MEDIEVAL MONEY MATTERS



Edited by
Diana Wood

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Preface

All but one of the papers included in this book were delivered at a one-day conference on 1 December 2002. It was held at the Oxford University Department for Continuing Education at Rewley House, Oxford, as part of the Local History programme. The subject of medieval money might not appear particularly local, but the collection focuses on English money, and much of the evidence used is that familiar to local historians.

As is so often the case in such ventures, it has taken longer than originally anticipated to edit the volume, for which I can only apologize. My warmest thanks are due to the authors for their stimulating papers, their help, and their patience. I am particularly grateful to Martin Allen for agreeing to include his paper in this collection and for his illustrations. I should also like to record my gratitude to my local history colleagues, especially Dr Adrienne Rosen, for their support, to the technical and residential staff at Rewley House, and to all those at Oxbow Books, especially Sarah Monks, who have contributed so much to the production of this book. But above all I thank all those who came to the conference on a depressingly wet day, and who did so much to make the day a memorable one by their enthusiasm and their lively questions and comments.

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List of Abbreviations

AgHR	*Agricultural History Review* (Oxford, 1953–)
BAR	British Archaeological Reports (Oxford, 1974–)
BNJ	*British Numismatic Journal* (London, 1903–)
CCR	*Calendar of Close Rolls preserved in the Public Record Office* (London, 1892–)
EconHR	*Economic History Review* (London/Oxford, 1927–)
EHR	*English Historical Review* (London, 1886–)
HR	*Historical Research* (London, 1986–)
NC	*Numismatic Chronicle* (London, 1838–)
NCirc	*Spink Numismatic Circular* (London, 1893–)
ns	new series
os	old series
P&P	*Past and Present. A Journal of Scientific History* (London/Oxford, 1952–)
RS	*Rerum Britannicarum medii aevi scriptores*, 99 vols (London, 1858–1911) = Rolls Series
SCBI	Sylloge of Coins of the British Isles (London/Oxford, 1958–)
TRHS	*Transactions of the Royal Historical Society* (London/Cambridge, 1871–)

Introduction

The most important aim of this book on *Medieval Money Matters*, as it was of the Rewley House conference, is the realization of its title – the hope that it will emphasize that medieval money *does* matter to historians. But this is not its only purpose. Over half a century ago Philip Grierson, Professor of Numismatics and the History of Coinage at the University of Brussels, observed: 'Historians have much to learn from numismatists, but there is a barrier of non-recognition and non-comprehension which must be broken down before each group can make use of the work of the other in the manner most helpful to both.'[1] This collection illustrates the collapse of Grierson's barriers. Finally, the book is an attempt to inform its readers of the results of current research in the field of medieval money matters.

James Bolton opens the collection with the all-important questions of what are money and a money economy, and when a money economy emerged in England. He takes the definitions of William Stanley Jevons of 1875 as his starting-point. Money functions as a means of exchange and as both a standard against which to measure value and a store of value. Its chief properties are that it is portable, indestructible, easily recognized, divisible, stable in value, and that coins are of uniform weight and fineness. In locating the beginnings of an English money economy Bolton stresses the importance not just of economic, demographic, and administrative factors, and the more specific one of the bullion supply, but also the parallel developments of numeracy, evidenced in reckoning and accounting, weighing and measuring, and of literacy, seen in the legal enactments and processes which underpinned commercial transactions. At what point did these converge to allow the money economy to develop?

In examining the uses of money in medieval Britain, Richard Britnell, too, focuses on the three functions emphasized by Jevons. In discussing money as a means of exchange he highlights the importance of the twelfth- and thirteenth-century development of both urban and rural markets in stimulating the monetary economy – not just in terms of cash sales, but also the collection of market tolls and rents in cash. The use of money in everyday transactions, however, was limited by the amount of coinage in circulation, the money available to the majority of people for spending after the payment of essential rents and taxes, and the limited flexibility of the silver penny – for most of the period the only denomination in circulation – which was too large for small market transactions, and inconveniently small when large sums had to be collected or transported by the king or great landlords. In the second section of his paper Professor Britnell examines the problem that the money used in accounts to measure value, that is, the pound sterling (240 pence), the mark (180 pence), and the shilling (12 pence) was simply 'money of account', and bore little relationship to the money actually in circulation. Finally, in examining money as a store of value, Britnell highlights the issue of accumulation, both the small but numerous reserves

hoarded by peasants and townspeople, and the huge sums accumulated and stored by royalty, aristocracy, and leading ecclesiastics. Amounts of money either lying idle or savings suddenly being released could have a significant effect on the amount of money in circulation and therefore on the economy as a whole.

Martin Allen's article on the English currency and the commercialization of England concentrates on the period from the late twelfth century to the 1340s. He shows how the reorganization and centralization of the mints led to a considerable increase in the size of the currency, and the vital contribution this increase made to the commercialization of the economy, as evidenced by rising prices and the growing number and variety of transactions. It was not so much the introduction of low-value coins, such as the round halfpenny and the farthing, nor the introduction of a gold coinage in 1344, nor government measures to protect the value and uniformity of the currency which motivated commercialization: it was the increased volume of the currency.

Martin Allen deliberately omits any discussion of the impact of credit on the economy, and this theme is taken up by Pamela Nightingale in her paper on money and credit in the economy of late medieval England. She sets out to discover the extent to which credit in medieval England, as today, was controlled by political and economic forces, as opposed to the preferences of individual debtors and creditors, and the ways in which it affected the economy: did it increase or decrease economic stability? Credit had developed in response to a shortage of coin, but could not entirely compensate for it. Dr Nightingale studies the use of cash, barter, and credit from the account book of a London iron merchant, Gilbert Maghfeld, for the crisis years 1390–5. There were two especially critical years, 1392–3, when the sales of iron collapsed, and 1394–5, when prices fell overall, domestic trade declined, and credit contracted. Maghfeld attempted in vain to remedy his situation in 1394 by switching from retail trade to money lending, and his death in 1397 saved him from almost certain bankruptcy. Revising the conclusions of previous scholars, Dr Nightingale considers that the main, though not the only, cause of the crises was the decline in the output of silver coinage essential for the functioning of the retail trade. Ultimately the supply of credit could not be increased indefinitely without the supporting structure of an adequate supply of coinage.

Nicholas Mayhew reiterates the importance of studying the coinage in order to understand the money supply: coins were the essential component of the money supply. In his paper on coinage and money in England, 1100–1500, he returns to the early twentieth-century Quantity Theory of Money, or Fisher equation, which tries to explain the relationship between the money supply and the rest of the economy in the formula $MV = PT – M$ being the money supply, V the velocity of circulation, P the level of prices, and T the volume of transactions. Before estimating M and GDP for various dates between 1086 and 1526 (with the caveat that the figures are no more than estimates) he emphasizes two points. The first is that the use of coinage was more widespread and important in the eleventh century than formerly thought. The second is that V, the so-called velocity of circulation, does not refer to the number of times money payments were made, but is an indication of the frequency with which money had to turn over in order to correspond with PT. The more money there was in circulation, the fewer times it had to turn over to achieve the same result, so that the

figure for V tends to fall over time, with an increase in the money supply, rather than to rise as an indication of economic growth. The figure for V is closely linked with those for M, P, and T, and can provide an index of monetization only to the extent that the other figures are accurate.

If there is a common theme to this book, it is the importance not so much of money *per se*, but the supply of money in circulation. It was this which determined the movement of prices, of trade, and of credit – in short, it was this which underpinned the commercialization of the economy. The availability of coinage was the most important medieval money matter.

Diana Wood

Note

1. Philip Grierson, *Numismatics and History*, Historical Association Publication G19 (London, 1951).

Chapter 1

What is money? What is a money economy? When did a money economy emerge in medieval England?

James Bolton

In 1875 William Stanley Jevons, one of those eminent Victorians who made such a lasting contribution to their particular academic or professional discipline, published a book called *Money and the Mechanism of Exchange*. The opening lines of this influential work are among my favourite 'beginnings':

> Some years ago, Mademoiselle Zélie, a singer of the Théatre Lyrique de Paris, made a professional tour round the world, and gave a concert in the Society Islands. In exchange for an aria from *Norma*, and a few other songs, she was to receive a third of the receipts. When counted, her share was found to consist of three pigs, twenty three turkeys, forty five chickens, five thousand coconuts, besides considerable quantities of bananas, lemons and oranges. At Les Halles in Paris, as the prima donna remarks in her lively letter, printed by Monsieur Wolowski, this amount of livestock and vegetables might have brought her four thousand francs, which would have been a good remuneration for five songs. In the Society Islands, however, pieces of money were very scarce; and as Mademoiselle could not consume any considerable portion of the receipts herself, it became necessary in the meantime to feed the pigs and poultry with the fruit.[1]

It is a good story, and it has a point. Jevons was trying to define money, its characteristics, and its functions in a money economy – my purpose here. His definitions have been much criticized, but they have stood the test of time. Open almost any modern textbook on economics and, acknowledged or unacknowledged, they are being used – money as a standard or a store of value, barter as a double coincidence of wants. The quotation also provides us with a beginning, as an answer to the first question, 'What is money?' because it shows us that money need not take the form of coin. In primitive societies, where there is only a limited market economy, or in modern times when there is dislocation through war or politics, then commodity money is used. It is often called primitive or special-purpose money, and it can take a quite staggering variety of forms. Cowrie shells, slabs of salt, whale and porpoise teeth, woodpecker scalps, giraffe tails, and cattle have all been used as forms of primitive money. Cigarettes and chocolate have served the same purpose in two world wars.[2] Using relatively modern evidence to help our understanding of the role of primitive money in ancient and medieval societies has its dangers. Then, as even now, completely marketless local economies may have existed, whilst the various commodities listed above were not always used for purposes of exchange. Some are probably better described as 'valuables',

which could also be used in non-commercial political and social ways, such as death compensation, bride wealth, or war alliances.[3] Nevertheless, their use does suggest that money existed before coin, that in the ancient and medieval world there could be exchange without coin. Sometimes, too, the commodities have a value in themselves: cattle, one of the commonest forms of primitive money, can be slaughtered for food. But commodity money is an unsatisfactory medium of exchange. Cattle, or any animals, 'have serious disadvantages as money. All goats are not alike; if a man sells a piece of land for twenty goats, he may consider himself cheated when he receives the twenty skinniest and most diseased of the purchaser's flock. Goats have other disadvantages. An outbreak of disease may decimate a man's wealth. The breeding season will cause a plethora in the community's supply of money.'[4] Nor can cattle, or the stone wheel money of Yap in Micronesia, easily be cut up to allow for small purchases, and they are not transportable, they cannot be carried about on one's person, to be used when needed. Another substantial problem is that the commodities can only serve as money where that commodity or article is accepted as having some value or worth. Yet commodities were almost certainly used as money in early societies, and as Sir John Hicks has famously said, there was money before there was coinage.[5]

The step upward from the use of primitive or commodity or special-purpose money in a non-market economy to the use of coinage, general-purpose money, in a market economy is a very substantial one. How it was achieved is a matter of considerable debate amongst historians, anthropologists, and numismatists, and very little agreement. Any schema constructed to show neatly how coins emerged as the standard or normal form of money almost inevitably attracts bitter criticism. When W. S. Jevons defined the attributes or functions of money, in the late nineteenth century, he did so in the context of a market-oriented western capitalist society. But, as Helen Codère points out, Jevons's definitions of the functions of money as a common measure of value, a medium of exchange, and a store of value are both overlapping and confused, whilst Grierson states firmly that Jevons defined money only in terms of its modern functions.[6] In spite of such trenchant criticism, Jevons's definitions have stuck, and they are used as a starting-point for discussion by students of primitive economies and primitive money, as well as by most modern economists. To be fair to Jevons, he did distinguish between the functions of money and its properties, and saw that those properties, portability, indestructibility, homogeneity (coins of equal weight and fineness), divisibility, stability of value, and cognizability, changed according to the state of the money economy.

There is not much more agreement as to how money became coin, but it is not the intention here to enter fully that debate. It is enough to acknowledge that it involves the interaction of a series of factors, and particularly the growth of exchange and of the market, and the growth of the 'state', not in the all-embracing modern sense, but of defined territorial entities, kingdoms, principalities, counties, or independent or semi-independent cities controlling their own affairs. Firstly, in terms of exchange, there needed to be a unit of exchange that could act as both a store and a standard of value. Commodities, by and large, are not stores of value. The disadvantages of using cattle as a form of money have already been seen. Similarly, grain or fish or furs are not of much more use: all are too perishable. There was a need for something, some commodity that could be stored away and hold its

value whilst being stored, to be used for exchange only as and when needed at a later date. There was also a need for a commodity that could act as a standard or measure of value, against which exchanges or other transactions could be measured. If, for example, a cart is to be exchanged for so many cattle or sheep or goats, then there has to be some understanding that there is equity within the exchange, that the cart is worth so many cattle and vice versa. If the cart and the cattle can be appraised as both being worth so many units of exchange, then the one can be sold for the other. No units of exchange need change hands. They are simply being used as a standard of value, to make sure that both sides of the sale are equal. In the same way, units of exchange can be used to value a man's worth, his blood price or wergild, payable in early Germanic society to his kin on his death or as compensation for injuries. The laws of Ine of Wessex, promulgated between 688 and 694, show society stratified according to the sums paid as wergild, from the 1,200-shilling *gesithcund* man in Wessex to the Welsh rent payer or *gafolgelda* at 120 shillings.[7] These were probably, almost certainly, not sums of money actually paid to the kin. Rather, coin was being used as a standard or measure of value, and other goods or commodities equivalent in value to that sum would be handed over. So, in Normandy in 1107 a debt stipulated as 20 solidi (shillings) was settled with a horse to that value; in Spain in 905 a debt of 25 solidi was settled with cloth, oxen, and silver; and in 933 a debt of 600 solidi with vases, caparisons, horses, fine cloths, and coins. Here the solidus, the shilling of 12 silver pennies, was being used not to settle debts, but as a standard of value to assess the goods with which the debts were settled.[8]

For units of exchange to act as both store and standard of value they had to be made of some substance which was both durable and regarded as valuable by geographically wide-ranging groups of people. As Crowther says, 'It is a comparatively early discovery in the history of money that metals are among the most suitable of all commodities to serve as money.'[9] Most metals were used as money at one time or another, iron, copper, and bronze particularly, but gold and silver became pre-eminent, in western civilization at least. Gold was too scarce and so too highly valued to serve as general purpose money in the early and central Middle Ages. Silver, by contrast, was 'precious, but not too precious'. Supplies were not unlimited, but sufficient to make wide circulation of the coins struck from the metal possible, and so silver coins became the most commonly used units of exchange in the medieval western world. Both metals are also light in weight and high in value. Coins struck from them can be carried around and stored fairly easily, unlike those made from iron or other heavier metals, although gold and silver did have one major disadvantage: they were both soft metals, and loss by normal wear and tear, especially of silver, was high.[10] It is not surprising, therefore, that from the earliest times coins were made from gold and silver. Yet the simple striking of a coin, not in itself a difficult technical problem, might not involve its use as money. It could be a political action, since coins could be prestige symbols, as they certainly were in the early Anglo-Saxon kingdoms in England.[11] For coins to be useful as stores and standards of value and as units of exchange they required certain other attributes. They had to be in use for a substantial period of time. Defining money as a standard of value suggests that the units of exchange were in continuous use and held their value, over many years, so that they could be used both as a medium for deferred payments and as a store of value. Coins must also have an agreed and accepted value. In practice, that meant that they

had to have a recognized weight and a known bullion content, and each coin in the series would have to meet those standards. How could users know that it did? The only practical way was for the coins to be validated in some way by 'the state'. They would have to bear the recognized mark or symbol of that state, usually a portrait of the ruler, with his name, on the obverse, and a design, on the reverse, often to prevent clipping. In the case of English coins, the names of the mint at which the coin had been struck and of the moneyer who struck it were also put on the coin. For the ruler, these symbols were important ways of disseminating propaganda and of asserting his authority widely through the population. They also gave him a means of checking the authenticity and quality of the standardized coinage circulating through his realm, which was often struck at some distance from the centre. More importantly, to the customer, the user, they gave the coins recognizable legality and credibility, and so the confidence to use them.[12]

