vita Economica Medievale (Studi Nell'Archivio Datini Di Prato)* (Florence: Casa Editrice Leo S. Olschki, 1962), 396.

accounting purposes transactions, for each branch, were recorded in the local currency of account depending where these branches were located. This was exemplified by the English branch of the Gallerani merchant-banking firm that recorded its transactions in pounds, shillings and pence.[94] This principle also held true when merchant-bankers recorded funds that were either owed to them or from them, and to or from branches or correspondents based in other territories.[95] Once funds were either transferred to or from these different territories, or indeed, applied against other obligations via a book entry, a foreign exchange gain or loss occurred and was duly recorded. However, it must be noted that the primary purpose of accounting at this time was not to calculate profit or loss. Rather, the main purpose of bookkeeping, by the Florentines at least, involved a stewardship function that was centered on the balance sheet, invariably to keep track of various assets such as inventory and amounts receivable, as well as liabilities represented by such items as salaries and commissions payable.[96] However, then as well as now, the main purpose of business was to earn a reasonable return on the funds invested in a trading venture.

The previous chapter highlighted the bill of exchange as the main financial instrument that aided the process of extra-territorial trade within Western Europe. As noted the bill of exchange not only had a credit element attached to it but also involved an exchange operation. As Spufford has put it, the actual rates of exchange that were used for commercial transactions "…were based on a par value. The par

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[94] C. W. Nobes, *"*Gallerani Account Book of 1305 – 1308,*"The Accounting Review* 57, No. 2 (Apr., 1982)*,* 305.

[95] De Roover, *Medici Bank,* 156.

[96] Lane, *Andrea Barbarigo,* 164.

value was determined by the precious metal content of the two coinages on which the moneys of account to be exchanged with were based."[97] These various moneys of account were not all based either on gold or silver. Additionally, the value of the precious metals themselves varied in respect to each other depending on the market. This characteristic was demonstrated in the previous chapter in Table 1, which detailed the divergence that existed between the ratios of gold to silver over a period of 165 years between various territories. The existing state of flux between the precious metals made the determination of the par value difficult to arrive at. At best, the par value provided a focal point around which the actual exchange rate varied.

Interestingly, in those cases where the exchange rate exceeded the normal fluctuation around par, it was deemed more profitable, even with the risk factor of transportation included, to send actual specie abroad to have it minted into the local currency. This aberration in the foreign exchange rate was a rare occurrence which usually happened when disequilibrium in a given currency existed between two banking centres.[98] However, the larger firms of merchant-bankers did not transfer funds directly between two branches. Often a third branch was involved, as an intermediary, in order to take advantage of accumulated credits in one location in order to pay the debts owing to another. Citing just one example, the Datini merchant-bankers effectively used the credit balance owing to the branch in Bruges from the Barcelona branch to effect payments to Florence. This was evidently because the branch in Bruges already had an accumulation of debts owing to the branch in

[97] Spufford, *Handbook of Medieval Exchange,* xlix.

[98] Ibid., xxxiii, xlix.

Florence.[99] In this fashion, a book entry in all three locations, in their local money of account, recorded the effective payment or transference of funds from Bruges to Florence via Barcelona. These various entries at their respective locations cleaned up the books of outstanding receivables and payables, which in effect, consolidated the inter-company receivable/payable balances. The resulting foreign exchange gains or losses affected by these entries between branches of the same firm of merchant-bankers would be recorded at the local level and would have nullified each other if the accounting records would have been translated into florins for recording purposes. For actual foreign exchange gains or losses to occur, transactions recording the purchase or sale of goods would have to happen with third parties, somewhere along the line of transactions, who were at arms-length with each other in terms of business relationships.

Extra-territorial trade in medieval Europe was slow and involved a rather long period of time to realize profits, or indeed losses, for any given venture. To illustrate, a complete trading cycle for Venetian merchants involved the initial journey to purchase goods to the Middle East, returning to Venice with these goods, then proceeding onwards to various points in North-West Europe and then, finally, back again to Venice; all in all this was a two-year process.[100] The initial trades between Western Europe and ports-of-call in the Levant did not involve any credit transactions. All trades between Catholic and Muslim merchants were, in fact, countertrades, which meant that, "…exchange is indirect, the money value of goods is understood…the parties are prepared to engage in a series of exchanges, each one of

[99] De Roover, *L'Evolution de la Lettre de Change, XIV-XVIII Siècles*, 64.

[100] Spufford, *Handbook of Medieval Exchange,* xxviii.

which may or may not be profitable, as long as the venture as a whole is successful."[101] Literally hundreds of items were purchased in this manner by Western European merchants in the Middle East, most prominently spices such as pepper and ginger, along with luxury items such as silk and jewellery. In return European merchants effected payment mainly in silver, either in bullion or in coins. However, no foreign exchange gain or loss ever occurred in these transactions, between the Levant and Western Europe, because only the value of goods including coins, as commodities, was exchanged.[102]

The concept of accounting for foreign exchange gains or losses was only applicable on extra-territorial transactions occurring within Western Europe, where bills of exchange were in use. The majority of these transactions was initiated in the financial and commercial cities of Lombardy, specifically, Florence, Venice, and Genoa. This was due to the fact that most Western European merchants who travelled to the Eastern Mediterranean to purchase the spices and luxury goods, as well as the merchant-bankers who issued the bills of exchange, were based there. In addition, Northern Italy, besides serving as a waypoint for goods from the Levant to the rest of Europe, was also a centre of an important textile-processing industry. It was the demands for appropriate raw materials made from the textile industry that spurred trading ventures to North-Western Europe. England was especially attractive because during the late medieval period eight different types of wool based on quality were known; the finest came from England, whereas, the poorest quality was from the

[101] Hunt and Murray, *History of Business*, 59.

[102] Ibid., 58.

Apennine region in Northern Italy.[103] English wool, therefore, was a magnet for Italian merchants who were especially keen on securing as much of this raw material as possible. The importance of having a steady stream of raw wool for cloth manufacturing in Italy meant that Italian merchants in England pre-purchased wool production years in advance. In so doing, this not only guaranteed the necessary raw wool at a given set price for years into the future, in addition, the Italians also negotiated significant discounts in the cost of the wool because of the cash advances made in securing the rights to this wool.[104] Indeed, from 1280 to roughly 1400, this high quality raw wool was the chief export from England. During this period almost 2.9 million sacks of wool were shipped to various locations in Europe, of which it seems that, on an annual average, at least 10% were purchased by Italian merchants. English wool exports reached their zenith between the years 1304-1309, when an average of 41,000 sacks of wool per year were shipped overseas. Interestingly, Florentine cloth production also peaked around 1310 at 100,000 pieces of cloth. Later on, once the English textile industry transitioned into producing finished cloth for the export market in the late fourteenth century, Italian merchants were also found to be actively involved in this area, at times purchasing up to 25% of the annual English production.[105] However, no trading venture involved simple outbound and inbound trading and freighting of goods. Northern Italian merchants were also extensively involved in various triangle trade routes involving England, which encompassed the

[103] Federigo Melis, *Documenti Per La Storia Economica Dei Secoli XIII-XVI* (Florence: Leo S. Olschki, 1972), 104.

