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ECONOMIC AND FINANCIAL CRISES AND TRANSFORMATIONS IN SIXTEENTH-CENTURY EUROPE

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ECONOMIC AND FINANCIAL CRISES AND TRANSFORMATIONS IN SIXTEENTH-CENTURY EUROPE

Financial revolutions in Europe have been ascribed to the Italian innovation of the bill of exchange in the thirteenth century and to the British ordering of government debt at the end of the seventeenth and beginning of the eighteenth centuries. Less attention has been paid to the series of financial crises and ensuing transformations in the sixteenth century, occurring especially in the 1550s and involving at least five broad and parallel changes in national and international finance:

(1) In money, annual increments to the money supply came to be dominated by silver, rather than gold, after the discovery of the New World.
(2) In fairs, meetings of merchants trading primarily in goods yielded to fairs of merchant bankers specializing in finance.
(3) In trade, primacy shifted from the Mediterranean to the Atlantic and the North Sea.
(4) In banking, the Age of the Fuggers yielded to the Age of the Genoese.
(5) In finance more generally, credit instruments and capital markets became more sophisticated.

The century saw discoveries of precious metals and numerous wars, and the financial crises brought on by these wars acted as catalysts for financial change. The changes were broader than financial, to be sure. One prominent historian observes that, in the fifteenth century, innovation was an unfamiliar and suspect idea, but that with the spread of printing and the displacement of Latin by the vernacular languages, new ideas abounded in the sixteenth century (Boorstin, 1985, p. 515). The age teemed with innovators in cultural, religious, and scientific life and included such figures as Calvin, Copernicus, Galileo, Luther, Mercator, Montaigne, Rabelais, and Shakespeare. In finance as well, there were important new views and responses to events. These economic and financial innovations are the subject of this essay.

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1 Money: From Gold to Silver

The fifteenth century was characterized by a scarcity of precious metals suitable for striking coins. This European "bullion famine" (Day, 1987) caused an especially acute shortage of the small coins used by working people in daily life. Some shopkeepers extended credit to customers in the form of "tallies," notched sticks split between tradesman and customer. Jacques Coeur, the renowned French merchant, is reported (twice) to have been unable to sell goods from his fully laden galley in Valencia because the town's inhabitants had no acceptable money (North, 1994, pp. 41, 66).

Gold came to Europe from the Sudan, first across the desert (mostly) to Alexandria, where it was traded with Venice, and later, after the Age of Discovery, up the Atlantic Coast of West Africa in Portuguese ships. According to one estimate, the gold arriving annually amounted to 700 kilograms at the beginning of the sixteenth century (North, 1994, p. 74). The supply actually in use, however, was certainly less than this amount. In an age of pestilence, war, and quarrels, hoarding was rational, whether as merchants' capital, ecclesiastical treasure, or Gresham-law hoards. In addition, the melting pot, losses at sea, and ordinary wear and tear in hand-to hand circulation reduced the supply of money in precious metals—by 2 to 3 percent a year in the case of gold coins, and by 4 to 5 percent in the case of silver and copper (North, 1994, pp. 109–110). Michael North (pp. 85–86) reports a sharp decline in the monetary use of gold between the middle of the fifteenth century and the second half of the sixteenth, although the numbers, reflected in tax collections, bequests, and later-discovered gold hoards, show varying degrees of decline from region to region.

The Expanded Money Supply

The European money supply expanded at the beginning of the sixteenth century as the Fugger family of financiers obtained control of gold (and copper) mines in Hungary and silver mines in the Tyrol and the Erzgebirge. Gross additions exceeded net in the early 1500s, as the Fuggers sent silver to Venice, whence it was shipped to the Levant to purchase luxury goods—pepper, spices, silk—and to exchange for gold, which was cheaper in the eastern Mediterranean than in Europe. As mining production rose, however, more and more silver was sent to the Spanish Netherlands,[1] along with copper and brass, to pay for woolens

[1] The Spanish Netherlands roughly comprised present-day Belgium and Luxembourg.

and Portuguese spices brought from the Far East and to purchase gold from Spanish America. Silver production in central Europe reached its peak in the 1530s. As it subsequently declined, German miners emigrated to England, Ireland, France, Spain, and the New World (Vilar, 1976, p. 169; Spooner, 1972, p. 25; Brandi, 1939, p. 337). Frank Spooner records the number of these skilled miners going to Ireland as 400; Karl Brandi and Pierre Vilar (p. 107) note that the miners going to the Americas included twenty-four whose journey to San Domingo was financed by the Welsers, bankers from Nuremberg.

North (1994, p. 71) estimates that central European silver output doubled between 1470 and 1520 and increased further in the 1520s with the new mine at Joachimstal, before declining sharply in the following decade. Then came a mass of gold from the New World—sixty tons of it between 1492 and 1550, funneled by the Spanish and Portuguese to Bruges, Antwerp, and Florence, where the mints switched over from silver to gold (North, 1994, p. 74). This gold was in the form of booty, rather than new production. New World production, when it started, was in silver, at the silver mountain at Potosí in Peru (modern Bolivia). The Potosí mine was discovered in 1545. Originally worked with mercury brought from Almadén in Spain (from a concession obtained by the Fuggers as collateral for their loans to Charles V), the mine's production rose sharply in the 1560s, following the discovery of mercury deposits in the Andean region of Huancavelica in 1563. Imports of silver into Seville reached peaks in the years between 1580 and 1585 and 1590 and 1600 (Vilar, 1976, chaps. 14, 15). Tables of silver imports into Europe are given by Earl J. Hamilton (1934, p. 34), Artur Attman (1986), and Michel Morineau (1985). It is generally recognized that Hamilton's estimates understate imports for the early years of the seventeenth century, because he counted only those imports recorded by the official Casa de Contratación in Seville. He therefore missed out on smuggling, landings at Lisbon, and specie transferred to Dutch and English East India ships directly in Cadiz, downstream from Seville. In addition, considerable amounts of silver went from Peru to Acapulco in Mexico between 1573 and 1815, and thence to the Philippines in the "Manila galleon"[2]—between two and three million pesos a year by 1590, and as much as 12 million pesos in 1597 (Borah, 1954, p. 123). In Manila, the silver was used to buy silk brought there by Chinese merchants.