Finally, coins had to have three other attributes to make them widely acceptable as units of exchange. They had to be portable, so that they could be carried from one place to another and then pass from hand to hand. They also had to be of a size that would allow them to be stored easily, and they had in some way to be divisible, with the subdivisions related to each other in terms of weight and bullion content. As will be seen, specie-based coins were often high in value, because of the amount of gold or silver they contained. This meant that it was often difficult using them to make small purchases. It was therefore important, and particularly as the market economy grew, either to have a main coin that could be physically subdivided into halves and quarters, or to strike lesser coins, halfpennies, and farthings, again directly related in weight and value to the main coin. This would allow small purchases to be made either with one coin or a mixture of coins.[13] General-purpose money that could be used in a whole range of transactions for both goods and services and for payments to the state had to have these attributes or functions. Hodges, in his *Primitive and Peasant Markets*, summarizes the definitions of such attributes given by the anthropologist Marvin Harris, and it is appropriate to cite the main headings here. They are remarkably similar to the properties of money as defined by Jevons in his classic study, perhaps more so than most anthropologists would care to admit, but they certainly help focus attention on the qualities that all-purpose money should possess. They are:

1. Portability. It should come in shapes and sizes convenient for being taken from one transaction to the next.
2. Divisibility. Its many forms and values are multiples of each other.
3. Convertibility. A transaction made in a higher-value unit can be made equally well in lower-value multiples.
4. Generality. Virtually all goods and services have a monetary value.
5. Anonymity. For virtually all purchases, any person with the appropriate money can make a transaction.
6. Legality. The nature and quality of money in circulation will be controlled by the state.[14]

We have, then, definition of general-purpose money and of its main characteristics. Its wide circulation would not, of itself, create a money economy. For that to emerge there would have to be parallel developments in law and legislation, in literacy and numeracy, and

within the economy itself in terms of growth in population and in the number of markets and fairs. Before discussing these, however, the scope of the argument needs further limitation before it becomes unmanageable. What follows mainly concerns medieval England, and it is important to know what coins were in circulation, from the silver pennies to the gold coins of various denominations after 1343. The Carolingians in the eighth and ninth centuries had established the silver penny as the standard coin in north-western Europe, including England. There were 12 of them to the shilling and 240 to the pound. The penny, a small coin about the size of a current 5- pence piece and with a silver content of around 92 per cent, remained the workhorse of the currency throughout the period. To create fractional coins the pennies were deliberately cut into halves and quarters, halfpennies and farthings, either at the mint or whilst they were in circulation. In Henry I's reign (1100–35) some round halfpennies were struck, and again in Henry III's reign (1216–72), but finds of both these coins are rare, suggesting circulation was limited. It was only from the recoinage of 1279 that halfpennies and farthings were struck in any quantity, although there always seemed to be complaints in the fifteenth century about the lack of small change. But until 1489 there were neither shilling nor pound coins. These were simply 'ghost' moneys, moneys or denominations of account, and in England they were joined by another such 'ghost', the mark of 13*s.* 4*d*. They were there, and had to be there, as devices to make accounting easier. Over time, in physical terms of actual coins in circulation, reckoning became more and more complex. First, in England, a new silver coin was struck, the groat worth 4*d.*, issued unsuccessfully in 1279, but then successfully in 1341, with a half groat worth 2*d.* to accompany it. Some gold coins from foreign mints were used in England, but then in 1343, and in the face of an influx of gold from France, Edward III decided to strike his own gold coinage. From that point, there were two metals in circulation, and a new and bewildering range of nobles, half and quarter nobles, and later angels and half angels, and ryals and half ryals. Their face values also changed. Edward III's first series of nobles were worth 6*s.*, 3*s.*, and 1*s.* 6*d.*, but they were soon taken out of circulation to be replaced by gold coins with face values of 6*s*. 8*d.*, 3*s.* 4*d*., and 1*s.* 8*d.*, and later there was a 10*s.* coin. Most peasants and townsmen probably only saw or used gold coins occasionally, perhaps to settle yearly accounts, but they, and society generally, had to cope with what were effectively two types of currency, coins of gold and silver that physically existed and 'ghost' moneys there solely for the purposes of reckoning.[15]

Secondly, although the following discussions will treat England as a unity in terms of the use of money and the emergence of a money economy, that is probably a mistake. There are clear differences between the east and south-east and the north and some western parts of the country in the degree to which money was available and the extent which it was used in exchange. All that can be done here is acknowledge that the differences existed, but also accept that the majority of the population lived in the increasingly monetarized areas of southern, central, and eastern England.[16] Finally, we should also accept that there were fluctuations in the use of money, or rather of coin, related to its availability. Because the coins literally wore out through use, were hoarded, or were lost, new ones had to be struck and issued regularly, year in and year out. That required precious metals obtained on the international market, and if for any reason they were not to be had, then no new coins could be struck. When complete recoinages were undertaken, much of the bullion needed came

from the reminting of old coins, but not by any means all. The size of the circulating medium was to some extent controlled by the bullion supply, and it is argued that in the late fourteenth and fifteenth centuries the European 'bullion crises' had severe consequences for the money supply in England and consequently for the economy generally. This may or may not have been the case, but, again, all that can be done here is to acknowledge the problem and concentrate on the argument about what went to make up a money economy and when it first emerged in medieval England. Whether it then faded and died in the mid-fifteenth century is entirely another matter.[17]

So, given these considerations, a definition of what constitutes or constituted 'a money economy' is now needed. It is a phrase that is used as indiscriminately as 'the rise of the middle classes' or 'the National Health Service is safe in our hands', and serves to explain almost anything, from the growth of markets and towns to the king's ability to raise taxes and the rise or fall of this or that 'class', particularly in undergraduate essays. But they are not alone in this. 'The existence of a money economy raises points that are fundamental in any discussion of the Anglo-Saxon economy', writes Henry Loyn in his classic *Anglo-Saxon England and the Norman Conquest*, whilst in his recent and extremely interesting *Atlas of Anglo-Saxon and Norman Coin Finds* (which is far more than just that), Donald Metcalf argues that the 'scale of the [Anglo-Saxon] currency was so large that it could have serviced a money economy which touched the entire population.' Others are more circumspect. Dr Reynolds is to be congratulated for having an entry 'money economy' in the index to her magisterial *Fiefs and Vassals*, but never using the term in her text. Recently 'the market economy' seems to have replaced the 'the money economy', but almost implicit in most arguments about the growth of a market economy are assumptions about the existence of a money economy.[18]

It is easier to use the phrase than to explain its meaning. Modern economists do little more than decry the definitions given by Jevons and then repeat them almost verbatim. Smith, Ricardo, Hume, and Marx are of no more help. The writings of social anthropologists are more useful, as are those of historians who take their ideas and apply them to medieval European societies. Richard Hodges is a case in point. His two books, *Primitive and Peasant Markets* and *Dark Age Economics*, have been much criticized, yet they contain valuable discussions about the nature and use of money, although still without defining 'the money economy'. What follows is an attempt to do so, first by defining the parts that go to make the whole, and then applying the criteria to the three and a half centuries between 973 and the 1340s, before the introduction of gold coins, to see if at any point a money economy had emerged. It begins by stating the blindingly obvious, and without apologies, because it is all too often forgotten. For money to be used widely and not simply as a standard of value in exchange, for it to replace the time-consuming and inefficient system of barter, then there has to be enough coin actually in circulation. Measuring when this actually happens is difficult. There are now, and thanks largely to the very recent work of Dr Martin Allen, reasonable figures for the growing volume of the circulating medium or the money supply (M) between about 1100 and the 1340s. They show its total volume at given times, but they do not indicate how much might be available for general use. One way of showing this is by calculating averages of coin per head of population, although it is not an entirely satisfactory

method.[19] Such averages disguise substantial inequalities in the distribution of wealth and do not by and large allow for hoarding, but they can provide a crude answer to the critical question: when can we say that there was sufficient coin in circulation to allow payments to be made using pennies or halfpennies or farthings, and to be made regularly, even for the smallest transactions, always allowing for the seasonal fluctuations in the availability of coin? We also have to ask ourselves the allied question: what factors will allow the production of that critical amount of coin? And we also have to acknowledge one other important point. Even when there is a sufficiency of coin in circulation to allow its use in basic exchange, barter in its various forms will not disappear. It never does. Today academic book reviewing is a form of barter: you supposedly read and review books which you get to keep as payment. Baby-sitting and school-run circles are forms of barter, and if you have ever entered the nightmare world of employing builders, and have overheard their lengthy conversations on your telephone at your expense, then you will be aware of the barter that goes on: 'I'm just building my new house, and if you come round and do my electrics, I'll do your plastering next time.'

Some would argue that this is all that matters, that when you had a sufficiency of coin in circulation to allow payments of all kinds to be made, from taxes to the purchase of a loaf of bread, using pennies or fractions of pennies, then you have a money economy. That is not so. The emergence of a money economy depends upon a convergence of circumstances, a whole series of factors working together, each enhancing and accelerating the other, as Alexander Murray has it, to create or refine mechanisms for reckoning, measuring, and accounting, and the legal instruments and actions that are essential to its, the money economy's, workings.[20] Many of these factors result from or are allowed by non-economic circumstances or conditions. The spread of numeracy and of reckoning and accounting, little considered by modern writers, certainly ran parallel to the general growth in literacy and was stimulated by it. The driving-forces behind the emergence of central administrative institutions of government, the spread of law, and the growth of legislation were mainly political and social and, again, ran parallel to the growth of kingship itself. It is not just a matter of having sufficient coin in circulation. It is having the right circumstances, the right infrastructure, to allow large quantities of money to be used regularly and effectively. So, what were these interrelated factors, what was the infrastructure which went together with a sufficiency of coin to create a money economy?

There had, first, to be a period of sustained population growth, leading to a rapid expansion of the market, to the growth of trade and of towns, essential to iron out the inequalities of supply. That would mean, at all levels, the need to simplify the processes of exchange, to cut transaction costs, to use the modern jargon, and one of the easiest ways of doing that would be to abandon barter and substitute for it monetary exchange. That would have to be accompanied by substantial improvements in transport, so that goods could be moved around in bulk over long and short distances, again to keep transaction costs as low as possible. Here there would have to be improved roads and bridges, better ships and the facilities to handle them, quays and wharves, and over short distances improvements in haulage by carts, such as the development and use of the horse-collar and harness.[21] It is a circular argument. Sustained population growth stimulates demand, demand has to be supplied by towns and

traders; they need improved methods of trading, more goods in which to trade, easier methods of exchange, and that means the increasing use of money and the development of credit systems. To function effectively, money has to work within a growing market economy and its rules. It cannot of itself create such an economy, in the same way that substantial increases in the amount of coin will not automatically create a money economy, simply an economy in which money is used. There is also another, closely related problem. If England was to get the silver it needed for a massive increase in the money supply and the circulating medium, that is, many more coins in circulation, then that silver could only come by way of foreign trade. In spite of recent arguments, production from English, Welsh, and Scottish mines seems to have been small in relation to the needs of the mints.[22] So an important question has to be both asked and satisfactorily answered, when was that possible, when was English overseas trade sufficiently strong to attract precious metals to the country in large quantities?

Next, the more you use money, or units of money in the form of coin, the more you need systems of reckoning, weights and measures, and recording. A great deal of reckoning was done in the head, or with the use of counters, such as stones, for simple addition and subtraction, especially for small transactions. But immediately you move beyond basic, small transactions, to larger transactions and to any form of deferred payment, then reckoning becomes much more difficult. You need to be able to turn a multiplicity of payments into units of account, shillings, marks, pounds. You need to be able to reckon and record, to add, subtract, and write down, and the whole process, or processes, becomes more complex as the coin types increase, with the introduction of the groat, 4*d*., unsuccessfully in 1279 and then successfully in 1341, with a half groat, and then a bewildering range of gold coins.

Nor can buying and selling be done in abstract. They have to take place within the framework of a standard set of weights and measures, so that precise amounts of money buy precise amounts of goods. A standard weight of bread or ale ought to be sold at a standard price, a bushel of barley or wheat ought to be worth so many shillings and pence, rents had to be so much per acre, or its subdivisions or multiples. So, interestingly, as you get one coinage emerging within England, you also get attempts, from at least Æthelstan's Grately Laws of *c*.926–30, to establish one set of weights and measures for the realm. It is doubtful whether that was ever actually achieved in the Middle Ages. Local variations and customary measures are still to be found in the nineteenth century, if not the twentieth, but what can be seen are persistent attempts to address the problem, and what they show is the importance of standardized amount-systems as part of a money economy.[23]

Reckoning has to be done in both money and amount: length, breadth, volume, weight, and area all have to be added into the equation. It also has to be done over time. There were important fluctuations in the amount of money available within the rural economy, dependent upon the harvest cycle and the need to pay rents and other customary dues at specified times. Trade was increasingly financed by credit, money was borrowed to meet obligations, to pay taxes, to live beyond one's means, or just to survive, since distress borrowing, after harvest failure, was often vital. These obligations had to be recorded. The anthropologist Helen Codère argues that if you put money, counting, measurement, and time together, then that taxes the capacity of the human mind beyond the holding powers of its memory and its computational powers. Written records become essential, to record transactions, the amounts

involved, the payments to be made, and the times at which they are to be made.[24] And, once you have credit or borrowing over time, then you need the legal means to enforce the payment of that credit, if necessary.