[104] Hunt and Murray, *History of Business*, 103.

[105] Fryde, *Studies in Medieval Trade,* XIV 294 – 307.

use of bills of exchange and the realization of gains or losses on foreign exchange.[106] For example, the triangle trade environment encompassing Italy-Spain-England involved more than just the exporting the spices and luxury goods acquired from the Levant directly to England; Italian merchants also traded some of these goods with Spain. In Spain, the Italians purchased iron, almonds, oranges, lemons, sugar, liquorice and horses for re-export to England.[107]

This significant volume of extra-territorial trade between the Northern Italian commercial states and England provides us with insight as to the percentage of gain the involvement in the foreign exchange market contributed to the bottom-line of the Italian merchant-bankers. Table 4[108] below illustrates the relationship that existed between the rate of exchange of converting one Florentine florin into English pounds for the sixty-year period ending in 1360. At first glance, we notice that for the period in question, the exchange rates between the Florentine florin and the English pound were relatively stable, fluctuating between a high of 3.3343 and a low of 2.9240. But for bills of exchange issued in Italy and due in England, the florin started losing value against the pound following 1330. The florin finally bottomed out in the period

[106] Mueller, *Venetian Money Market*, 327.

[107] Salzman, *English Trade*, 409 – 411.

[108] Table 4 does not represent the circular movements of specific, individual bills of exchange from their inception in Italy to their initial maturity and re-issuance in England through to their eventual final maturity back in Italy many months later. This table does, however, show the gains or losses based on the average foreign exchange rates of bills of exchange travelling the trade route between England and Italy. In order to eliminate statistical irrelevance and to provide a concise format the transactions were grouped by 15-year periods and the foreign exchange analyzed over those periods. Additionally, in order to strengthen the relevancy of the small sample sizes available for making statistical inferences about the large population of bills of exchange, the t-distribution formula $x \pm(t^*(s/\sqrt{n}))$ was used in estimating the upper and lower limits of the confidence interval for the population mean; an 80% confidence level was used. Furthermore, since the florin and English pound were relatively stable currencies during the Middle Ages, it is assumed that the foreign exchange rates within the population of bills of exchange are not highly skewed.

ending in 1345. Although the oscillations, in general remained relatively mild and the currencies traded within certain parameters, this decline represented a significant fall for the florin, dropping from 3.3343 to 2.99 English pounds. The florin did recover, to a certain degree by 1360, but never again did it reach the previous valuation it had at the end of 1330, achieving only 3.0225 pounds per florin. In examining the bills of exchange issued in England and due in Italy, we can see that the nadir of the English pound was in the decade of 1330, reaching a low of 2.924 pounds against the florin. If we compare the fifteen-year period, ending in 1330 to the period ending in 1345, the pound had recovered to 3.117 against the florin increasing its value by 6.6% versus a drop of 10.3% for the florin.

TABLE 4
ANALYSIS OF FOREIGN EXCHANGE RATES - ONE FLORIN INTO ENGLISH POUNDS
FIFTEEN YEAR INCREMENTS, 1300 - 1360

15-YEAR PERIOD ENDING	BILLS OF EXCHANGE ISSUED IN	# OF SAMPLES n	SAMPLE MEAN (1 Fl = £) x	STANDARD DEVIATION s	80% CONFIDENCE LEVEL t-DISTRIBUTION t	RANGE OF DISTRIBUTION UPPER	LOWER
1315	ITALY	4	3.1075	0.3404	0.2788	3.3863	2.8287
	ENGLAND	10	3.0380	0.3156	0.1380	3.1760	2.9000
						0.2103	(0.0713)
1330	ITALY	7	3.3343	0.0881	0.0480	3.3822	3.2863
	ENGLAND	5	2.9240	0.3483	0.2388	3.1628	2.6852
						0.2195	0.6011
1345	ITALY	4	2.9900	0.3077	0.2520	3.2420	2.7380
	ENGLAND	20	3.1170	0.1788	0.0531	3.1701	3.0639
						0.0719	(0.3259)
1360	ITALY	4	3.0225	0.3073	0.2517	3.2742	2.7708
	ENGLAND	7	3.0357	0.0774	0.0421	3.0779	2.9936
						0.1963	(0.2227)

Data Source: Peter Spufford, "Currency Exchanges from Handbook of Medieval Currency Exchange" (London, 1987), in Rudolph M. Bell and Martha Howell, eds., *"The Medieval and Early Modern Data Bank,"* Oct. 19, 1998, <http://www2.scc.rutgers.edu/memdb/search_form_mueller.php> (Nov. 14, 2011).

Prior to discussing Table 4, it is important to keep in mind that merchant-bankers were always seeking opportunities to lend funds where money was relatively scarce and tended to borrow where money was relatively cheaper. In effect, they

played the liquidity of the money market in one location against the relative illiquid state in another location. Clearly, under these circumstances foreign exchange transactions were heavily weighed to the side of the lender, rather than the borrower. Although, lenders did suffer the occasional loss, by and large, they did not incur losses often enough or important enough to discourage them. In fact, if the merchant-banker was adept, the only losses on foreign exchange he would suffer would be if the exchange rates were not in equilibrium. Even then these market conditions were only temporary because economic trends gravitate towards a state of equilibrium.[109]

Although the data in Table 4 covers a substantial portion of the fourteenth century, the following in-depth discussion will concentrate on the forty-five year period ending in 1360, which was shown to be a particularly turbulent time in the history of England and of Western Europe. At first glance, for the period ending in 1330, the range of the foreign exchange gain, with the confidence level of 80%, is 6.49% to 18.29%[110] on any given circular transaction; even if we average out these amounts we would still get a reasonable return of 12.39%. The implication of these high returns on investment is that this period was a time of relatively abundant liquidity for the Florentine merchant-bankers who issued bills of exchange to England. This scenario was a continuation of a downward trend for the English pound that had existed since at least the preceding period ending in 1315. We easily notice that bills of exchange issued in Italy had shown a devaluation of the pound against the florin, dropping from £3.1075 to £3.3343 or 7.30%.The bills of exchange issued in England show a similar trend for the pound against the florin, going from £3.0380 to

[109] De Roover, *Early Accounting Problems of Foreign Exchange,* 389, 394, 397, 403.

[110] From Table 4, (.2195/3.3822 = 6.49%, .6011/3.2863 = 18.29%).

£2.9240 or 3.80%.[111] The higher rate of devaluation for bills of exchange issued in Italy indicates that the money market in England was tighter, in theory at least twice as much so, over this prolonged period.[112] All indications as to why this was so appear to be two-fold. In the first instance this was due to the booming English economy, which was almost wholly based on the exportation of raw wool. England seemed unable to finance its economic growth fast enough or indeed to adequately monetize the internal demand for coinage. Upon examination of the customs records, we note that for the thirty-years ending in 1330, exports of raw wool accounted for 23.66% of the total raw wool exported during the 220 year-period encompassing the years 1280 to 1500.[113] This fact meant that the export market for English wool was extremely overheated, which, in turn, created a very high demand for the florin.