[2] The Manilla galleon made an annual round trip between Manila and Acapulco from 1565 to 1815.

Monetary Movements

How much specie remained in Spain, how much in other parts of Europe, and how much was carried to the East are questions for which we have no definitive answers. For 1600, Attman (1986) estimates silver imports into Europe of about 260 tons a year, and exports of 114 tons, leaving a surplus of about 150 tons. North (1994, p. 79, p. 217, n. 23) retains the export figure, lowers the import figure to 220 tons, and estimates a net accretion to European silver stocks of about 100 tons annually at the end of the sixteenth century. Royal edicts required that imports be registered at the Casa de Contratación, where the royal tax of one-fifth was collected. When the Spanish silver fleet arrived, Seville had liquid funds in prodigious abundance, followed shortly by a scarcity as the specie spread over Spain and Europe as a whole and was shipped eastward (Braudel and Spooner, 1955). Although Seville was perhaps more volatile monetarily than other European cities,[3] most European cities alternated between easy and tight money.[4]

Loans to Charles V and Philip II earned not only interest, but also permission to export silver. So did *asientos*, bills drawn on Lyons and, especially, Antwerp to pay Spanish and German mercenaries fighting against the French in the Spanish Netherlands or putting down revolt. The "Dover Road" went by ship to the English Channel and Antwerp but was cut off when England was at war with Spain. The "Spanish Road" consisted in shipping silver in galleys from Barcelona to Genoa, converting it to gold, and taking the gold by mule train through Piedmont, Savoy, the Franche-Comté, and Lorraine to the Spanish Netherlands

[3] In writing about bankruptcy in preindustrial Europe, Mark Steele (1991, pp. 192, 199) states that Seville had a well-known reputation for banking instability, and that insolvency in Seville often led bankers to flee or to seek holy sanctuary to avoid imprisonment for debt. An article by Tinoco Rubiales (1991) on private banks and municipal power in Seville (unhappily in Spanish, which I do not read) has a long series of appendices, the second of which provides eight tables giving lists of banks and exchange dealers, including, in Tables E and H, lists of bankruptcies with brief notations. Table E deals with the crisis of the 1550s, and Table H, with that of the 1590s. Appendix 11, in prose, rather than tabular form, covers the exhaustion of the municipal treasury and the bankruptcy of banks in 1600 and 1601.

[4] Fernand Braudel and Frank Spooner (1955) use the French expressions "largesse" and "étroitesse" for ease and tightness. The English translation of Herman van der Wee's (1963) study of the Antwerp money market uses the Italian terms, "larghessa" and "strettezza." Henri Lapeyre (1955), a Frenchman, writing about Spain, uses the Spanish, "larqueza" and "estrecheza."

(Parker, 1972, p. 59). Other routes led from Spain to Nantes through France to the Spanish Netherlands, with a safe conduct being given on the proviso that one-third of the specie remain in France (Lapeyre, 1953, p. 25). Lapeyre (p. 455) also notes some shipments sent by Simon Ruiz to Rouen, where one could obtain better rates, especially after 1586.

In his classic study of monetary movements in France from the voyage of Columbus to the setting of the price of the livre in gold in 1726 (after the Mississippi bubble), Spooner (1972, pp. 4–43) holds that France was not unified monetarily. Silver circulated in the west after the middle of the sixteenth century—gold coin before—and copper, infiltrating from Germany, in the east. With wartime monetary troubles from 1540 to 1550, silver testons, the nominal equivalent of the English shilling, were converted to copper money. At one stage in the transition, the merchants of Lyons, echoing an order given by Charles V in Spain in the 1530s, insisted that two-thirds of every payment, especially of bills of exchange at fairs, be made in gold (Spooner, 1972, p. 98). This requirement lasted only a month, however, because it crippled Spanish trade with the Brabant and Flanders (Spooner, 1972, p. 133).

Marie-Therèse Boyer-Xambeu, Ghislain Delaplace, and Lucien Gillard (1986) make a sharp distinction between bills of exchange, private money traded at fairs, and coins that were royal money. They recognize, however, that although in principle, only kings had the right to coin precious metals, in practice, they farmed out this privilege, as also their right to exploit the royal domains and to collect taxes, because European kings, apart from those in Prussia, had only limited bureaucratic staffs.[5] Achieving a central monopoly of the coinage would take another two centuries. Moreover, national borders were porous, and foreign coins circulated freely. A French edict in 1557 counted 190 coins of different sovereigns in use in France (Boyer-Xambeu, Deleplace, and Gillard, 1986, p. 70).

The Debasement of Coinage

From time to time, kings would debase the coinage to gain seigniorage, especially in time of war. Henry VIII of England did so on a small scale when war broke out with Scotland in 1542 (along with confiscating

[5] Henry II reigned in France in the 1550s with a relatively small bureaucracy of 10,000 *officiers* (Le Roy Ladurie, 1997, p. 164).

goods and church property and imposing forced loans). The debasement was extended when the fighting expanded into France in 1544, and after Henry's death in 1547, it was taken still further under his successor, Edward VI. From 1544 to 1551, as the price of silver at the mints was raised from £2/8/8 per ounce to £4/8/0, and that of gold from £27/16/5 to £37/1/10, the seigniorage gained was £1,270,000. By May 15, 1550, seigniorage had covered more than one-third of the war's total cost of £3,500,000 (Challis, 1978, pp. 253–254). A revaluation in October 1551 reduced the price of silver to £3/5/2 per ounce and that of gold to £36, and a second revaluation under Elizabeth I in 1559 brought prices back to the 1543 levels (Gould, 1970, p. 11). The economic literature offers something of a debate as to whether the debasement of the English coinage, which resulted in a depreciation of the exchange rates against the Low Countries, had a significant impact on English exports, but this need not detain us. It is of more interest that the Holy Roman Empire, in an ordnance of Charles V at Augsburg, devalued the gold taler in 1551. An additional adjustment in 1559 would serve as the standard to which the empire would return in 1623, following progressive debasements after 1600 in anticipation of the Thirty Years' War (Kindleberger, 1995, p. 262). Richard Ehrenberg notes that "many princes in the sixteenth and seventeenth centuries did a roaring business in currency depreciation and sale of offices to raise money" (Ehrenberg, 1928, p. 31).