It is in the sphere of both accounting and the law that central government had a vital role to play. This is not just a matter of being able to tax, or to record liabilities and audit accounts both centrally and locally. It is much more that the institutions of central government could provide models, practices, that others could apply, or to which they could respond by developing their own private and public institutions at both intermediate and local levels. The growth of the power of the state was vital to the emergence of a money economy, and the reverse is also true. The Crown guaranteed the weight and fineness of the coins, supervised their minting, and placed upon them, as a mark of its guarantee, the symbol of its authority, the bust or portrait of the king. By so doing, the Crown of course enhanced its own authority, since coinage is as much a political as it is a fiscal statement. By taxing, the Crown helped accustom the population to the use of money, and stimulated the circulation of coin. By paying its armies it also spread the use of coin to the furthest parts of the realm, to the Scottish and Welsh borders. Ever growing justice and royal administration promoted record-keeping and provided the legal framework for the recovery of debts. What royal government did was soon copied by others, or perhaps royal government copied and improved upon what was already being done, and so the legal and administrative framework within which money had to work was continually improving, and the more it improved, the more money itself would be and was used.[25]

A money economy, then, is the sum of many parts, interacting each with the other, accelerating the processes by which money is used to make immediate and deferred payments at all levels in society. There is much more to it than that, of course, including the intriguing question of whether and when fiduciary or paper money was first used, through the assignment of debts, and equally whether such debts became negotiable. If they were, then their value should be added to any figures for M, the money supply, although it might well prove impossible even to estimate what it should be. There may well have been other forms of paper money, too. Recent research has shown that London merchants could settle their debts to other London merchants by transfers between the accounts they held with an Italian bank in London in the 1430s. Such book transfers, *giri di partita* or debits and credits, were a common method of making payments in late medieval Italy. They seemed to have become increasingly common in northern Europe and were certainly forms of paper payment, if not paper money. As such, they should be added to M, but, again, there is currently no way of estimating their value. Arguments that link the availability of credit to the amount of coin in circulation and treat M as equivalent only to the size of the circulating medium should be treated with some caution, especially when they are being used to show the severity of supposed economic crises in fifteenth-century England.[26]

An answer to the third of the questions posed in the title of this paper can no longer be avoided: when did a money economy emerge in medieval England? Not, at the earliest, before the second half of the thirteenth century. Before then there was simply not enough coin in circulation to make the regular, day-to-day use of coin possible, and it is when the use of coin becomes the norm and not the exception that we have the beginnings of a money

economy. Accepting that all figures for the population of England, the total volume of coin in circulation and therefore the amount of coin per head of population are in some way flawed, the latter still remains a useful guide to the degree of monetization. The most optimistic of all estimates of the Anglo-Saxon coinage are those developed by Metcalf, which, interestingly enough, he does not actually give as such in his latest book. He would argue that in the reigns of Æthelred and Cnut there were between £60 and £80,000 pennies and their fractions in circulation. Had there not been, then it would not have been possible to raise those vast sums in geld and heregeld to buy off the Danes and pay the mercenary troops. Until such time as the estimates of coinage volume are revised downwards fairly substantially, argues Lawson, it looks as though eleventh-century England did contain the wealth in precious metal to make payments of the size recorded. These stories may or may not be true, but when Lawson quotes Grierson as supporting Metcalf, he does so disingenuously. What Grierson actually wrote was that

> such a figure (£60–80,000) was not necessarily related to the strictly economic needs of society. The requirements of Danegeld imposed a much greater output of coin than trade would normally require and it seems rash to deduce from it that long before the Conquest the monetary sector of the economy was of an extent that the ordinary historical resources fail to reveal.

This part of Grierson's argument is often and perhaps conveniently ignored.[27] The effective circulating medium in late Anglo-Saxon England was much less than £60,000, and probably more in line with the £37,500 of silver pennies that Dolley thought were in circulation in 1086. If the population stood at 1.5 million in late Anglo-Saxon England, which seems to be about the current going rate, then we can calculate three sets of figures. With a circulating medium of £40,000 it amounts to 6.4*d.* per head; at £60,000, 9.6*d.* per head, at £80,000, 12.8*d.* per head. If you take Dolley's figure of £37,500 for 1086, then it comes to 6*d.* per head, or 4*d.* if you accept a population total of 2 million. It seems to me that we might be best advised to take the lower figures of £40,000 and 6.4*d.* per head for late Anglo-Saxon England.[28] It is very difficult indeed to make any estimate of the size of the circulating medium until about 1180, when it is thought to have reached £100,000, rising to about £250,000 in 1205, after the partial recoinage of that year. If the population had risen to say 3.5 million by the end of the twelfth century, and that is a guess rather than estimate, then the amount of coin had risen to 17*d.* or so per head of population, or on the basis of a population of 3 million, 20*d.* per head. It is at least a trebling per head over a period of a hundred years. By the time of the recoinage of 1247–50, and written records, the circulating medium had reached £400,000, and if the population by then was, what, say 4.5 million, then it was 21.3*d.* per head, or, if only 4 million, 24*d.*, and then by the end of the century we have £900,000 in circulation, and with a population of 6 million, about 36*d.* or 3*s.* per head.[29]

Two things have occurred. There had been probably a trebling of the population between 1000 and 1300. At the same time there had been at least an eleven-fold rise in the size of the circulating medium, if you accept the figures of £80,000 for 1000, a great deal more if you accept £40,000 – 22.5, in fact – and much of that rise had come after 1247, with the circulating medium doubling by 1300. Critics will point to the inflation that this must have caused, and argue that a silver penny would have bought far more in 1000 than in 1300. Agreed, but the limited evidence we have does not suggest that inflation proceeded at the same rate as increases in the money supply. In any case, what you have by 1300 is a currency

that, paradoxically, was much easier to spend precisely because the value of the silver penny had fallen. The fifteenth century was to show the difficulties caused by the shortage of silver coins, and their high value. It apparently made buying and selling small quantities of goods difficult at times, and this may also have been true in what was admittedly a less market-oriented economy in 1000.[30]

From about 1247 onwards, then, there was an economy with far more markets at all levels, from large towns to villages, the result of a combination of increased demand due to a growing population, and a sufficiency of coin in circulation to make exchange, again, at all levels, much easier. Why was that possible in 1247 and 1300 and not in 1000? Obviously because there were more people, but also because much more silver was available. After the recoinage of 1247 there were some 96 million pennies in circulation, worth £400,000. Simply striking and maintaining in circulation a coinage of that size required large initial supplies of bullion. Subsequently, to keep the coinage at that level, since silver wears away quickly, the mints needed to strike further coins at regular intervals, and that too required regular inflows of bullion. Striking 2 million Short Cross pennies in 1220–2 required 3 metric tons (3,000kg). Some, most, of it came from reminting old coins, but in order more or less to double the size of the circulating medium in 1247, and then for it to double again by 1300 meant there had to be a constant flow of silver from abroad, in large quantities at times of major recoinages, less when there were 'top-up' issues. There was no shortage of silver in thirteenth-century Europe, because of vastly increased and continuous production, first from the mines at Freiburg in Saxony and then, successively, from Freisach in the Tyrol, Montieri in Tuscany, Iglesias in Sardinia, Jihlava or Iglau in Moldavia, and Kutna Hora in Bohemia.[31] That silver had to reach England by way of foreign trade and, of course, in the thirteenth century, by way of the wool trade to Flanders. There had been a boom in silver production at Rammelsberg/Goslar in the Hartz mountains in the late tenth century, but whether supplies reached England in the quantities suggested by Peter Sawyer seems a very moot point indeed. Hodges's arguments about problems of infrastructure, inadequate shipping, lack of suitable ports, wharves, and quays, seem very valid, but, more importantly, there is an assumption, against all the evidence produced by Flemish historians, that the Flemish cloth industry at this point needed vast quantities of English wool. It did not: local supplies were more than adequate to sustain production at that point. In the second half of the thirteenth century that was not the case. There were bulk-carrying cargo ships, there were new ports, such as Boston, Lynn, and Hull, there were commercial syndicates, Flemish, Italian, and English, that could handle exports on a grand scale, internal marketing networks to gather the wool for export, and, above all, a sustained demand from the Flemish cloth industry for English wool of all qualities. What was there in the second half of the thirteenth century and especially by the 1290s was simply not there in 1000, and it made it possible for England to earn the silver necessary to sustain a large coinage.[32]

What had also happened by the second half of the thirteenth century was the spread of reckoning and accounting in terms of money, measurement, and time, from the centre to the localities. This had not been a rapid process. It had already been under way before the Conquest, but inevitably it gathered momentum as the royal administration itself grew, and royal justice began to operate more effectively in the country at large. It also went hand in

hand with the growing use of money as a medium of exchange, and of course with the growth in the size of the circulating medium, and this is one aspect of the problem that urgently requires much more investigation. Was it, perhaps, a case of parallel development? There was a need to know what was due, to record agreements, a need to enforce obligations, debts, and contracts. That all took time. The creation in 1194 of public local archives to record debts to the Jews was one of the first stages in the process. Another was the appearance in the localities of multiple taxation records for the *carucage* of 1198. But the real growth in local record-keeping came in the thirteenth century, with the appearance of estate accounts and surveys, of central auditing bodies on episcopal, monastic, and lay estates, of manorial court rolls, records of urban government, local taxation assessments, and then, as a result of the Statutes of Acton Burnell (1283) and Merchants (1285), the enrolment of recognizances of debt in various English towns. Recording was an essential prerequisite for recovery, for the enforcement of payment, using a growing body of legal process available through royal courts. The Jews had had these advantages since the late twelfth century: now, finally, in the late thirteenth century, they were offered to Englishmen.[33] The appearance of manorial court rolls, recording as they did minor legal disputes, including debts, fines to be paid, and the transfer of customary holdings in terms of area and time, was part of this process of increased local record-keeping. Court rolls appear for the first time in the mid-thirteenth century. Why that should have been so is a matter of current debate, with the most recent explanation being that thirteenth-century landlords were seeking to attract business back to their own courts by making them attractive to suitors, in the face of growing competition from central and local royal courts. This 'legal' explanation rejects Maitland's earlier arguments that the written manor court roll was intended to tell the lord's servants of the occasional profits of the manor, the fines, amercements, and perquisites which were to be collected by the manorial officials.[34] Perhaps Razi and Smith are right, but what we are seeing in manorial court rolls is the recording of money, measurement, and time. Consequently, and finally, it is worth trying to put the two chronologies together here, that of the making and keeping of records, as described by Michael Clanchy, and that of increases in the money supply and the emergence of a money economy. Clanchy argues that record-keeping spread from the centre, first to the great ecclesiastical and lay landlords in the early thirteenth century, then to the knights by 1250, and to the peasants by 1300, with the real expansion coming in the reign of Edward I. The chief influences at work are seen to come from the development of political, legal, and administrative institutions, and rightly so. But that chronology must be set side by side with that for the increase in the money supply. They run almost parallel. Already, by 1187, the capacity to count money and to measure cloth was said to be the test of legal majority for a burgess's son.[35] The ability to reckon, measure, record, and account had to spread far beyond the towns into the countryside if a money economy was to emerge. Literacy and numeracy had a major part to play in its emergence. Such a confluence of mutually interacting circumstances in terms of the money supply, the bullion supply, a market economy, international trade, record-keeping, legal protection for debts, and transferability of debts does not occur until the second half of the thirteenth century. That is when a money economy emerged in England.

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Notes

1 W. S. Jevons, *Money and the Mechanism of Exchange* (London, 1875), p. 1.

2 W. J. Baumol and A. S. Blinder, *Economics: Principles and Policy*, 5th edn (Florida, FL, 1991), pp. 226–7; Richard Hodges, *Dark Age Economics: the Origins of Towns and Trade, A.D.600–1000*, 2nd edn (London, 1989), pp. 24–35; P. Grierson, *The Origins of Money* (London, 1977), p. 7; H. Codère, 'Money-exchange systems and a theory of money', *Man*, 3 (1968), pp. 550–7; John Hicks, *A Theory of Economic History* (Oxford, 1969), p. 33; Grierson, *Origins of Money*, pp. 3–4.

3 Jevons, *Money and the Mechanism of Exchange*, p. 4; see also Richard Hodges, *Primitive and Peasant Markets* (Oxford, 1988), pp. 3–4.

4 G. Crowther, *An Outline of Money* (Edinburgh, 1948), p. 4; Hodges, *Primitive and Peasant Markets*, pp. 104–5.

5 Hicks, *Theory of Economic History*, p. 63.

6 Codère, 'Money-exchange systems', p. 558; Grierson, *Origins of Money*, p. 14.

7 Dorothy Whitelock, ed., *English Historical Documents*, I: *c.500–1042* (London, 1955), pp. 366–7; Henry R. Loyn, *Anglo-Saxon England and the Norman Conquest* (London, 1962), pp. 200–1.

8 Carlo Cipolla, *Money, Prices, and Civilization in the Mediterranean World, Fifth to Seventeenth Centuries* (Princeton, NJ, 1956), p. 5; Grierson, *Origins of Money*, p. 17; Alexander Murray, *Reason and Society in the Middle Ages* (Oxford, 1978), pp. 32–3.

9 Crowther, *An Outline of Money*, p. 5.

10 Ibid., pp. 4–10; Nicolas J. Mayhew, 'Numismatic evidence and falling prices in the fourteenth century', *EconHR*, ser. 2, 27 (1974), pp. 2–3.

11 Philip Grierson and Mark Blackburn, *Medieval European Coinage*, I: *The Early Middle Ages (Fifth to Tenth Centuries)* (Cambridge, 1986), pp. 276–82, 324–30; Hodges, *Primitive and Peasant Markets*, p. 112. In an important article S. Piron examines the way in which the coinage was used to assert growing royal authority in thirteenth- and fourteenth-century France: 'Monnaie et Majesté royale dans la France du 14^{e} siècle', *Annales, Economies, Sociétés, Civilisations* (1996), pp. 325–54.

12 Hodges, *Primitive and Peasant Markets*, pp. 103, 106–11.

13 Ibid., p. 103. See also Codère, 'Money-exchange systems', pp. 557–77 and Grierson, *Origins of Money*, pp. 30–1.

14 Hodges, *Primitive and Peasant Markets*, p. 103.

15 The best modern accounts of the coins in circulation in medieval England are given in Ian Stewart, 'The English and Norman mints, c.600–1158'; Nicholas J. Mayhew, 'From regional to central minting, 1158–1464', and Christopher E. Challis, 'Lord Hastings to the Great Silver Recoinage, 1464–1699', all in Christopher E. Challis, ed., *A New History of the Royal Mint* (Cambridge, 1992). Appendix 2 gives full details of the coins and their weights. For the problem of small change in the fifteenth century, see p. 176, and nn. 310, 311. 'Ghost moneys' are discussed by Cipolla, *Money, Prices, and Civilization*, pp. 38–42, and Frederick C. Lane and Reinhold Mueller, *Money and Banking in Medieval and Renaissance Venice. Coins and Moneys of Account* (Baltimore, MD, and London, 1985), pp. 7–8. In medieval England the mark of 13*s.* 4*d.* was the most important.

16 D. M. Metcalf provides the best starting-point for the discussion of the degree of monetization in the English regions in *An Atlas of Anglo-Saxon and Norman Coin Finds*, Royal Numismatic Society Special Publication 32 (Cambridge, 1998), pt 4, 'The Regions and their Mint Places', pp. 192–248, Conclusion, pp. 275–84. Whether this 'regionalism' in the use of coin had entirely broken down by 1300 is a matter of debate: see James L. Bolton, *Money in the Medieval English Economy, 973–1489* (forthcoming, Manchester University Press, 2005), for a discussion of this issue.

17 The pioneering work on the bullion famines of the late Middle Ages was done by J. Day, 'The great bullion famines of the fifteenth century', *P&P*, 79 (1978), pp. 3–54. Peter Spufford, *Money and its Use in Medieval Europe* (Cambridge, 1988), pp. 319–62, gives an excellent general account of the supposed 'crisis'. Pamela Nightingale argues for a general crisis in 'England and the European depression of the mid-fifteenth century', *Journal of European Economic History*, 26 (1977), pp. 631–56. A more optimistic view will be found in Bolton, *Money in the Medieval English Economy*.

18 Loyn, *Anglo-Saxon England and the Norman Conquest*, pp. 116–17; Metcalf, *Atlas*, pp. 100–1; Susan Reynolds, *Fiefs and Vassals: the Medieval Evidence Reinterpreted* (Oxford, 1994), index, p. 539. To be fair, Dr Reynolds does discuss the use of money, but that is not the same thing.

19 Allen's most recent figures are given in 'The volume of English currency, 1158–1470', *EconHR*, ser. 2, 44 (2001), pp. 595–611, *passim*. The figures given below are taken from early versions of Dr Allen's work in various journals. Mr Mayhew does not necessarily agree with them, as will be seen in this volume. But whichever figures are used for the volume of coinage and the total population, the order of change remains much the same, although the purchasing power of money was only twice as great in 1300 as it had been in 1100: John Hatcher and Mark Bailey, *Modelling the Middle Ages. The History and Theory of England's Economic Development* (Oxford, 2001), p. 138. Another way of estimating the growing use of money is by calculating its velocity of circulation. This is done in a most important article by Nicholas J. Mayhew, 'Modelling medieval monetisation', in Richard H. Britnell and Bruce M. S. Campbell, eds., *A Commercialising Economy. England 1086–c.1300* (Manchester, 1995), pp. 55–77, which must be the starting-point for any discussion of this subject.