A second and perhaps more important factor contributing to a dearth of coinage was the ever-increasing spending by the English crown. Therefore, in order to generate sufficient tax revenue to finance government expenditures that had exponentially increased from the range of £40,000 to £70,000 in 1300 to about £200,000 per year in the 1320s and 1330s,[114] it was apparently deemed important to keep the wool exports flowing at a high level. The English crown and Privy Council, like all other medieval bureaucracies, lacked any real concept of economic planning

[111] When bills of exchange were issued in Florence, exchange rates are quoted in terms of florins to the pound; therefore, the seeming increase in the pound rate actually denotes a decrease in its value against the florin; in effect, merchants have to spend more pounds to purchase the same amount of florins in Florence. However, for bills of exchange issued in England, there the exchange rates are quoted in pounds to the florin. Therefore in England, a decreasing rate for the pound rate against the florin denotes a devaluation of the pound against the florin.

[112] (7.30% - 3.80%) = 3.50%. Therefore: 7.30%/3.50% = 2.08 times more stringent.

[113] See Table 2, in Chapter 2.

[114] H. Miskimin, *Money, Prices and Foreign Exchange in 14th Century France* (New Haven: Yale University Press, 1963), 9.

and foresight and simply pursued the goal of maximizing tax revenue through the collection of the customs duty. However, in order to ensure a steady flow of funds the customs duty was not collected by government officials; it was instead in a sense farmed out to the Italian merchant-bankers to collect. In practice, the Italian merchant-bankers advanced funds to the English king in order to acquire and maintain their royal prerogative in the wool trade, and the customs duty was used as collateral by the king, as well as a source of repayment for loans advanced by them. The English king used this interplay with the Italian merchant-bankers in the collection of the customs duty as a quick and easy solution to meet the rising demands of fiscal responsibilities and perhaps also to acquire a measure of personal financial gain as well. Upon further examination we note that the only real difference in the English economy between the periods ending in 1315 and that ending in 1330 was the drastically increased spending by the English crown; as we can see on Table 2, the exports of raw wool were consistently high for both periods. Therefore, by comparing the return on foreign exchange transactions for these periods we note a large discrepancy. For the period ending in 1315 we notice the returns are modest, for bills of exchange issued in Italy, at only 6.21%. However, for bills of exchange issued in England the denominator represents the higher number of £2.90 in order to avoid a negative value, therefore the return in this case amounts to 2.46% or an average return of 4.34%.[115] Compare this with the return on bills of exchange issued for England in the period ending in 1330 which, as noted previously above, was 6.49% to 18.49% with an average of 12.39%. It is interesting that an increase of crown expenditures from £70,000 to £200,000 per year was, at least partially, responsible for an increase in the demand for florins to the

[115] From Table 4, (.2103/3.3863 = 6.21%, 0713/2.9000 = 2.46%), (6.21% + 2.46%)/2 = 4.34%.

detriment of the English pound. We noticed that the average foreign exchange gain between the fifteen-year periods ending in 1315 and 1330 increased by an average of 8.05%. Then, by mathematical inference, if the injection of an additional £130,000 per year affected the economy by 8.05%, then it stands to reason that England in the 1330s had currency in circulation in the neighbourhood of £1,615,000.[116] Interestingly, as quoted by Martin Allen, economic historian N.J. Mayhew estimated that about £1,100,000 was in circulation as late as 1324; his estimates, however, only included data from eleven hoards and mint outputs from London and Canterbury, and excluded all other mint outputs.[117]

As noted the resulting economic damage to the English pound can be easily discerned by the magnitude of the demand for the florin by reviewing Table 4 for the period ending in 1330. As noted the results for this period show a return ranging from at least 6.49% to an upper limit of 18.29%. This level of return can perhaps be better conceptualized if we factor in the usance (this term denotes a period of time, set by custom) of a bill of exchange between Northern Italy and England, which is four months in one direction and eight months for a full circuit. In this circumstance, we calculate that the average annualized rate of return just on foreign exchange for the fifteen-year period ending in 1330 was between 9.74% and 27.44%.[118] These values represent the extremities of the 80% confidence level of the t-distribution probability calculation. Perhaps more realistic would be an average of these returns, which would

[116] £130,000/8.05% = £1,615,000.

[117] Martin Allen, "The Volume of the English Currency, 1158-1470," *The Economic History Review* New Series 54, No. 4 (Nov., 2001), 602.

[118] 6.49% x (12/8) = 9.74%, 18.29% x (12/8) = 27.44%.

amount to 18.59% annually, still a very robust return on investment. The two inter-related factors of increased fiscal spending by the English crown and the high level of exports of raw wool led to a situation where the pound was continually pressured into a state of devaluation against the florin, culminating in the period ending in 1330, as Table 4 effectively demonstrates. The continuance of the ever-increasing value for the florin provided an obvious financial windfall for the Italian merchant-bankers who were all too eager to participate in reaping the benefits. However, these gains for the merchant-bankers occurred to the detriment of the English pound, which through the effects of devaluation created an inflationary environment that increased the cost of imports for England.

However, in spite of the adverse effects to the English currency and to the economy through the effects of inflation, the export of raw wool, nevertheless, continued unabated during the subsequent decade. A review of the customs record for the period ending in 1340 readily indicates that large amounts of wool were still being exported through English ports.[119] However, the fifteen-year period ending in 1345 was afflicted with increased political and economic instability, both for England and for Florence. In 1337, the Hundred Years War began between England and France; in this major conflict, one would believe that the English would have been even more hard pressed for funds in order to sustain its war effort. Logically, therefore, the economic result for the English pound would be to continue in its steady course of devaluation against the florin. However, unlike the previous period, where the market conditions were conducive to absorbing large amounts of wool for export, the English King Edward III, in an attempt to further maximize revenue, concentrated the wool

[119] See Table 2, in Chapter 2.

due to be exported at the ports of Antwerp and Bruges. The rate of duty was also greatly increased for Italians and other foreigners, who were now being charged £3 per sack of wool. The economic fallout of dumping massive amounts of wool led to severely depressed wool prices to a point where the Italian merchant-bankers were losing over £2 per sack of wool. Additionally, the Bardi and the Peruzzi merchant-banking firms, in all probability to keep their royal trading prerogative, had lent the English king in the neighbourhood of £90,000 to £100,000 during 1336 and 1337.[120] The unfavourable wool prices, created by excessive supply, combined with a large increase in export duty along with an apparently inelastic market that was unable to absorb the increased cost associated with English wool, created a disincentive for merchants to participate in the export wool market.