The weight of the groat of the Spanish Netherlands had been reduced in 1520 from 0.49 grams of silver to 0.42 grams. In 1548, as supplies of silver from the New World began to increase, the value of gold rose against silver. In 1551, the groat was reduced to 0.40 grams of silver, and by the time of the Treaty of Westphalia in 1648, it was down to 0.25 grams (van Houtte, 1977, p. 422). Similar adjustments took place all over Europe. Earl Hamilton (1934, chaps. 3 and 4) claims that Charles V and Philip II of Spain resisted debasement but that the succession of financial crises affecting Spain (in 1557, 1575, 1598, 1607, 1627, and 1647), together with shortages of silver, led Castile to blacken its coinage with copper in a compound called "vellon" (*billon* in France). Hamilton (1934, p. 67) observes that many economists at the time thought that debasement was unobjectionable for gold and vellon but that it could be the ruin of commerce if applied to silver.

There were difficulties in reconciling the relative prices of gold, silver, and copper coins, because the supplies of each kept changing, and various mints adapted to the changes with longer and shorter lags. Gresham's law was kept busy as undervalued coins were hoarded, melted down, or exported, and overvalued coins were spent or exchanged for gold coin wherever sophisticated dealers could take advantage of naive people. In addition to the problems with full-weight coins, there were problems of counterfeiting, clipping (until milled edges were introduced in the second half of the seventeenth century), rubbing, and sweating, that is, shaking good coins in a bag to collect the dust (Challis, 1978, p. 275). Adjustments in the gold-to-silver ratio were continuous. In Castile, the ratio, decreed legally at the mint, stood at 10.11 to 1 from 1496 to 1536, and at 10.61 to 1 from 1537 to 1565. It then moved up in one large step to 12.12 to 1 in 1566, and up another step to 13.3 to 1 in 1609 (Hamilton, 1934, p. 71). The pioneering quantity theorist Jean Bodin favored a ratio of 12 to 1, because he believed in the harmony of numbers (Vilar, 1976, p. 173; Spooner, 1972, p. 94). Six, divisible by 1, 2, and 3, was the perfect number; double it and one gets 12. As sometimes happens, however, theory was overtaken by events. Boyer-Xambeu, Deleplace, and Gillard (1986, p. 230) provide a table of bimetallic ratios in Europe showing the differences between the highest and the lowest ratios. Most countries show changed ratios between 1550 and 1560 (but not Spain, Portugal, or Milan), and England, with Elizabeth's revaluation in 1559, went from 11.1 to 1 to 13.3 to 1, the highest number in the table, except for Venice at 14 to 1 in 1600.

Inflation

The shift from gold money in the first half of the sixteenth century to silver money in the second half was less important than the inflation, or so-called "price revolution." Debate over its causes started with the controversy between Malestroit and Jean Bodin and continues to the present day (Fischer, 1996, pp. 70–91). Like Bodin, Hamilton (1934) ascribed the rise in prices in the sixteenth century to the increase in the money stock caused by the flow of silver from the New World. Later historians attribute at least the beginnings of the inflation to demographic factors, especially to the fact that after the Black Death of 1348, population growth recovered more rapidly than did agricultural production (Outhwaite, 1969; North, 1990, chaps. 6 and 7). The case against the quantity theory is that prices started to rise well before the massive imports of silver from Peru and Mexico in the 1550s and 1560s and that the prices of basic foodstuffs rose higher than the prices of industrial goods and wages. North (1990, p. 225) offers a telling comparison of the twenty years from 1561 to 1570 with those from 1511 to 1520 for prices on the Baltic south coast: grain prices rose by

274 percent and other foodstuffs by 161 percent, but prices of industrial goods and wages rose only 119 percent and 81 percent, respectively, with commercial and other property prices rising somewhere between these last two figures. North's estimate (1990, p. 226) of the growth in the money supply from 1510 to 1570 is 22 percent—leaving out, of course, unknown amounts of bills of exchange and other forms of credit. The point at which prices started to rise differed from market to market but occurred mostly in the first half of the century, primarily in 1515, 1520, or 1525, well before the massive flow of silver from the New World to the European continent (North, 1990, chap. 6)[6]

Although the second half of the sixteenth century saw a significant shift of money prices from gold to silver, another view holds that the role of specie has been exaggerated relative to the role of credit. Specie was required for certain payments, notably for the wages of mercenary soldiers, the settlement of a portion of balances at fairs within Europe, and the payments for net imports from the eastern Baltic, the Mediterranean, and the Far East. But Vilar (1976, p. 146) quotes a sixteenth-century Spanish source as stating that the fair at Medina del Campo was a factory for contracts, with never a coin traded there. This brings us to the transformation of the European fairs from fairs for dealers trading in goods to fairs for dealers involved mainly in finance.

2 Fairs: From Goods to Credit Instruments

Fairs started out to accommodate foreign merchants. Often organized into "nations," these merchants were granted special legal protection during the period of a fair—protection to which they were not otherwise entitled. Fairs were held for a few days or a few weeks at specific times—some two, some three, some four times a year. The most prominent early fairs were those in the Champagne country of France in the twelfth and thirteenth centuries, dealing largely in British wool and Flemish woolen cloth. Regular procedures were developed, starting with a set number of days for trading in cloth, then leather, then goods of weight (*avoirs du poids*) such as metals. These were followed by days for settlement, during which each merchant would cast up balances of

[6] Le Roy Ladurie (1997, p. 191) observed that in 1564, Charles IV of France quadrupled the salaries of the four regents of the medical school in Montpellier. These had been frozen since the end of the fifteenth century, despite the fact that inflation had raised prices two to three hundred percent.

the goods he had bought and sold and would then receive or pay the balance. At first, balances were paid in coin, but increasingly, they came to be paid in bills of exchange drawn on another place or on the next fair. In due course, and especially in the sixteenth century, trade in bills of exchange, usually for three-months "usance," replaced trade in goods. Borrowers, including agents of rulers, and lenders would attend fairs solely to deal in credit instruments.