20 Murray, *Reason and Society*, pp. 27–30, 190–1.

21 The figures for population totals in England and Wales change about once every five years, as the debate on fertility, mortality, and the ability of the agrarian sector to feed more than a certain number of people continues. The best general introduction to the subject lies in the pages of Christopher Dyer's *Making a Living in the Middle Ages. The People of Britain, 850–1520* (London, 2002), index, p. 399, under 'population'. For the 'population and resources' model of the economy, see Hatcher and Bailey, *Modelling the Middle Ages*, pp. 21–65. By contrast, they give scant attention to money: ibid., pp. 186–92. For the growth of markets and fairs, the commercialization of society, and improvements in transport, see Richard H. Britnell, *The Commercialisation of English Society, 1000–1500* (Cambridge, 1993); James Masschaele, *Peasants, Merchants, and Markets. Inland Trade in Medieval England, 1150–1350* (Basingstoke, 1997); Edward Miller and John Hatcher, *Medieval England. Towns, Commerce and Crafts, 1086–1348* (London and New York, 1995); John Langdon, *Horses, Oxen and Technological Innovation: the Use of Draught Animals in English Farming from 1066 to 1500* (Cambridge, 1986). For parallel developments in the European economy, see Philippe Contamine et al., *L'Economie Médiévale* (Paris, 1993), pt 2, La Croissance (milieu x^{e}- début xiv^{e} siècle), pp. 141–208.

22 Ian Blanchard, 'Lothian and beyond: the economy of the "English empire" of David I', in Richard H. Britnell and John Hatcher, eds., *Progress and Problems in Medieval England* (Cambridge, 1996), pp. 25–39; Ian Blanchard, *Mining, Metallurgy and Minting in the Middle Ages*, II: *Afro-European Supremacy, 1125–1225* (Stuttgart, 2001). In this latest work Professor Blanchard argues the case for heavy silver output from mines in north-west England further, but see Dr Allen's trenchant review in *EHR*, 118 (2003), pp. 1037–8.

23 II Æthelstan c.12, and II and III Edgar, cl. 8, 8.1, *English Historical Documents*, I, pp. 384, 397; *Chronica Magistri Rogeri de Hovedene*, 4, ed. W. Stubbs, RS (1871), pp. 33–4; R. D. O'Connor, *The Weights and Measures of England*, H.M.S.O. (London, 1987), pp. 90–1; Harry Rothwell, ed., *English Historical Documents*, III: *1189–1327* (London, 1975), pp. 230, 856–7; *Statutes of the Realm*, I (London, 1810, repr. 1963), pp. 204–5; Codère, 'Money-exchange systems', p. 564.

24 Ibid. p. 565.

25 Michael J. Prestwich discusses the effects of war on the use of money in 'The Crown and the currency. The circulation of money in late thirteenth- and early fourteenth-century England', *NC*, 142 (1982), pp. 51ff.; see also James L. Bolton, 'Inflation, economics and politics in the thirteenth century', in Peter R. Coss and Simon D. Lloyd, eds, *Thirteenth Century England IV* (Woodbridge, 1992), pp. 9–11 for the costs of war. All these issues will be discussed in Bolton, *Money in the Medieval English Economy*, chs 1–4.

26 The view that there is a direct link between the money supply and the availability of credit is best discussed by Pamela Nightingale, ' Monetary contraction and the money supply', *EconHR*, ser. 2, 43 (1990), pp. 560–75. For arguments concerning the negotiability of debts, see John H. Munro, 'The international law merchant and the evolution of negotiable credit in late medieval England and the Low Countries', *Atti della società Ligure di storia patria*, 31, 1 (1991), pp. 63–75. Munro's arguments are, however, challenged by James S. Rogers in *The Early History of the Law of Bills and Notes* (Cambridge, 1995), pp. 44–51. The research into the services offered to its clients by an Italian bank in Bruges and London, Filippo Borromei e compagni, is being undertaken by James L. Bolton and Francesco Guidi Bruscoli at Queen Mary, University of London. The Fisher equation or identity MV=PT or, in its most common form, P = MV/T, was first developed by Irwin Fisher, *The Purchasing Power of Money* (New York, 1911), ch. 2, *passim*, ch. 8, pp. 156–8. See also James L. Bolton, 'The English economy in the early thirteenth century', in Stephen D. Church, ed., *King John. New Interpretations* (Woodbridge, 1999), p. 39 and nn. 52, 53; Hatcher and Bailey, *Modelling the Medieval Economy*, pp. 186–92.

27 The debate on the levels of Danegeld and heregeld was conducted between M. K. Lawson and J. B. Gillingham in the pages of *EHR*, vols 99, 104, 105. It remains largely unresolved, but the present author is more convinced by

Professor Gillingham's arguments. D. M. Metcalf, 'How large was the Anglo-Saxon currency?' *EconHR*, ser. 2, 18 (1965), pp. 480–2; Philip Grierson, 'The volume of the Anglo-Saxon coinage', *EconHR*, ser. 2, 20 (1967), pp. 153–60, and esp. 159–60.

28 See pp. 16, 17 and nn. 19, 21, above. R. H. M. Dolley's estimates of the Norman coinage are to be found in *The Norman Conquest and the English Coinage* (London, 1966).

29 See Allen, 'The volume of English coinage', pp. 597–603, for a discussion of coinage levels, 1100–1300.

30 Hatcher and Bailey, *Modelling the Middle Ages*, p. 138, argue that the real value of money per head doubled between 1100 and 1300. Cf. n. 19, above.

31 Bolton, 'Inflation, economics and politics', pp. 3–4; Spufford, *Money and its Use*, ch. 5, *passim.*

32 Bolton, 'The English economy in the early thirteenth century', pp. 34–6.

33 M. T. Clanchy, *From Memory to Written Record: England 1066–1307*, 2nd edn (Oxford, 1992), pp. 65–6; W. L. Warren, *The Governance of Norman and Angevin England, 1086–1272* (London, 1987), pp. 73–8; H. G. Richardson, *The English Jewry under the Angevin Kings* (London, 1960), pp.135–60.

34 Zvi Razi and Richard Smith, 'The origins of the English manorial court as a written record: a puzzle', in idem, *Medieval Society and the Manor Court* (Oxford, 1996), pp. 36–68.

35 Clanchy, *From Memory to Written Record*, p. 76.

Chapter 2

Uses of money in medieval Britain

Richard Britnell

MONEY AS A MEANS OF EXCHANGE

Although decisions today are no doubt driven more by financial calculations than they were in the period 1000–1500, money was no marginal matter during those five centuries. It was vital to the way social relations operated from the top to the bottom of the social scale. At the highest levels of society the enthusiasm for income in coin was universal because it allowed a much more flexible exercise of choice than income in any other form. Rents paid in farm produce, which were very common in parts of Britain during the twelfth century, involved elaborate planning on large estates; either a seigneurial household had to move around from property to property consuming the produce from each, or the individual properties had to transport their produce to a central household according to some set rota. Many of the ways in which estate administration developed, both on lay and ecclesiastical estates, such as the substitution of money rents for labour services, were deliberate procedures for increasing cash incomes. The growing concern with cash balances was one of the driving considerations behind the considerable increase in estate documentation at the highest level; estate accounts recorded cash flows in and out of lords' coffers, and records of private jurisdiction recorded the income from judicial fines. The commercial opportunities of the twelfth and thirteenth centuries made it possible for the owners of major estates to increase their cash incomes substantially. The income of Canterbury Cathedral Priory rose from £1,406 in the early years of the thirteenth century to £2,540 in 1330–1, after which it showed no continuing growth.[1] The substitution of cash for labour and payment in kind necessarily involved both lords and tenants in a money economy. At the other end of the social scale from the great landlord, even the smallest tenements owed money rent by 1300, and so had to obtain cash either by selling goods or by earning wages.

Quite apart from landlords' demands, an increasing number of families both in town and country depended on cash for their ordinary household requirements. It is estimated that the urban proportion in England increased from about 10 per cent of the population in the eleventh century to perhaps 15–20 per cent around 1300.[2] For Britain as a whole the change was probably less marked, but the growth of the urban proportion was nevertheless a widespread phenomenon. Larger tenants were able to supply many of their domestic needs from their land, but the large number of smallholders and townsmen had to buy at least some of their basic

food requirements of bread and ale and needed money for other commodities they did not have the resources to produce themselves, including the raw materials for manufacturing occupations. It is estimated that even in rural areas of southern England around 40–50 per cent of rural households were unable to feed themselves in the later thirteenth century.[3] A lucky few were employed a year at a time as estate servants and would be paid most of their remuneration in grain, but even these characteristically received some cash in addition.[4] Workers paid at day rates or piece rates were more likely to be paid mostly in cash.

The growth of a monetized economy during the thirteenth century can be reliably captured from some of the evidence available to us. The amount of money in circulation per head of the population increased rapidly between the 1170s and 1311, as a result of influxes of silver, by way of trade with Flanders and Germany, from mining centres in central Europe.[5] The stock of coinage in circulation rose from about £25,000 on average in the late Saxon period, and perhaps £37,500 on average in the reign of William I, to about £550,000 in 1279, and about £2,100,000 in 1319.[6] The Scots introduced their own currency in 1136, and its volume is estimated to have increased within little more than a century of its introduction to about £50,000–£60,000 in 1250 and £130,000–£180,000 in 1280.[7] One of the most spectacular indices of the volume in currency is the evidence produced by S. E. Rigold relating to the archaeological recovery of small change lost accidentally, rather than wealth deliberately hoarded. This shows that finds of coinage from the period 1279–1351 are over eleven times more numerous than those from late Anglo-Saxon and Norman England (Table 2.1). This increase is not the same as an increase in average money incomes, since money circulates. Nor does it correspond to an increase in purchasing power, since prices rose during the thirteenth century. But it implies an increasing use of money in everyday life, to the point that it is difficult to conceive how any household, except perhaps in the farthest north and north-west of Britain, could live without making use of money for some essential transactions.

A good deal of petty trade, much of it involving barter, occurred between neighbours, and outside any formal institutional structure. Even larger transactions, where they involved bulk purchases of wool or grain from rural producers, were 'farm-gate' sales.[8] One of the most striking features of twelfth- and thirteenth-century commercial development, however, was the creation of an extensive structure of marketing institutions, all of which depended upon monetized trade, and most of which involved the collection of tolls and stallage rents in cash. In much of Britain – the four northernmost English counties, Wales, and Scotland – the formal network of trade was largely limited to market towns, many of which were designated *burgi* (boroughs in English, burghs in Scots). This was perhaps largely the result of the fact that in these parts fewer people were trade dependent, and less money was in circulation. These circumstances were compounded, however, by political intervention. In the Palatinate of Durham the bishops resisted authorizing any markets other than their own. In Scotland, David I and his successors gave royal burghs territorial monopolies in order to maximize the income from market tolls. David I, for example, gave territorial rights and tolls to the burgesses of Rutherglen, and then, in the 1180s, William I of Scotland required that all goods brought for sale within those bounds should be taken first to the burgh of Rutherglen.[9] Such territorial monopolies discouraged the proliferation of minor rural markets. In much of England, by contrast, many villages with no conspicuous urban characteristics were granted

	religious *finds*	castles *finds*	rural *finds*	urban *finds*	total *finds*
c.973–1053	0.37	0.12	-	1.7	2.25
c.1053–c.1125	0.15	0.7	0.15	1.4	2.43
c.1125–1180	0.5	2.0	-	2.2	4.5
1180–1247	2.25	2.1	0.7	3.0	8.0
1247–1279	2.7	2.7	1.0	6.7	13.0
1279–1351	7.3	9.3	1.7	9.7	28.0
1351–1412	5.5	1.3	0.83	3.8	11.5
1412–1464	2.4	2.5	0.4	2.6	8.0
1464–1544	4.0	1.2	0.12	0.5	6.0

Note: the average total number per decade has been calculated independently and is not arithmetically identical with the sum of the averages from different types of site.
Source: S. E. Rigold, 'Small change in the light of medieval site-finds', in N. J. Mayhew, ed., *Edwardian Monetary Affairs (1279–1344)*, BAR 36 (1977), pp. 61, 79.

Table 2.1 Site finds of small change dated by the period of minting, and classified by types of site, adjusted to estimate the number of finds from each decade.

markets, presumably because there was enough buying and selling going on to justify investing in a charter.

Landlords founded markets in order to stimulate the circulation of coin, and, in consequence, to make it possible to increase their own money incomes – this was one aspect of their hunger for cash. Rents were charged for stalls in the market and for the use of distinctive market facilities like weighing apparatus. Outsiders were charged tolls on their trade according to some regular tariff; an early list of toll charges from the new town of Cardiff dates from the mid-twelfth century. In addition, fines were charged for offences against market regulations. The availability of markets and fairs increased the chances that rural tenants would be able to raise cash for sales of produce, and so pay more of their rent in cash, and this had direct implications for the need for cash amongst ordinary village populations. The number of new markets granted by the English Crown in each decade reached a peak in the mid-thirteenth century, but grants continued to be numerous for a hundred years after that.[10] By the early fourteenth century almost every family in the country was in easy reach of a market town or village market. Besides facilitating the payment of money rents, these markets also encouraged new patterns of expenditure and consumption in some sectors of village society. A growth in the range of consumer goods available is more apparent in the period after the Black Death than before, but some families must have been switching from home-produced goods to purchased goods well before then. For those who

migrated into towns, of course, there can be no doubt of the growing significance of lifestyles dependent upon money and trade.

What could be bought with money by someone free to spend it? One answer is that then, as now, it all depended who you were and where you were. Knowing what you can buy, where you can buy it, and what it will cost, is very culturally specific.[11] Oxford market in the 1360s, spread along the four streets leading from Carfax, but chiefly along the High Street, had separate stalls for a range of basic foodstuffs – grain, bread, vegetables, meat, poultry, dairy produce and eggs, fish and ale. Live pigs were sold in the High Street. Other basic household necessities were supplied from stalls selling timber, firewood, coal, straw, rushes, and hay. There were also craftsmens' and traders' stalls selling furs, cloth, mercery, linen, hosiery, leather, leatherware, gloves, parchment (being a university town), horse-harnesses and equipment for archery, drugs, spices, earthenware, cutlery, and scullery ware.[12] Yet however superlative a town it may have been in other respects, in the matter of local trade Oxford was not high ground. Oxford scholars were not big spenders, and this was not a centre of conspicuous consumption. A wide range of luxury goods, investment goods, and services were characteristically available only in towns larger than Oxford or in major fairs.

To move from Oxford to London or Westminster was to enter a different order of spending and consumption, patronized by the lay and ecclesiastical nobility. The city of London had developed as the only large city in Britain, by the standards of Italy and France, and became unquestionably the principal source of luxury goods for the wealthy by the later thirteenth century. The king and his leading subjects had opulent houses and palaces there. There they bought their jewellery, fine textiles, furs, and other valuables, to be stored in the numerous strongly built 'wardrobes' that lined some of the city streets up to the mid-fourteenth century (after which their use was discontinued).[13] Westminster, in particular, was a major centre both of litigation and pilgrimage, so that money was to be made there by catering for visitors as well as wealthy residents. 'The economy of medieval Westminster', says Gervase Rosser, 'was based primarily upon the entrapment of the consumer.'[14]

Oxford was amongst the wealthiest twenty English towns in the fourteenth century, and its market was well supplied by comparison with the many smaller towns in England and elsewhere in Britain.[15] The range of goods in a village shop today would seem wonderful in comparison with the restricted range of products available in the minor towns that multiplied between the tenth and the thirteenth centuries. In a small town market one would expect to find grain, bread, ale and wine, meat, poultry and fish, butter and cheese, shoes and some other leather goods, cheap cloth and clothing, basketwork, some basic metal goods, firewood, maybe salt – probably not much more. More exceptional goods might come round once a year at fair time. A lot of other goods might be sold informally between neighbours without there being a formal structure for trading; it is likely that the second-hand market was of this kind, to judge from the rarity of reference to it in our sources.