Surprisingly, in spite of the negative economic conditions, the expected devaluation of the English pound did not occur. It seemed that the Florentines were even more constricted for funds than the English. Florence had become heavily involved in a politically, and as it turned out also economically, disadvantageous conflict with Venice against Scaliger Verona, that lasted from 1336 to 1339. According to the terms of the alliance with Venice, Florence was responsible to pay for the German mercenary armies fighting in Venetian territory. The financial obligation finally amounted to some 600,000 florins that apparently completely depleted the coffers of Florence. By the end of the conflict, Venice even had to advance payment to the German mercenaries on behalf of Florence. Venice, once having achieved the goal of extending its territory on the mainland, promptly made peace, leaving Florence with no choice but to follow suit in suing for peace. At this

[120] Fryde, *Studies in Medieval Trade*, VI 11; VII 1158-1170; IX 12-15.

point the alliance between Florence and Venice turned sour. The apparent inability of Florence to repay Venice the comparably small debt of 37,000 florins had simply become an all too easy excuse for these cities to break off both commercial and diplomatic relations between them. [121] Fiscally still reeling from the ill-advised adventure with Venice, Florence was soon thereafter forced into the purchase of the town of Lucca for 250,000 florins by Mastino Della Scala in 1341, because he held captive Florentine hostages for that express purpose. Subsequently, eyewitnesses stated that there was almost no specie to found in Florence; in effect the money market in Florence was practically non-existent.[122]

The continuing illiquid position of the Florentine state finance was in part due to the dire straits which the larger merchant-banks, such as the Bardi and the Peruzzi, were themselves experiencing. They, having overextended themselves in continuing to advance loans to the English crown while losing money on the purchase of wool, could not adequately assist Florence in a time of fiscal stringency. The debilitating effect of poor economic and political decisions by the Florentine government coupled with recessionary pressures and commercial, as well as political, commitments in England on the part of the large merchant bankers proved to be disastrous. The Florentine money market was substantially compromised and had proportionally shrunk to a much greater extent than the money market for the pound had in England. The dire strait of the Florentine economy is highlighted on Table 4, in the severe devaluation of the florin against the English pound in the fifteen-year period ending in

[121] Mueller, *Venetian Money Market*, 134 – 136.

[122] A. Sapori, *La Crisi delle Compagnie Mercantile,* 107-140, 158-159, cited in Mueller, *Venetian Money Market,* 136.

1345. The dealings in bills of exchange highlight the extent of the Florentine economic hardship. This is seen by comparing the returns of those bills issued in England versus those issued in Italy. Table 4 demonstrates that this period saw returns from 2.22% for Italian issued bills of exchange against 10.64% for those bills of exchange issued in England. For the Italian merchant-bankers their return on investment averaged 7.06% for this period.[123] The business cycle regarding issuance of bills of exchange was in a state of flux, as the stringency of the Florentine money market was making it more profitable to initiate foreign exchange transactions from England. Now it was Florence that was in a relative state of want and not England. This average return is 11.53 percentage points lower than the results from the previous fifteen-year period. The question now arises; with the decreased return on foreign exchange transactions and generally unfavourable market conditions, why were the Italians still participants in the English wool trade, knowing the difficulty in simply making an adequate profit, if any, from the sale of raw wool? One reason may have been that the Italians really had no choice but to take delivery of the raw wool from the English. The actual contracts for purchases and payments were already made to the wool suppliers because the Italians were in the habit of contracting the purchase of wool production years in advance.[124] Other important considerations also were involved. The merchant-bankers may have felt constrained, perhaps even pressured, to participate in order not to lose their trading privileges and their right to collect the customs duty granted to them by the English king in the hopes of having their loans to

[123] From Table 4, (.0719/3.2420 = 2.22%, .3259/3.0639 = 10.64%), (2.22% + 11.90%)/2 = 7.06%.

[124] R.W. Kaeuper, Bankers to the Crown: The Riccardi of Lucca and Edward I (Princeton: Princeton University Press, 1973), 30, 36-39.

him eventually repaid or at least drawn down. This would explain the large loans, as previously noted, that the Florentine bankers made to the English crown in 1336 and 1337 at a time when their home city, Florence, was suffering through an unprecedented liquidity crisis.

The large merchant-bankers, the Bardi and the Peruzzi, were left reeling from the economic and political fallout surrounding them. In addition, the fall of the gold/silver ratio by 26% over the previous twenty-years[125] had cut deeply into their profitability; this reality coupled with the decline of the extra-territorial grain trade with which they were closely associated finally ruined them. First the Peruzzi failed in1343 and then the Bardi in 1346. The outstanding loans to the English king Edward III were not the only issue that made them collapse; these loans only exacerbated the existing situation. Subsequent records show that the Peruzzi were able to repay only 35% of the outstanding amounts due to their creditors, whereas the Bardi repaid 46%.[126] Due to large discrepancy in the ratios of repaying their creditors it seems likely that the creditors of the Bardi were able to temper their situation somewhat since they had seen what could happen to a large firm like the Peruzzi and had in all likelihood started to restrict their exposure in the three-year interval between the bankruptcies. In addition, the Bardi were further handicapped by the city of Florence, which had devalued the public debt, in which they held an important stake. The Bardi's perceived assets were effectively shrunken by legislation which, no doubt, increased anxiety among their creditors, because shortly thereafter, the Bardi went

[125] Mueller, *Venetian Money Market*, 137.

[126] Hunt and Murray, *History of Business*, 117, 119.

bankrupt.[127] We could examine the extent to which loans to the English king affected the cash flow of the Peruzzi and the Bardi by comparing the above bankruptcy repayment ratios with that of another large firm, the Acciaiuoli, who also failed at roughly the same time, but were able to repay 50% of the amounts owing to their creditors. They had no outstanding loans with the English king.[128]

The subsequent fifteen-year period ending in 1360 encompassed the passing of the Black Death through Europe between the years 1348 to 1350. The societal and economic disruption caused by this pestilence can be seen from the data contained in the English customs record. For the 220 year period ending in 1500, the only decade for which data is incomplete is the period terminating in 1350; the information that survives for that decade cannot be adequately compared to either the prior or subsequent periods.[129] As for foreign exchange transactions, Table 4 above provides an interesting snapshot. The Florentine economy is in transition and apparently recovering towards the latter part of this period. A strong indicator of this is the sample means for the bills of exchange issued in Italy and England which are very similar, £3.0225 versus £3.0357. These results are a clear reversal of the trend from the prior period. This suggests that the early part of this fifteen-year period continued with the same economic conditions that caused the tight money-market conditions in Florence and the devaluation of the florin, with the recovery of both the liquidity of money market and consequently the florin occurring during the latter years of this

[127] Edwin S. Hunt, "A New Look at the Dealings of the Bardi and Peruzzi with Edward III," *The Journal of Economic History* 50, No. 1 (Mar., 1990), 160.

[128] Hunt and Murray, *History of Business*, 117.