The Fairs of Spain

The fairs of Spain were dominated by the fair at Medina del Campo, although bills of exchange were also traded in significant amounts at Burgos. Elsewhere, the fair at Bruges in the fifteenth century lost out to Antwerp in the sixteenth. The latter started with two fairs a year for goods and took over two from Bergen op Zoom, the Antwerp foreport, which specialized in finance. In the middle of the century, Antwerp followed Bruges in building a bourse, named after the house of one Burs in Bruges where financial trading had concentrated. The Antwerp bourse was entirely devoted to finance. The English Merchant Adventurers sold their cloth elsewhere, in an open-air market near the docks. Sir Thomas Gresham built the Royal Exchange in London in 1566 on the pattern of the Antwerp bourse.

Stapling, the concentrated selling of commodities, took place in other countries separately from fairs. The British Merchants of the Staple (wool), located at Calais, moved in 1559 to Le Havre. ln Spain, Spanish merchants traded wool at Burgos, which was accessible to the export port of Bilbao on the Bay of Biscay. British merchants sold goods for export to the New World at San Lucar, a foreport of Seville, which even had an English church (Kellenbenz, 1970, p. 336).

The role of foreign merchants in Spain was studied at a symposium in Cologne, the results of which are reported by Hermann Kellenbenz (1970). There was much movement. Germans, Florentines, and Venetians dominated trade in Alicante and Valencia in the fifteenth century, but they were eclipsed and overtaken by the Genoese in the sixteenth century (Lapeyre, 1970, p. 112). There were three northern groups in Seville before 1566: British and Dutch (lumped together), Bretons, and Hanseatics. By about 1570, however, as silver from the New World arrived in great quantities, the Genoese merchant bankers took over there as well, financing trade to America, dealing in *asientos* for the Spanish Netherlands, and acquiring licenses to export silver (Berthe, 1970, p. 241). The Spanish in Seville found themselves reduced to commission agents, without risk. Kellenbenz (1970, p. 349) asks but does not answer the question whether the dominance of foreign merchants limited Spanish growth in the second half of the sixteenth century.

Some foreign merchants were settled in Spain; some, like the Flemish, came only for the fairs. While there was an English house in Antwerp, some 600 Merchant Adventurers came for at least one fair a year (van Houtte, 1977, p. 178). As trade changed, so did the numbers of merchants attending the fairs. There were only twelve Portuguese merchants in Antwerp in 1526 but ninety-seven in 1570, when Portuguese exports of spices, olive oil, and southern fruit were flourishing and Portuguese salt from Setúbal had displaced Biscay salt from Bourgneuf in France (van Houtte, 1977, pp. 176–177). In 1551, there were thirty-eight firms in the Genoese nation in Antwerp, twenty-three "Lombard," twenty Luccan, and thirteen Florentine firms (van Houtte, 1977, p. 181).[7] Although the Spanish were outdone at home by foreign merchants, the number of Spanish merchants in Antwerp increased from 200 in 1553–54 to 300 by 1560 (Lynch, 1964, p. 272). Late in the century, a significant contrast emerged between Antwerp and Amsterdam. Antwerp, with mostly foreign merchants, distributed luxury goods and English woolens; Amsterdam, with native-born dealers, dealt in bulk goods—herring, grains, and salt (van Houtte, 1977, p. 186).

Movements of Fairs and Merchants

Fairs did not stay put. Francis I of France first attracted the Genoese nation from Geneva to Lyons, then pushed it out to Besançon in the Franche-Comté, from which it moved by stages to Piacenza outside Genoa (although it kept the Italianized version of the Besançon name

[7] Italians also dominated Lyons. In 1571, the national origins of foreigners in Lyons banking were: Florentine 42, Milanese 36, Luccan 28, Genoese 27, German (including Swiss) 22, other Italians 15, Portuguese 4, English 1, Flemish 1, Spanish 1, or a total of 154 Italians and 29 of other national origin. Most of the big foreign merchant bankers—for example, the Centuroni and Capponi of Florence and Ruiz of Spain—became naturalized, but true settlement was rare. Jean (Hans) Kleberg, the "good German," whose family originated in Nuremberg, became a Swiss citizen. He stood out from others of the German "nation" because of his many charities, although his designation may say something about the avarice of other Germans—numerous Welsers, Tuchers, George Obrecht of Strassburg, and Israel Minkel, a Swiss (Gascon, 1971, p. 359 and *passim*; Ehrenberg, 1928, pp. 184–185). Lapeyre (1955, p. 124) writes that one would think Lyons an Italian republic, with the French a "nation" like the Milanese, Genoese, Florentines, Luccans, and Germans. Decisions about trading were made by the Italians.

as Bisenzone). The Merchant Adventurers persuaded the English government to drive the rival Hanseatic woolen merchants from the Steelyard in London. They were first ejected in 1552, allowed to return in 1553, and finally driven away in 1556 (de Roover, 1949, p. 221). When England found itself in a trade war with Margaret of Parma, regent of the Spanish Netherlands, it threatened to move the Merchant Adventurers to Emden in Germany. In 1564, when the regent was unable to obtain the release of some English merchants and seamen imprisoned in Spain and to guarantee that English trade with Spain would be open and free, England made good its threat. George Ramsay (1975, p. 208) states, somewhat guardedly, that if there was a turning point in English commercial history, this was it.

By the end of the sixteenth century, the fairs in Spain had lost their raison d'être and, despite attempts at modernization, had gone into decline, along with the banks supporting them. In 1569, when some dealers had thought the five-month interval between the October and May fairs was too long and that fifty days for each fair was also overextended, the two existing fairs were shortened to thirty days, and a third fair of forty days was added. In 1601, a fourth fair was introduced. In addition, payments of taxes and interest on royal debt were removed from the fairs to make room for more merchandise transactions. These actions failed to arrest the downward trend. For one thing, the king prolonged the fair of 1574 for a full year. In addition, the revolt in Flanders caused exports of wool to decline, and Dutch entry into the East Indies trade hurt Portuguese business. A tax on exchanges, the *alcabala*, moreover, pushed many merchants out of trading in merchandise to dealing in money or investing in *juros*, perpetual 5 percent bonds (Fernandez de Pinedo, 1991, pp. 1042–1047).