Several constraints closely affected how money was used for everyday trade. One was the extent to which money was in circulation, a second the extent to which money incomes were available for consumer spending, and a third was the size of the denominations in which coins were minted.

I Cash in circulation

By 1300 all Britain was to some extent engaged in long-distance contacts and became more monetized in consequence. On the western side the growth of towns and ports went no further north than the Clyde Valley, where there were burghs at Dumbarton, Renfrew, Glasgow, and Rutherglen. On the east coast, however, already in the twelfth century there were burghs as far north as the Moray Firth at Banff, Cullen, Elgin, Forres, Nairn, and Inverness, to which Dingwall, Rosemarkie, and Cromarty were added during the century following.[16] By that time there were also small towns all round the Welsh coast, most conspicuously along the northern shores of the Severn Estuary.[17] The use of coinage in Wales and Scotland had been increasing markedly since the early twelfth century, and by the later thirteenth it was penetrating even in the most outlying parts of Britain. Coins are found in hoards in the far north of Scotland, and include small change, which suggests that they were used for local transactions.[18] Coins of the tenth and eleventh centuries, both Anglo-Saxon and others, have been found in hoards on the Isle of Man; by the later thirteenth century almost all the currency there was English, signifying the growing dominance of trade with Britain rather than Scandinavia.[19] Wales did not have a currency of its own, but English coins were in sufficiently widespread use to allow the Welsh Princes, and especially Llewelyn ap Gruffydd between 1267 and 1282, to impose an increasing burden of dues levied in money. These included tolls on trade, customs duties, and fees for licences to trade.[20] After Edward I's conquest of Gwynedd in 1282–3, he was able to impose taxes on movable wealth there, as he did in England. In 1292–3, 2,669 taxpayers from the five commotes of Merioneth, in west Wales, contributed £566 11*s*. 10*d*. to a lay subsidy.[21] A survey of the king's revenues from the township of Llanfaes, in Anglesey, made in March 1284 records a total of £78 5*s*. 11¾*d*., of which £27 6*s*. 8*d*. was due from the royal demesne lands and a water mill, £1 6*s*. 8*d*. was from sales of labour services, £12 10*s*. 0*d*. was feudal dues and profits of jurisdiction, and the remaining £37 2*s*. 7¾*d*. was revenue from burgesses and from various tolls on traffic and trade.[22]

There were nevertheless regional differences in the extent to which cash was available, particularly before the twelfth century. These remain to be chartered in greater detail, but it seems inevitable that regions with a marked outflow of marketable goods had more cash flowing in by trade than parts of the country isolated from the main trade routes. It would be surprising if there was as much currency *per capita* in the north-west as in the south-east. Dues in kind, which had been so prominent in much of Britain and Ireland in the later eleventh century, survived for centuries in some parts. Because Forfar was a normal residence of the king, a levy called waiting or conveth, owed by the thanages of Forfar and Glamis, was paid there in kind in 1264, and its make-up was recorded in the Scottish exchequer rolls (Table 2.2). Even in Wales, the importance of tenant payments in produce remained higher in the 1290s than in most parts of south-eastern England.[23] Since the years around 1300 were a high point in the volume of currency in circulation, it is unlikely that there was any consistent longer-term trend towards the monetization of outlying regions of Britain during the fourteenth and fifteenth centuries. In fact, it is more likely that regional differences in the availability of cash were accentuated after 1350 as a result of the very different opportunities for different parts of Britain to participate in export trades. Evidence from Durham in the late fifteenth century suggests that a large part of the rents owed to the prior of Durham by

his tenants was paid in kind rather than cash, and it would be interesting to establish how far this corresponds to a regional characteristic from earlier times.[24] It is not surprising that rents in kind remained in place in the more remote parts of Britain. In 1497 eight chalders and eight bolls of barley were transferred by the chamberlain of the western Scottish isles of Bute and Arran to Duncan Forestar, Enroller of Accounts to the King of Scots; Forestar paid £3 for the conveyance of the grain to Glasgow, where it was sold.[25]

Despite the increase in monetary circulation, even in the most monetized zones we need to be cautious about the extent to which money was available to ordinary households at any stage during the medieval period. Around 1300 the average money income in England was probably less than 4*d*. a week per person, or 20*d*. for a family of five – and these figures refer to the medieval penny that was 1/240th of £1, not the modern decimal penny. They derive from an estimated average of national income *per capita*.[26] But medieval incomes were very unequal, and many families drew much of their income in agricultural produce. We must assume, then, that for many families the income averaged very much less than 20*d*. a week. This is amply borne out by what we know of rural incomes. Christopher Dyer has estimated that even a better-off Midland peasant, with about thirty acres of arable land, would only be receiving on average around 16½*d*. a week from his farming activities at this time, though this would be in addition to farm produce retained to feed his household.[27] Since a skilled craftsman's day wage around 1300 was commonly 3*d*., his family would receive no

item	quantity
cows	37½*
pigs	75
cheese	492 cogall ½ stone and 1 quarter†
hens	291
malt	32 chalders and 2 bolls
barley flour	10 chalders 5 bolls
prebenda	206 clevins, 3 bolls
eels	960

* 24 from Forfar, 13½ from Glamis.
†404 cogall from Forfar, 81 cogall from Glamis, 7 cogall from 'Kingaltenin', the rest from 'Coil'.
Source: *The Exchequer Rolls of Scotland*, ed. J. Stuart, G. Burnett, et al., 23 vols, Series of Chronicles and Memorials (Edinburgh, 1878–1908), 1, pp. 6–7.

Table 2.2 Composition of waiting (conveth) from Forfar and Glamis, 1264 (excluding arrears from previous years).

more than 18*d*. a week in cash, even if he was regularly employed, unless other members of the household were also earning. A labourer's income would be half of this or less, especially if his employment was more intermittent than that of a skilled worker.[28] If the head of the family was in full-time employment as a farm servant, the family would receive much of its income in the form of grain, but in that case the cash income was unlikely to be much more than 1*d*. a week.

II Cash for consumer spending

For the majority of the population some proportion of the money income households received had to be reserved to pay rents and other monetary dues owed to landlords. Any estate accounts of the Middle Ages will illustrate the extent to which straightforward transfers of income between landlords and tenants shaped the circulation of money. Rents came at more predictable times of the year on different estates. In the Palatinate of Durham, for example, rents were due after the harvest at Martinmas (11 November) and again six months later at the feast of St Cuthbert (20 March). Other tenants owed rents at three or four times in the year. Families could plan to sell particular things at these times, so they would have the necessary cash. Given the insubstantial nature of many houses, they would perhaps deliberately avoid having sums of money accumulating unnecessarily over long periods. For this reason, the archaeological evidence of coin finds from village sites, as recorded in Table 2.1, is a misleading indication of the extent to which thirteenth-century peasant families used money, both for paying rents and taxes and as traders and consumers. Their daily activities required the handling of coinage, even though many transactions were accomplished without the use of money.[29]

During the course of the period 1200–1500 there was a long-term tendency for the payment of rents to become more and more dependent on cash. In the thirteenth century this was chiefly the result of growing landlord power, because cash incomes allowed landlords more flexibility in how they used their incomes.[30] They also allowed landlords to replace relatively inefficient labour services with hired labour.[31] In his study of the Hundred Rolls, published in English translation in 1956, Eugene Kosminsky concluded that by 1279 money rent predominated over labour rent, even in Midland England, where the labour services of serfs were most developed.[32] In the fourteenth and fifteenth centuries the same trend was maintained for different reasons. It was more advantageous for tenants to pay money rents than to give their increasingly valuable labour time, and the difficulty of finding and retaining tenants meant that landlords had a powerful inducement to respect tenants' wishes.

Taxes were paid irregularly, and it must often have been a matter of chance whether families had been able to plan ahead to pay them. Already in the eleventh century the English Crown was able to levy enormous sums from its subjects in the form of geld, which was a property tax. Some of the most extraordinary demands were those made by early eleventh-century kings to pay tribute to the Danes; a single geld, we are told, could raise over £20,000. The sums recorded by the chroniclers are so large that there is some uncertainty about whether they can be reliable. Certainly, if their accounts are true, taxation must have been more oppressive then than at any later period.[33] Geld continued to be levied, at differing rates and with varying frequency, until 1162.[34] Landlords were responsible for passing

upwards the taxes due from the lands of their unfree tenants, but the tenants were doubtless the ones who ultimately paid. A similar tax, later called common aid, was being collected in Scotland by the 1170s, though it was neither heavy nor required very often.[35]

With the growth of monetary circulation, tax systems were modified by various stratagems designed to catch commercial incomes. Edward I greatly developed the use of taxes on movable property, including tradable goods, which greatly facilitated the taxation of the kingdom's growing urban populations. Under Henry III there were only four lay subsidies on movables (1225, 1232, 1237, 1269), but Edward I levied nine, of which three were before 1294 (1275, 1283, 1290), and six after (1294, 1295, 1296, 1297, 1301, 1306). These six subsidies in the space of the fifteen years from 1294 to 1306 raised in all £292,146, implying an average annual total of about £19,476 raised in this way.[36] These sums had to be paid in coin. There seem to have been no equivalent taxes in Scotland, where the Crown depended through the thirteenth century on occasional aids and tallages. Both English and Scottish Crowns also took advantage of the growth of monetized trade to impose substantial increases in customs duties on overseas trade. Edward I's imposition of the 'great customs' on wool and hides of 1275 was shortly afterwards imitated by Alexander III of Scotland. [37]

In 1975 J. R. Maddicott argued that the king's taxes placed the resources of many peasants in jeopardy. The wartime taxation of Edward I and his successors struck way down the social scale in rural society. It was not only the rich who were taxed. The poor were supposed to be exempt, and indeed the very poorest, labourers and beggars, were. But the Exchequer's orders defined as poor a man with less than 10*s*. worth of movable goods, the value of a single cow, or of two quarters of wheat. Taxation struck just at the group in village society with a small surplus for sale who were on the margin of commercial farming, and ensured that the surpluses available should be sold for the king's interest rather than that of the individual. Moreover, quite apart from the money that reached the king, collectors collected for themselves. Taxes on movables subjected the population to a whole new range of corrupt local officialdom. In 1332 a sub-taxer responsible for assessments at Hemingford Abbots (Huntingdonshire) was said to have got his position by bribing the chief taxers for the county. Clearly there was something in it for him. As this case implies, the chief taxers in turn expected to profit from their office. One common device was to refuse to accept the accounts of the village sub-taxers unless they were accompanied by a gift of a shilling or two. [38]

It seems unlikely that in England incomes from tax and rent together around 1300 were less than £250,000. Such payments did not significantly affect the income and expenditure of the landowning classes, who received considerably more in rents than they themselves paid in rents and taxes. Nor did they affect very considerably the incomes of cottagers and labourers, whose rents were small and who rarely paid taxes. However, such payments disproportionately reduced the disposable incomes of peasant farmers – those with characteristically between ten and forty acres of land. Christopher Dyer's relatively well-off Midland peasant, whom we have seen receiving an average income of 18*d*. a week, would spend an estimated 6*d*. a week in rent, tallage, and other dues to the lord of the manor. That would have left him 12*d*. a week for spending on investment and consumption goods. In this section of society an increasing level of rents, court fines, or taxation lowered levels of consumption and consequently depressed standards of living. Tax levels varied considerably

in the later Middle Ages, being highest in periods of warfare, when they could significantly depress the domestic demand for consumer goods.

III Denominations of currency

A third problem limiting the use of money, particularly before the later thirteenth century, was the problem of currency denominations. The standard coin of the period of expansion in local trade from the tenth to the early fourteenth centuries was the silver penny. Around 1200 a penny was an inconveniently large unit for retail trade. According to an assize of ale of King John's reign, at prevailing prices, 1*d*. would buy nine or ten gallons of ale.[39] It was impossible, in other words, to buy a pint of ale. It was correspondingly harder to buy small quantities of meat or dairy produce. We are bound to assume that a good deal of trade in small quantities of goods for household consumption was transacted by barter between neighbours. This was a less problematic form of trade in small rural communities than amid the greater anonymity of the growing towns. But during the thirteenth century the monetary system became better adapted to the needs of small consumers. This was partly the result of inflation, which reduced the real value of wages, but simultaneously made it easier to buy small quantities. The interests of consumers were also met by adaptations in the system. From 1279 the mints often produced halfpennies, and people had the option of cutting pennies into halves and quarters to produce halfpennies and farthings. Edward I declared it illegal to refuse fractional currency of this sort.[40] With prices as they were around 1300 this currency was reasonably accommodating to petty retail trade. A farthing (one quarter of a penny – that is, a quarter of a day's wages for a labourer) would buy a standard loaf of wheaten bread – most of a day's subsistence for an adult. The size of a loaf varied with the price of wheat, but with prices as they were in 1301–2, a farthing would buy about a pound's weight of bread.[41] In southern England a farthing might also buy a countryman a quarter to a half pound of butter, or six eggs,[42] or about five pints of ale.[43] This breakdown emphasizes the limited flexibility with which a penny could be spent, even when cut into farthings, but suggests that by the end of the thirteenth century, within a limited range of commodities purchased, the monetary system could suit the needs of small households better than a hundred years before.

There were, however, competing interests in the matter of currency denominations. The thirteenth-century system, while becoming better adapted to household purchases, was never well adapted to the needs of those who handled large sums. At the upper end of society, the silver penny was inconveniently small. In 1207 King John raised an exceptional tax that raised a net £57,400.[44] In the currency of the day, before the introduction of any coin above the single penny, this required the collection and transportation of almost 13.8 million pennies. The cash income of Canterbury Cathedral, even at the beginning of the thirteenth century, was represented by 3.4 million pennies. This feature of the monetary system imposed heavy costs on big earners, since it implied carrying great weights of cash around the country on horseback, and protecting them against highway robbery.

All over Europe governments were constrained, in these circumstances, to introduce coins of larger denominations, showing a powerful tendency to privilege the interests of merchants and large spenders. From Edward I's reign a wide range of coins of higher denomination was introduced, and these grew as a share of the money stock, to the point that the interests of

international traders were better respected than those of small consumers. Not only were larger silver units minted – the groat and the shilling – but from the reign of Edward III a large proportion of the English coinage was in gold. The smallest unit of gold currency between 1344 and 1464, the quarter noble worth 20*d*., represented about five days wages for a labourer and was plainly unsuitable for most household purchases. The amount of small silver minted dropped sharply in volume in this period. Around 1422 it was only about a tenth of what it had been a hundred years earlier.[45] The currency was becoming less adapted to flexibility in retail trade; for small purchases the resort to barter may have become more rather than less common. This was all the more so because as the total stock of silver coinage declined through this period, prices tended to sag.[46] Although falling prices brought welfare advantages relative to income levels, and implied rising standards of living for many families in the century after the Black Death, they complicated the use of money for small purchases. To some extent deficiencies of small change could be made up by the use of jettons and tokens, which became more numerous in the fourteenth century, but the acceptability of these was inevitably restricted. To judge from the number of examples found, their number did not increase through time in the manner we should expect if they were adequately substituting for silver.[47] It seems very likely that there was an increasing resort to barter for small quantities of produce in the fifteenth century, though it is difficult to demonstrate how far this was the case. It is possible to find numerous examples of debt cases in local courts arising from moneyless exchange that came unstuck, but it is not easy to reason from such examples about long-term trends in methods of payment.