[129] See Table 2, in Chapter 2

period. In fact, this occurrence is shown to be true by considering Table 5 below. Using twenty-year increments rather than the fifteen-year period previously used, in order to take in the continuing economic factors that afflicted the florin along with the passing of the Black Death and comparing the results with the immediate subsequent period we can clearly see how far the florin had devalued prior to its recovery. The sample mean for the period ending in 1350 for the florin is 2.9260, with the range of return for foreign exchange transactions being distributed from .967% to 11.23% or, if the figures are tempered, there would be an average of 6.10% return.[130] The average

TABLE 5
ANALYSIS OF FOREIGN EXCHANGE RATES - ONE FLORIN INTO ENGLISH POUNDS
TWENTY-YEAR INCREMENTS, 1331-1370

PERIOD	BILLS OF EXCHANGE ISSUED IN	# OF SAMPLES n	SAMPLE MEAN (1 Fl = £) x	STANDARD DEVIATION s	t-DISTRIBUTION t	80% CONFIDENCE LEVEL RANGE OF DISTRIBUTION UPPER	LOWER
1331 to	ITALY	5	2.9260	0.3025	0.2074	3.1334	2.7186
1350	ENGLAND	21	3.1133	0.1751	0.0506	3.1640	3.0627
						(0.0306)	(0.3441)
1351 to	ITALY	4	3.0850	0.2265	0.1855	3.2705	2.8995
1370	ENGLAND	15	3.0373	0.0670	0.0233	3.0606	3.0141
						0.2099	(0.1146)

Data Source: Peter Spufford, "Currency Exchanges from Handbook of Medieval Currency Exchange" (London, 1987), in Rudolph M. Bell and Martha Howell, eds., "*The Medieval and Early Modern Data Bank,*" Oct 19, 1998, <http://www2.scc.rutgers.edu/memdb/search_form_mueller.php> (Nov. 14, 2011).

return of 6.10% for the twenty-year period ending in 1350 shows the continuance of the devaluation of the florin and the stringent state of illiquidity of the Florentine money market. The five-year difference between 1345 and 1350, both using the same base year of 1330, highlights this continued decline. For the period ending in 1345 the average return was 8.37%, whereas, for the period ending in 1350 this figure was

[130] From Table 5, (.0306/3.1640 = .967%, .3441/3.0627 = 11.23%), (.967% +11.23%)/2= 6.10%.

6.10%. This small difference of 2.27 percentage points represents a decline of 27.12% in the average five-year return.[131]

However, this contrasts sharply with the subsequent twenty-year period ending in 1370 that highlights the economic and societal recovery of Florence. The florin had by 1370 recovered 5.43% of its value in the twenty-year interval to 3.0850. The foreign exchange market also seemed to be shifting away from issuing the majority of bills of exchange in England to Florence since the fifteen-year period ending in 1330. The range of distribution for this period displays variances from 6.42% to 3.80% for an average return of 5.11%.[132] Although this amount is still smaller than the return for the previous twenty-year period, the main difference lies in the fact that the larger return is now the result of bills of exchange issued in Italy rather than in England. The recovery of the money market in Florence was slow in the twenty-year interval from 1350 to 1370. The disastrous effects of the Black Death coupled with economic decline and political misadventures had taken a heavy toll and recovery took a generation. However, the merchant-bankers that failed were soon replaced by others and their involvement in bills of exchange clearly brought them a measure of profitability when dealing with England. Table 6 below summarizes estimated returns on foreign exchange transactions for the seventy years ending in 1370. It must be remembered that merchant-bankers were opportunists of the marketplace; income from foreign exchange, though important, was just a supplementary form of revenue.

[131] 8.37% - 6.10% = 2.27%, therefore: 2.27% ÷ 8.37% = 27.12% decline in the average return.

[132] From Table 5, (.2099/3.2705 = 6.42%, .1146/3.0141 = 3.80%), (6.42% + 3.80%)/2 = 5.11%.

It was trade, as a rule, that generated the greater amount of profit.[133] Table 6 shows that the annual return on investment for bills of exchange issued between Italy and England during the seventy years ending in 1370 averaged 10.48%. If, however, we

TABLE 6

AVERAGE RETURN ON FOREIGN EXCHANGE TRANSACTIONS

FLORENTINE FLORINS AND ENGLISH POUNDS

	GAIN ON CURRENCY - %		AVERAGE		ANNUAL
PERIOD COVERED	UPPER RANGE	LOWER RANGE	RETURN %	TOTAL USANCE	RETURN %
1300 - 1315	6.21%	2.46%	4.33%	8 MONTHS	6.50%
1316 - 1330	6.49%	18.29%	12.39%	8 MONTHS	18.59%
1331 - 1350	0.97%	11.23%	6.10%	8 MONTHS	9.15%
1351 - 1370	6.42%	3.80%	5.11%	8 MONTHS	7.66%
AVERAGE VALUES	5.02%	8.95%	6.98%		10.48%

Data Source: Peter Spufford, "Currency Exchanges from Handbook of Medieval Currency Exchange" (London, 1987), in Rudolph M. Bell and Martha Howell, eds., "*The Medieval and Early Modern Data Bank,*" Oct 19, 1998, <http://www2.scc.rutgers.edu/memdb/search_form_mueller.php> (Nov. 14, 2011).

omit the result for the fifteen-year period ending in 1330, for which profitability is skewed at 18.59%, the average annual returns fluctuated in a relatively narrow range of 6.50% to 9.15%, which would provide us an average of 7.77%. The reason for this high rate of return for the period ending in 1330, as discussed earlier, was due to the lack of liquidity in the English money market, in part caused by increased spending by the English crown. Therefore, because implied interest charges were strictly forbidden on loans, these annual returns effectively represent the prevailing interest rates on the credit function of bills of exchange.[134] However, because fifteen to twenty-year increments were used to calculate these returns on investment, it stands to reason that a certain amount of statistical smoothing, or flattening of interest rates, occurred. These rates of return do provide insight as to the amount of interest charged over

[133] De Roover, *Early Accounting Problems of Foreign Exchange,* 394.

[134] Ibid., 394.

several medium to long-term business cycles of fifteen to twenty years each between Florence and England, as well as providing an interest rate over a very long-term cycle of seventy-years.

There is no doubt that the parties involved in dealing with bills of exchange knew that, in all probability, the issuer would profit from the advancement of funds. Bernardo Davanzati, in the sixteenth century, openly stated such when he wrote: "*L'ingordigia di questo guadagno ha convertito il cambio in arte: e dannosi danari a cambio, non per bisogno d'averli altrove, ma per riaverli con utile; e pigliansi, non per trarre I danari suoi d'alcun luogo, ma per servirsi di quei d'altri alcun tempo con interesse*…"[135] [Greed from this gain has changed foreign exchange into a business: where giving funds in exchange, no longer means having these funds available elsewhere for one's own use, rather funds are advanced for the purpose to receive these funds back with gain; and taking these funds, no longer means to have funds available for themselves elsewhere, but rather, to use funds provided from others for a period of time and repayable with interest…]. Transactions involving the use of funds always imply an opportunity cost/benefit for both the lender and the borrower. The opportunity benefit for the lender is the expected return on funds while they are not in his possession; for the borrower the cost is the interest, or the difference in foreign exchange points, that are calculated on the funds that he received. In either case the important determining factor is usance, or the time the bill of exchange is outstanding. For example, Florentines did not prefer to transfer funds directly from Florence to Bruges or Paris; rather they remitted from Venice. The usance was the same, two months, either from Florence or Venice; the difference was that the merchant banker

[135] Davanzati, "Notizia," 429.

retained control over his funds for twenty additional days, if Venice was used. Similarly, twenty days were saved dealing with London through Venice instead of Florence.[136]

The question now arises, how typical are the above rates of return on the bills of exchange with England compared with other trade centres in Western Europe that Florence or Northern Italians were dealing with? Table 7[137] below compares selected returns on investment on foreign exchange transactions involving several currencies and the Florentine florin in the fourteenth century encompassing the identical fifteen to twenty-year periods as used for the English pound throughout this thesis. The above currencies and time periods were chosen based on the availability of an adequate volume of samples in each case. Upon examining Table 7, we notice that there is no correlation between the various diverse currencies. Based against the common denominator currency, the Florentine florin, the return on foreign exchange transactions varies not only between the currencies themselves but sometimes also between the different periods within the same currency. The soldo of Bologna is an interesting example that shows the tightness of the money market that existed within its boundaries for the first fifty years of the fourteenth century. The margins on profit are much higher between this currency and the florin as compared to the other currencies being considered. For the first thirty years of the century the margins fluctuated in the vicinity of 17% to 18.60%, and then during the period surrounding the Black Death the yield skyrockets to 33.54%, indicating the almost complete

[136] Mueller, *Venetian Money Market*, 296, 333.

