
PROBLEMS

Some Observations on Early Foreign Exchange Banking Based Upon New Evidence from Thirteenth-Century Lucca

Thomas W. Blomquist
Northern Illinois University, DeKalb

Historians of medieval Italian foreign exchange banking are, due to the distribution and nature of the sources, inevitably much better informed about conditions prevailing in the Later Middle Ages than they are about the preceding period. The survival of account books, mint records, merchant correspondence, merchant manuals and other types of documentation has allowed the economic historian to construct up to this point a relatively — the work goes on — clear picture of the operations of contemporary mercantile-banking companies and the workings of the international money markets in the fourteenth and fifteenth centuries.¹ Not that we are wholly without do-

* Research for this paper was carried out in the Lucchese archives under grants from the American Council of Learned Societies, The American Philosophical Society and the Graduate School, Northern Illinois University: to each I am grateful. An earlier version was presented at the annual meeting of the American Historical Association in San Francisco, December, 1983 and I would like to thank my colleagues on the panel, Professors Mavis Mate, Harry Miskimin, Louise B. Robbert and Peter Spufford for their helpful comments. I also wish to express my gratitude to Dr. Alan Stahl, Curator of Medieval Coins at the American Numismatic Society, New York, for his aid, council and hospitality while I was probing monetary problems relating to the rates of exchange as a guest at the Society during the summer of 1983.

¹ In the interests of brevity, for the vast literature on finance and commerce in Late Medieval Italy the reader is referred here only to the bibliographies in FREDERICK C. LANE and REINHOLD C. MUELLER, *Money and Banking in Medieval and Renaissance Venice*, I, *Coins and Moneys of Account* (Baltimore-London, 1985), ARMANDO SAPORI, *Studi di Storia economica, secoli XIII-XIV-XV*, 3 vols. (Florence, 1955-1967) and the same author's *Le marchand italien* (Paris, 1952). Two still excellent surveys of medieval Italian commercial and business history are ROBERT S. LOPEZ, "The Trade of Medieval Europe": The South, MICHAEL M. POSTAN et al.,

cumentary access to the business history of the thirteenth century.² This latter period has, however, bequeathed a comparatively limited and scattered harvest of sources that can illuminate the dynamic of organizational and technical advances in the field of international trade, commerce and finance which collectively have inspired the tag, "The Commercial Revolution of the Thirteenth Century."³ In the following essay I would like to set out some new data bearing upon the long and short-term movements of foreign exchange rates on the money market of thirteenth-century Lucca and to make some qualified remarks about the structure of the Lucchese money market and the way in which foreign exchange banking functioned in the thirteenth century.

The rates of exchange that I propose to examine are commercial rates reflected in instruments of exchange (*instrumenta ex causa cambii*) negotiated in Lucca and drawn upon one or another of the Fairs of Champagne. The rates are taken from contracts scattered about in the cartularies of several Lucchese notaries and a handful of surviving parchments spanning the years 1240-1302.⁴ I propose to look first at the long-run movement of the rates

eds., *Cambridge Economic History of Europe*, II (Cambridge, 1952), 257-334, and RAYMOND DE ROOVER, *The Organization of Trade*, *ibidem* III, (Cambridge, 1963), 42-104, also now PETER SPUFFORD, *Money and Medieval Europe* (Cambridge, 1988).

² On the sources and literature dealing with thirteenth-century Italian commercial and business history, see especially the works of MARIO CHIAUDANO, general editors, *Documenti e studi per la storia del commercio e del diritto commerciale italiano*, I, II, XI, XII, XIII, XV, XVI, XVII, XVIII (Turin, 1935-1940) which provides the surviving minutes of five Genoese notaries, 1154-1211; DINA BIZZARRI, ed., *Liber imbreuiaturarum Appuliesis notarii Communis Senarum, 1221-1223* (Turin, 1934) and *Liber imbreuiaturarum Ildibrandini notarii, 1227-1229* (Turin, 1938): the surviving materials of the notary Amalric (1248-1249) of Marseilles are in LOUIS BLANCARD, *Documents inédits sur le commerce de Marseille au moyen âge*, 2 vols. (Marseille, 1884). In addition, RENE DOEHAERD, *Les relations commerciales entre Gènes, la Belgique et l'Outremont d'après les archives notariales génoises aux XIIIe et XIVe siècles*, 3 vols. (Brussels-Rome, 1941) has calendared the Genoese notarial instruments relating to Italian commercial and financial relations with Northern Europe. PETER SPUFFORD and WENDY WILKINSON, *Interim Listing of the Exchange Rates of Medieval Europe* (Keele, 1977) is a massive compilation of data. Professor Spufford promises a final edition shortly.

³ The concept of a "Commercial Revolution of the Thirteenth Century" was envisaged by RAYMOND DE ROOVER, "The Commercial Revolution of the Thirteenth Century," *Bulletin of the Business Historical Society*, XVI (1942), 34-39. See also PETER SPUFFORD, "Le rôle de la monnaie dans la révolution commerciale du XIII siècle," JOHN DAY, ed., *Etudes, d'histoire monétaire* (Lille, 1984), 356-395.

⁴ For a description of the Lucchese notarial materials housed in the *Archivio di Stato in Lucca*, see ROBERT S. LOPEZ, "The Unexplored Wealth of the Notarial Archives of Pisa and Lucca," *Mélanges d'histoire du Moyen Âge dédiés à la mémoire de Louis Halphen* (Paris, 1951), 417-432; ROBERT-HENRI BAUTIER, "Notes sur les sources de l'histoire économique médiévale dans les archives italiennes," *Mélanges d'archéolo-*

over this sixty-year period and then to narrow the focus down to one year, 1284, from which survive an exceptionally concentrated run of rates. This latter series is taken from the cartulary compiled in 1284 by the notarial team of Bartolomeo Fulcieri and his two sons Tegrino and Fulciero.⁵ The cartulary is important for our purposes in two respects. First, among their clientele, the Fulcieri numbered numerous partners of the some twenty-two mercantile-banking companies operating on the Lucchese exchange market in 1284.⁶ Second, the cartulary contains an almost continuous string of *instrumenta ex causa cambii* since it is chronologically complete for the year — there appear to be no gaps — and I assume that it represents the total number of contracts redacted by the Fulcieri for this particular constituency. In sum, the Fulcieri instruments of exchange permit the construction of the most compact homogeneous run of thirteenth-century rates compiled to date.⁷

Taken together, these two series — the long and the short run — can provide us with valuable insights into how exchange banking functioned before the fourteenth-century development of the informal holographic letter of exchange and before the emergence of a relatively large number of banking places scattered throughout northern Europe replaced the Fairs of Champagne as the more or less single point of financial contact with the Mediterranean. But, it must be noted that any conclusions drawn from the data must be regarded with all due caution, for it must be kept in mind that we are dealing essentially with a one-sided equations since no comparable data survives from Champagne.⁸

gie et d'histoire, LVIII (1941-1946), 299-300; "Eugenio Lazzareschi, "L'Archivio dei Notari della Repubblica lucchese," *Gli archivi italiani*, II (1915), 175-210; MARTINO GIUSTI, "Lucca archivistica," offprint from *Archivi e cultura*, V (1971); SAC. GIUSEPPE GHILARDUCCI, *Le biblioteche e gli archivi arcivescovile e capitolari della Diocesi di Lucca* (Lucca, 1969); DUANE J. OSHEIM, "The Episcopal Archive of Lucca in the Middle Ages," *Manuscripta*, XVII (1973), 131-46.

⁵ *Archivio di Stato in Lucca, Archivio dei notari*, no. 15 (notaries Bartolomeo Fulcieri, Tegrino Fulcieri, Fulciero Fulcieri). A description of the cartulary may be found in THOMAS W. BLOMQUIST, "Commercial Association in Thirteenth-Century Lucca," *Business History Review*, XLV (1971), 172-73.

⁶ BLOMQUIST, "Commercial Association," 172-78, for the partial rosters of these companies.