MONEY AS A MEASURE OF VALUE

Not all the sums cited in medieval records represent actual payments of cash. Money was often used as a measure of value, supplying a common denominator to define obligations that would in fact be transacted in other ways. This was probably the case, for example, with many of the money values of manors cited in Domesday Book; the fact that a property was worth a particular sum to a lessee did not mean that a lord could not reserve payment in grain, meat, or dairy produce if that would suit him better. The statement of value as a money sum gave flexibility in this case, because it meant the landlord could contract to be paid in a variety of ways.[48]

Prices in this sense could also be used as measures of quality in drawing contracts of many different kinds. When the canons of St Paul's Cathedral in the late twelfth century granted a life lease of Belchamp St Paul's, in Essex, to Richard Ruffus, they specified that when the manor should revert to them there should be eighteen oxen, worth 3*s*. 0*d*. each, and six plough-horses of the same value. There should be eighty ewes, each worth 4*d*., and forty pigs, of the same value, and so on.[49] Without the availability of money as a measure of value it would have been extremely laborious to draw up such a contract, since it would have meant describing the quality of the beasts with lengthy detail. There are numerous ways in which it was advantageous for contracts anticipating future transactions to make comparable use of prices as measures of quality. Shortly before 1315 John du Bois acquired land in Haswell (Durham) for which he was obliged to give annually to the granter a pair of spurs

worth 6*d*.[50] At Durham in 1350 Thomas Cokside granted his kinsman John Fossour land in Seaham and Seaton until the time when John should be preferred to a benefice worth twenty marks.[51] In 1439 John Halton and his wife contracted, in exchange for land at Heath (Derbyshire), to maintain John Herresoun in necessities for the rest of his life and at his death to provide for his mortuary a cow worth 7*s*. 0*d*.[52] The chief drawback of valuations in contracts of this kind was the risk that prices would change, so that the stipulated value no longer represented the expected quality.

The principle of monetary evaluation was explicit in the taxes on movable goods increasingly used by the English Crown from the late twelfth century. As long as the sums raised depended upon real assessments rather than fixed historical data – that is until 1334 – each taxpayer's movable goods were assessed as the basis for the sum owed payable to the king. Madog ap Dafydd at Aberffro (on Anglesey) in 1292–3, for example, was assessed by the taxers, Tudur Gam and Dafydd Gethyn, on three cows worth 3*s*. 4*d*. each, one three-year-old plough-beast worth 2*s*. 6*d*., a two-year-old plough-beast worth 2*s*. 0*d*., and a crannock of flour worth 2*s*. 0*d*. He owed a fifteenth of the total sum in tax to the king.[53] Similar assessments were being made all over north Wales and the whole of England. The law courts, too, made regular use of money as a measure of value in the process of assessing losses resulting from theft or deception. At the Justice's Court at Flint in 1283, for example, a widow sued seven Welshmen for murdering her husband and stealing sixteen sheep, eleven oxen and cows, clothes and other goods worth in all £8, a sum which the court allowed her to recover.[54] In Colchester, about Easter 1394, as she later alleged in the borough court, Cecily, wife of Richard of Colne, gave russet cloth worth £1 16*s*. 0*d*. to John Bertlot the fuller to be fulled; she said he had not returned it.[55] Valuation was also important in the procedure by which defendants were pressed to appear in court to answer charges against them in private litigation. Courts did this, characteristically, by seizing goods from the defendant, which were valued by the court and ultimately – if the distraint failed to achieve the desired result – these goods could be sold to satisfy the claims against him.

As a measure of value, money was expressed in forms that bore little relationship to the actual currency in circulation. All through the period, systems of valuing and accounting used monetary units that did not correspond to any coin. Until 1489, when Henry VII first minted a 'sovereign' as equivalent to £1, the pound sterling (240 pence, or 20 shillings), the mark (180 pence or 13*s*. 4*d*.) and the shilling (12*d*.) were all merely accounting units. Their use in accounts was erratic. Because they were merely notional units, accountants were quite uninhibited about writing down such sums as '50 shillings', instead of £2 10*s*., or '20 pence' instead of '1*s*. 8*d*.'.

MONEY AS A STORE OF VALUE

In the Middle Ages, as now, money served as a store of value for those able to accumulate and save, but this use of coin must have been of minor importance for a large section of the population. Prevailing levels of poverty did not allow significant savings for most families, and even over a short period the insecurity of peasant houses argued against storing coin unnecessarily. It is difficult to prove the point, but it is likely that most families realized cash

at the point when they needed it – that is, when rents fell due, or when there were essential purchases to be made. This will partly explain why prices were so low immediately following the harvest each year. Many farmers had to sell produce at that point, rather than wait until prices rose later in the year, in order to have cash to pay rent at Michaelmas or Martinmas. The cash they raised would have passed rapidly through their hands into the coffers of their landlord. Even townsmen probably retained only small sums of cash. There is some evidence to this effect – though its precise significance is uncertain – from some local tax assessments. Townsmen were sometimes taxed on 'treasure', which included coin. This evidence shows that precious metals were kept in forms other than coin – in spoons, cups, rings, and other personal adornment – but that only a minority of urban taxpayers was assessed on this sort of wealth. At Colchester in 1301 only 147 out of 389 taxpayers had any sort of 'treasure', and this represents an even smaller proportion of the total population, since probably half the town's households were too poor to be taxed. Only 59 taxpayers were taxed on coin, to a total value of £16 8*s*. 6½*d*.[56]

The fact that even relatively ordinary people might nevertheless try to accumulate savings is suggested by the survival of numerous coin hoards of modest size. About 200 hoards of coins minted before 1500 are known from Scotland, most of which are very small. One of the largest, the Langhope hoard, perhaps buried in 1356, contained about 4,000 pennies (£16 13*s*. 4*d*). Two identical fourteenth-century hoards, each of 704 pennies (almost all English) were found in the eighteenth century twelve miles apart at Inverarity (Angus) and Longforgan (Perthshire), and seem to represent two shares of a single accumulation of cash.[57]

Amongst the wealthier sections of society, however, much larger sums were accumulated. The avaricious hoarding of treasure was a common allegation against kings and their leading subjects.[58] Sometimes the wealthy entrusted the safeguarding of their wealth to others. The Knights of the Temple, until their suppression in 1312, were willing to keep valuables on behalf of others, and were employed for this purpose even by kings.[59] In the later thirteenth century, Italian merchants also assumed such responsibility. The Bardi and Perruzzi companies held between them £5,886 7*s*. 8*d*. in the name of Hugh Despenser the Younger in September 1324.[60] In instances where cash was entrusted to others some at least of the savings were probably mobilized by those guaranteeing their safety, since both Templars and Italian merchant companies lent money as well as accepting deposits.

More commonly, however, royal and aristocratic accumulation meant the amassing of hoarded cash. At all times, large but varying sums of cash were stored away by those landlords wealthy enough to be able to secure them. Savings in coin remained idle in barrels, sacks, or chests stored in strong-rooms in castles and monasteries. Kings accumulated in anticipation of urgent necessity, often in strongholds other than their central treasury. Henry I had funds stored in cathedrals, monasteries and even, perhaps, in the custody of urban treasuries.[61] He was said to have left coin of good quality to the value of nearly £100,000 (24,000,000 pennies) at his death in 1135.[62] In preparation for war in France in 1205 and 1206, King John accumulated cash at provincial treasuries at Bristol, Exeter, and Porchester.[63] Between July 1207 and the spring of 1208 he was able to transfer £44,333 6*s*. 8*d*. (10,640,000 pennies) from Winchester to provincial treasuries at Devizes, Marlborough, Nottingham, Salisbury, Exeter, and Bristol.[64] Prominent lay men and ecclesiastics, too,

accumulated large idle funds. Adam Stratton, no nobleman but Chamberlain of the Exchequer, had £12,666 17*s*. *7d*. in accumulated cash in his house, following his disgrace in 1290.[65] At his death in 1376, Richard Fitzalan, Earl of Arundel, left the sum of £60,240 in cash, distributed between a coffer in Arundel Castle, chests at St Paul's, London, and other deposits at his estates in the March of Wales.[66]

These examples imply that at any given moment there were thousands of pounds' worth of currency lying idle in safe-keeping, awaiting the day when they would be needed for funding a dowry, purchasing lands, funding a building project, or financing a military expedition. The size of this reserve defies any close analysis. It presumably contracted in wartime, when large numbers of wealthy men would be equipping themselves for campaigning. But, in general, the way it responded to changing events and circumstances can only be surmised. Monetary historians are obliged to reckon with it in explaining changes in the money supply, since the independent effect of hoarding or releasing cash could significantly affect the volume of currency actually in circulation.[67] So although restricted in its forms and its operations in comparison with the modern world, medieval money nevertheless had the power to move the economy in complex and sometimes barely comprehensible ways.

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venditur pro v s. vel pro xl d. et quarterium ordei pro iiij s. et [avena pro] ij s. tunc possunt braciatores et debent vendere in civitatibus unum galonem cervisie ad d. et extra in suburbio j galonem pro ob. qua., in burgo j galonem pro ob., extra in uppelonde iij galones pro j d. qua.': MS Cambridge University Library, Mm.1.27, fol. 66v.

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Chapter 3

The English currency and the commercialization of England before the Black Death

Martin Allen

The word 'revolution' is a much over-used historical term, but the development of trade and finance by Italians during a 'long thirteenth century' from the late twelfth century to the early fourteenth century can justifiably be called a commercial revolution. In England this was also a formative period of commercialization.[1] The increasing use of money in rents and wages by a growing population supported an expanding network of markets and fairs, increasing demand for luxury goods from the recipients of rents, and rising taxation. The growth of London and other urban centres was accompanied by the development of urban commerce and trade in agricultural produce for urban consumption. The institutional framework of commercialization was developed through the local and national regulation of trade, financial legislation, and the spread of written accounts and commercial documentation. England's international trade expanded, bringing it into contact with the Italian commercial system, and the size of the currency increased enormously.[2] Peter Spufford has argued that substantial increases in the currency, combined with the development of credit, had a crucial role in the commercial revolution, and that the expansion of the currency in many parts of Europe was accompanied by fundamental changes in the organization of coinage production.[3] This paper will assess the contribution of the English currency to the commercialization of England between the late twelfth century and the 1340s, leaving the assessment of the contribution of credit to others.[4]

Spufford has argued that the expansion of coinage production in the period of the commercial revolution was characterized by a transition from relatively small moneyers' workshops to 'factory mints', which had larger and more continuous outputs, buildings provided by the State, increasing documentation of business, and specialization of function in the work-force.[5] Factory mints were often operated by entrepreneurs from Tuscany, Lombardy, and Provence, as happened in England at various times from the late thirteenth century.[6] John Brand critically examined the concept of factory mints in the context of the development of the English coinage, suggesting that England had such mints from no later than Henry II's recoinage of 1180–2, owing nothing to Italian influence.[7] Between the reign of Henry II (1154–89) and the arrival of the Black Death in England in 1348 the English coinage was wholly or partly recycled by recoinages on six occasions, in 1158–*c.*1160, 1180–2, 1205–7, 1247–50, 1279–81, and 1300. In the recoinage of 1180–2 there is

documentary evidence for the replacement of separate moneyers' workshops by a centralized mint premises in Winchester, which may have been part of a more general policy in this recoinage.[8] Pamela Nightingale has suggested that the London moneyers had one mint premises from 1158, on the evidence of coins showing that they sometimes shared the use of coin dies, but Barrie Cook has been more cautious in arguing that the sharing of dies by London moneyers in the recoinage of 1180–2 is not decisive evidence of the existence of one centralized mint.[9] The Winchester and Canterbury moneyers certainly had separate workshops during the coinage of 1158–80.[10] Another prominent feature of the recoinage of 1180–2 was its national system of salaried exchangers, taking the administration of mint profits out of the hands of the moneyers. Until 1180 the moneyers were responsible for the profits of exchanging new coins for silver offered by mint customers, and it is possible that some of the men described as moneyers in documentary sources whose names do not appear on coins may have been solely employed as exchangers.[11] The national system of exchangers ended with the termination of the recoinage in 1182, but the king's mint profits were centrally administered through the Exchequer from the 1190s.[12] Derek Allen's reconstruction of the king's sources of revenue from the mints between 1158 and 1180, based upon the Exchequer's pipe rolls, led him to the conclusion that Henry II's assured income from the coinage in this period was no more than about £100 per annum, and that the true profits of minting were diverted to the King for the first time in 1180.[13] Nightingale has argued, on the contrary, that Henry II would not have tolerated a significant loss of income from the coinage before 1180, and that he probably received a direct profit or 'seignorage' from salaried moneyers between 1158 and 1180, paid into the Chamber without surviving record.[14] She has also suggested that the reform of 1180 was prompted by a rise in mint outputs in the 1170s, which would have increased the size and importance of mint profits.[15] The exact nature of the administration of mint profits before 1180 may be a matter of debate, but it is undeniable that the recoinage of 1180–2 initiated a period of fundamental change in the administration of the English mints and their profits.

Henry II's contribution to the development of the English coinage was not restricted to changes in the administration of mint profits and the centralization of the activities of moneyers. He twice made a clean sweep of the moneyers in office, in 1158 and 1180, and he progressively reduced the number of mints.[16] Thirty mints were engaged in the recoinage of 1158–*c.*1160, but only ten mints were allowed in the recoinage of 1180–2.[17] Between 1158 and 1180 Henry II had relentlessly eroded local minting rights.[18] There was some relaxation of this policy after Henry's death in 1189, but from the thirteenth century the number of mints in operation between recoinages was normally no more than four.[19] This is in marked contrast to the situation in parts of thirteenth-century Europe, where an expansion of the currency was often accompanied by a proliferation of mints, many of them under ecclesiastical, feudal, or civic control.[20] In thirteenth-century England some ecclesiastical minting rights were allowed, but there were no autonomous local coinages.[21] The commerce of London was always served by a royal mint, and the Canterbury mint was well placed to receive silver imported through cross-Channel trade, but most of the kingdom was geographically remote from a mint most of the time, which cannot have been in the best interests of many people needing to exchange their silver for new coins. The number of mints

usually rose during recoinages, which greatly increased the demand for the services of the mints, but the locations of the temporary recoinage mints were not necessarily chosen with the needs of commerce in mind. In the 1180–2 recoinage the Winchester mint may have served the needs of the royal treasury in the city, and other mints then and later may have been established for various administrative or political reasons.[22] Some of the mints in the 1205–7 recoinage may have been opened at the initiative of individuals offering money for the right to farm exchanging profits, which might be represented as a response to the needs of commerce, but that would have been exceptional.[23] Richard of Cornwall, who had a leading role in the administration of the recoinage of 1247–50 in return for a loan to his brother Henry III, seems to have used his influence to establish a largely superfluous mint at his feudal *caput* of Wallingford, when the mint in Oxford might have sufficed for the needs of the area.[24] The Riccardi of Lucca, who as bankers and creditors of Edward I administered exchanges in the recoinage of 1279–81, did not have any such influence over mint organization, nor did the Frescobaldi of Florence in a similar situation in the recoinage of 1300.[25] In both cases, the administration of the king's mints was effectively separated from that of the exchanges, and the coins were produced under the direction of mint-masters not connected with the Italian companies. In the 1300 recoinage Italians were able to buy large quantities of foreign coins for resale to the English exchanges and eventual recoinage, and presumably this activity was more geographically dispersed and responsive to customer demand than the kingdom's limited number of mints and exchanges.[26]