[137] Note: Usance on Table 7 and Table 8 is based on the research of Mueller, *Venetian Money Market,* 295.

TABLE 7

AVERAGE RETURN ON FOREIGN EXCHANGE TRANSACTIONS

FLORENTINE FLORINS AND SELECTED WESTERN EUROPEAN CURRENCIES

PERIOD ENDING	CURRENCY	BILLS OF EXCHANGE ISSUED IN	GAIN ON CURRENCY - % UPPER RANGE	LOWER RANGE	AVERAGE RETURN %	TOTAL USANCE	ANNUAL RETURN %
1316 - 1330	SUELDO OF BARCELONA	ROME BARCELONA	2.19%	4.20%	3.19%	6 MONTHS	6.39%
1331 - 1350	SUELDO OF BARCELONA	ROME BARCELONA	0.43%	4.91%	2.67%	6 MONTHS	5.34%
1300 - 1315	SOLDO OF BOLOGNA	ROME BOLOGNA	3.65%	2.03%	2.84%	2 MONTHS	17.05%
1316 - 1330	SOLDO OF BOLOGNA	ROME BOLOGNA	4.56%	1.66%	3.11%	2 MONTHS	18.68%
1331 - 1350	SOLDO OF BOLOGNA	ROME BOLOGNA	5.84%	5.34%	5.59%	2 MONTHS	33.54%
1351 - 1370	SOLDO OF BOLOGNA	ROME BOLOGNA	0.93%	1.01%	0.97%	2 MONTHS	5.83%
1300 - 1315	SOLDO OF PISA	ROME PISA	0.28%	0.08%	0.18%	2 MONTHS	1.06%
1316 - 1330	SOLDO OF PISA	ROME PISA	1.26%	1.82%	1.54%	2 MONTHS	9.23%
1351 - 1370	GROOT OF FLANDERS	GENOA BRUGES	4.70%	10.82%	7.76%	6 MONTHS	15.52%

Data Source: Peter Spufford, "Currency Exchanges from Handbook of Medieval Currency Exchange" (London, 1987), in Rudolph M. Bell and Martha Howell, eds., "*The Medieval and Early Modern Data Bank,*" Oct 19, 1998, <http://www2.scc.rutgers.edu/memdb/search_form_mueller.php> (Nov. 14, 2011).

disappearance of liquidity, before dropping to 5.83% during the subsequent twenty-year period. This is in sharp contrast with the soldo of Pisa which exhibited a relatively liquid money market in contrast with Bologna. However, even at that, there was a large discrepancy between one period and the next. The conclusion we can draw from Table 7 is that the denominator currency, in this case the Florentine florin, reacted according to the market conditions prevalent at the location where the bill of exchange was due to mature. The local conditions of the various money markets were

insulated by time and distance from each other. This can be seen by comparing the yields from Bologna and Pisa, cities that were relatively close to each other geographically and yet had completely diverse yields on foreign exchange. These rates were no more similar to each other than they were to either the yields earned in Bruges or Barcelona.

If there is no direct correlation in yield for foreign exchange transactions for a single currency trading at different locations during similar periods, the question that now arises is how significant would the correlation be if different currencies had bills of exchange maturing at the same location during the same time period? In this regard Table 8 will briefly consider the results of this situation with two examples. In the data provided by Peter Spufford, there were not enough samples to include a third location, such as Florence, for the same time period in order to completely ascertain the results. In the early part of the fifteenth century, London was an important hub of two trading triangles that used bills of exchange. The cities involved in these triangles were London-Bruges-Venice and London-Bruges-Genoa.[138] In considering the returns

TABLE 8

AVERAGE RETURN ON FOREIGN EXCHANGE TRANSACTIONS

ENGLISH POUND WITH THE GENOVINO AND THE DUCAT

PERIOD ENDING	CURRENCY	BILLS OF EXCHANGE ISSUED IN	GAIN ON CURRENCY - % UPPER RANGE	GAIN ON CURRENCY - % LOWER RANGE	AVERAGE RETURN %	TOTAL USANCE	ANNUAL RETURN %
1436 - 1439	GENOVINO POUNDS	GENOA ENGLAND	5.77%	4.73%	5.25%	8 MONTHS	7.87%
1436 - 1439	DUCAT POUNDS	VENICE ENGLAND	7.05%	8.22%	7.63%	8 MONTHS	11.45%

Data Source: Peter Spufford, "Currency Exchanges from Handbook of Medieval Currency Exchange" (London, 1987), in Rudolph M. Bell and Martha Howell, eds., "*The Medieval and Early Modern Data Bank,*" Oct 19, 1998, <http://www2.scc.rutgers.edu/memdb/search_form_mueller.php> (Nov. 14, 2011).

[138] Mueller, *Venetian Money Market*, 327.

on foreign exchange transactions between London and Venice and between London and Genoa, we notice that the discrepancy between the rates is not significant. What seems likely is that the liquidity on the English money market produced similar returns for the merchant-bankers based in both of those Italian commercial centres. However, the divergence in the rates is most probably due to the different conditions of the money market existing in Genoa and Venice. The lower rate of return in Genoa indicates a tighter market for funds than in Venice. All things being equal in terms of the money market, the merchant-bankers based in both cities would theoretically receive approximately the same amount of yield. However, the merchant-bankers in Genoa willingness to accept a lower yield indicates a greater inclination to participate in bills of exchange in an attempt to increase liquidity by profiteering through foreign exchange.

The use of bills of exchange contributed significantly to the monetization of Western European economies by entrenching the concept of quantified denominations of currency. Originally this process occurred in extra-territorial trade mainly because of the use of bills of exchange and then locally through the use of wage-labour. Currency once quantified and accepted at the stated face value acted as an accelerant to the economy by increasing the velocity, as well as the theoretical quantity of funds available for trade. These processes were aided by the credit function of the bills of exchange that cleverly circumvented the prohibition of the Church on usury by disguising the interest factor on loans as gains on foreign exchange. This slight change of perspective aided the societal and religious acceptance of gain involving bills of exchange simply because of the perceived inherent risk associated with

foreign exchange. However, as demonstrated in the various tables in this thesis, adverse risk using bills of exchange was greatly minimized by merchant-bankers who were able to use the differential in the liquidity of the money markets of various locations to their benefit in establishing foreign exchange rates and thus, ensuring profitability.