⁷ Among the contracts calendared by R. Doehaerd, *Les relations commerciales*, vols. II and III, are numerous *instrumenta ex causa cambii* drawn upon the Fairs of Champagne. The Genoese, however, were unfortunately circumspect in wording their contracts, usually omitting the amount Genoese disbursed (*tot genoinos*) in Genoa to acquire a stated amount of *provinois* at the Fairs. It is thus impossible to establish the rates of exchange between Genoa and the Fairs on the basis of this otherwise rich data. The *instrumenta ex causa cambii* so far published from Siena and Marseilles are too thin in number to permit the construction of short term runs similar to those included in this essay.

⁸ The only surviving production of a fair notary is dated 1296 and according to its

Champagne gave its currency to Lucca; that is to say that the rates in the Lucchese instruments of exchange drawing upon the Fairs were quoted in a varying number of Lucchese *denarii* of account to the fixed *solidus provinois* of the city of Provins which constituted the principal currency of account at the Fairs. Only in the 1290's does the money of Tours appear as the expression of value between Lucca and Champagne but since the *tournois* and the *provinois* were equivalent and since the method of quotation the same — so many *denarii* Lucchese to the *solidus tournois* — I have not distinguished in the accompanying graphs between the two currencies.⁹ The method of expressing the rates in the Lucchese contracts of exchange meant that a decline in the rates favoured Lucca while a rise was correspondingly unfavourable. Also it needs to be noted that the delivery dates of all contracts drawing upon Champagne in Lucca were fixed to the period of payment of one or another of the Fairs.¹⁰ It was not, therefore, a customary and regular period of usance

discoverer, ROBERT-HENRI BAUTIER, "Les registres des foires de Champagne: à propos d'un feuillet récemment découvert," *Bulletin philologique et historique du Comité des Travaux Historiques et Scientifiques du Ministère de l'Éducation Nationale*, 1942-1943 (Paris, 1945), 157-88, contains a number of exchange contracts among a total of some fifty transactions. These are, however, among the exemplars published by the author, no exchange rates. Adolf Schaube, "Ein italienischer Coursbericht von der Messe von Troyes aus dem 13. Jahrhundert," *Zeitschrift für Sozial- und Wirtschaftsgeschichte*, V (1897), 248-308 provides references to a number of exchange transactions but no exchange rates. CESARE PAOLI and ENEA PICCOLOMINI (eds.), *Lettere volgari del secolo XIII scritte da Senesi* (Bologna, 1871 — reprint Bologna, 1968), have published four letters written by Sienese merchants doing business at the Fairs. The few references to exchange and the accompanying rates quote the price of *provinois* in Siena in 1260 at 33d. and 31d. Sienese on the St. John Fair: see *ibid.*, 20. The first rate is given in the text as 33 *solidi per solidus (la doçina)*, of Provins, but since the Sienese penny was equal to the Lucchese such a rate is patently wrong and *denarius* should be understood. It should be noted that the 31d. and 33d. rates accord perfectly with those of Lucca from the same time.

⁹ On the parity between the *tournois* and the *provinois* from ca. 1210 or 1224, see J.-Adrien Blanchet and Adolphe Dieudonné, *Manual de numismatique française*, 4 vols. (Paris, 1912-1936), IV, 132-33.

¹⁰ The precise internal organization as well as the opening and closing dates of the Fairs present a number of problems. I will use here the dates given by ABBOTT PAYSON USHER, *The Early History of Deposit Banking in Mediterranean Europe* (Cambridge, Mass., 1943), 118: Lagny, 2 January - 22 February; Bar-sur-Aube, 24 February - 30 March — 15 April - 20 May; May Fair (Provins), 28 April - 1 June — 13 June - 16 July; St. John (Troyes), 9 July - 15 July — 29 August - 4 September; St. Ayoul (Provins), 14 September - 1 November; St. Remi (Troyes), 2 November - 23 December.

For the opening dates of the Fairs, see the texts published by PAUL HUVELIN, *Essai historique sur le droit des marchés et des foires* (Paris, 1897), 600-603. The fundamental

between two banking places that established the duration between the taking up of funds in one place and repayment in another. This fact marks an important difference in the means of conducting exchange banking between the thirteenth and later centuries when new banking places had arisen in northern Europe to replace the declining Fairs and when the letter of exchange was displacing the formal notarial *instrumentum ex causa cambii*.¹¹ The significance of this difference will be taken up more fully below.

* * *

The long term behaviour of the Lucca-Champagne rates of exchange are displayed in Graph I. The time line shows four fairly distinct periods in terms of the levels of the exchange points: the years 1240-1253 during which the rates hovered around 28 *denarii* Lucchese per *solidus* of Provins with a slight upturn towards the end of the period; the years 1253-1273/1279 when they stood at about 33.3; the era post 1279 to 1295 when the rates averaged out at 44.32 *denarii*; and, lastly 1295-1302, when the Lucchese showed renewed strength against the *provinois, tournois*. What external variables might be adduced to explain the alterations in the otherwise fairly tranquil levels of the rates?

The first significant jump in the rates — unfavourable, as we have noted, to Lucca — took place in the early 1250's. The event that stands out clearly at this point in Tuscan monetary history is the return to gold with the issuance of the Florentine gold florin late in 1252.¹² By my reckoning, the gold/silver

study of the Fairs remains Felix Bourquelot, *Etudes sur les foires de Champagne* (Paris, 1865); for the opening dates, see part I, 80-83. See also Charles Alengry, *Les foires de Champagne: étude d'histoire économique* (Paris, 1915); LEVIN GOLDSCHMIDT, "Die Geschäftsoperationen auf den Messen der Champagne," *Zeitschrift für das gesamte Handelsrecht*, XL (1892), 8-10; ELISABETH BASSERMANN, *Die Champagnermessen. Ein Beitrag zur Geschichte des Kredits* (Tübingen-Leipzig, 1911), 13-15; ELIZABETH CHAPIN, *Les villes de Foires de Champagne des origines au début du XIV^e siècle* (Paris, 1937), 107, note 9 and Robert-Henri Bautier, "Les foires de Champagne: Recherches sur une évolution historique," *La foire* (Brussels, 1953), 97-147.

The standard wording of the Lucchese contracts called for payment within eight days of the public summons to payment: *infra VIII proximos dies ex quo preconizatum fuerit ara ara ad pagamentum tabule et ab ydonea tabula ut est usus in fera*.

¹¹ For these points, see the studies of Raymond de Roover cited below in note 29.

¹² On the issuance of gold coinages in Genoa and Florence, see ROBERT S. LOPEZ, "Settecento anni fa: il ritorno all'oro nell'occidentale duecentesco," *Rivista storica italiana*, LXV (1953), 19-55, 161-198; re-issued under the same title as *Quaderni della Rivista Storica Italiana*, 4 (Naples, 1955) and the author's abbreviated English version "Back to Gold, 1252," *The Economic History Review*, 2nd series, IX (1956-57), 219-240. For the Florentine florin see, MARIO BERNOCCHI, *Le monete della repubblica fiorentina*, 4 vols. (Florence, 1974-1978), III, 58 ff. On the role of the florin as the dominant coin in international commerce until the end of the fifteenth century, see

ratio stood in Lucca in 1245 at the remarkably low rate of about 1:8;¹³ reflecting to some degree the shortage of silver created by the expanded outputs of the Tuscan mints in the wake of the striking of the Tuscan groat during the previous three decades.¹⁴ The issuance of the florin and the accompanying increase in the demand for gold seems, despite new inflows into Italy, to have brought an end to the era of cheap gold.¹⁵ Mario Bernocchi gives a gold/silver ratio of 1:8.99 in 1250;¹⁶ Robert Lopez similarly offers a rate under 1:9 in the years immediately preceding the issuance of the florin;¹⁷ while Carlo Cipolla provides a ratio of 1:10.7 in 1252.¹⁸ Thus, Tuscan silver lost 12.3% against the primary metal between 1245 and 1250; another 19% between 1250 and 1252; and 33.7% overall between 1245 and the time of the appearance of gold coinage. The proximity of this decline in the relative value of Tuscan silver to the 16% drop in Lucchese money against the *provinois* on the foreign exchange market seems to me to be more than fortuitous. The realignments in the gold/silver ratio in central Italy must have been a primary causal factor in the adjustment of the exchange points as reflected in our series.