3 The Shift of Trade North

The sixteenth century was characterized by the shift of Italian and Spanish trade, in particular, and of European trade, in general, from the Mediterranean to the Atlantic and the north, especially to the English Channel and the North Sea (Lynch, 1964, chap. 9). Spanish armies and navies had been held down on two fronts. With success in 1571 in the battle of Lepanto against Turkey, (and the euphoria generated by rising silver imports), however, Spain turned its military attention from the Mediterranean to the west and north. In particular, it sought to strengthen its ground armies in the Eighty Years' War (1568–1648) against the revolt in the Spanish Netherlands, partly in the name of the

Counter-Reformation, but primarily to hold on to the territory (Lynch, 1964, chap. 7). One celebrated episode in the course of the war was the dispatch of the Spanish Armada, sent to clear the English Channel for Spanish shipping to Antwerp. The Armada's defeat in 1588 proved not to be decisive. The loss of sailors was not enormous and the efficient Spanish bureaucracy repaired forty-eight of the fifty-six ships that made it back to Spain and built new ships to fill Spanish needs in the Atlantic and the north (Lynch, 1964, pp. 326–327).

Venice

During the sixteenth century, Venice was having difficulty feeding its growing population. Attempts were made from time to time to add to normal supplies from the Terra Ferma (Po Valley), from Sicily, Turkey, and Bavaria by road, and even from Poland by way of the Black Sea. In 1590, the worst harvest in Italy in twenty years required more strenuous measures. First, Venetian ships proceeded to the Baltic; then English, Dutch, and Danish ships penetrated the Mediterranean with grain from Danzig. Within a few years, Venetian buyers were acquiring grain in Antwerp and Amsterdam and paying for it with exchange on Nuremberg, Antwerp, and, occasionally, Besançon (Aymard, 1956, chap. 4, esp., pp. 154–164).

Leghorn

Leghorn on the Tyrennean Sea, built by the Medici in the fifteenth century as a Tuscan rival to Pisa, was made a free port by the Grand Duke of Tuscany in 1590. It served primarily English shipping; Thomas Mun served part of his apprenticeship there from perhaps 1597 to 1607 before becoming a director of the East India Company (de Roover, 1957). Until Dutch and English ships penetrated the Mediterranean, the Leghorn trade with the north had been conducted largely by Venetian and Genoese vessels. Hanseatic shipping ventured into the Bay of Biscay for salt and wine, ultimately being overtaken by Dutch ships in the wine trade with Bordeaux, which in turn were displaced by French vessels in the eighteenth century (Crouzet, 1968). But Spanish sailors played an important part in the shift of merchandise traffic from south to north, especially sailors from Viscaya on the Bay of Biscay, where Bilbao was the leading shipbuilding city.

It is remarkable, in retrospect, that the Flemish and Brabanters, with so much in the way of exports and imports, were not more distinguished in shipping but were instead dominated, first, by the Hanseatics and the Italians, and, then, by the English, Dutch, and Zeelanders.

4 Banking: From the Fuggers to the Genoese

The Italians were the leading bankers in the fifteenth century, especially the Florentines in Bruges. Toward the end of the century, they began to transfer their activities to Antwerp and Lyons. The late fifteenth century also saw the rise of South German merchant bankers, notably the Fuggers of Augsburg, Welsers of Nuremberg, and the Hochstetters, Seilers, and others (Bergier, 1979, pp. 108–109). South Germany had close connections with Venice, from which it bought the eastern cotton needed to mix with wool in the production of fustian. In time, the South German bankers sent their sons to Venice to learn double-entry bookkeeping and banking. They were imitators, not innovators of credit instruments, according to Hildebrand (1991), although they found themselves drawn into industrial investments, especially in mining, through loans to princes.

The bankers of North Germany, concentrated mainly in Lübeck, which collected the Pope's revenues from the Baltic area, were far more backward in banking, resisting Italian influences even though one or two Italian bankers had insinuated themselves into the city (North, 1991). For the most part, Hanseatic merchants in foreign ports traded with local money, buying the equivalent in value of what they sold. The bankers sent the papal income to Rome, initially through Bruges, with its Hanseatic Kontor (office), and later through Nuremberg.

The Fuggers

At the beginning of the sixteenth century, the Fuggers of Augsburg borrowed from Cardinal Melchior von Brizen in the South Tyrol and made loans to Holy Roman Emperor Maximilian, for which they received mortgages on gold and silver mines in Hungary, the Tyrol, and the Erzgebirge. In 1519, two years after Martin Luther nailed his thesis to the church door at Weimar, initiating a running war between Catholicism and Protestantism, Jacob Fugger undertook to finance the campaign of Charles V (Charles I, king of Spain) to succeed Maximilian. Francis I of France, also a contender for the emperorship, sought but failed to borrow funds from the Fuggers and borrowed from the Genoese instead. The monies were needed to elicit the votes of the German princes who served as electors. In the end, Charles V won the election, having borrowed 850,000 florins for his campaign, of which 542,000 came from the Fuggers, 143,000 from the Welsers, and 165,000 (55,000 each) from three Florentine banks (Ehrenberg, 1928, pp. 75–77).

In 1523, Charles V still owed the Fuggers his dues under contracts with three Spanish knightly orders (of Santiago, Calatrava, and Alcantara), which had grown with the expulsion of the Moors from Granada in 1492. The orders produced grain and other agricultural products, which they marketed, and they paid some dues in kind. In addition, Calatrava contained the mercury mines at Almadén. The three orders were bound in a lease called the "Maestrazgo." The contract with the orders ran out in 1538 and led to serious bidding among the Fuggers, Welsers, and some Genoese for the four-year extension. The Fuggers won the contract for the 1538–42 period, despite the pressure of what Kellenbenz (1967, p. 15) calls the *Staatsrat* (probably the *Cortes*, or Council) to favor the Genoese. Kellenbenz's study is based largely on documents uncovered in the Fugger archive in Dillingen/Donau. The contracts, which seem not to go beyond 1542, are complex, specifying payments in Spain and abroad and dealing with the rights to export grain and, presumably, mercury. The Welsers, in addition to competing for these contracts in Spain, had been engaged between 1528 and 1532 in financing Spanish exploration in the New World, including the recruitment of German miners. They maintained "factories" (branches or depots) in Spain and in San Domingo (Brandi, 1939, pp. 337–339).

