From the Commercial Revolution to the Black Death (c.1150–1350)

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In 1986–1988 excavations at a medieval Black Death cemetery at East Smithfield in London (on the old site of the Royal Mint) yielded an important group of burials, some of which were accompanied by coins. One of these was of particular significance, as it provided a rare glimpse into the composition of the stock of “everyday” money available to Londoners in the 1340s. Excavators discovered the burial of a woman aged 25–36, who had been interred with two distinctly different groups of silver coins.¹ Of the 181 coins recovered, most of the pennies were found to the side of the chest, probably in a pouch slung around the neck or under the shoulder. The second cache – which consisted entirely of fractional denominations – was found within the pelvis cavity. The lesser denominations were available at the waist for ease of access, and the pennies kept closer to the body, hidden under the armpit.² This tale from London was no doubt replicated countless times across the rest of Europe. That this evidence survives at all is a consequence of the horrific reality of death and hasty burial that overwhelmed town and country alike as the Black Death gripped Europe in the mid-14th century. The pandemic, which wiped out between one-third and one-half of the population, fundamentally altered the social, economic, and political landscapes over which it so mercilessly swept, arresting the economic progress of the previous two centuries. This chapter explores the major monetary changes that occurred between the Commercial Revolution of the long 13th century and the Black Death of the late 1340s and early 1350s.

1 Grainger, *The Black Death Cemetery, East Smithfield, London*, p. 15. A second female inhumation in the same grave row was found with eight coins. Gilchrist and Sloane, *Medieval Monastic Cemetery*, pp. 100–1.

2 Kelleher, Leins, and Cook, “Roman, medieval and later coins from the Vintry, City of London”, pp. 235–36. Gilchrist and Sloane suggest the likely reason that coins (and other objects) were not removed from a body during its preparation for burial was advanced putrefaction, *Requiem*, p. 102.

The coinage of the period discussed here is better served in the literature than that of the previous chapter, but the evidence can be patchy and in some areas of Europe published finds and syntheses remain scarce. A good introduction to the coins of medieval Europe was published by Philip Grierson,³ and several volumes of the *Medieval European Coinage* series, inaugurated by Grierson to provide an English language survey of the currencies of Europe c.600–1500, are currently available, with many more in preparation.⁴ Of fundamental importance to the student of medieval coinage is Peter Spufford's *Money and Its Use in Medieval Europe*, which offers a magisterial analysis of the use of money in Europe across the full course of the Middle Ages, accompanied by his useful *Handbook of Medieval Exchange*.⁵ This volume introduces the reader to the complex world of medieval exchange rates, tracking the relative values of the principal European currencies against the florin over time. It provides a starting point for further research.

The volume of material evidence, in the form of hoards and single-finds, increases dramatically across this period. This is largely due to the increased levels of production at mints all over Europe – through the exploitation of new sources of bullion – and a concomitant increase in levels of monetization within society. Beginning in the 12th century and accelerating through the 13th and 14th, the quantity of surviving records relating to monetary affairs increases significantly. These take a wide variety of forms: the most useful are records of mint production, taxation documents, coin lists, exchange rates, and commercial records, but tangential sources such as monetary policy advice documents, correspondence, conversion manuals, and chronicles can also provide useful information.⁶ These sources have framed how we understand the dynamics of coin production and use and the development of non-coin transaction mechanisms

3 Grierson, *Coins of Medieval Europe*; relevant here are ch. 8, 9, and 10.

4 Two of the three proposed *Medieval European Coinage* Italian volumes have been published. These cover northern and southern Italy, respectively: see Day, Matzke, and Saccocci, *Italy (I)*; and Grierson and Travaini, *Italy (III)*. For Spain and Portugal, see Crusafont, Balaguer, and Grierson, *Iberian Peninsula*.

5 Spufford, *Money and Its Use in Medieval Europe*, ch. 5–11 are of particular relevance for the long 13th century. See also Spufford, Wilkinson, and Tolley, *Handbook of Medieval Exchange*.

6 Grierson, "Numismatics", p. 123. The classic sourcebook for trade-related monetary documents is Lopez, Raymond, and Constable, *Medieval Trade in the Mediterranean World*. The contemporary coin list of Pegolotti, *Mercatura*, edited by Evans, and the mercantile manuscript of Zibaldone da Canal, edited by Stussi, Lane, Marston, and Ore, are also useful resources.

in Europe. Historically, documentary sources have been more widely used in informing the debate than the evidence from hoards or archaeological finds, which have great potential for exploring patterns of consumption. In recent decades the picture has begun to shift, thanks to the impact of metal-detecting on the finds record. However, because of the widely differing laws relating to cultural property ownership and metal-detecting in European countries, there is a huge imbalance in the quality and abundance of comparable data.⁷

Money in Europe on the Eve of the Commercial Revolution

Money, as represented in documents and physically preserved in coin collections, is the most available and possibly the most sensitive instrument to feel the economic pulse of the Commercial Revolution.⁸

This quotation from the historian Roberto Sabatino Lopez identifies money and coinage as a central source for understanding the development of the commercial economy in medieval Europe. It was the two centuries from 1150 to 1350 that witnessed the most vigorous monetary developments in the entire medieval period. It has been argued that the origins of the Commercial Revolution in the Mediterranean lay in the 10th century, as a period of economic expansion connected Western Europe with the Byzantine and Muslim world. Italians led the way in gradually relocating the centre of economic gravity away from the eastern Mediterranean to the powerful city-states of northern Italy.⁹ The wealth and economic sophistication of the Muslim states, particularly Egypt, was on a scale unmatched in Europe and, in this sense, it is surprising that Italian competition was tolerated, let alone allowed to flourish.¹⁰ Peter Spufford characterizes the Commercial Revolution as one in which fundamental changes took place in the methods

7 For a wide-ranging survey of literature on the subject of metal-detecting, archaeology, and the law, see the bibliography in Thomas, "The future of studying hobbyist metal detecting in Europe", pp. 148–49.