The second realignment in the Lucca-Champagne rates took place at sometime between 1273 and 1279 — no intermediate data survives in Lucca from this period — when the Lucchese lost nearly another 25% against the money of Provins. The 1270's were a period of especial turmoil — apparently

CARLO M. CIPOLLA, *Money, Prices and Civilization in the Mediterranean World* (Princeton, 1956), 20-21) the same author's *The Monetary Policy of Fourteenth-Century Florence* (Berkeley, 1982), XI-XIV, and THOMAS WALKER, "The Italian Gold Revolution of 1252: Shifting Currents in the Pan-Mediterranean Flow of Gold," JOHN F. RICHARDS, ed., *Precious Metals in the Later Medieval and Modern Worlds* (Durham, NC, 1983), 29-52.

¹³ Lucca, *Archivio capitolare*, LL 20, f. 43v: 10 ounces *argenti battuti* sold for £ 9 Lucchese or 18s. per ounce while LL 20, f. 120 records that on 24 October 1245 1 ounce *auri* and 5 ounces *argenti* sold for £ 11 14s. Lucchese. Using these figures, we arrive at the 1:8 ratio gold/silver. In reality, however, the ratio was no doubt somewhat higher since the *argenti battuti* was worked, while the 5 ounces of silver were presumably fine.

¹⁴ On the striking of the full weight Tuscan *grosso* of 12 *denarii*, see DAVID HERLIHY, "Pisan Coinage and the Monetary History of Tuscany, 1150-1250," *Le zecche minore toscane fino al XIV secolo (Atti del III Convegno Internazionale di Studi di Storia e d'Arte)*, (Pistoia, 1967), 169-192: this is an expanded version of an article which appeared under the same title in *The American Numismatic Society Museum Notes* (New York, 1954).

¹⁵ LOPEZ, "Settecento anni fa," and "Back to Gold;" WALKER, "The Italian Gold Revolution of 1252."

¹⁶ BERNOCCHI, *Le monete*, III, 142.

¹⁷ LOPEZ, "Back to Gold", 232-35.

¹⁸ CARLO M. CIPOLLA, *Studi di storia della moneta*, I, *I movimenti dei cambi in Italia dal secolo XIII al XV* (Pavia, 1948), 129.

caused by a severe shortage of silver — in Tuscan and Lucchese monetary history.¹⁹ The decade was also preceded by debasement of the Lucchese silver *denarius* in late 1267 or 1268. The first mention in the sources of a debased silver Lucchese penny is dated 31 March 1268 with the reference to a *denarius novus* valued at 16.6% less than the traditional *Decenarius parvus*.²⁰ Just why this debasement took some three to four years to register on the exchange market is difficult to fathom but the best hypothesis would seem that for purposes of exchange the merchant-bankers retained the traditional lira of account, equaling a nominal 31.68 grams silver, that had obtained in Lucca since a monetary reform in 1181.²¹ Apparently, only some years later was the debasement of 1268 expressed in a new pound of account value. In fact the jump in the rates between 1273 and 1279 show an increase for the *provinois* of 20%, about what we might have anticipated given the appearance of a new Lucchese penny debased by close to that figure.

As to the rejuvenation of the money of Lucca on the Lucchese foreign exchange market in the 1290's, we probably need look no further than the policies of debasement in the royal coinage implemented by Philip the Fair to explain the gains of Lucchese silver against a progressively weakened *tournois*.²²

* * *

It goes without saying that the movement of the Lucca-Champagne rates of exchange was a more complex matter than our scattered data can reveal. Within the long-term secular pattern, the medieval merchant unquestionably had to contend with short-run fluctuations in the points. In the somewhat busy Graph II, I have charted the total volume of exchange traded in Lucca, averaged per month, for the year 1284; the rates of exchange, also averaged per month; and the monthly volume of silk imports from Genoa into Lucca,

¹⁹ BERNOCCHI, *Le monete*, III, 144-45.

²⁰ LUCCA, *Archivio capitolare*, LL 33, f. 107: On 31 March 1268 the money-changer, Castracane *quondam* Rugerii, sold 144 "good new pennies" for the price of 120 *denariorum lucensium*. The stated exchange was 24 new *denarii* to 20 of the old or a debasement of 16.6%.

²¹ This pound value is based upon a *denarius* of an intrinsic worth of 132 grams silver: see my article "Alle origini del 'grosso' toscano: la testimonianza delle fonti lucchesi del XIII° secolo", forthcoming in *Archivio storico italiano*.

²² On Philip's monetary policies and their consequences, see JEAN LA FAURIE, "Le gros tournois en France", *Numismatický Sborník*, XII (1972), 49-61; JOSEPH STRAYER, "Italian Bankers and Philip the Fair", *Explorations in Economic History*, VII (1969), 113-121; ARMAND GRUNZWEIG, "Les incidences internationales des mutations monétaires de Philippe le Bel", *Moyen Âge*, LIX (1953), 117-173; ADOLPHE DIEUDONNÉ, "Changes et monnaies au Moyen Âge", *Revue des deux mondes*, I, (1927), 24-37; A. LANDRY, *Essai économique sur les mutations des monnaies dans l'ancienne France, de Philippe le Bel à Charles VIII* (Paris, 1910).

as revealed in the contracts of the Fulcieri. A quick visual scan shows large volume trading in April, May, June, October and November with a peak of over L. 7,000 Lucchese in August. The lowest trading volumes were in February, September and December. Sharp upward swings occurred between March and April, July and August, September and October, with equally dramatic downturns taking place between June and July, August and September, and November-December. Turning now to the rates as expressed in the graph, there appears a positive correlation between the volume of pounds traded in a given month and the behaviour of the rates. As might be expected, the rise in volume pushed the value of the *provinois* upward in Lucca while a decrease lowered its worth on the Lucchese market.²³ The law of supply and demand is clearly at work here. But what generated demand?

The third element factored into the equation of Graph II is the volume of raw silk imported from Genoa and traded in Lucca in 1284. I have included these figures, taken from the pages of the Fulcieri cartulary, because of the critical significance of raw silk needed to feed Lucca's primary industry, the manufacture of fine silk clothes.²⁴ The volume of raw silk traded in Lucca at any given time ought to have been a key indicator of the city's overall economic vitality. The most striking feature of this data is the zero level of imports in August, attributable unquestionably to the epic naval battle of Meloria, waged off the Pisan coast on 6 August 1284 between Pisan and Genoese forces.²⁵ The diversion of Genoese energies toward this confrontation evi-

²³ For an analysis of the effects of supply and demand for specie and its effects upon the exchange market between Florence and Venice, see REINHOLD C. MUELLER, "Chome l'uccielo di passaggio: la demande saisonnière des espèces et la marché des changes à Venise au Moyen Age", Day, ed., *Etudes d'histoire monétaire*, 195-219.

²⁴ For the Lucchese silk industry, see FLORENCE EDLER, "The Silk Trade of Lucca during the Thirteenth and Fourteenth Centuries", doctoral dissertation, Department of History, University of Chicago (Chicago, 1930); EUGENIO LAZZARESCHI and FRANCESCO PARDI, *Lucca nella storia, nell'arte, e nell'industria* (Pescia, 1941); TELESFORO BINI, *I Lucchesi a Venezia: alcuni studi sopra i secoli XIII e XIV*, 2 Vols. (Lucca, 1853) and SALVATORE BONGI, "Della mercatura dei Lucchesi nei secoli XIII e XIV", *Atti della Reale Accademia Lucchese di Scienze, Lettere ed Arti*, XVIII (1868). For the Lucchese in Genoa, see especially Edler, "The Silk Trade"; DOMENICO GIOFFRÉ, "L'attività economica dei Lucchesi a Genova fra il 1190 e il 1280", *Lucca archivistica, storica, economica in Fonti e studi del corpus membranarum italicarum*, X (Rome, 1973), 94-111; PIERRE RAGINE, "I banchieri piacentini ed i campi sulle fiere di Champagne alla fine del Duecento", *Studi storici in onore di Emilio Nasalli Rocca* (Piacenza, 1971) and *ibidem*, "Le marché génoise de la soie en 1288", *Revue des études sud-est européennes*, VIII (1970); also see the documents published by DOEHAERD, *Les relations*, and ARTURO FERRETTO, *Il codice diplomatico delle relazioni fra la Toscana e Lunigiana ai tempi di Dante*, 2 parts, *Atti della Società Ligure di Storia Patria*, XXXI (1901-1903).