In February 1525, Charles V's troops had been unpaid for three months, and he decided to attack the French to gain an indemnity. His Spanish mercenaries captured Francis I of France at the battle of Pavia. Charles V released Francis in exchange for his four sons as hostages. In the peace of 1529, the sons were, in turn, released on the promise of a ransom of two million escudos, plus 290,000 more to pay Charles V's debt to England. Ransom in the amount of 1,200,000 was to be paid in cash, with the boat carrying the princes to their father crossing the Bidossa River at the same time as the money crossed in the opposite direction (Vilar, 1976, p. 174). Ehrenberg (1928, p. 81) records that money poured into France for this ransom from many sources: from the king of England, the Republics of Genoa and Venice, and from the Duke of Milan.

During the 1530s and 1540s, Anton Fugger, who took over the firm on the death of Jacob, started lending on a vast scale. Financial trouble lay ahead for Anton, however, as Charles V continued to borrow to conduct war against the French, and the French borrowed funds to resist the emperor. In addition, Charles was under strong pressure from the German Protestant princes, who, allied with the Catholic king of France, in 1552 drove Charles out of Augsburg (where he had been staying in Anton Fugger's house) into Italy. There, characteristically, Charles borrowed more money (Brandi, 1939, pp. 600–611). In Antwerp, the Fuggers, too, borrowed more money, not only for Charles V, but also to lend to England, which also was fighting the French. The monies did not save Charles, who spent 2,500,000 ducats in the battle for Metz but failed to take the city (Lynch, 1964, pp. 55, 57). Ehrenberg calls 1552 the turning point for the Fuggers. The Spanish-French wars proceeded nevertheless.

Lyons and the Grand Parti

In the mid-sixteenth century, the Italians were being drawn to Lyons as well as to the Low Countries. The Medici bank had much earlier transferred its main branch from Geneva to Lyons. Lyons was important for French state finances, and this attracted the Florentines (who were also shifting from Bruges to Antwerp), as well as the Genoese. Cardinal Toulon, an innovative French financial agent, first, of Francis I, and then, of his successor Henry II (1547 to 1557), organized in Lyons at this time a royal loan called "the Grand Parti." As earlier noted, the French kings had been borrowing heavily from the start of the English wars in 1543. The loans were described as "short-term, but permanent," that is, they ran from fair to fair, three months apart, at 3, 3.3, or 4 percent (making for annual rates of 12, 14, and 16 percent), but were rolled over automatically. In addition, banks accepted deposits from "widows and orphans" at 5 to 8 percent per annum and lent to the king at 10 percent (Doucet, 1933, part 1, p. 475). The Grand Parti was organized in 1555 to sort out this chaotic situation. It was a royal loan, raised from the public, rather than the banks, and had a 10-year term, a sinking fund, and compound interest. Ehrenberg claims that it was the first royal loan open to all. Doucet (1933, part 1, pp. 494–495) insists that it was nothing new, having been patterned after a French loan of 1552. Subscriptions were received quarterly, and the interest rate came down to 12 percent a year. There was a continuous rush to buy, from the local populace and from foreigners, among the latter, even a Turkish pasha. Women sold ornaments to raise cash, servants contributed, and amounts were sent in from Toulouse, Montpellier, and Riom to add to the amounts raised in Lyons. "Every man ran to it as to a fire" (Hauser, 1929–30, p. 249, quoting Jean Bodin; Doucet, 1933, part 1, pp. 490–503; Ehrenberg, 1928, pp. 302–306).

The enthusiasm was not sustained, however. The sinking fund was not kept up; interest was not paid but was added to principal. Starting as a floating debt of 1,500,000 ecus (4,500,000 livres), the loan finally reached 9,700,000 livres. This proved insufficient to pursue the war, and Henry II turned again to borrowing from bankers. He pledged the yield on the salt tax in Brittany and various regions in southern France, as well as the customs of Lyons, although this was already committed as collateral for a loan from Florentine bankers. At the beginning of 1558, the Grand Parti, plus loans, amounted to 13,200,000 livres, with interest payments at 2,600,000 (Doucet, 1933, part 1, pp. 505–506). With armies in Italy and in the north at the battle of St. Quentin, plus a resumption of war with the rebellious Spanish Netherlands, financial ruin arrived for France.

St. Quentin and the Rise of the Genoese

The Spanish armies under the Duke of Alba fared no better than the French. Charles V had abdicated the Spanish throne in 1555 in favor of his son, Philip II, and in 1556 left the throne of the Holy Roman Empire to his brother, Maximilian I. Spanish armies had done well in Italy, defeating papal forces at Milan and Naples, and this encouraged Philip to renew his attack on the French at St. Quentin in 1557. Despite the failure of the treasure fleet to arrive from America, he hired German mercenaries, using monies borrowed from the Fuggers in Antwerp. The Fuggers originally lent their own funds. In the 1540s, however, they started borrowing in order to lend, a practice that Ehrenberg (1928, pp. 1130) states was safe originally but dangerous later. In financing St. Quentin, the house borrowed at 9 percent and charged 12 to 13 percent.

At St. Quentin, Philip II and Henry II exhausted both their finances and their armies, which they were forced to disband. Peace came at Cateau-Cambrésis in 1559. In the meantime, however, both monarchs had stopped servicing their debts. In Lyons, the French suspended the sinking fund and added current interest due to principal. Philip II paid off maturing debts with *juros* and confiscated the silver fleets of July I and September 20, 1557 (van der Wee, 1977, p. 371). The flooding of Spanish markets with *juros* converted many Spaniards into *rentiers*, who deserted commerce for the noble life (North, 1994, p. 92).

Both Genoese bankers and Germans negotiated with Castile to settle Philip's debts. The Tuscans and Germans held out for two years for payment, but the clever Genoese—the Grimaldi, Centuroni, Espinosas, and others—had loaned less and settled earlier and on more generous terms, earning themselves a preferred position in future Spanish finance (Ehrenberg, 1928, p. 118; van der Wee, 1977, p. 371). Although the final eclipse of the Fuggers awaited the Spanish financial crises of 1575 and 1596, 1557 marked the start of the "Age of Genoa," which lasted seventy years, until two additional Spanish royal bankruptcies, in 1607 and 1627, brought the Genoese down as well. The Hapsburgs squeezed all they could from the South German bankers and then turned to Genoa, or to the invading Genoese bankers (Arrighi, 1994, pp. 124–125). Giovanni Arrighi's Marxian analysis holds the Age of Genoa, a Braudelian designation, to have been the first of four cycles of systemic capital accumulation: Genoan, Dutch, English, and United States.