8 Lopez, *The Commercial Revolution of the Middle Ages*, p. 70.

9 Lopez et al., *Mediterranean Trade*, p. 50.

10 Smith, "Calamity and transition" outlines a process in which Muslim traders incorporated the Italian maritime cities into existing networks of trade and "by the mid-12th century the Italians had established their own quarters in Muslim cities, overpowered their ship-ping, and negotiated advantageous treaties with their rulers", pp. 55–56.

of doing business. Rather than simply a response to growing international trade, a “critical volume” was reached when a three-way division of labour was required by the sedentary merchants based in Italy, the specialist carriers, and the full-time overseas agents.¹¹ This condition encouraged the growth of coin use and an evolution in the types and denominations that would be produced. In England, as elsewhere in Europe, the long 13th century witnessed large-scale economic, demographic, and social change. The population was growing, which in turn led to the expansion of towns and fed the urban demand for local agricultural produce and imported luxury goods. At the same time the network of markets and fairs was expanding, as were general levels of taxation, the commutation to money of rents and wages in kind, and the availability of credit. Additionally the mechanisms of recording commercial transactions were spreading, and thus the documentary sources become more readily available beginning in the 13th century.¹²

In the mid-12th century the Carolingian empire’s monetary system could still be recognized in many coinages across Europe, both within the former empire and indirectly among her neighbours. In the lands formerly ruled by Charlemagne the denier or penny was the principal denomination, although halfpence (or obols) were also struck. Without the empire, the penny was virtually the sole denomination. Despite sharing a common numismatic ancestor, the coinages in the former imperial lands evolved in distinctive ways, based upon region or locality. In Germany and France in particular, the right to coin had been granted to or usurped by an array of secular and ecclesiastical authorities, from princes to priors, bishops to barons, and monasteries to magnates. In Germany, the coinage tradition diverged into two characteristic forms. The most widespread was the traditional penny, with a favourite form being a facing figure on the obverse, usually a bishop or king, and an elaborate building on the reverse. Elsewhere the form evolved in a quite different way (Figure 6.1). Thin, often uniface pennies, known from the 14th century as bracteates, were struck in Lower Saxony, Brandenburg, Meissen, Upper Lausitz, Thuringia, Hesse, Augsburg, Donauwörth, Ulm, Constance, Basel, Baden, Württemberg, and Alsace.¹³

11 Spufford, *Money*, pp. 251–33; and Spufford, *Power and Profit*, pp. 19–25.

12 Allen, “The English currency and the commercialization of England before the Black Death”, p. 31.

13 Svensson, *Renovatio Monetæ*, p. 11; and Grierson, *Coins in Medieval Europe*, pp. 163–64.

These coins, struck from a single die and materially fragile given their purpose as money, were large enough to allow for a more expressive and varied visual language. A factor in the multiplicity of iconographic expression was practical, as the fragility of the coins made it necessary to frequently replace the current specie with newly struck types in a common system known as *renovatio monetarum*, which financially enriched the issuing authority at regular intervals.

The idea of frequent changes of type was de rigueur in many states across Europe, but it was by no means the only model employed. In some cases, communities would pay a tax known as a *monetarium* in order to avoid change to the coinage.¹⁴ The coinage tradition in France was split between those of the Capetian kings and the great feudatories, with a plethora of smaller local issuers. The royal coinage increased in volume from the reign of Philip I (1060–1108), thanks largely to episodes of debasement which reduced the fineness of the royal coinage to 58 per cent,¹⁵ but also to an increased mint network within the royal domain. Under Philip's successors Louis VI (1108–1137) and Louis VII (1137–1181), debasement continued, forcing the fineness below 50 per cent. The so-called feudal coinage of France is complex.¹⁶ The fragmentation of royal authority over the right to coin began in the 9th century and progressed slowly in a three-stage process. The first saw the crown grant away the profits of a mint (fully or in part); next came the right of prosecution of forgers and others who infringed upon monetary regulations. The last stage, which was never formally conceded but invariably implemented, was the right to alter types, weights, and fineness.¹⁷ The result, by the mid-11th century, was a miscellany of stylistically varied regional issues lacking any semblance of fixed standards of weight or fineness. The composition of many hoards reflects the ubiquity of issuing authorities and mixing of types. A large find of silver coins, dated to 1152–1160, was discovered in Massay in the Cher department of central France in 1873. Of the 4,103 coins, more than half came from the large local mints at Vierzon and Issoudun; others came from mints of the royal domain and the Île-de-France to the north, Anjou and Brittany in the east, Limoges and Angoulême to the southwest, and even Melgueil on the Mediterranean coast.¹⁸

14 Bisson, *Conservation of Coinage*, pp. 14–28 for its origins in Normandy.

15 Mayhew, *Coinage in France from the Dark Ages to Napoleon*, pp. 63–64. Mayhew links this phenomenon to the general baronial search for cash to fund their Crusades.

16 Ibid., pp. 19–58 provides a comprehensive survey of the feudal issues.

17 Ibid., p. 21.

18 Duplessy, *Les Trésors Monétaires Médiévaux et Modernes Découverts en France*, pp. 83–84.

FIGURE 6.1 a) Archbishops of Cologne, silver pfennig of Adolf I (1193–1205), diameter 19mm; b) archbishops of Mainz, Henry I of Haarburg (1142–53), silver bracteate struck at Erfurt, diameter 33mm.

SOURCE: FITZWILLIAM MUSEUM, CAMBRIDGE.

Numismatists find it frustrating that many of the series defy proper dating. This is the result in part of the striking of the same static type over decades, or even centuries. The excesses of such immobilized types can be seen in the Poitevin coinage, which continued with coins of Melle in the name of Charles the Bald (843–877) until the 12th century, or those of Angouleme, immobilized in the name of “Louis” from the 10th to the 13th centuries. The repetition of names within particular houses, such as the Fulks and Geoffreys in Anjou or the Williams of Aquitaine, adds an extra layer of ambiguity to the process of dating some of the feudal issues. This process shows that there was a tangible disinclination to alter a familiar and successful coinage. While some coins

FIGURE 6.2 12th-Century anonymous silver denier of Blois diameter 20mm.
SOURCE: FITZWILLIAM MUSEUM, CAMBRIDGE.

persisted in unaltered form, others became increasingly stylized, none more so than the Blois-Chartres deniers which dominated central France. By the 12th century the profile head of the original coin is barely recognizable, having assumed a Picasso-esque level of abstraction (Figure 6.2).

A serious problem for the utility of the French coinage was the wide variability in fineness seen in products of different mints. A general shortage of silver in the early and mid-12th century encouraged competition between mints to attract bullion and make what silver they had go further. Debasements (through the addition of copper) and weight reduction became common practice. Regionally dominant types had emerged by the 12th century, and because of the variability in fineness between them a hierarchy of deniers emerged. In the north, two deniers *angevin* or *tournois* were the equivalent of one denier *mansois*, two of which were equivalent to the English sterling penny. In the south, two deniers *melgorien* and *raymondin* (which were equivalent to the *tournois* in the north) were the equivalent of one denier of Toulouse or Carcassonne.¹⁹ By the end of the 12th century, however, the worst of the debasements were over.