²⁵ For chronicle accounts of the battle, see LUIGI T. BELGRANO and CESARE IMPERIALE DI SANT ANGELO, eds., *Annali genovesi di Caffaro e de' suoi continuatori dal*

debtially choked off normal commercial activity in the Ligurian port and temporarily halted the flow of raw silk into Lucca. The volume of trading in foreign exchange in Lucca peaked in the month of August precisely when little, if any, raw silk was available in the market place. Conversely, when in December the pound value of imported silk soared, the amount of exchange dealings with the North plummeted. The data, then, indicate that sharp alterations in the configuration of trade had effect upon the rates of exchange by increasing or lowering demand for credit in Lucca, which in turn, as we have already observed, had a direct impact upon the behaviour of the exchange points.

Yet another related and measurable factor that needs examination is the possibility that some Fairs traditionally attracted more business than others. Here, however, the relationship seems negative: each year appears to have had its own variations in the relative volume of business conducted at each of the Fairs. For example, turning to Graph III which depicts the volume of exchange transactions drawn on each Fair in 1284, we find the St. John Fair of Troyes in the lead, the May Fair of Provins second, followed by the Troyes Fair of St. Remi, St. Ayoul of Provins with Langry and the Fair held at Barsur-Aube bringing up the rear. Drawing upon similar data compiled from Genoa by Pierre Racine (Graph IV), the Troyes Fair of St. Remi is number one with Lagny second, followed by Bar, St. John, St. Ayoul and the May Fair in that order.²⁶ Furthermore, the figures published by Abbot Payson Usher showing the annual revenues from the six Fairs for the years 1275, 1276, 1317, 1326 and 1341 show the same flip-flopping in the yearly rank order of the volume of business conducted at each of the Fairs.²⁷ Apparently seasonality, insofar as it affected financial dealings between Lucca and the Fairs, was random and fluctuated according to the yearly exigencies of international and domestic trade, commerce and finance.²⁸

MXCIX al MCCXCII, 5 vols. published as vols. 11-14:2 of *Fonti per la storia d'Italia: scrittori secolo XIII* (Rome, 1890-1929), V, 55-57 and BERNHARD SCHMEIDLER, ed., *Tholomei lucensis annales in Monumenta germaniae historica: Scriptorum rerum germanicorum*, n.e. VIII (Berlin, 1930), 203. For an evaluation of the impact of the battle upon Pisan society, see DAVID HERLIHY, *Pisa in the Early Renaissance: A Study in Urban Growth* (New Haven, 1958).

²⁶ RACINE, "I banchieri piacentini", 481-82.

²⁷ USHER, *Deposit Banking*, 118.

²⁸ MUELLER, "Chome l'uccielo di passaggio", 197-198 has observed that Florence "loin de la mer" lacked an annual pattern of seasonality. Lucca, however, was tied to the sea by her dependence upon Genoa as a source of raw silk and in other years her exchange market may well have showed a closer relationship to the rhythm of Genoese trade than in 1284.

No analysis of medieval foreign exchange banking would be complete without reference to built-in interest charges as a motor driving the rates --an issue so vigorously set forth by the late Professor Raymond de Roover in his many works dealing with medieval banking. De Roover's views are well known and I will here give only a brief résumé of his position regarding interest, foreign exchange and early banking.²⁹ De Roover emphasized that the *cambium* contract was a credit as well as an exchange operation; involving credit because the deliverer, or lender in his words, advanced funds in one place payable at home time in the future. The bankers did not, however, forego interest owing on the time factor but instead of charging up front--which would have brought them into conflict with the Church's usury ban--they "cleverly concealed" interest within the rates of exchange "by either adding or subtracting something from the rate or price of exchange." To be complete, according to de Roover's analysis, an exchange transaction involved at least two contracts: in the first the delivering banker acquired a balance abroad in a foreign currency; in the second he, or his agent, delivered this balance to a taker, or his agent, who promised repayment in an equivalent sum in the currency of the first contract at the original place. Only when the exchange operation had been fulfilled through remittance by re-exchange a was the banker able to know his profit or loss. Although De Roover admitted that the bankers could lose dealing in exchange, he nonetheless insisted that the deck was stacked, due to concealed interest, in their favour and losses were consequently rare. Furthermore, argued De Roover, since canon law defined any certain profit on a loan (*mutuum*) as usury, bankers had to find other ways of lending at a profit. The favoured method was by means of the *cambium* which the civil and canon lawyers considered a licit contract because of the uncertain return due to the vagaries of the exchange rates: therefore large-scale banking became virtually synonymus with foreign banking until the

²⁹ *Inter alia*, see "What is Dry Exchange? A Contribution to the Study of English Mercantilism", *Journal of Political Economy*, LII (1944), 250-266 (reprinted in JULIUS KIRSHNER, ed., *Business, Banking and Economic Thought in Late Medieval and Early Modern Europe: Selected Studies of Raymond de Roover* (Chicago-London, 1974), 183-199); *La lettre du change, XIV^e-XVIII^e siècles* (Paris, 1953); "New Interpretations of the History of Banking", *Journal of World History*, II (1954), 28-76 (reprinted in KIRSHNER, *Business, Banking and Economic Thought*, 200-238); "Cambium ad Venetias: Contribution to the History of Foreign Exchange", *Studi in onore di Armando Sapori*, 2 vols. (Milan, 1957), 631-638 (reprinted in KIRSHNER, *Business, Banking and Economic Thought*, 239-259); *The Rise and Decline of the Medici Bank, 1397-1494* (Cambridge, Mass., 1963). (Italian edition, *Il Banco Medici dalle origini al declino, 1397-1494*). *The Bruges Money Market around 1400 with a Statistical Supplement by Hyman Sardy* (Brussels, 1968). For a complete bibliography of de Roover's work, see KIRSHNER, *Business, Banking and Economic Thought*.

eighteenth century. Although our evidence is taken from an earlier period than deRoover, his views are still relevant to the 1284 data.

The cartulary of the Fulcieri numbers among its 513 folio pages and thousands of individual agreements some 202 rough drafts of *instrumenta ex causa cambii* reflecting an unknown fraction of the total exchange dealings of Lucchese merchant-bankers in 1284 with the Fairs of Champagne. The total volume exchanged through these contracts comes to £ 44,941 *provinois*, payable at one or another of the fairs, purchased with £ 171,244 Lucchese disbursed in Lucca. Furthermore, the information appended by the notary in the margin of his cartulary, indicating the circumstances under which each obligation was satisfied and rendering the contract void, demonstrates that these transactions were, for the most part, fulfilled in Champagne. In other words, the contracts are genuine and do not represent efforts to avoid the taint of usury by disguising straight loans as legitimate--in the eyes of the canonists--exchange transactions. Of the 202 *instrumenta* negotiated in Lucca, 114 were actually fulfilled in accordance with the contractual terms, 27 were cancelled with no comment, 32 were not cancelled at all and 29 were settled in Lucca.³⁰ Since the information regarding the circumstances of the settlement in the North had to have come from the original deliverer who had no compelling motive to register the cancellation in the notary's cartulary--for his purposes entry of the payment in his own books was sufficient--my sense is that in 27 cases the deliverer gave only a bare bones oral acknowledgment that he had been paid while in the other 32 instances he simply neglected to do so. Similarly, from the taker's perspective, the cancellation was superfluous since he would have had his northern agent's evidence of settlement in Champagne in the event of a later challenge. In short, it seems reasonable to assume that most, if not all, of these 59 transactions were indeed fulfilled at the Fairs. Regarding the 29 contracts settled in Lucca, I suspect that they were concluded there as a convenience to the contracting parties and not because of any pre-terminated agreement to avoid a nearly unenforceable usury prohibition. If this reasoning is sound, then 86% of the exchange agreements contracted in Lucca were actually settled in the North.