Religious Wars and Emigration North

In addition to the Spanish and Anglo-French hostilities, France was harassed by religious wars. Persecution by Catholics of the Lutherans and Anabaptists of Germany and Holland had little impact on business or finance. The rise of Calvinism, the peculiarly French form of Protestantism, however, was different (Coornaert, 1961, vol. 1, p. 100). Some Calvinist Huguenots had been pirates in the Bay of Biscay, preying on the Spanish-French trade out of Nantes and St. Nazaire and, after the Treaty of Cateau-Cambrésis (which the Protestants thought unfavorable to them), on trade with the Indies. In 1562, during the first of eight wars of religion in France, the Huguenots occupied Rouen and Lyons, the premier French cities in trade and finance, respectively. Successive peace treaties were followed by new outbreaks of hostilities. The third war ended in 1570 in the Treaty of St. Germain, only to be followed two years later by the Massacre of St. Bartholomew, during which Catholics attacked Protestants throughout France. Huguenot piracy in the Atlantic continued uninterrupted. Peace treaties and new hostilities followed one another until the Edict of Nantes, granting the Huguenots freedom of worship in 1598, was revoked by Louis XIV almost a century later in 1685, leading to a massive emigration of Huguenots to Geneva, Amsterdam, Hamburg, London, and the American colonies (Lapeyre 1955, p. 413ff).

The religious wars in France were paralleled in the Spanish Netherlands by the War of the Counter-Reformation, which applied the Inquisition to the Low Countries. Cardinal Granvelle, Philip II's advisor to the regent Margaret, was expelled from the Netherlands in 1562 in a victory for the Calvinist princes. This led to the dispatch of the Duke of Alba to Brussels, the Duke's ruthless suppression of Protestant resistance, the sack of Antwerp in 1568, and the outbreak of the Dutch revolt in 1572. John Lynch (1964, chap. 8, esp., pp. 236, 257, 263) states that the Counter-Reformation was a war more to secure Spanish territory than to satisfy religious zeal.

The Huguenot attack on Lyons in 1562 and the Dutch blockade of the Scheldt estuary in 1585 each led to emigrations of merchants, along with Protestants, Jews, and foreigners, from France as a whole and, especially, from the Spanish Netherlands. The resettlement of many of the latter emigrants in the northern Netherlands and in the Lower Elbe region stimulated the economic and financial growth—and ultimate primacy—of the Dutch Republic as well as the beginnings of commercial and financial growth in Hamburg.

5 Credit Instruments and Capital Markets

The Grand Parti

The Grand Parti of 1555–57 furnishes an early example of the distinction between bank-based and market-based capital markets (Sarcinelli, 1996). After Henry II stopped paying the sinking fund and deferred interest, the price of the bonds, sold to the public and traded in markets, fell to 70 livres (Doucet, 1933, part 2, p. 3). The Grand Parti was not the first such example, however. Beginning in the fourteenth and fifteenth centuries and continuing on a larger scale in the sixteenth century, especially after 1560, the French crown had also borrowed on *rentes*.

Rentes

The *rente* was a loan with payment of service assigned to a tax or, increasingly, to a town or city, which sometimes raised the tax but, in any event, stood behind the service of the debt. In the first half of the sixteenth century, French *rentes* were largely assigned to the rural areas; after 1566, they were guaranteed by the Hôtel de Ville of Paris (Schnapper, 1957, p. 80, and part 2, chap. 2). After the 1559 bankruptcy, the king and the city of Paris entered into the Contract of Poissy with the Church, in which the Pope promised that the French clergy would, over six years, pay the accumulated arrears of the Hôtel de Ville of Paris (Schnapper, 1957, pp. 155–158). A similar development of *rentes* with cities smaller than Paris took place between 1515 and 1560 in the Spanish Netherlands and is called by James Tracy (1985) a “financial revolution.” *Rentiers* would not accept the guarantee of every town, and those marketing *rentes* from Amsterdam hesitated to sell them in port cities, such as Bruges, where Dutch goods and ships might be confiscated if interest fell into arrears (Schnapper, pp. 112, 129).

Bernard Schnapper (1957, p. 9) writes that the history of the *rente* has been neglected because of historians' fascination with the bill of exchange, which evolved during the sixteenth century. The evolution of the bill of exchange in Antwerp at the hands of the Italians and Flemish (but not the South Germans, who clung to medieval techniques) has been recited in great detail, especially by de Roover (1949), van der Wee (1963, 1977, 1991a, and 1991b, chap. 3), and Boyer-Xambeu, Deleplace, and Gillard (1986, chap. 5). Begun early in the thirteenth century, the functions of the bill of exchange expanded in the sixteenth century as it became successively assignable, transferable, negotiable, and, from the 1540s, discountable, thus bridging time and space and serving as private money (as distinct from specie, which was the money of the prince). Boyer-Xambeu, Deleplace, and Gillard (1986, pp. 295–296) call the *asiento*, the special bill of exchange by which the Spanish transferred money from Spain to the Spanish Netherlands to pay their troops, a perversion of the monetary role of letters of exchange. This is because it specifies payment in specie, the only form of payment the mercenaries would accept. In addition, it lacked the flexibility of the bill of exchange used by the Italians and Flemish in Antwerp.

The *rente* in France evolved over the century in a fashion similar to a mortgage: it was perpetual in term and given when acquiring property; some *rentes* were given in kind for wine and grain. Originally, *rentes* did not circulate but were held for purchase of property, given as dowry, or bequeathed in an estate. Amounts were initially small in the sixteenth century, issued even by laborers to acquire small bits of land, and rose sharply as *rentes* came into use by the nobility and then the middle class (Schnapper, 1957). Tracy (1985, chap. 5) sketches the growing market for Dutch *rentes*, used initially in the Spanish Netherlands but gradually finding buyers at home in Holland and, especially, in Amsterdam. With the growth of Amsterdam after the sack of Antwerp, and the shift of capital out of trade and industry into finance, a *rentier* class emerged. Brewers in Delft and grain dealers were large purchasers. Tracy (1985, p. 219) concludes that towns started selling *rentes* on the open market because they were no longer able to force their citizens to lend to them.