In the mid-1100s England was emerging from a prolonged and damaging period of civil war. The 1153 Treaty of Winchester brought a peace settlement and King Stephen was allowed to die on the throne provided that Empress Matilda's son, Henry of Anjou, succeeded him as King Henry II. The civil war had left a deep scar on the English coinage. During the conflict

19 Mayhew, *Coinage in France*, p. 25.

Stephen had lost control of mints in northern and western parts of England and, for the only time in English history, coins were struck by nobles and bishops without the consent of the king. Many are irregular copies of the royal type, but others name Stephen's rival Matilda and her supporters, such as Patrick, earl of Salisbury, or adopt quite remarkable design elements, as in a group of types from York. The hoard record suggests that the last penny type in Stephen's name was effective in displacing the various baronial and irregular types that had been circulating in England.²⁰ In 1154 Stephen died and Henry II succeeded him. The first of Henry's two major coinage reforms took place four years later. This Cross and Crosslets coinage departed significantly from the frequent changes of type seen in England in the preceding two centuries: a single design was minted between 1158 and 1180, between 1180 and 1247, and between 1247 and 1279 as part of a system which owes more to traditions of Anjou and Aquitaine than England. Surviving Cross and Crosslet pennies are often ill-struck and irregularly shaped despite the dies being fairly well engraved.

The emergence of a royal coinage for the Scottish kings was intimately linked to events in England. In 1136 David I of Scotland (1124–1153), uncle of Matilda, invaded Cumbria and took the mint at Carlisle, inaugurating the minting of the first Scottish coins. New, long-lived mints would be opened throughout the 12th century. Scottish pennies from before the 13th century are generally scarce and often borrow design elements from English contemporaries. The monetary reforms seen in England in 1180, 1247, and 1279 were incorporated into the Scottish coinage in due course.

As an extension of the coinage of Angevin England, the money coined for Ireland was heavily influenced by that produced at the English mints. Minting in the name of Prince John as lord of Ireland commenced towards the end of the century, first with rare pennies bearing a profile portrait, and later a facing bust type.²¹ However, it was only with two currency reforms of the 13th century (by Henry III in 1251 and Edward I in 1279) that the Irish coins adopted the same reverse types as the English.

In the 12th century the coinage of the Low Countries was released from the shackles of imperial and, to some extent, French coinage traditions. The most

20 Blackburn, "Coinage and currency", pp. 198–99.

21 Colgan, *For Want of Good Money*, pp. 11–18. These coins were issued in 1185 and were followed in c.1190–1199 by a somewhat more common second coinage. The fact that both issues were halfpennies has led to the suggestion that this was a deliberate policy to reflect the subordinate position of Ireland within the Angevin empire; however, it is more probable that coins of a lower value than the penny would be more useful and readily adopted in an economy that had seen no locally produced coin for a generation or more.

popular coins issued here were pennies struck in good silver but on a small module (c.0.5 g) that employed a wide range of iconography which varied from issuer to issuer. Some adopted a martial image, such as a mounted knight at Louvain and Brussels, a standing warrior at Bruges, a helmeted bust at Ghent, and a figure brandishing a sword at Alost. Buildings were popular at Hainault and Guelders, as was the eponymous castle at Cassel. Utrecht and Liege adopted the figures of their bishops, reflecting the authority under which coins were issued, while Holland used a lion.

In northern and central Italy, the penny or *denaro* was dominant. Beyond the borders of the empire in the south, by contrast, a mixed system endured. It was in northern and central Italy that many monetary innovations were first tested and adopted.²² The legacy of the empire is visible in the dominance of the former imperial mints of Pavia, Verona, Lucca, and Milan and the continuation of the Ottonian types of the previous century. However, from the 10th to the mid-12th century, the coinage was subject to heavy debasement, with silver content reduced by up to 80 per cent. There were no regular recoinages.

The complexity in the coinage of the southern peninsula and Sicily lies in its historic position at the crossroads of the Mediterranean, where Norman, Byzantine, and Arab influences met and interacted. Unlike the monometallism of the rest of Europe the coinage system comprised gold and copper coins, with only small amounts of silver produced by either the Normans or Angevins. The gold is more fully considered below, but consisted of *tarenì* weighing about one gram. Although originally produced at the Sicilian mints of Palermo and Messina after Arab models, both the mainland mints of Amalfi and Salerno soon began minting *tarenì* under the Normans.²³ The copper coinage is varied and puzzling. Those dating from after the 1140 reform of Roger II move away from Byzantine influence and carry Kufic script. A silver *ducalis*, copying the Byzantine *tracheae* of Alexius I from Thessalonica, was introduced as part of this reform.

In the mid-12th century Portugal and the Spanish kingdoms of León, Aragon, Castile, and Navarre were engaged in the Reconquista. As such, their monetary policies were influenced, to a greater or lesser degree, by the monetary realities of those areas that they conquered from the Almohads, Taifa kings, or Almoravids. The currency then began to coalesce into a fusion of silver and billon (an alloy of less than 50 per cent silver and copper) traditions from Europe and Andalusí gold.²⁴ The billon coinage of the Spanish kingdoms was very similar

22 Day, Matzke, and Saccocci, *Italy (I)*, p. 8.

23 Grierson, *Coins of Medieval Europe*, p. 95.

24 Crusafont, Balaguer, and Grierson, *Iberian Peninsula*, p. 7.

to that of feudal France, although the obols (equivalent to half a denier) were rather more important in the Christian states south of the Pyrenees than in the north.²⁵ The Portuguese coinage comprised billon *dinheiros* and their halves.

Despite all these developments, money, and specifically coined money, was not yet a familiar facet of the traditions of exchange in many parts of Europe, particularly on the western, northern and eastern peripheries and in rural areas generally. These areas, in which coin tended to be issued under royal monopoly, can be briefly summarized here. In Scandinavia, the only coinage of note was that of Denmark. For the most part this comprised broad pennies of poor alloy with a definite German influence, although it was punctuated by a phase of bracteates from the civil war period (1146–1157). In Norway, small, light bracteates or half-bracteates were made, while in Sweden coinage was only revived in the second half of the century with regional variations in the types minted. None of these coins played a major role in the economy.²⁶ In Poland, the currency was made up of small pennies and bracteates, while in Bohemia, there was a continuation of the small silver pennies of the previous century, albeit with a variety of new religious pictorial designs. Hungary struck biface silver pennies and obols; to the south and east lay the former Balkan provinces of the Byzantine Empire, where any coinage minted was in imitation of imperial types.²⁷

In the 1150s the Crusader States comprised the principality of Antioch in the north and the kingdom of Jerusalem in the south, with the county of Tripoli sandwiched between the two. The coinages of the three states drew inspiration from a combination of the local currencies they encountered and the customary coinage of their founders' homelands.²⁸ At the top of the scale were the Fāṭimid gold dinars minted by the caliphs in Egypt and Syria, which were in plentiful supply. The Crusader copies include imitations of two prototypes, those of al-Mustansir (1036–1094) and al-Āmir (1101–1130), but are typically lighter and of lower fineness and display blundered Arabic legends.²⁹ By the mid-12th century the Antiochene coinage had moved

25 Grierson, *Coins of Medieval Europe*, p. 104.

26 Ibid., p. 98.

27 Ibid., pp. 99–100.

28 The post-reform Byzantine coinage of Alexius I that the crusading armies encountered was a far more sophisticated system than those of their homelands, with the possible exception of that of the Normans from southern Italy under Bohemond: Porteous, "Crusader coinage with Greek or Latin inscriptions", pp. 360–62.