But was interest an element in setting the exchange points? The Lucchese material suggests that--in a manner not envisaged by deRoover--it was. But again I must remind the reader that we are dealing only with the view from Lucca and in the absence of contemporaneous data from the Fairs it is impossible to verify the profit or loss sustained by the bankers had they chosen in fact to repatriate their funds through re-exchange; that is, by delivering a se-

³⁰ The notary cancelled the entries in his cartulary by drawing crossed diagonal lines across the face of each. He then added in the margin or beneath the text the information relevant to the satisfaction of the terms of the contract. Thus is appended the information that the agent of a given deliverer received payment in Champagne through the agent of the taker on such and such a date.

cond contract at the Fairs payable in Lucca. It should be noted, moreover, that I have found no evidence whatever in the archives that Lucchese merchant-bankers operating in the North engaged in direct re-exchange with Lucca. There were other means by which the Lucchese bankers brought their capital home.

Let us examine first the dealings on the May Fair of Provins illustrated in Graph V. Here the data show that the shorter the term of the contract, the lower the supposed interest charges as expressed in the rates. The May Fair opened in 1284 on 16 May and closed on either 30 June or 6 July.³¹ Trading in *provinois* in Lucca payable at the May Fair began in March and continued into June. If we average the rates for each month, a clear rising pattern of the Lucchese against the *provinois* emerges: the seven transactions negotiated in March show an average of 43.43 *denarii* Lucchese to one *solidus* of provins; seventeen documents from April indicate a rate of 43.86 *denarii*; eleven from May give an average of 46.59 *denarii*. A rising rate favored the taker who consequently received more in Lucca for his promise to pay a fixed sum at the May Fair as the value date drew closer. If, for example, the taker traded one *solidus provinois* in March for delivery at the May Fair he received in Lucca on average 43.43 *denarii* Lucchese from the giver. In June a taker would have received 46.59 *denarii* for the same amount of *provinois* payable at the Fair. Looking at the data from the other fairs, the same configuration more or less obtained at the Troyes Fair of St. Remi (Graph VI) where the spread between the opening and closing of trading was a sizeable 11%; on the Fair of Lagny (Graph VII) the difference was ultimately 3% but the months of November, December and January show no movement at all; St. John and Bar-sur-Aube (Graph VIII and IX) show modest rises of 2.5 and 2.2 respectively: finally the Fair of St. Ayoul (Graph X) registered only a slight gain of .05%. The rising tendency of the exchange points favored the taker, as we have noted, and must have reflected an interest factor since the only constant within the rate series for each Fair is the decreasing time element between the negotiation of the *cambium* contract and the value date. By deli-

³¹ The May Fair of Provins, according to the texts published by Huvelin, *Essai historique*, 600-603, began on the Tuesday before Ascension Day, or 16 May. According to GOLDSCHMIDT, *Die Geschäftsoperationen*, 9, the May Fair lasted 46 days: BASSERMANN, *Die Champagnermessen*, 13-15 and CHAPIN, *Les villes de Foires*, 107, note 9, concur. RICHARD FACE, "Techniques of Business in the Trade between the Fairs of Champagne and the South of Europe in the Twelfth and Thirteenth Centuries", *Economic History Review*, X (1958), 427, note 2 and "The Vectuarii in the Overland Commerce between Champagne and Southern Europe", *Economic History Review*, XII (1959), 240, note 8, following Bourquelot, argues a 52-day cycle. A 46-day duration would have closed the Fair, in 1284, on 30 June; a 52-day cycle on 6 July. The Fair of St. John, following Huvelin's texts, opened the first Tuesday a fortnight after St. John's Day, or 11 July.

vering funds at a low rate and taking high, bankers could turn a nice to moderate profit on the Lucchese exchange market.

As an example of how this could work, we may turn to the fourteen *cambia* contracts negotiated by Arrigus Arnolfini and Tedicius Lamberti *de Porta*, acting for themselves and their partners, between 21 March and 5 April.³² In the eight of the fourteen deals, Arrigus and Tedicius were deliverers, distributing a total of £ 8,802 ls. 8d. Lucchese at an average rate of £ 44.03 *denarii per solidus provinois* and receiving promises of £ 2,400 *provinois* payable in seven instances at the May Fair of Provins, with one contract due at Bar-sur-Aube. In the remaining six transactions, the partners took up £ 7,856 5s. Lucchese at an average rate of £ 44.83 *denarii Lucchese per solidus* of Provins promising to repay five loans at Bar-sur-Aube and one at the May Fair with a total of £ 2,100 *provinois*. The results of this trading left Arrigus, Tedicius and partners with a balance of 300 *provinois* in the North which they had secured at an effective rate of 37.833 *denarii per solidus provinois*, a rate well below those prevailing on the Lucchese market in 1284. Such a process of trading could continue indefinitely. As long as there existed in Lucca an effective supply and demand for short-term loans on the one hand and credit balances in the North on the other, profits were to be had working the market.

As for those who delivered at high rates, i.e., at relatively low interest, it may be presumed that their commercial interests dictated that they shift capital to the North where it could profitably be invested. If a merchant-banker chose, in fact, to collect his balances at the Fairs, how did he make his returns and thus complete the transaction in Lucca? Two phenomena must be considered more fully in this context. First, there is no evidence from Lucca, as we have seen, indicating that funds were repatriated from the North by re-exchange. Second, is the fact that Italian capital did not remain idle in northern Europe.

Lucchese merchant-bankers intensively engaged in trade, commerce and money lending in the North in addition to their dealings at the Fairs.³³ Some forty-six partners of Lucchese merchant-banking companies represented their respective organizations in Champagne in the 1280's.³⁴ They transacted their

³² This material is summarized in the Appendix.

³³ In Flanders the Ricciardi, Paganelli and Cardellini companies of Lucca frequently extended credit to the city of Ypres; in 1282 the Paganelli company acted for the city of Bruges in settling a debt in Rome while Lucchese merchants were also purveyors of luxury cloths to the Counts of Flanders and Hainault as well as the court of Champagne: see GEORGES BIGWOOD, *Le régime juridique et économique du commerce de l'argent dans la Belgique au moyen-âge*, 2 parts, published as *Mémoires de l'Académie Royale de Belgique, classe des lettres et des sciences morales et politiques*, XIV (1921-1922), I, 180, 641; LEON MIROT, *Etudes lucquoises* (Paris, 1930), 53-56; and CHARLES PITON, *Les Lombards en France et à Paris: leurs marques, leurs poids-monnaies, leur sceaux de plomb*, 2 vols. (Paris, 1892-1893), I, 125.

³⁴ BLOMQUIST, "Commercial Association", 162.

companies business at the Fairs--acting as payers and payees in exchange dealings, buying and selling merchandise and lending money to a varied northern constituency. Other Lucchese operated pawn shops in the County of Champagne, while still others, money-changers and lesser merchants, engaged in petty trade and money lending with the denizens of the smaller towns and villages of the Champenois.³⁵ In short, profitable outlets for capital could not only have kept Lucchese balances in the North for long periods of time but also could have acted as a magnet drawing ever fresh stocks northward.

If quick returns were the objective, however, there existed in Lucca a lively market for northern cloths and the merchant-bankers were thus presented with the prospect of investing their balances by buying fine woollen cloths for export to Lucca and other Tuscan markets.³⁶ It is reasonable to assume that a not inconsiderable portion of the credits transferred to the North via exchange banking was invested in cloth intended for re-sale in Lucca and other Tuscan markets. Indeed, the bankers may have shifted their capital to the Fairs expressly for the purpose of making such investments.