CHAPTER IV

CONCLUSION

Bills of exchange created an economic paradigm within the Western European economy of the late Middle Ages by addressing societal, religious and logistical issues that stifled trade and retarded the growth of industry. Although bills of exchange were already in use in the thirteenth century, their full potential as a dynamic economic tool for expanding and promoting trade was only fully realized in the fourteenth century. However, in spite of the ambiguity that seemed to have existed within the realm of medieval foreign exchange operations, the actual functionality of bills of exchange was both elegant and yet, in many aspects, deceptively simple. These were important characteristics in order to facilitate and promote their use between merchant-bankers and individuals who dealt in extra-territorial trade. Ideally, the goal of any economic tool is to increase the rollover of funds through increased rollover of trade. Merchants had long recognized this dual economic truism that increased profits derive not only from an increase in the actual volume of trades undertaken during any given timeframe, but that profits could also be increased if the quantity of units involved in each individual trade was also increased. The second point is especially important on two levels: first, if the volume of trades could be increased and if the quantity of goods involved in each trade could also be increased then it stands to reason that the rollover of funds, and thereby profitability, would also increase proportionally to the volume and size of trades in a given time period. A second benefit would be

derived, that if a merchant would be able to purchase larger quantities of goods from a supplier more often, in all likelihood the overall cost of purchases would decrease due to the effect of economies of scale; however, lower costs for the merchant did not necessarily translate into proportionally lower selling prices to their customers.

In review, the economic challenges that existed within the Western European medieval economy that stifled the rollover of trade, although varied, could be categorized into four major obstacles: the lack of liquidity at the macro level brought upon the unfavourable trade balance that existed with the Levant, which continually siphoned off large quantities of gold and silver; secondly, the burdensome, hazardous, as well as expensive transportation of gold or silver specie in the form of coins or bullion from one trade zone to another; third, the dizzying amount of coinage of various denominations, weight and purity that were circulating at any given time; fourth, the negative directives issued by the Catholic Church against usury and loans made for business purposes. The impact of the Catholic Church on medieval economic thought cannot be over-emphasized. As a societal insight into the seriousness of being accused as a usurer, in Dante Alighieri's version of hell, usurers were reserved for punishment, along with sodomites, to suffer for eternity in the third ditch of the seventh circle. However, usurers held a more degraded position, being that they were bordering on the fourth ditch, slightly above those being tormented for fraud.[139]

[139] Dante Alighieri, *La Divina Commedia – Inferno*, Commentary by Giuseppe Villaroel (Milan: Arnoldo Mondadori Editore S.P.A, 1993), Canto XV to Canto XVII, pages: 128 – 153.

Bills of exchange successfully addressed all these impediments, literally by the stroke of a pen. This was because their importance to the economy resided primarily in their capacity as vehicles that not only provided short-term trade credit to merchants but also eliminated the guesswork involved in the coin-exchange operation from the hands of these same merchants that were involved in extra-territorial trade. As such, bills of exchange effectively acted as accelerants within the Western European economy. With the inherent credit function of bills of exchange, merchants were relieved of keeping large amount of specie on hand to conduct trade. Indeed, merchants were able to leverage the amount of funds they had for trade purposes through the issuance of multiple bills of exchange. In this fashion not only were they able to purchase larger quantities of goods but also were also able to conduct greater number of trades in a shorter period of time. Additionally, with the issuance of bills of exchange, the transportation of specie from one locality to the next was basically eliminated, except in rare circumstances. Paper replaced precious metals in conducting trades, thus making the cost of doing business not only less expensive, but also less cumbersome, as well as diminishing the possibility of loss through theft or shipwreck. To further highlight their importance bills of exchange also addressed the conundrum created by the myriad of coin denominations in circulation by creating a virtual currency which was based on an accepted monetary standard called money of account. For extra-territorial trade within Western Europe the currency of choice was the florin; however, for trade within individual sovereign economic zones each had their own monies of account. Therefore, the credit function of bills of exchange not only

enhanced the quantity of available currency in circulation at any given time by multiplying the amount of funds a merchant had on hand, but also provided a measure of certainty in the chaotic monetary environment that existed in each sovereign trade zone.

Additionally, through the use of monies of account, bills of exchange provided the impetus that initiated the monetization of Western European currency and standardized protocols used in extra-territorial trade. This implied that cottage-based labour and manufacturing of goods gave way to the wage-labourer who was paid in coins having a nominally-stated value and to the increased specialization of tasks in the production process. The result of this transformed the concept of coins from being a commodity, based on their content of precious metals, to actual money based on their stated value. Also, the goods now being produced had a greater degree of uniformity as well as a measure of standardization which were now increasingly produced in response to market demands. Along with the introduction of monies of account and the increasing monetization of the economy the abstract concept of value could now be calculated with greater certainty and scrutinized accordingly as the situation demanded. With this changing attitude merchants were now able, through the introduction of double-entry bookkeeping, to mathematically evaluate business risks, tabulate costs, verify profitability and assign values to liabilities and assets, which in turn, provided a standardization of protocols in the accountability of business ventures.

However, it is in the intricate manner in which bills of exchange achieved their ubiquitous status in trade without severely disrupting the late medieval cultural and religious barriers associated with money-making that lies their real elegance. Italian merchant-bankers originally introduced the concept of bills of exchange coated with ingenious arguments designed to take advantage of the nebulous nature of foreign exchange. The success of these arguments in convincing or, at least, confusing the situation even further was based on the desire to circumvent the Church's directive issued in Christendom against usury. This was achieved by subtly substituting the inherent loan function of bills of exchange and interest charges applicable to these loans by disguising these transactions as a foreign exchange contract wholly subject to the vicissitude of the foreign exchange market. Thereby, simply by transforming the certainty of profitability of interest income on a loan into the presumed uncertainty of gain on a foreign exchange transaction mollified the religious and the societal outlook on these extra-territorial trade advances. Therefore, by simply stating that re-payment of the bill of exchange would occur in another location, in another currency and at a later time was sufficient to deflect excessive criticisms of the methodology used by the merchant-bankers to pursue profits in extra-territorial trade. Indeed, objections to foreign exchange transactions were often stalled in a quagmire of a never-ending circle of arguments and counter-arguments concerning the apparent secularization of sacred directives. Concerning the confusion that reigned regarding the use of foreign exchange, these debates raged well into the

Renaissance and as late as 1553, as quoted by Raymond De Roover, Domingo De Soto, a prominent Scholastic theologian, wrote:

> This matter of exchange, although sufficiently abstruse by itself, becomes each day more complicated because of new tricks invented by the merchants and more obscure because of the conflicting opinions advanced by the doctors.[140]

The confusion surrounding the use of bills of exchange as a valid tool in extra-territorial trade did not impede its usage in the least. The consciences of the merchant-bankers rested easy and their souls apparently withstood the temporal temptations seemingly inherent to involvement in trade. Eventually, after centuries of use the bill of exchange became the mainstay of trade between economic zones within Western Europe, having become ingrained into the mindset of individuals as a matter of course in any of these transactions. All debates were inconsequential and effectively irrelevant, it was trade above all, and the pragmatists within the Catholic Church knew this and tacitly accepted the reality of the situation.