29 Metcalf, *Coinage of the Crusades and the Latin East in the Ashmolean Museum*, pp. 43–51. Metcalf attributes the al-Āmir imitations to the kingdom of Jerusalem and those of al-Mustansir to Tripoli.

away from the Byzantine-inspired copper folles of the early century and fully embraced the European-style billon denier. While the denier was a familiar coin type at home, the iconography of the “helmet”-type coinage of Bohemond III (1162–1201) was entirely new, featuring a helmeted bust reminiscent of the mounted Crusader knights seen on murals in the Templar church at Cressac (Charente) and the miniature plan of Jerusalem on a manuscript in the Hague.³⁰ Around the same time as at Antioch (1140s), the kingdom of Jerusalem issued a regular coinage of deniers with schematic representations of the Holy Sepulchre and the Tower of David. Baronial issues from Jaffa, Beirut, Sidon, and Tyre would be struck in small numbers later in the century. The county of Tripoli, which was less rich than its neighbours, issued a plethora of named and anonymous issues. The Provençal influence of Raymond of Toulouse can be seen in the style of the crescent moon and stars of the Tripolitan coins. The county’s interest in coining is of little surprise, as Raymond exercised the right of coinage as count of Melgueil, and two of his retainers, Gaston of Béarn (at Morlaas), and Gerard of Roussillon, possessed mints back in France.³¹

In the mid-12th century monetary transactions in most parts of Europe were conducted in silver pennies. The scourge of debasement and reduction in the physical size of coins – whether from a lack of silver on the market or for purely financial gain – was driven by an increasing demand for money on a continent short of silver bullion. The responses were not universal. Probably the starkest contrast is visible in the English maintenance of fine silver compared to the reduction in fineness in Italy, France, and the southern Netherlands. Both had their advantages, with large silver more useful for certain payments and small low-value coins preferable for daily business. Only in those areas in direct contact with Islamic and Byzantine influences were multi-metal, multi-denominational systems present. It would take the fundamental growth of the bullion supply and new ways of thinking about monetary systems to elicit the changes that would transform money in Europe in the following 200 years.

Mines, Mints, and the Money Supply

The period beginning in the 1160s witnessed a series of precious metal discoveries that fundamentally transformed patterns of minting and the quantity

30 Porteous, “Crusader coinage”, p. 372. The Hague Map is in the Koninklijke Bibliotheek, 76 F 5.

31 Porteous, “Crusader coinage”, pp. 360–62.

of money in Europe. Chief among these was the town that would become Freiberg near Meissen in Saxony. Estimates suggest that hundreds of millions of pfennigs were added to the currency over a 20-year period.³² Typically such mines would grow rapidly, peak early, and then level off, but remain viable for up to a century. Other new silver mines were emerging at about the same time as Freiberg's, and these would invariably transform the local areas and the fortunes of those who held the rights to mine. A village sitting above a rich seam might be elevated to a town or even a commune. Montieri in Tuscany is one such case. Mined for the bishops of Volterra, it was a significant source of silver and remained profitable to the 1250s; other, less rich sites were exploited at Cellerfeld and Oberharz in the Harz Mountains (c.1200); south Tirol (c.1185); Massa in Tuscany; Ems on the Lahn river; and Mechernich in the Eifel.³³ However, the only mine that could compete with Freiberg was at Friesach in the eastern Alps, under the archbishops of Salzburg and dukes of Carinthia. Here, an intensive period of *friesacher Pfennige* production lasted until 1230. These coins have been found in huge numbers in Hungary, from the Alps to the Carpathians, and formed a large proportion of the silver imported into Venice.³⁴ As these sources petered out, new ones emerged in the 1220s and 1230s. The most important were at Jihlava on the Bohemian-Moravian border, which, under the king of Bohemia, was producing four tons of silver a year, and Iglesias in Sardinia under Pisan authority, which was productive until the 1330s.³⁵ Smaller enterprises were known elsewhere: at Brskovo in Serbia; Schemnitz, Göllnitz, and Rodna in the kingdom of Hungary; Ziering in Styria; Longobucco in Calabria; Lüderich on the Rhine; and even an unlikely and comparatively unproductive endeavour at Beer Alston in Devon.³⁶ By far the most impressive new find of the period came in 1298 at Kutná Hora in Bohemia, where peak output rose to 20 tons a year.³⁷

The opening up of new silver mines generated a massive surge in output of the local coinage, but much silver would be sold uncoined to other mints or used in ingot form for large payments.³⁸ Old mints could be reopened or new

32 Spufford, *Money*, pp. 109–13.

33 Ibid., pp. 114–18.

34 Ibid., pp. 136–38.

35 Ibid., pp. 120–21.

36 Ibid., pp. 127–28; Allen, "Silver production and the money supply in England and Wales", pp. 120–21.

37 Spufford, *Money*, p. 125.

38 Ibid., p. 131. Spufford's assertion that ingots were in widespread use has been questioned. For recent work on the use of ingots in Western Europe, see Phillips, "The monetary use of uncoined silver in western Europe in the twelfth and thirteenth centuries"; and for the

ones created to facilitate the conversion of bullion to coin, often under Tuscan or Lombard management. Over the course of the long 13th century large-scale factory mints comprising several workshops were established in some places. The 17 mints of Bohemia were brought together at one site at Kutná Hora, and London and Canterbury increasingly monopolized the production of English coins. But this was not the case everywhere. Between 1140 and 1270 more than 400 new mints were opened in Germany, and north of Rome the number of Italian mints jumped from four in 1130 to 37 in 1250.³⁹

As well as flowing into Italy, Central European silver moved west into the Rhineland (Cologne was an important bullion market), the Low Countries (the cities that dominated the woollen and cloth industries), and eastern France (particularly the Champagne Fairs of Troyes, Provins, Bar-sur-Aube, and Lagny).⁴⁰ The silver that came into these key nodal points then spread into other parts of France, England, and Italy and the Hanseatic towns of the Baltic. Certain coin types in these regions began to dominate: those of Cologne in the Rhineland, *Melgorienses* in the coastal plain of the Languedoc and northwest Spain, the *Proviniois* in Champagne, and the *Parisis* in northern France.