The evidence also points to a complementary, if more complicated, method of repatriating northern balances. Pierre Racine has shown that in the last decades of the thirteenth century Lucchese mercantile-banking companies — the same that were working the Fairs — were the most active dealers in Genoa in exchange operations with the Fairs.³⁷ These were the same companies that dominated the Lucchese exchange in 1284. Domenico Gioffrè has further noted that the Lucchese operating in Genoa were primarily takers; i.e., they were accepting funds in Genoa and promising payment from balances built up at the Fairs.³⁸ Simultaneously, these and other Lucchese were the most prominent buyers of raw silk in Genoa in the last two decades of the thirteenth century.³⁹ In addition, then, to the bi-lateral Lucca-Champagne configuration of trade, commerce and finance, there existed a regular tri-lateral pattern involving Lucca-Champagne, Champagne-Genoa and Genoa-Lucca in the movement of Lucchese goods and credits. In the latter cycle,

³⁵ THOMAS W. BLOMQUIST, "The Early History of European Banking: Merchants, Bankers and Lombards of Thirteenth-Century Lucca in the County of Champagne", *The Journal of European Economic History*, 14 (1985), 521-536.

³⁶ On the northern organization of the cloth industry, see HENRI LAURENT, *Un grand commerce d'exportation au moyen-âge: la draperie des pays-bas en France et dans les pays méditerranéens XII-XV siècles* (Paris, 1935). Numerous contracts for the sale of northern cloth survive in the cartularies of late thirteenth-century Lucca. This material has not as yet been tabulated and I therefore cannot give precise figures. For the circulation of northern cloth in the Lucchese *contado* in 1249, see THOMAS W. BLOMQUIST, "The Drapers of Lucca and the Distribution of Cloth in the Mid-Thirteenth Century", VII (1969), 65-73.

³⁷ RACINE, "I banchieri piacentini", 481.

³⁸ GIOFFRÉ, "L'attività economica dei lucchesi a Genova", 108.

³⁹ RACINE, "Le marché génoise de la soie en 1288", 409.

Lucchese northern balances were shifted to Genoa by taking up funds there through *cambia* contracts drawing upon the Fairs; with this capital ultimately invested in raw silk destined for export to Lucca.

It would seem that in order to return their capital to Lucca, Lucchese bankers did not employ the device of re-exchange but rather chose to invest in the northern economy, to buy northern merchandise, or to draw in Lucca — or Genoa — upon their credits at the Fairs.

* * *

If, indeed, the silence of the sources regarding re-exchange as a means of repatriating balances from abroad is a reliable indicator of the thirteenth century international merchant-banker's operations, we must seek an explanation as to why. Re-exchange was, after all, a regular feature of banking behaviour in the Late Middle Ages.⁴⁰ The solution lies, I would argue, in the way in which the linkage of the duration of the thirteenth-century *cambium* contract to the immovable period of *pagamentum* at the Fairs, conditioned exchange banking in this period.

The lag between the time a *cambium* was drawn and the fixed due date determined the duration of the contract. This in practice made for far greater variations in the length of individual contracts than was necessarily so in the following centuries when the value dates were fixed by a customary usance between two banking places. A glance at Graph V-X shows, for example, terms for contracts drawn on a specific Fair varying from a few weeks to over three months. All *cambia* drawn on a given Fair were, however, nominally due on the same date regardless of when the contract had been executed. But in deRoover's analysis of fifteenth-century foreign exchange banking, the banker's profit stemmed from a market in equilibrium — that is, between two banking places the rate had always to be higher in that place which gave its currency to the other. Between Champagne and Lucca, the former gave its currency to the latter, in the sense that the rates were quoted in the both places on the basis of the *solidus* of Provin and a variable amount of *denarii* Lucchese: for the market to have been in equilibrium, the rates would have to have been higher at any given time in Champagne than in Lucca.⁴¹ Such a market situation, while perhaps existing from time to time, would have been im-

⁴⁰ MUELLER, "Chome l'ucciello di passagio", 199-200, stresses the importance of regular usance in keeping the Florence-Venice, Venice-Florence exchange in equilibrium and thus making possible a regular flow of credit between the two places via exchange and re-exchange. For further examples of these types of dealings, see DEROOVER, "Cambium ad Venetas", and GIULIO MANDICH, "Per una ricostruzione delle operazioni mercantili e bancarie della Compagnia dei Covoni", in ARMANDO SAPORI, ed., *Libro Giallo della Compagnia dei Covoni* (Milan, 1970), chapter VII.

⁴¹ In the absence of comparable rate data from Champagne, such a situation is impossible to verify.

possible to sustain consistently — given the absence of time rates — by merely adding or subtracting at one end or the other something from the price of exchange.

To make the point clearer, we may refer again by way of example to the data reflecting dealings on the May Fair of Provins where the spread between the opening and closing of trading amounted to 7% and ranged between 43.43 and 46.59 *denarii* Lucchese respectively.⁴² In all, forty-three separate *cambium* contracts were negotiated within this time span, yet all were payable on the same date. How could the northern exchange market have accommodated to the variation in the rates at which these contracts were concluded and yet have retained the relationship between the points in Lucca and Champagne demanded by deRoover's model of equilibrium? Apparently it could not. The consequent lack of correlation between the prices of exchange in Lucca and Champagne led to conditions that made re-exchange too uncertain a means of regularly repatriating capital to Lucca. Also in Genoa, it should be emphasized, capital was transferred there by drawing upon balances at the Fairs instead of drawing in Champagne upon the Ligurian port.

* * *

In sum, the Lucchese data shows that over the long run of some sixty years the foreign exchange market in Lucca, based upon the Fairs of Champagne, was characterized by lengthy periods of relative stability. Sharp readjustments in the comparative prices of the money of Lucca and Champagne were results essentially of monetary dislocations — the introduction of the gold florin and the attendant decline in the value of Tuscan silver, and the subsequent debasements of the silver coinage first in Tuscany and then in France. The short-term run of rates from the years 1284 indicates that the volume of raw silk coming into Lucca at any given time had an important impact upon the exchange market. Large quantities of imported silk created a correspondingly large demand for short-term credits to settle purchases: the resulting tight money market forced the price of the *provinois* upward while low volumes of imports freed capital for investments in foreign exchange and the loose money market resulted in the fall of the price of *provinois*. Seasonality in the sense that any particular Fair or Fairs generated regularly year after year more business than others does not seem to have been a factor moving the price of exchange. Any predictability in the behaviour of the rates derived from the interest factor built into the points as they were quoted on given Fairs. Bankers dealing on the Lucchese exchange could, indeed, turn speculative profits but they were forced to return their capital home by drawing on Champagne.

⁴² See Graph V.

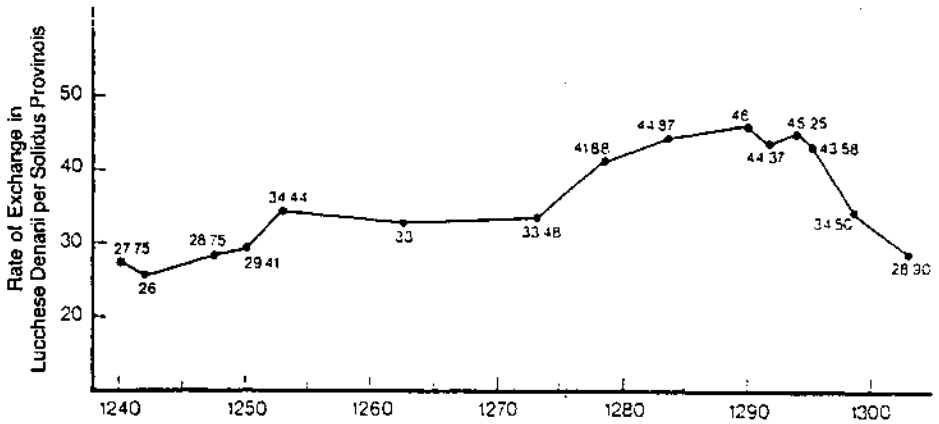
* * *

This preliminary excursion into the Lucchese evidence bearing upon thirteenth-century exchange banking has only touched upon the surface. The general outline of the behaviour of the exchange rates over the long run needs to be refined by additional data from other places. A synthesis of Italian patterns of investments in northern Europe needs to be done. Further analysis of the short-term run of rates from 1284⁴³ probing the investment strategies of the individual Lucchese merchant-banking companies has to be accomplished. Finally, an overall picture of the inter-action between Italian exchange banking and the European-wide economy of the thirteenth century must be drawn.