Changes in the organization of the English mints did not necessarily have a beneficial effect upon England's economic development, nor were they intended to do so. It is arguable that the principal object of mint administration was the efficient collection of the king's profits. Government policy towards the currency itself generally showed a commitment to the protection of its intrinsic value and uniformity, and the enforcement of a uniform currency sustained the king's profits by obliging importers of foreign silver coins to take their coins to an English mint. The maintenance of the intrinsic value of the English currency protected its reputation abroad, which would be in the best interests of both the king and his subjects when they made payments overseas, and might also promote England's international trade. According to the chronicler Thomas Wykes, foreign merchants were deterred from coming to England by the bad state of the currency before the recoinage of 1279–81.[27] (See Figs. 4 and 5.) Thirteenth-century sources provide evidence of a widespread assumption that a strong currency was needed to maintain the stability of the economy and social order, and that a weak currency was a sign of disorder and weak kingship.[28] The weight of the English silver penny was maintained throughout the thirteenth century close to the theoretical standard of 240 pennies to the Tower pound, and in 1247 a general council at Oxford debating the state of the currency rejected advice that the standard of fineness of the coinage should be altered, as in France and elsewhere.[29] It was only in the most extreme circumstances, during a severe recession in mint output in the 1330s, that a debased coinage of reduced fineness was temporarily introduced. (See Fig. 14.) This desperate expedient of 1335–43 was restricted to halfpennies and farthings only, and there were no more English debasements until the 1540s, if debasement is strictly defined as reduction of fineness.[30] The only concession to the economic forces undermining the strength of the currency was the

gradual reduction of the weight standard from 1344, in response to a long-term decline in the weights of coins in circulation.[31]

From the reign of Henry II there were many attempts to protect the currency from various threats, including clipping, forgery, infiltration by foreign coins, and loss by export.[32] Between the 970s and the mid-twelfth century there had been regular recoinages at intervals of only a few years, but the abandonment of this system by Henry II had the unfortunate consequence of the accumulation of bad money over long periods, and currency crimes such as clipping and forgery became a greater problem. Counterfeiting, which was equated with the treasonable falsifying of the king's seal, was now a capital offence, dealt with by the king's courts instead of the shire courts. Clipping (removing silver from the edges of the coins to melt down and sell) was prominent amongst the monetary offences listed in the justices' articles in eyre from the late twelfth century, and by the reign of Edward I (1272–1307) it was increasingly treated as a capital offence.[33] The recoinages of 1205–7, 1247–50, and 1279–81 were each precipitated by an epidemic of clipping, in spite of the severity of the law.[34] Before the first of these recoinages clipped money was prohibited by letters patent of 9 November 1204, and an assize of 26 January 1205 regulated the exchange of clipped and lightweight coins.[35] On this occasion the Jews were singled out for harsh punishment if they were found to have clipped coins, and they were often regarded as the principal culprits of clipping later.[36] There was a particularly severe epidemic of clipping between 1275 and 1278, which had serious consequences for England's Jewish population. The Statute of Jewry's new limitations on money-lending seems to have encouraged many Jews to turn to clipping at this time, although Christian goldsmiths and mint officials were also prominent amongst those arrested for clipping and other coinage offences in November and December 1278.[37] On 5 January 1279 three special commissions of oyer and terminer were appointed to investigate coinage offences, and at least 269 Jews and 61 Christians were executed.[38] The recoinage of 1279–81 ended the epidemic of clipping, although it was considered necessary to issue a proclamation in 1280 to prohibit clipping of the new money.[39] (See Figs. 7–10.)

Until 1279 the silver penny was the only coin regularly struck by the English mints. (See Figs. 1 and 4.) The epidemic of clipping in the 1270s caused concern about the intrinsic value of halfpennies, as they were produced by cutting a penny in half, and silver could easily be removed from the cut edge in the process as well as from the rest of the edge. (See Fig. 5.) Large numbers of clipped halfpennies seem to have been in circulation in 1277 and 1278, as records of debts incurred in London at this time often specify payment in good halfpennies.[40] This problem was finally solved by the issue of round farthings in 1279 and round halfpennies in the following year. (See Figs. 9 and 10.) There had been a previous attempt to replace the kingdom's cut halfpennies and farthings in 1222. A writ of 21 February 1222 announced that only round halfpennies and farthings would be allowed to be used from 17 April, and dies to make these coins were supplied to the London mint-officials in February and March.[41] The moneyers were apparently not provided with compensation for the extra cost of producing the new denominations in comparison with the cost of producing fewer pennies from a given weight of silver, and the attempted innovation failed. No examples of this coinage were known until the late 1980s, and the great rarity of the surviving coins (see

Fig. 2) is an indication of the issue's lack of success.[42] The mint-masters were compensated for the extra cost of producing round halfpennies and farthings in the recoinage of 1279–81, and the new coins were successfully introduced on this occasion, but it is possible that the numbers produced were insufficient to satisfy the public demand for small change.[43] The issue of round halfpennies and farthings, and of the silver groat (*4d*.) introduced in 1279, was stopped at the end of the recoinage in 1281, and no more groats were produced until 1351.[44] (See Fig. 16.) Peter Spufford has suggested that the groat failed in the thirteenth century because its value was too great in relation to wages, and that it was significantly more useful to wage-earners in 1351, as wages had substantially increased since 1279.[45] Halfpennies and farthings were always useful to wage-earners and in general commerce, and the minting of them resumed in 1285 or 1286.[46] After 1279 merchants and others needing small change for transactions less than a penny could no longer make their own by cutting pennies, as they may have done before, although the progressive reduction of the purchasing power of the penny itself through inflation would have increased its usefulness in small transactions. It has been suggested that copper-alloy jettons (see Fig. 17), originally intended for use in accountancy, may have had a secondary use as small change in late medieval England.[47] The ubiquity of jettons as finds from archaeological excavations and other sources would seem to support this suggestion, although the documented use of jettons in board games might be an explanation for many of these finds.[48] The manufacture of English jettons seems to have begun in the1280s as a sideline of the London mint for the use of government departments, with private manufacture of jettons and their use by merchants in accountancy soon becoming increasingly common, particularly after 1300.[49] They often resembled the English penny in size, and to a certain extent in design, but they were made of brass, and they usually had a central partial piercing to prevent them from being passed off as pennies. Pewter 'pictorial' tokens (see Fig. 18), the manufacture of which probably began in London in the third quarter of the thirteenth century, may have had a role in minor transactions.[50] The uses of base-metal tokens in various parts of medieval Europe included their use as tickets for charitable doles and the payment of wages, the recording of duties performed, tax and merchandise receipts, and membership passes.[51]

England's stock of small change was often supplemented by foreign coins, which served a useful economic function in this way, but which also posed a threat to the much-prized uniformity of the English currency.[52] The English silver currency seems to have been free of foreign coins for about three decades from the recoinage of 1180–2, but Irish and Scottish coins entered the currency *c*.1210, followed by German and French coins after *c*.1215.[53] Following the recoinage of 1247–50 the currency was supplemented by new supplies of Irish and Scottish coins, continental imitations of English pennies or sterlings, and small numbers of other foreign coins.[54] The recoinage of 1279–81 temporarily eliminated foreign coins, but in 1284 the Statute of Money (revised and reissued in 1291) showed official concern about the infiltration of the new currency by lightweight sterling imitations, requiring the examination of coins entering the kingdom.[55] John de Bourne had been appointed in 1283 to search for false and clipped money at Dover and Sandwich, but this was evaded by merchants who diverted their trade to other ports.[56] A national system of searchers was instituted in 1284 to check money for lightweight and false coins, particularly at ports, and this system

continued with limited success until the 1290s.[57] An account of the clerk of the customs at Newcastle upon Tyne in 1295 records examinations of the coins used for customs payments, which may have been visually examined to check for obviously foreign coins, and then weighed in bulk to detect lightweight coins.[58] The influx of continental sterlings (generally known as pollards and crockards – see Figs. 11 and 12) became a flood in the late 1290s, and eventually Edward I was obliged to take decisive action.[59] In May 1299 the Statute of Stepney introduced a new prohibition on the import of foreign silver coins. The value of pollards and crockards was reduced to a halfpenny from Christmas Day 1299, and their use was prohibited altogether from 10 April 1300.[60] By the end of 1300 they had been effectively removed from circulation by a recoinage.[61] Large-scale production of continental sterlings copying the English penny resumed about 1310, and by the 1340s these coins (see Fig. 13) were widely perceived to be a major threat to the strength of the English currency, although hoards seem to indicate that they never constituted more than a small percentage of the sterlings in circulation.[62]

The Statute of Money of 1284 required payments from abroad to be checked in units of 5*s*., weighing in bulk to detect the presence of lightweight coins, and testing the weights of individual coins if a deficiency was found. A lead weight has been found that could have been used to check 5*s*. in pennies at the weight standard current in 1284, and there are many surviving coin balances or 'tumbrels' that were evidently intended to check the weight of a penny at the weight standards of various periods between 1279 and the early sixteenth century .[63] It would be wrong to conclude that coins were always weighed during transactions, but weighing was an option that was available if there was public concern about the weight, and hence the intrinsic value of the currency, as a consequence of the presence of foreign coins, clipping, or unavoidable wear. The average weight of pennies in hoards, which might be assumed to be the best and heaviest coins in circulation, dropped to about 90 per cent of the official standard by the 1330s or 40s.[64] The minting of pennies virtually ceased in the 1330s, and the mint indenture of 4 December 1343 that revived their production tacitly acknowledged the deterioration in weight of the currency by requiring only that the new coins should be struck at the same weight as those commonly current. On 9 July 1344 the weight standard was fixed at 266 pennies to the Tower pound of silver, increased to 268 pennies in 1345, and 270 in 1346 (equivalent to 91.4, 90.7, and 90.0 per cent of the weight of 1279).[65]

At the same time as the English silver currency was being eroded by loss of weight and infiltrated by foreign coins, it was also losing good English coins by export, in spite of repeated official attempts to stem the flow. Marion Archibald has estimated that about £1,000,000–£1,100,000 of the English coinage was lost between 1247 and 1279, and hence not available for recoinage from 1279.[66] This would imply an average annual wastage rate of over £30,000 per annum. If Archibald's estimate is even approximately correct, it indicates an enormous loss from a silver currency that may have consisted of less than £500,000 in 1247, and about £800,000–£900,000 by 1282.[67] Some of the wastage of currency between 1247 and 1279 must be attributed to hoarding, accidental loss, and melting for non-monetary uses, but loss by export must also have been a major factor, as English coins were widely used in parts of continental Europe in the thirteenth century.[68] Losses of English coins

continued after 1279, and some of these losses occurred immediately after minting, owing to the demand for English coins abroad.[69] I have estimated that the English silver pennies minted in 1279–*c.*1282 suffered an average annual wastage rate of about 2 per cent between 1282 and 1290, and over 3 per cent in the next nine years to 1299.[70] Michael Prestwich has calculated that the government itself exported about £350,000 for military expenditure between 1294 and 1298.[71] Nevertheless, in 1299 the Statute of Stepney (which was principally concerned with the import of pollards and crockards) included a ban on the export of all silver coin, plate, and bullion.[72] In the first half of the fourteenth century the export of English silver was prohibited on many occasions, although licenses for export were often granted.[73] Non-governmental exports of English coins and official attempts to prevent them continued into the fifteenth century and beyond, but they might be regarded as an inevitable consequence of the vitality of England's commerce and the enterprise of merchants, and not the unmitigated calamity assumed by the king and his advisors.

The government was sometimes the main culprit in the export of coinage, and it could also control a large part of England's domestic stock of currency.[74] Michael Prestwich has estimated that in 1294–5 the wardrobe receipts alone were equivalent to over 10 per cent of the currency, and that the king had a quarter of the currency at his disposal.[75] Prestwich has argued that this was exceptional, and that the impact of royal demands for money was normally reduced by the immediate spending of revenues where they were raised, and by the diversion of money to creditors and other beneficiaries. Large royal reserves of cash may have been rare, but the process of raising and spending revenue redistributed wealth and was an important mechanism for the circulation of the currency, for example, in the transfer of substantial sums to Wales and Scotland in the reign of Edward I.[76]

Henry III's accumulation of gold coins and bullion in the 1240s and 1250s was an exceptional process, with an equally exceptional sequel. From the mid-twelfth century Byzantine gold bezants and gold dinars and double dinars (*oboli* and *denari de musc'*) of the Almohads of Spain and North Africa seem to have had a limited circulation in England, supplemented by a few Italian *augustales* of the Emperor Frederick II from the 1230s.[77] Between 1243 and 1253, and again in 1254–8, Henry III deliberately accumulated a gold treasure in coins and bullion.[78] The treasure of 1243–53 was spent on the expenses of the Gascon campaign of 1253–4, and much of the treasure of 1254–8 was sold between 1259 and 1261.[79] In 1257 Henry III introduced a gold penny, with a nominal value of twenty silver pennies, to convert some of the bullion in his treasure into a form that could be spent (see Fig. 3).[80] David Carpenter has estimated that about 80,000 gold pennies were produced, which would have had a nominal value of 10,000 marks (£6,666 13*s*. 4*d*.), but the new coin was not a success.[81] In November 1257 the mayor and citizens of London complained that the issue of the gold pennies had reduced the price of gold, and that they were very harmful to the kingdom, particularly in the case of poor people whose goods were not worth one gold penny. The King conceded that nobody should be obliged to take the new coin, and that it could be exchanged for 19½*d*. in silver.[82] When the surviving wardrobe accounts resume in July 1258, after a gap that starts in May 1256, gold pennies were being sold for silver and not paid out.[83] London's commerce was not yet ready for a gold coin with a fixed value independent of the relative market values of gold and silver, and it would never be possible

in medieval England to maintain a bimetallic currency entirely unresponsive to the ratio of market values between the two metals. In the early fourteenth century England became more accustomed to gold coinage, through the import of large quantities of florins and French gold, which were particularly suitable for international payments, large internal transactions, and accumulations of wealth.[84] The exchange rates of foreign gold coins in terms of English silver were volatile in the late 1330s and early 1340s, and the first of two English gold coinages launched in 1344 failed because it was based on a valuation of the gold in the florin (3*s*.) that had been established before a fall in the price of gold.[85] The second gold coinage of 1344, which introduced the noble valued at 6*s*. 8*d*. (see Fig. 15), eventually succeeded, beginning a new era for England's currency on the eve of the Black Death.