For kingdoms such as France and England, which lacked rich silver mines, bullion had to be earned through trade. In this period several national coin types acquired an international reputation for quality. Perhaps surprisingly, given its position on the periphery of Europe, one of these was the English sterling penny. It was in the context of Continental money flows that the English sterling made its unlikely mark on the European monetary landscape.⁴¹ Unlike many of its Continental contemporaries, the English coinage was under strong, centralized royal control and maintained a high silver content. Records show sterling pennies moving from Champagne to Italy and into Venice by 1202. They moved primarily with trade, but also through large international payments like those levied for Richard 1's Crusade and ransom and Richard and John's financial support for Otto IV's pursuit of the imperial crown.⁴² Figure 6.3 shows the findspots of Short Cross pennies in Continental hoards. While the western French finds come from lands held

date at which gold coins replaced silver ingots as a means of making large payments, see Stahl, "Ingots and the Venetian mint in the later Middle Ages".

39 Svensson, *Renovatio Monetae*, p. 38; and Spufford, *Money*, p. 189.

40 Spufford, *Money*, pp. 138–39.

41 England, Wales, Scotland, and Ireland made up the "Sterling Area", in which sterling coins of each circulated until the 1400s, when Scottish debasement led to its disengagement from the standards set by the English mints. See Allen, "The first Sterling area".

42 Spufford, *Money*, p. 161 cites the figure of 6,000 marks, equivalent to a million coins, as given in 1207.

FIGURE 6.3 Map showing location of hoards of the Short Cross (1180–1247) period found in Continental Europe.⁴³

by the English crown, other clusters of finds, particularly in the Rhineland, show high levels of coin use there. They also travelled to southern France and Italy, Croatia and Romania, and the Aegean and Near East. The dowry of Isabella, sister of Henry III, for her marriage to Frederick II in 1235 was 30,000 marks, or five million coins. Henry's brother Richard of Cornwall made an expensive yet futile attempt on the imperial crown, which sent huge numbers of Long Cross pennies to the Rhineland, and Edward I spent greatly on subsidies against the French. These large sums may seem exceptional, but hoards of sterlings have been recovered, which shows that impressive numbers of pennies were available at different levels of society. The Colchester hoard discovered in 1969 comprised a lead canister containing 14,065 Long Cross pennies.⁴⁴ Another find, made in 1831, was even more extraordinary, as it probably contained as many as 360,000 pennies of Edward I and II.⁴⁵

43 The map was drawn with reference to the listing of hoards found in Allen, "Circulation", pp. 118–20.

44 Archibald and Cook, *Coin Hoards I*, pp. 67–142. The plot on which the hoard was found was likely owned by Jewish moneylenders. A second hoard of 11,000 Short Cross pennies was found on the adjacent plot in 1902.

45 Kelleher and Williams, "Tutbury Hoard", pp. 62–87. The hoard was undoubtedly the war chest of Thomas of Lancaster, which was lost or buried close to his castle at Tutbury in 1322.

FIGURE 6.4 English silver penny of Edward I (1272–1307) struck at Bristol (c.1280–1282), diameter 20mm.

SOURCE: FITZWILLIAM MUSEUM, CAMBRIDGE.

The Brussels hoard of more than 145,000 pennies has a long numismatic pedigree. Found in 1908 and a description only recently published, this find supports the notion, seen in documentary sources, of a flood of sterlings entering the near continent. The abundance of English Long Cross pennies in Westphalia spawned a great number of imitations, most famously those of Bernhard III of Lippe, but it was the English (and Irish) pennies of Henry III's son Edward I (Figure 6.4) that would be imitated on a hitherto unprecedented scale. The main areas for imitation were the Low Countries, specifically Brabant, Flanders, Hainault, Holland, and Luxemburg, but with many smaller mints also getting in on the act. Nicholas Mayhew estimates that more than 100 million sterling imitations were struck, with great numbers of these exchanged for English wool or entering France.⁴⁶ In Denmark, sterlings would have a considerable role up to the 1360s when they were replaced by Hanseatic *wittens*.⁴⁷

As coinage became a more familiar and useful medium of exchange across Europe, the physical size of coins began to change. The most important development in this period was the introduction in Italy of a silver coin larger than the penny. The first of these was traditionally seen as an unexpected consequence of the Fourth Crusade rather than the fulfilment of any monetary policy. The story goes that the silver *grosso* was introduced to facilitate payment to the workmen building the fleet for the Fourth Crusade

46 Mayhew, *Sterling Imitations of Edwardian Type*, pp. 23–27.

47 Steen Jensen, "Danish money in the fourteenth century", p.165.

(1202–1204), but other evidence suggests that the Venetian and Genovese *grossi* were already in use by 1200 if not before.⁴⁸ The *grossi* of Enrico Dandolo (1192–1205) were of almost pure silver, weighed 2.18 g, and adopted a strongly Byzantine design. One face depicts the figure of Christ, while the other shows the doge receiving a banner from St Mark, patron of the city. The introduction of fine silver *grossi* in northern Italy completely altered the pattern of coinage throughout Europe in a short time.⁴⁹ Genoa followed Venice in the early 13th century and Marseilles in 1218. *Grossi* spread across northern Italy in the 1220s and central Italy in 1230, but not everywhere and not in a uniform manner. However, their impact beyond Italy was profound. Veronese *grossi* provided the prototype for the later *kreuzer*.⁵⁰ The 14th-century heirs of the *grossi* in Central Europe were the Prague *grošchen* from the Kutná Hora mines. The opportunity to strike large coins presented by a prolific silver mine on one's doorstep did not always mean there was a market to absorb such coins, as was the case in Bohemia, and so a high proportion of its silver was struck into smaller pieces while many of the *grošchen* were exported to Italy.⁵¹ A coin twice the size of the Venetian *grosso* appeared in Rome in 1253 and inspired the *carlino* and *pierreale* of Naples and Sicily in southern Italy, and thence the *gigliato* of Rhodes and Chios.⁵²

It was, however, the French *gros tournois* that would be the most influential and widespread of the large silver coins in the West, although their uptake was slow from their first appearance in 1266 under Louis IX and Charles II (Figure 6.5). In the east, the Venetian *grosso* was more important than the French *gros*.