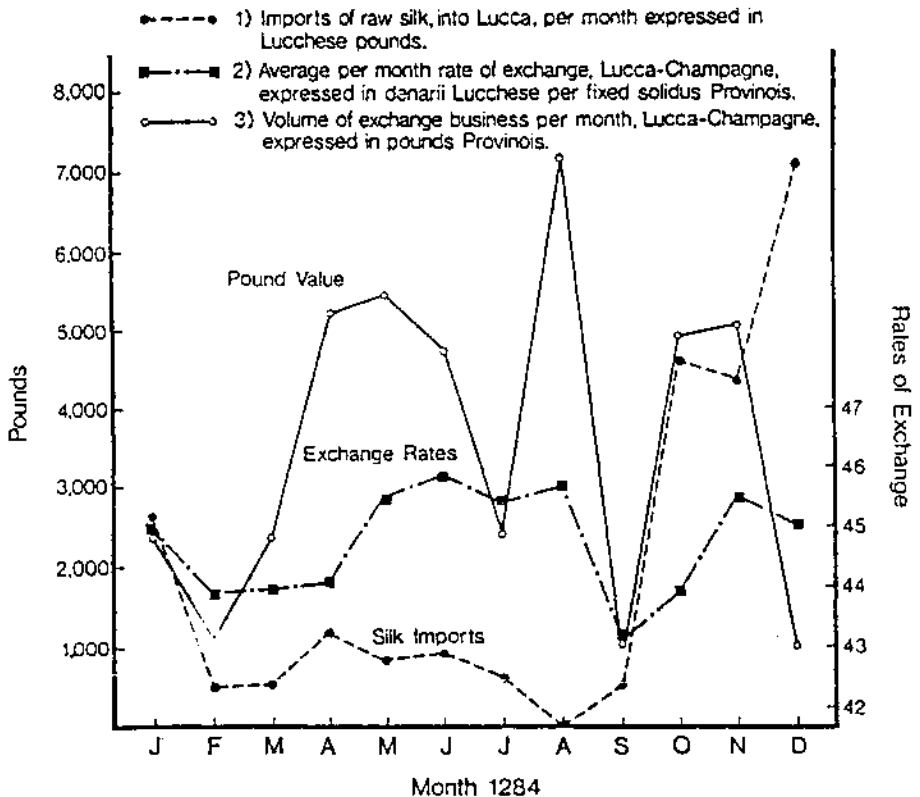
In the meantime, it may be hoped that this brief introduction will serve to re-open a discussion of the structures, methods and economic importance of exchange banking in the era of "The Commercial Revolution of the Thirteenth Century."

⁴³ The comprehensive data regarding exchange rates soon to be published by Peter Spufford should aid enormously in this task. (Now available as *Handbook of Medieval Exchange* (London, 1986).

Graph I
 THIRTEENTH CENTURY RATES OF EXCHANGE,
 LUCCA-CAMPAGNE, EXPRESSED IN DENARII LUCCHESI PER
 SOLIDUS PROVINOIS/TOURNOIS

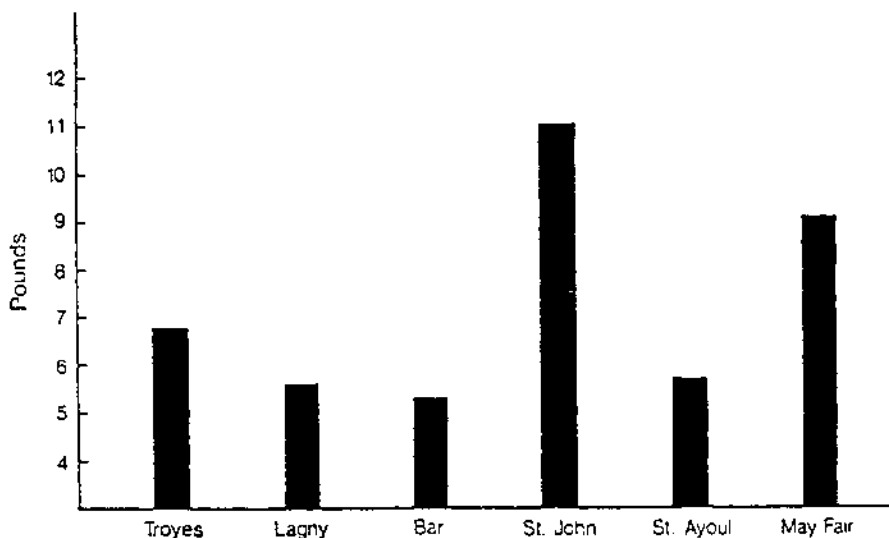


Graph II



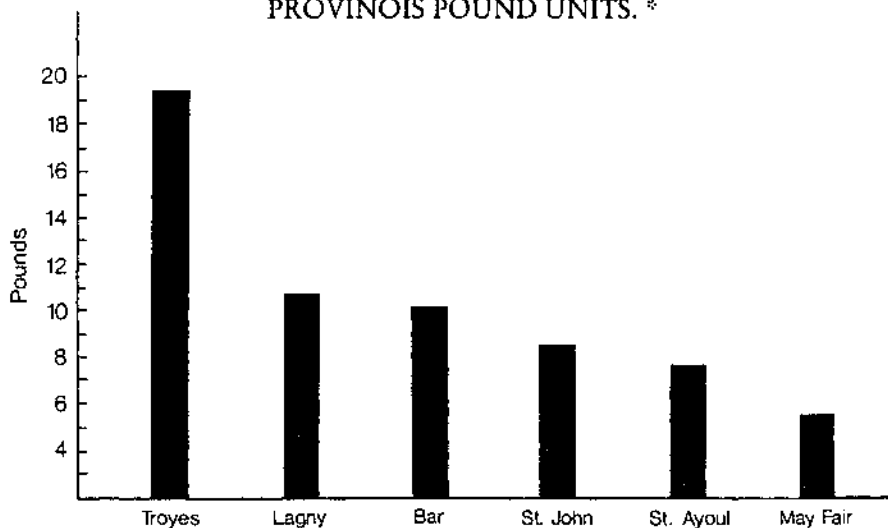
Graph III

VALUE OF EXCHANGE TRANSACTIONS IN LUCCA DRAWING
ON THE CHAMPAGNE FAIRS IN 1284 EXPRESSED IN 1000
PROVINOIS POUND UNITS



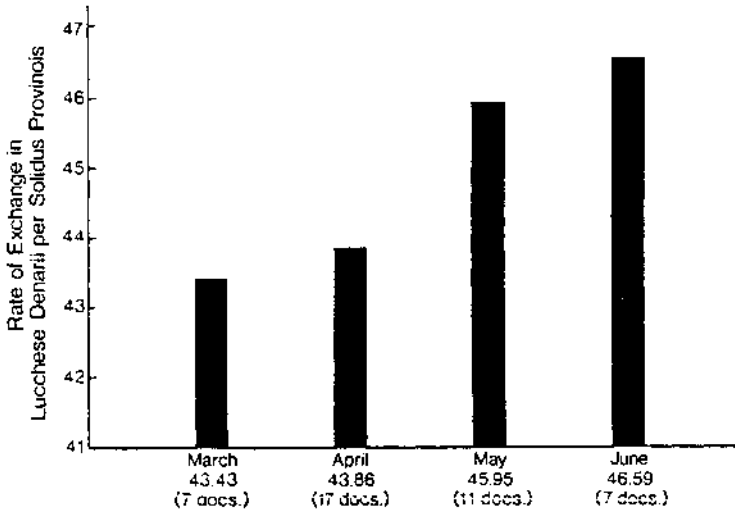
Graph IV

VALUE OF EXCHANGE TRANSACTIONS IN GENOA DRAWING
ON THE CHAMPAGNE FAIRS IN 1288 EXPRESSED IN 1000
PROVINOIS POUND UNITS. *