Foreign exchange rates used on bills of exchange were affected more by the current state of the money market, which in many cases, as we have noted in the previous chapter, was highly localized and particular to each economic zone. This was especially evident in Northern Italy where economic zones were specifically centered on cities that had their own currencies and hence, their own sovereignty and sphere of political influence. Therefore, political stability, or lack thereof, interacted with the vicissitude of the greater Western European economy to

[140] De Roover, *Business, Banking and Economic Thought,* 257.

individualize the economic conditions that gave rise to the pressures affecting the state of liquidity in each given location. Florence was a prime example of the effect of political instability on its economy while grappling with external recessionary pressures affecting its extra-territorial trade. The subsequent drying up of the money market is reflected on the devaluation of the florin versus the English pound for the fifteen-year period ending in 1345, as demonstrated on Table 4 in the previous chapter. The localized nature of the economic effects in Northern Italy could vary widely even between neighbouring cities as was shown on Table 7 when comparing the annual returns on foreign exchange for bills of exchange issued in Rome and maturing in Bologna and Pisa. For the two fifteen-year periods, the first ending in 1315 and the second in 1330 the rates of return were 17.05% and 18.68% for Bologna compared to 1.06% and 9.23% for Pisa respectively for the periods indicated. These cities are relatively close geographically, being only 114 km distant from each other. However, the size of the political entity was not of any importance. This could be seen for economic zones that historically had feudal backgrounds that were ruled by a hierarchical class of nobility such as found in England. Here, political sovereignty and influence extended outward from the central seat of government, in this case London, where control of the mints, tax collection and fiscal spending resided. Similar to the city-states in Northern Italy, decisions made in these areas coupled with external factors also affected the foreign exchange valuation of the pound sterling. Therefore, relative proximity to other economic centres as well as the size of the economic zone were not decisive factors, unless war was involved, that

affected the foreign exchange rates; rather it was the liquidity of their individual money market that was the deciding indicator, as was seen on various tables in the preceding chapter.

Evidence presented in the tables in the previous chapter determined that Italian merchant-bankers were generally adept at making money issuing bills of exchange regardless of the condition of the economy or of external factors such as the societal effects of the Black Death or the constraints caused by war. However, the returns made from foreign exchange transactions were good but not spectacular. Table 6 from the previous chapter shows that returns made from bills of exchange involving florins and English pounds averaged out to 10.48% for the seventy-years ended in 1370. Whereas Table 7, which detailed returns involving florins and various other Western European currencies, shows they only averaged 12.52%[141] during the same seventy-year period. Merchant-bankers were eclectic in their trade pursuits and did not specialize in any one sphere of the trade market, rather they responded to the market as they saw opportunities.[142] As a result their profit centres were not concentrated in any one area and their business risk was similarly spread out. If they, as merchants, rather than bankers, perceived that a certain product or material was in short supply, they either strove to purchase as much as they could or to acquire the right, to the exclusion of others, of

[141] From Table 7, (6.39+5.34+17.05+18.68+33.54+5.83+1.06+9.23+15.52)/9 = 12.52%.

[142] De Roover, "Early Accounting Problems of Foreign Exchange," 394, 397, 402, 403.

purchasing large quantities in the hope of gaining a hegemonic trade position at the location where they hoped to sell the product.[143]

Interestingly, the range of the percentage of profit made by merchant-bankers through their individual business endeavours was relatively consistent. This implied that merchant-bankers, as a group, and perhaps merchants in general had certain minimum returns already set as economic goals in their trading endeavours. As shown above dealings in the foreign exchange market offered a return of 10.48% to 12.52% for the seventy-years ending in 1370. These percentages are comparable with the returns tabulated from the documents found in the Datini archives. One example details the sale of 47 pieces of cloth in 1384; after expenses the net profit was found to be 9.31% of the gross selling price.[144] In his analysis, Federigo Melis was able to group his findings on the profitability of cloth sales into various categories based on the information found on the source documents; on one chart he detailed the profitability of 217 cloths sold based on the origin of the wool used in manufacturing, where the percentage of profitability came to 11.54%;[145] on another, Melis detailed percentage of profit based on sales to various customers, and here the profitability came to 16.25%.[146] By taking a simple average of the profitability on the sale of cloth found in the documentation

[143] Frederic C. Lane, "Family Partnerships and Joint Ventures in the Venetian Republic," *The Journal of Economic History* 4, No. 2 (Nov., 1944), 192.

[144] Melis, *Aspetti Della Vita Economica Medievale,* Prospetto XVIII on page 487.

[145] Ibid., *Prospetto* XXXV on pages 598 and 599.

[146] Ibid., *Prospetto* XXXIX on pages 614 and 615.

from the Datini records, one arrives at a return of 12.37%.[147] This phenomenon of striving to achieve a certain rate of return was not peculiar to merchants based in Florence only. The Venetian merchant, Andrea Barbarigo, declared that he made an annual profit of 15%, by earning 2,000 ducats on an initial investment of 6,000 ducats over a two-year period.[148] These rates of return discussed above applied to transactions initiated and completed within Western Europe. However, the rate of return for trades dealing with the Levant was much higher. In the fifteenth century, the difference in price between Venice and the Levant was 50% on most items such as pepper. Some goods commanded an even higher price; for example; cloves were 72% higher, nutmeg 220%, cotton could be as much as 92% more. After expenses the profit margin on these highly sought goods could range anywhere from 35% to 50%.[149] However, as discussed previously, bills of exchange were only honoured for extra-territorial trade within the geographical confines of Western Europe. All dealings with Muslims in the Levant were on a cash-basis involving either specie in some form or the exchange of goods. Credit in one guise or another was never extended by either party.[150]

Although merchant-bankers, in the fourteenth century, carried on a profitable business in foreign exchange, the earnings generated from their dealings in this medium were sorely insufficient to stem the outflow of funds that

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[147] (9.31% + 11.54% + 16.25%) / 3 = 12.37%.

[148] Frederic C. Lane, *Venice and History: The Collected Papers of Frederic C. Lane,* edited by a committee (Baltimore: The John Hopkins Press, 1966), 126.

[149] E. Ashtor, "Profits from Trade with the Levant in the Fifteenth-Century," *Bulletin of the School of Oriental and African Studies, University of London* 38, No. 2 (1975), 254, 257, 258, 268.

[150] E. Perragallo, "The Ledger of Jachomo Badoer: Constantinople September 2, 1436 – February 26, 1440," *The Accounting Review* 52, No. 4 (Oct., 1977), 889.

ultimately led to their downfall. The years from 1343 to 1345 proved to be especially disastrous for merchant-bankers; the Bardi, Peruzzi and the Acciaiuoli firms - the pillars of Christendom, - all suffered bankruptcy and had to be liquidated in order to satisfy their creditors.[151] These firms were apparently profitable; however, their downfall proved to be their perceived lack of liquidity in the face of a recessionary economic environment combined with the cascading effects of war both on the home front and abroad on the continent, pestilence, the continuing long-term devaluation of gold, and the decline of their involvement in the extra-territorial grain trade. In the case of the Bardi and the Peruzzi one could also add their quasi-obligatory adherence in appeasing the English king with loan advances, apparently hoping that their continued favoured position with the king would aid them in weathering the economic storm. It did not, and their place in economic history was soon replaced by others.

[151] Mueller, *Venetian Money Market*, 130.

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