The popularity of the *gros tournois* is visible in its wide distribution in hoards across northern Europe.⁵³ In the Low Countries it stimulated the issue of the *petit gros* (worth two-thirds of a *gros tournois*) and after 1305 played a more prominent role.⁵⁴ *Gros* soon entered Germany, as shown in the hoard from Silschede dated 1294, and were being imitated in the Rhineland by 1328.⁵⁵ The Danish hoard of Ebbelnaes included 767 *gros tournois*.⁵⁶ In Mediterranean Europe they appear

48 Day, Matzke, and Saccocci, *Italy (I)*, pp. 637–40.

49 Ibid., p. 16.

50 Spufford, *Money*, pp. 232–33.

51 Ibid., p. 233.

52 Ibid., pp. 228–29.

53 Duplessy, *Trésors Monétaires*, p. 159 lists 58 French hoards, 22 Belgian, and three apiece from the Netherlands and Switzerland which include *gros tournois*.

54 Phillips, "Low Countries", p. 99.

55 Ilisch, "Imitation *gros tournois* from north of the Alps", p. 105.

56 Steen Jensen, "Danish money", p. 165.

FIGURE 6.5 Silver *gros tournois* of Louis IX of France (1226–1270), diameter 26mm.
SOURCE: FITZWILLIAM MUSEUM, CAMBRIDGE.

among coin finds and in documents in varying numbers.⁵⁷ *Gros tournois* entered Italy soon after they emerged in France, but did not have the prolonged later circulation that one sees in the German evidence. In Italy, the coin had little time to flourish, as it occupied the brief period between the end of the *grossi* and the emergence of the first gold coins, after which they disappeared from records and hoards.⁵⁸ The hoard and documentary evidence from northern Italy is good; indeed, imitative *gros* were minted at Asti in some numbers. In central Italy they are found in papal accounts and in Tuscan sources in the late 13th century, but not from hoards.⁵⁹ A contract agreed between Genoa, the king of Valencia, and the archbishop of Taragona regarding salt mining in Ibiza used *gros* as a standard value.⁶⁰ In the Regno, Charles of Anjou made clear attempts to inhibit the use of *gros* (and foreign coins more generally) in favour of his *gigliati*, which from 1303 became dominant in the Mediterranean.⁶¹ The Near Eastern evidence is patchy but shows some circulation in the Latin states of Tripoli and Cyprus and the kingdom of Jerusalem.⁶² Two hoards – “Syria 2” and Ras Shamra – show that *gros* were still in use 30 years

57 Much of the following draws on a survey of relevant material from Mediterranean sources by Phillips, “*Gros tournois* in the Mediterranean”.

58 Ibid., pp. 299–301.

59 Ibid., p. 287.

60 Ibid., p. 297.

61 Ibid., p. 284.

62 Ibid., p. 301 says the hoard evidence suggests that the *gros* came directly from France, rather than through Italy. See also Kool and Arav, “Khirbet Shatta”, p. 262. *Gros* were found

after the abandonment of the mainland Crusader settlements, but arrivals to the mainland into the 1320s were not on any great scale.⁶³

Evidence for the *gros* in England is limited to two hoards, from Mayfield in Sussex and Dover in Kent, and seven single-finds. Both the Mayfield hoard, with its seven *gros tournois* alongside 348 English pennies, and the Dover find, with its array of foreign coins, among them 39 *gros*, have been argued not to have come from the English currency pool at all.⁶⁴ Barrie Cook suggests, however, that *gros tournois* were used by merchants in England. There was certainly a lack of English high-value silver coins, and it may be that these French issues found acceptance, particularly in London and the southern ports.⁶⁵ *Gros* are thought to have inspired the short-lived English groat introduced by Edward I in 1279. The groat's unpopularity came from its heavy weight (six grams) and high value (four pence, which was impractical for internal use). Spufford links its abandonment to its incompatibility with daily and weekly wage-earners.⁶⁶

The Spread of Gold

Though a novelty in northern and western Europe in the 12th century, gold coins were a familiar monetary object across the Mediterranean world. They were an enduring presence in the monetary systems of the Byzantine Empire and the Muslim world from their earliest days, and continued to be so throughout the 12th to 14th centuries. The complex geopolitical inheritance of three areas of Latin Christendom – southern Italy and Sicily, the Iberian Peninsula, and the Crusader States of the Levant – meant that they developed quite exceptional monetary systems rooted in Islamic and Byzantine coinage traditions, often later fused with European influences.

in excavations at Pilgrim's Castle and Acre. The *gros* in the Khirbet Shatta hoard reveal an extensive afterlife, as they were mounted as jewellery alongside Muslim coins.

63 Phillips, "*Gros tournois*", pp. 280–82.

64 Archibald, "The Mayfield (Sussex) 1968 hoard of English pence and French *gros*, c.1307", p.151; and Dolley, "The Dover hoard", pp. 154–55.

65 Cook, "Foreign coins", pp. 254–55.

66 Spufford, *Money*, p. 235. The groat would return triumphantly to England in 1351 when wages and prices had risen significantly from the levels seen in 1279. Many of the early groats that survive in modern collections avoided the melting pot by being converted into dress hooks, a fate shared by many continental *gros tournois* in England: see Kelleher, "The re-use of coins in medieval England and Wales c.1050–1550" for a survey of this phenomenon.

When the Normans arrived in Sicily and southern Italy in the 11th century they found three rival polities. The mainland was split between the Lombard territories and the Byzantine territories of Apulia and Calabria, while Sicily was ruled by the Muslim successors of the Kalbid governors. The adaptability of the Norman diaspora to the monetary systems they encountered through conquest, so visible in the coinage of England and the northern Crusader States of Edessa and Antioch, is writ large in Sicily and southern Italy. Under the Arabs, the gold *tari* had been the mainstay of the Sicilian currency. This system was continued under the Normans.⁶⁷ The design of the coins was changed only incrementally, with Arabic script replaced by Christian motifs such as a tau cross or the rulers' Latin initial. The inscription remained essentially Muslim in its formulation, naming the ruler and being dated by the Hegira. By the reign of William I (1154–1166) the kingdom of Sicily had been formally recognized by the pope and enjoyed an extensive currency based on denominations in three metals (Figure 6.6a). When the Hohenstaufen Frederick II took possession of Sicily, he instituted a new gold *augustale* there in 1231, and at his mainland mints in 1240.⁶⁸