6 Conclusion

The sixteenth century was a revolutionary time in European finance. Commerce moved from sporadic fairs to continuous trading. Financial transformations included shifts from gold to silver, from dominance by the Italians in the Mediterranean to primacy by the South Germans, and then, the Flemish and Dutch in the north. The Age of the Fuggers gave way to the Age of the Genoese. Silver from the New World produced or, as is more generally agreed, accelerated a price revolution. Religious and other wars created enormous demands for money to hire mercenary soldiers. Financial crises abounded.

The high pressure of events produced at least two financial transformations so far-reaching as to be called "revolutions." Herman van der Wee (1991b, p. 1173), the doyen of the financial history of the Spanish Netherlands, calls the transformation of short-term credit through the development of the bill of exchange a financial revolution situated somewhere between the Italian introduction of the bill of exchange in the thirteenth century and the British substitution of a rational for a chaotic system of government debt in the seventeenth century (Dickson 1967). James Tracy (1985) calls the Dutch development of a market in *rentes* a financial revolution not so much because of the large sums of money raised by *rentes* in the 1550s, but because *rentes* mobilized the wealth of the provinces for the first time.

France participated in these financial changes perhaps more slowly than did Britain and the rest of continental Europe. Boyer-Xambeu and her colleagues (1986, pp. 82–83) write that farming of princely and royal domains and taxes was given up in Europe in the middle of the sixteenth century, except in France, which caught up only in the eighteenth century. This lag held back the development of French banking. Coornaert (1961, vol. 2, p. 126) suggests that the French failure to keep up with the financial techniques of their competitors is perhaps connected to a cultural trait, the traditional French spirit of moderation (*mesure*).

Henri Hauser (1929–30, pp. 241, 255) concludes that the bankruptcies from 1557 to 1559 probably interrupted the march toward modern finance and economic growth. Van der Wee (1977, p. 391) modifies Hauser's conclusion, stating that the innovation in finance led the royal houses of Europe to follow grandiose schemes, which were disruptive in the short run but positive in the long run. This is a supply-side viewpoint. It is possible to conclude the reverse—that the grandiose schemes of the royal houses put pressure on the financial markets and led to innovations that were evident not, perhaps, in short-term commercial credit, but in the shift from bank-led to market-led capital markets.

Appendix

A game for nonprofessional historians is to note in the literature "turning points" or "decisive limits" recorded by various authors, usually in terms of a given year, decade, or event. Comparisons among them are impossible, to be sure, because the authors have different outcomes in mind. Nonetheless, a selection may be of interest:

Author	Turning Point
Arrighi (1994, p. 125)	1557, the start of the Age of the Genoese.
Braudel (1975, p. 941)	1556, peace between the Pope and the Duke of Alba, an important turning point for Western civilization.
Braudel (1975, p. 1055)	"The War of Granada, A Turning Point"; 1567, the arrival of the Duke of Alba in the Netherlands.
Ehrenberg (1928, p. 106)	1552, a turning point for Charles V and the last time the Fuggers held his fate in their hands.
Ehrenberg (1928, p. 328)	"From about 1552 a real madness or mania for the Bourse loans of Antwerp and Lyons seized on the masses all over Europe."
Friis (1953)	Believes that the financial crisis of 1557 was largely the result of the disastrous grain harvest in Europe in 1556; van der Wee (1963, p. 214n) is doubtful.
Gascon (1971, p. 250)	The Grand Parti turned finance from commerce to speculation.
Gascon (1971, p. 671)	Records the disagreement on the date of the collapse of Lyons as a dominant financial center among Ehrenberg, Doucet, and Lapeyre. Ehrenberg, paying more attention to public than to commercial credit, cites 1562; Doucet, focusing on public credit alone, gives 1575; and Lapeyre, relying on the papers of Bonvisi of Lucca, cites 1590. Gascon claims that the documents studied by Ehrenberg, Doucet, and Lapeyre are not as full as the papers of the four Lyons notaries that he used, which suggest 1575.

Hauser (1929–30, p. 254)	The period that was opening (after 1559) was a period of economic retardation, at least for the countries that played leading parts.
Israel (1995, chaps. 7–9)	The Dutch revolt begins in the Spanish Netherlands in 1572, after the arrival in 1567 of the Duke of Alba, who arrested 9,000 and executed 1,000, including the Counts of Egmont and Horn.
Lapeyre (1955, p. 413)	The second phase of the religious wars in France and the Massacre of St. Bartholomew in 1572.
Lapeyre (1955, p. 421)	1585, a critical date in western European history, with the battle of the Atlantic (with England), which lasted to the end of the century.
Lynch (1964, p. 164)	The Treaty of Cateau-Cambrésis between Spain and France in 1559 confirmed Spain's prestige in southern Europe and its weakness in the north.
Ramsay (1975, p. 211)	If there was a turning point in English commercial history, it was reached (in 1564) when the Merchant Adventurers transferred from Antwerp to Emden. "The long-standing supremacy of the Netherlands market for British trade was never restored."
Ramsay (1975, p. 137)	1550, usually taken as the turning point in the movement from gold as the dominant currency in France to silver.
Spooner (1972, p. 57)	The loans of Charles V in Antwerp and the Grand Parti in Lyons led to a breaking point during the 1550s; the Spanish bankruptcy in 1557 soon entailed bankruptcies of the Low Countries, Naples, Milan, and then, of the French monarchy.
Vilar (1976, p. 161)	1557, the greatest crisis of the century.
van der Wee (1963, chap. 6)	"The Decisive Years, 1520–c.1550" (chapter title).

van der Wee (1963, p. 215)	The peak of south German expansion was reached during the 1520s; the final decay, during the 1550s.
van der Wee (1963, p. 221)	"The feverish credit boom of the fifties had also caused a fatal crisis and a state bankruptcy in Lyons' money market, . . . the financial impulse was completely broken."
van der Wee (1963, p. 221n)	Reports that Ehrenberg and Braudel believe Lyons was over only in 1575 (Lapeyre, in 1589), but states that "in our view the crisis of 1557 *broke the expansion* for good."
van der Wee (1963, p. 432)	The political crisis of the 1550s caused Antwerp's foundation to disintegrate and killed its supremacy in the financial market. Commerce flourished after 1559, and Antwerp revived. "But it was no use. The crisis of the mid-1560s was a definite turning point."

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