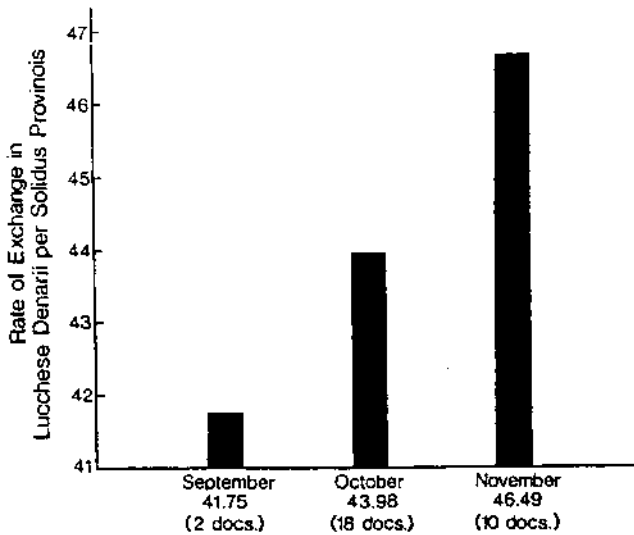


* Pierre Racine, 'I banchieri piacentini ed i campi sulle fiere di Champagne alla fine del Duecento,' *Studi storici in onore di Emilio Nasalli Rocca*, (Piacenza, 1971), 481

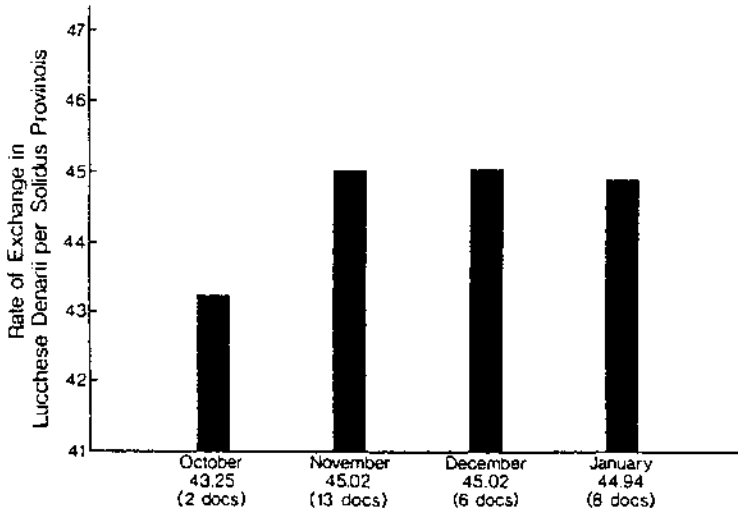
Graph V
PROVINS-MAY FAIR (42 DOCS.)



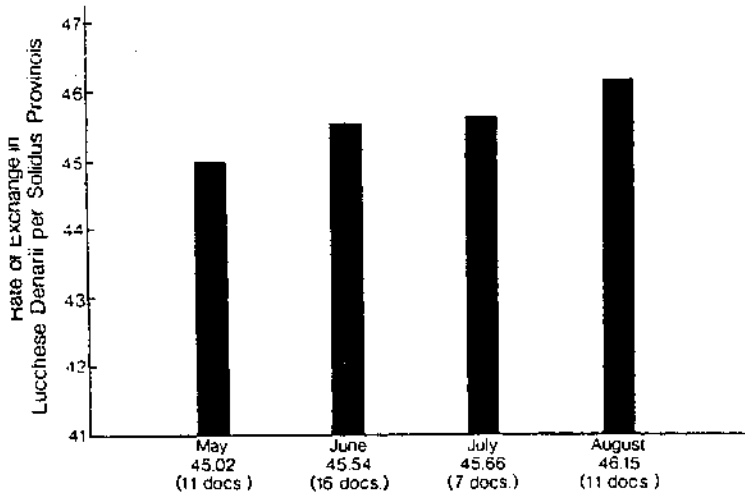
Graph VI
ST. REMI (30 DOCS.)



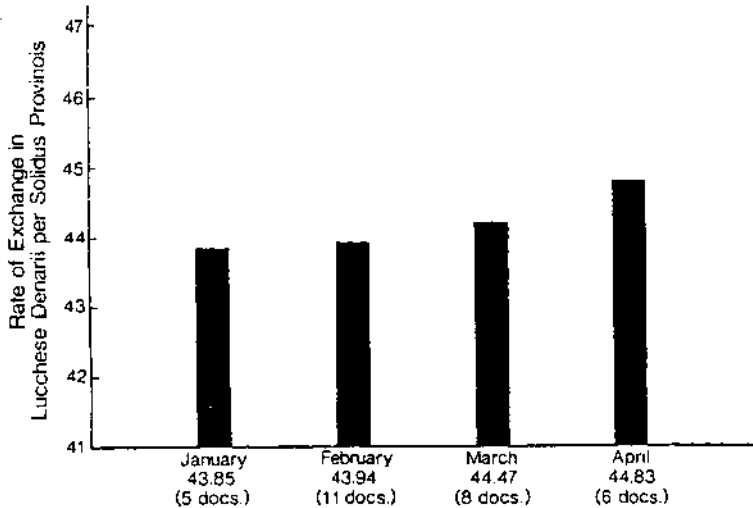
Graph VII
LAGNY (29 DOCS.)



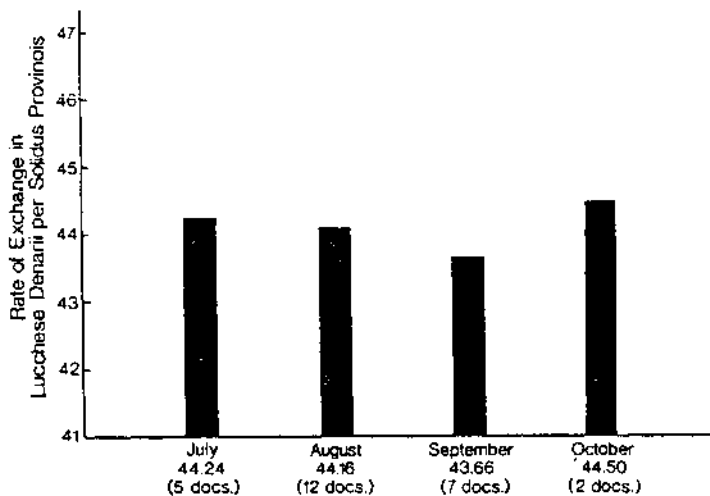
Graph VIII
ST. JOHN (45 DOCS.)



Graph IX
BAR (30 DOCS.)



Graph X
ST. AYOUL (26 DOCS.)



Some Observations on Early Foreign Exchange Banking Based Upon New Evidence

APPENDIX

The dealings of Arrigus Arnolfini, Tedicius Lamberti *de Porta* and partners between 21 March and 5 April 1284 taken from folios 214v-244 of *Archivio di Stato in Lucca*, no. 15 (notaries Bartolomeo Fulcieri, Tegrino Fulcieri, Fulciero Fulcieri).

DELIVER CR

Date	Folio	Amount Lucchese	Amount Proinois	Fair	Rate
1/4 44	234	1,833	6s.	8d.	500May Fair
4/4 43	237v 3/4	364	11s.	8d.	100May Fair
4/4 44	239v	1,100			300May Fair
4/4 44	240	1,833	6s.	8d.	500May Fair
5/4 43	242v 3/4	364	11s.	8d.	100May Fair
5/4 44	243	1,833	6s.	8d.	500May Fair
5/4 44	244 3/4	372	18s.	4d.	100Bar-sur-Aube
43.03	Totals	8,802	1s.	8d.	2,400average

TAKE R

Date	Folio	Amount Lucchese	Amount Proinois	Fair	Rate
21/3	214v	1,125	300	Bar-sur-Aube	45
4/4	239v	1,131	300	Bar-sur-Aube	45 1/2
4/4	240	1,875	500	Bar-sur-Aube	45
4/4	240	1,125	300	Bar-sur-Aube	45
5/4	243v	1,875	500	Bar-sur-Aube	45
5/4	243v	725	200	May Fair	43 1/2
	Totals	7,856	2,100	5s. average	44,83