The names of the gold coins that the Christian kingdoms in the Iberian Peninsula began to mint in the 12th century – the *mancus*, *maravedí*, and *dobla* – have the ring of the Islamic world and could easily have originated in Baghdad or Cairo. The gold bullion and tradition of using gold coins came to Atlantic Europe from North Africa, where an abundant gold currency existed under the Almoravids (1094–1147) and the Almohads (1130–1269). The gold itself was drawn northward via the trans-Saharan networks from Mali and the valley of the Niger, and from the western Sudan. Although some made it into southern Europe, the greater part was destined for the Middle East.⁶⁹ Letters of payment, wills, and other documents from the Christian states bordering al Andalus were denominated in Almoravid gold coins.⁷⁰ The Castilian king Alfonso VIII (1158–1214) began to strike a gold coin in imitation of the Almoravid *morabitino* or *maravedí* at Toledo, weighing around 3.85 g (Figure 6.6b). The monarch's Christian sensibilities were reflected in the addition of a cross and the initials ALF on the obverse, while the king's Muslim subjects were satisfied by the continued use of Arabic script, although the inscription was adapted to read “the emir of the Catholics Alfonso ben Sancho, May God support and aid

67 Grierson and Travaini, *Italy (III)*, p. 87.

68 Ibid., p. 169.

69 Spufford *Money*, pp. 163–70; and Crusafont, Balaguer, and Grierson, *Iberian Peninsula*, p. 54.

70 Crusafont, Balaguer, and Grierson, *Iberian Peninsula*, p. 62.

FIGURE 6.6 a) Sicily, William I (1154–1166), gold *tari*, Messina mint, 1154, diameter 11mm;
b) Castile, Alfonso VIII (1158–1214), gold *maravedí alfonsí*, Toledo mint, 1191
diameter 28mm.

SOURCE: FITZWILLIAM MUSEUM, CAMBRIDGE.

him”, and the reverse “the imam of the Church of the Messiah is the Roman Pope. In the name of the Father and the Son and the Holy Spirit. God is One. He that believeth in Him and is baptized shall be saved”. These coins were struck in some quantity and became the gold coin of reference in the Christian states across the Iberian Peninsula.⁷¹ In León, poorer-quality copies were minted, but these did not include any Arabic inscriptions. In Portugal, Sancho I did likewise, striking *morabitini* bearing the *quinas* (five shields), which represented the five Moorish kings supposed to have lost their lives at the battle of Ourique

⁷¹ Ibid., pp. 289 and 725.

in 1139; this motif would become the traditional arms of Portugal. In 1240 Arab types gave way to the double dinar, or *dobla*, in Castile, Portugal, and Aragon.

The states that emerged in the Levant following the First Crusade were superimposed on a region familiar with the use of coin in gold, silver, and copper. Fāṭimid dinars minted in Egypt provided the prototypes for the kings of Jerusalem and counts of Tripoli to mint their own gold bezants.⁷² Copies of the dinars of al-Āmir (1101–1130) have been attributed to Jerusalem, and those of al-Mustanşir (1036–1094) to Tripoli. The system appears to have worked well enough and provided the Crusader States with a high-value gold coinage. There is little evidence to suggest they circulated much beyond the borders of Crusader lands except in the Syrian hinterland as far as Aleppo and Maras, where no Muslim gold was available.⁷³ However, in 1250 the papal legate Eudes of Châteauroux arrived in Acre with the French king Louis IX. He was apparently outraged to find Christians using coins bearing “the name of Mahomet and the number of years from his nativity [*sic*]”.⁷⁴ His correspondence with Pope Innocent IV survives in the papal reply and a change of design to a more acceptably Christian model followed. Crosses became prominent motifs, and the Arabic inscription now included proclamations of faith in the Trinity and dated the coins from the incarnation of the Messiah. The Latin initials B and T were inserted into the Tripolitan coins, perhaps to denote Bohémond and Tripoli.⁷⁵ The Crusader bezant ended with the collapse of the mainland Crusader States in 1291.

Always at the vanguard of monetary innovation, the Italian city states of Florence and Genoa began minting their own gold coins in 1252 (Figure 6.7).⁷⁶ Gold from North Africa and Sicily had been moving through the commercial cities for some time. Unlike other gold coins of the period, the new Florentine

72 Metcalf, *Coinage of the Crusades*, outlines the chronology of the types of the kingdom of Jerusalem and county of Tripoli based on a characteristic reduction in the fineness of the gold over time. In the kingdom of Jerusalem, this diminished from c.80 to c.66 per cent (pp. 43–51). Three issues have been identified for Tripoli: a rare type with 87–98 per cent gold; an interim issue of 71–90 per cent; and a third using a standard of 62 per cent (pp. 150–52).

73 Bates and Metcalf, “Crusader coinage with Arabic inscriptions”, pp. 439–40; and Metcalf, *Coinage of the Crusades*, p. 43.

74 Metcalf, *Coinage of the Crusades*, p. 44.

75 Ibid., p. 151.

76 Lopez, “Back to gold, 1252”, laid out the chronological arguments for the Genoese first striking gold in 1252. Day, Matzke, and Saccocci, *Italy (I)* (pp. 266–68) have shown that the first Genoese gold coin was the *quartarola*, based on the theoretical weight standard of the south Italian and Sicilian *tari* and valued as a type of quarter-florin. The *genovino*, which was equivalent to the Florentine florin, did not appear until the early 1270s to late 1280s, and was inspired by its Florentine neighbour.

FIGURE 6.7 Gold florin of Florence, 1252.

SOURCE: FITZWILLIAM MUSEUM, CAMBRIDGE.

florins were based on the Tuscan money of account, equal to one lira or 20 *soldi*,⁷⁷ and were thus the first pounds to be coined anywhere in Europe.⁷⁸ The other Italian gold coin that would find international fame, the ducat, would not be issued by Venice for another 30 years. The florin took some time to gain popularity in Tuscany, but once it gained acceptance it spread rapidly, inspiring similar types in nearby states and then in northern and western Europe. By the 13th century florins were popular in the Levant. They have been found in hoards in Aleppo and the harbour at Acre,⁷⁹ but here they would have found competition from the well-established local dinars that were in use within and without the Latin settlements of the Levant.

It was against the background of emerging gold currencies that Henry III attempted to introduce an English gold penny in 1257. Gold coin was not a commonplace in England, although documentary references are known. Just seven 11th- and 12th-century gold coins were recorded in Marion Archibald's survey of Islamic and Islamic-inspired gold coin finds in Britain,⁸⁰ and of

77 Spufford, *Money*, p. 177.

78 Spufford, "The first century of the Florentine florin", pp. 422–23.

79 The Aleppo hoard is thought to have been loot from the destruction of the last Crusader city in the Levant. Six hundred of the 630 coins were gold florins, but this find is poorly recorded. A recent hoard dredged from the harbour at Acre consisted of 70 or 80 coins and shows that high-value money was required to supplement the Crusaders' own gold bezants as late as the 1270s: see Kool, "Florins from Acre".

80 Archibald, "Islamic and Christian gold coins from Spanish mints found in England, mid-eleventh to mid-thirteenth centuries", pp. 377–96.

these, four bore 12th-century dates. A recent find of an Almohad dinar of Abu Ya'qub Yusuf I (1163–1184) in Suffolk adds to two Almoravid dinars of Ali b. Yusuf (1106–1142) found near St Paul's before 1879, and a Murcian dinar of Muhammad b. Si'd (1147–1172) in Hertfordshire.⁸¹ Philip Grierson suggested that documentary references to payments in Islamic gold coins would not have been expected to be reckoned in such coins, while Peter Spufford sees the use of foreign gold as limited to almsgiving and other special or ceremonial purposes.⁸² Cook has challenged these positions in highlighting the many references to "bezants" (Byzantine *hyperpyra*, valued at around two shillings) in the Pipe Rolls.⁸³ Despite the abundance of documentary references, just one bezant is known from England. The Accounts of the King's Wardrobe in the Pipe Rolls and entries in the Fine Rolls give clear evidence for the amassing of two great gold treasures by Henry III: one in the 1240s for his proposed Crusade to the Holy Land and, when this had been spent on the Gascon expedition of 1253–1254; a second, later in the 1250s, which was intended for an expedition to Sicily to install his son Edmund at the expense of the Hohenstaufen rulers.⁸⁴ In any event, much of this gold was used for the unsuccessful issue of Henry's own gold coins. These weighed two pennyweights and were valued at 20 pence, matching the gold-to-silver exchange rate of the time.⁸⁵ The French *ecu d'or* of Louis IX met with similar failure.

Like the *grosso* before it, the florin had a significant impact in France. The Champagne fairs drew gold coins northward, and florins were noted at Beaune in Burgundy in documents by 1274. Peter Spufford sees the Popes at Avignon as a critical agent in increasing the circulation of gold coins in southern France.⁸⁶ Philip IV (1285–1314) introduced a gold coinage in 1290 at the same size, weight, and fineness as the florin but, as was the case with the *grosso*, the French found a larger, more valuable version of the Italian coin to be more popular. The florins and double florins were the principal high-value money in France until the *mouton* was introduced in 1311.⁸⁷ The florin standard of weight and fineness, if not the exact type, was imitated in other Italian cities by the end of the 13th century, while the coins had spread all around the Mediterranean and were being imitated in Achaia. The European impact can be seen in early-14th-century

81 Ibid., p. 396.

82 Grierson, "Oboli de Musc", pp. 76–77; and Spufford, *Money*, p. 183.

83 Cook, "The bezant in Angevin England".

84 Carpenter, "The gold treasure of King Henry III", pp. 61–62.

85 Carpenter, "Gold and gold coins in England in the mid-thirteenth century", p. 111.

86 Spufford, *Money*, p. 183.

87 Spufford, "Florentine florin", pp. 428–29.

commercial documents in which florins were valued against local silver currencies in London, the Low Countries, southern Germany, Lübeck, Prussia, and Hungary.⁸⁸ In Denmark, florins are found in small numbers after c.1300; indeed, the 1319 will of Erik VI stipulated that 18 florins be distributed to every Danish monastery.⁸⁹

In addition to developments in the physical coinage, there were equally important changes in non-monetary forms of exchange in the extension of banking, both local and international, and the increasing role played by credit. Italians were at the forefront of extending the use of bills of exchange, which had evolved to reduce the risk of agents moving large amounts of precious metal from place to place.⁹⁰ The merchant banking network, which reflected the principal nodes and routes of north Italian trade, spread across Europe and massively increased the supply of money for international transactions.⁹¹ The mechanisms of banking spread from the merchant communities to the papacy and nobility, increasing its efficacy and extent. Even with the stresses and monetary contractions of the period after the Black Death, banking was here to stay.⁹² The other strand which developed was that of credit. There is some debate over the form(s) and function(s) of medieval credit. Pamela Nightingale suggests that credit expanded and contracted in line with changes in the money supply, while James Bolton says that was not necessarily true due to Nightingale's misinterpretation of her sources and the beginnings of negotiable credit instruments. Chris Briggs suggests that credit expanded and contracted in response to the money supply, but also in response to the character of legal institutions and debt recovery mechanisms.⁹³

Money in Europe on the Eve of the Black Death

By necessity, this chapter has focussed on the impact that a resurgent silver supply had on the coinages of Europe.⁹⁴ This silver, in combination with the development of gold currencies, saw the emergence of new coin types that quickly

88 Ibid., p. 430.

89 Steen Jensen, "Danish money", p. 168.

90 Spufford, *Money*, pp. 254–55.

91 Spufford, *Power and Profit*, pp. 34–38.

92 Ibid., pp. 16–19.

93 See Briggs, "The availability of credit in the English countryside, 1400–1480", p. 2.

94 It was during the 1340s that the first signs of a silver bullion shortage were emerging.

gained an international reputation and were subject to large-scale imitation. Chief among these were the sterling, the *gros*, and the florin. The high value of gold coinage, which – north of the Alps – was still only minted in France, and to some extent the larger silver, meant that they were not universally practical. However, the flexibility of the multi-denominational system, backed up by petty coinages, allowed participation from a broad array of coin users and the extension of monetization beyond the traditional bounds of two centuries earlier. This system was not without its problems. The relative value of silver to gold fluctuated and led to complex shifts in the value of coinages against one another. By the 1350s the monetary landscape had palpably shifted. In France, a resurgent monarchy had, by the time of Louis IX, asserted royal control over the coinage and ended the age of the feudal denier. The strong English coinage had added fractional denominations and was on the verge of instituting large silver and gold. Germany was later than its neighbours in introducing any large silver or gold coins. The Low Countries saw possibly the greatest change over the period, a consequence of its burgeoning role as the commercial hub of northern Europe. In northern Italy, which had given Europe the prototype for high-value coins, the florin and the ducat emerged as the most important gold currencies. By the start of the 14th century areas with no major history of Islamic or Byzantine traditions had started minting gold coins, such as the imitative florins of the Rhone valley, the southern Netherlands, and the Rhineland. The coinage of the Spanish kingdoms was much improved in quality, although Portugal still lagged behind. In Denmark, circulation was dominated by the principal foreign coins of silver and a little gold. In the eastern Mediterranean, the *grossi* of Cyprus oiled the wheels of trade, as did the *gigliati* of Rhodes and Chios in Asia Minor.

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