The volume of the currency may have had a greater effect upon the economic development of England in the period of the commercial revolution than its physical forms or the organization of its supply. It can be estimated that the English silver currency increased from about £30,000–£80,000 in 1158 to about £70,000–£190,000 in 1180, nearly £0.5 million in 1247, over £1 million in 1290, and a peak of about £1.5–£2 million between 1310 and 1331, before a decline to less than £1 million in 1351.[86] Gold currency only partly compensated for the decline in the silver currency, reaching about £100,000–£200,000 in 1351.[87] Nevertheless, the increase in the volume of the silver currency since the late twelfth century had been enormous. P. D. A. Harvey's theory that an increase in the silver currency was a principal cause of a two- or three-fold inflation between 1180 and 1220, with significant effects upon estate management and royal finances, has been extremely influential in the thirty years since it was published.[88] Nicholas Mayhew has examined the evidence for changes in English mint output between 1180 and 1220, arguing that it supports Harvey's assumption that there was a large increase in the currency, based upon increasing supplies of silver obtained through foreign trade.[89] However, a recent re-examination of the subject by Paul Latimer has questioned the possible causes and effects of inflation in 1180–1220, and has shown that the major increases in price levels only occurred in the first few years of the thirteenth century.[90] Latimer has suggested that the reduction of the intrinsic value of the currency by clipping before the recoinage of 1205–7, magnified in its effect by the public perception of the bad state of the coinage, was a cause of the inflation, possibly combined with the inflationary effects of the spending of accumulated stocks of currency.[91] D. L. Farmer had noted the sharp and usually temporary rises in prices contemporary with the recoinages of 1205–7, 1247–50, 1279–81, and 1300, which can be interpreted as market adjustments to the reduced value of bad money and its subsequent elimination by recoinage.[92] This phenomenon is particularly well attested in the case of the 1300 recoinage, when pollards and crockards were refused in payments or taken only at heavy discounts, and after this recoinage prices dropped to their lowest point in the first quarter of the fourteenth century, by 1303/4.[93] The unusual failure of prices to return to former levels after 1205 is difficult to explain, particularly if we accept J. L. Bolton's argument that King John's temporary accumulation of large stocks of money between 1204 and 1214 may have had a deflationary effect.[94] Latimer has suggested that the continuing high prices after 1205 might have been related to a persistent lack of confidence in the currency, or a failure of the demand for money as a store of value to return to its previous level.[95] It is also possible that

there was a significant increase in the volume of the currency after the recoinage of 1205–7, but this hypothesis cannot be tested without reasonably precise estimates of the currency immediately before and after the recoinage.[96] Bolton has argued that increases in the currency after 1220 had more significant economic effects than any increase in 1180–1220, culminating in the unprecedented levels of government taxation and expenditure in the reign of Edward I.[97] There is good reason to believe that an increase in mint output and the volume of the silver currency was a major cause of price rises between 1305 and 1310, and that a subsequent decline in the silver currency had deflationary effects, which were most acute in the late 1330s and early 1340s. These deductions are principally based upon coincidences between fluctuations in monetary data and price changes, supported in the late 1330s and early 1340s by contemporary complaints about the effects of a scarcity of money.[98] Nicholas Mayhew has used regression analyses of wheat prices and yields in the thirteenth century and first half of the fourteenth century to support the assumption that both money supply and yields affected long-term trends in prices.[99] Mayhew has also constructed ambitious models of the English medieval economy based upon the Quantity Theory of Money to relate money supply to price levels and other economic factors in 1086, 1300, and later dates in the following four centuries.[100] These models do not throw any light upon the possible connections between movements in the size of the currency and prices before and after 1300.[101] However, it can be argued that a rapidly growing currency supported both rising prices and the increasing number and variety of transactions that is a defining characteristic of a commercializing economy.

Did the development of the English currency help or hinder the commercialization of England before the Black Death? The mints greatly increased their productive capacity, but they declined in number and became less accessible to people remote from a few urban centres. England's silver currency was based upon the penny in the early fourteenth century, as it had been in the late twelfth century, and the introduction of round halfpennies and farthings may have actually reduced the availability of small change. Coin-substitutes such as tokens did not yet have a significant role in supplementing supplies of small change. The gold penny of 1257 and the silver groat of 1279 were failures, but an increasing presence of foreign gold coins in the early fourteenth century heralded a new era of the use of gold coinage in England. Epidemics of foreign silver coins and bad currency occasionally disrupted the operation of the English economy by causing short-term fluctuations in prices, but in the longer term an enormous increase in the currency supported the commercialization of the English economy.

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The Short Cross halfpenny (Fig. 2 on page 46) is illustrated by permission of the Trustees of the British Museum. All other illustrations are by permission of the Fitzwilliam Museum, Cambridge.

Notes

1 Richard Britnell, *The Commercialisation of English Society 1000–1500*, 2nd edn (Manchester, 1996), chs 4–6, examines the commercial development of England between 1180 and 1330. A critical analysis of the concept of commercialization in medieval England is provided by John Hatcher and Mark Bailey, *Modelling the Middle Ages: the History and Theory of England's Economic Development* (Oxford, 2000), ch. 4. M. Bailey, 'The commercialisation of the English economy, 1086–1500', *Journal of Medieval History*, 24 (1998), pp. 297–311, reviews the literature.

2 The foregoing description of English commercialization is principally based upon Britnell, *Commercialisation.* See n. 86, below, for the increasing size of the English currency.

3 P. Spufford, 'Le rôle de monnaie dans la révolution commerciale du XIIIe siècle', in John Day, ed., *Études d'histoire monétaire* (Lille, 1984), pp. 355–95; Peter Spufford, *Money and its Use in Medieval Europe* (Cambridge, 1988), ch. 11.

4 P. R. Schofield and N. J. Mayhew, eds, *Credit and Debt in Medieval England, c.1180–c.1350* (Oxford, 2002) contains recent work on the subject and an up-to-date bibliography.

5 Spufford, *Money and its Use in Medieval Europe*, pp. 187, 193–4; P. Spufford, 'Conclusioni', in Rina La Guardia, ed., *I luoghi della moneta. Le sedi delle zecche dall'antichità all'età moderna. Atti del convegno internazionale 22–23 ottobre 1999 Milano* (Milan, 2001), pp. 157–64, at pp. 157–61.

6 P. Spufford, 'Mint organisation in late medieval Europe', in N. J. Mayhew and Peter Spufford, eds, *Later Medieval Mints: Organisation, Administration and Techniques. The Eighth Oxford Symposium on Coinage and Monetary History*, BAR, int. ser., 389 (1988), pp. 7–29, at pp. 18–23; M. Allen, 'Italians in English mints and exchanges', in C. Given-Wilson, ed., *Fourteenth Century England II* (Woodbridge, 2002), pp. 53–62.

7 J. D. Brand, 'Factory minting in medieval England', *NCirc*, 95 (1987), pp. 71–2.

8 *Annales de Wintonia*, in H. R. Luard, ed., *Annales Monastici*, RS, 36, 5 vols (1864–9), 2, p. 62; J. D. Brand and F. Elmore Jones, 'The emergency mint of Wilton in 1180', *BNJ*, 35 (1966), pp. 116–19, at pp. 116–17; M. Allen, 'The chronology of Short Cross class Ia', *BNJ*, 63 (1993), pp. 53–8, at pp. 53–4. John D. Brand, *The English Coinage 1180–1247: Money, Mints and Exchanges*, British Numismatic Society Special Publication, 1 (London, 1994), pp. 24–31, provides a survey of the documentary evidence for the organization of the recoinage of 1180–2.

9 Pamela Nightingale, '"The king's profit": trends in English mint and monetary policy in the eleventh and twelfth centuries', in Mayhew and Spufford, eds, *Later Medieval Mints*, pp. 61–75, at p. 68; B. J. Cook, 'The late medieval mint of London', in La Guardia, ed., *I luoghi della moneta*, pp. 101–13, at pp. 102–3.

10 Martin Biddle, ed., *Winchester in the Early Middle Ages: an Edition and Discussion of the Winton Domesday*, Winchester Studies, 1 (Oxford, 1976), pp. 419, 422, 513–14; D. M. Metcalf, 'The premises of early medieval mints: the case of eleventh-century Winchester', in La Guardia, ed., *I luoghi della moneta*, pp. 59–67, at pp. 60–1; William Urry, *Canterbury under the Angevin Kings* (London, 1967), pp. 114–15; Brand, *The English Coinage 1180–1247*, pp. 19–20.

11 N. J. Mayhew, 'From regional to central minting, 1158–1464' in C. E. Challis, ed., *A New History of the Royal Mint* (Cambridge, 1992), pp. 83–178, at p. 93.

12 Brand, *The English Coinage 1180–1247*, pp. 32–48, examines the administration of the exchanges from the 1180s to 1247.

13 D. F. Allen, *A Catalogue of English Coins in the British Museum. The Cross-and-Crosslets ('Tealby') Type of Henry II* (London, 1951), pp. lxxvi–lxxxviii, xciii.

14 P. Nightingale, 'Some London moneyers, and reflections on the organization of English mints in the eleventh and twelfth centuries', *NC*, 142 (1982), pp. 34–50, at pp. 45, 48–50; Nightingale, '"The king's profit"', pp. 61–7; see also Mayhew, 'From regional to central minting', pp. 84–7.

15 Nightingale, '"The king's profit"', pp. 69–70. A. Dawson and N. J. Mayhew, 'A continental find including Tealby pennies', *BNJ*, 57 (1987), pp. 113–18, at p.115, notes an apparent increase in the output of East Anglian mints in the 1170s, which might support Nightingale's argument.

16 Allen, *A Catalogue of English Coins*, pp. lxxxii–lxxxv, reviews the documentary evidence for the removal of moneyers in 1158.

17 For the number of mints in the recoinage of 1158–*c*.1160 see M. Allen, 'The volume of the English currency, 1158–1470', *EconHR*, ser. 2, 54 (2001), pp. 595–611, at p.598, n. 27. The recoinage of 1180–2 was begun with only six mints, increased to ten during 1180: Allen, 'The chronology of Short Cross class Ia', pp. 56–7; M. Allen, 'The chronology, mints and moneyers of the English coinage, 1180–1247', in J. P. Mass, *The J. P. Mass Collection. English Short Cross Coins, 1180–1247*, SCBI, 56 (2001), pp. 1–12, at pp. 1–2.

18 Mayhew, 'From regional to central minting', pp. 83, 87–92.

19 R. J. Eaglen, 'The evolution of coinage in thirteenth-century England', in P. R. Coss and S. D. Lloyd, eds, *Thirteenth Century England IV: Proceedings of the Newcastle upon Tyne Conference 1991* (Woodbridge, 1992), pp. 15–24, at pp. 20–2.

20 Spufford, *Money and its Use in Medieval Europe*, ch. 8.

21 M. Allen, 'Ecclesiastical mints in thirteenth-century England', in M. Prestwich, R. H. Britnell, and R. Frame, eds, *Thirteenth Century England VIII: Proceedings of the Durham Conference 1999* (Woodbridge, 2001), pp. 113–22.

22 J. D. Brand, 'Permanent and temporary mints 1180–1300', *NCirc*, 92 (1984), pp. 287–8.

23 The organization of the recoinage of 1205–7 is discussed by I. Stewart, 'King John's recoinage and the conference of moneyers in 1208', *BNJ*, 59 (1989), pp. 39–45; Mayhew, 'From regional to central minting', pp. 97–9; Brand, *The English Coinage 1180–1247*, pp. 35–6.

24 N. Denholm-Young, *Richard of Cornwall* (Oxford, 1947), pp. 58–62, describes Richard of Cornwall's role in the recoinage of 1247–50. The possible connection of the Wallingford mint with the interests of Richard of Cornwall has been suggested to me by Mr Ron Churchill, who has an unrivalled knowledge of the documentary evidence relating to the mints and moneyers of the recoinage.

25 Charles Johnson, ed. and trans., *The De moneta of Nicholas Oresme and English Mint Documents* (London and Edinburgh, 1956), pp. xxxi, xxxiii, xxxvii; Richard Kaueper, *Bankers to the Crown: the Riccardi of Lucca and Edward I* (Princeton, NJ, 1973), pp. 110–15; Allen, 'Italians in English mints and exchanges', pp. 54–6; M. Allen, *The Durham Mint*, British Numismatic Society Special Publication, 4 (London, 2003), pp. 34–5.

26 The activities of Italian companies in the 1300 recoinage are discussed by Johnson, *The De moneta*, pp. xxxix–xl; R. Kaueper, 'The Frescobaldi of Florence and the English crown', *Studies in Medieval and Renaissance History*, 10 (1973), pp. 46–95, at pp. 50, 59–60; Mayhew, 'From regional to central minting', pp. 138–40. Italians also acted as agents for the purchase of old coins to be sent to the exchanges in the recoinage of 1279–81: see Kaueper, *Bankers to the Crown*, pp. 112–13.

27 *The Chronicle of Thomas Wykes*, in Luard, ed., *Annales Monastici*, 4, p. 278; Michael Prestwich, *Edward I* (London, 1988), p. 244.

28 W. Johnson, 'Textual sources for the study of Jewish currency crimes in thirteenth-century England', *BNJ*, 66 (1996), pp. 21–32, at pp. 22, 28–30.

29 *Matthaei Parisiensis, Monachi Sancti Albani, Chronica Majora*, ed. H. R. Luard, RS, 57, 7 vols (1872–83), 4, pp. 632–3; Rogers Ruding, *Annals of the Coinage of Great Britain and its Dependencies*, 3rd edn, 3 vols (London, 1840),1, p.184; John Craig, *The Mint. A History of the London Mint from AD 287 to 1948* (Cambridge, 1953), p. 32.

30 A. Hughes, C. G. Crump, and C. Johnson, 'The debasement of the coinage under Edward III', *Economic Journal*, 7 (1897), pp. 185–98, at pp. 186–9, 192; Craig, *The Mint*, p. 62; A. Beardwood, 'The royal mints and exchanges', in J. F. Willard, W. A. Morris, and W. H. Dunham, eds, *The English Government at Work, 1327–1336*, 3 vols (Cambridge, MA, 1940–50), 3 pp. 35–66, at pp. 49–50; Mayhew, 'From regional to central minting', pp. 144–5; P. Woodhead, 'The early coinages of Edward III (1327–43)', in J. J. North, *The J. J. North Collection. Edwardian English Silver Coins 1279–1351 with some Supplementary Examples*, SCBI, 39 (1989), pp. 54–78, at pp. 56, 66–71.

31 See below, p. 36.

32 The legal protection of the currency is discussed by B. J. Cook, 'Crimes against the currency in twelfth and thirteenth century England', *Bulletin of the John Rylands University Library of Manchester*, 83 (2001) [forthcoming]; J. H. Munro, 'Bullionism and the bill of exchange in England, 1272–1663: a study in monetary management and popular prejudice', in *The Dawn of Modern Banking* (New Haven, CT, and London, 1979), pp. 169–239, at pp. 216–25, tabulates prohibitions of the import and use of counterfeit and foreign coins, and of the

export of English coins and other silver.

33 D. C. Skemer, 'King Edward I's articles of inquest on the Jews and coin-clipping, 1279', *HR*, 72 (1999), pp. 1–26, at pp. 5–7.

34 Johnson, 'Textual sources', pp. 27–31.

35 Ruding, *Annals*, 1, pp.178–9; G. C. Brooke, 'Chronology in the Short Cross period', *NC*, ser. 4, 10 (1910), pp. 291–324, at pp. 319–20, 322; S. Smith, ed., *The Great Roll of the Pipe for the Seventh Year of the Reign of King John Michaelmas 1205*, Pipe Roll Society, ns 19 (1941), pp. xxvii–xxix.

36 Johnson, 'Textual sources', pp. 21, 27.

37 M. Mate, 'Monetary policies in England, 1272–1307', *BNJ*, 41 (1972), pp. 34–79, at pp. 37–40.

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42 P. Seaby, 'A round Short Cross halfpenny of Henry III', *Seaby Coin and Medal Bulletin*, 843 (Sept. 1989), pp. 199–200; N. J. Mayhew and A. Smith, 'Another round Short Cross halfpenny', *BNJ*, 60 (1990), p. 136.

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44 Allen, 'The volume and composition of the English silver currency', p. 41.

45 Spufford, *Money and its Use in Medieval Europe*, pp. 234–6.

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52 B. Cook, 'Foreign coins in medieval England', in Lucia Travaini, ed., *Local Coins, Foreign Coins: Italy and Europe Eleventh to Fifteenth Centuries. The Second Cambridge Numismatic Symposium*, Società numismatica Italiana collana di numismatica e scienze affini, 2 (Milan, 1999), pp. 231–84. Foreign gold coins circulated in England from no later than the mid-twelfth century: see below, p. 37–8.

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54 Cook, 'Foreign coins in medieval England', pp. 243–7.

55 *Statutes of the Realm*, 11 vols (London, 1810–28), 1, pp. 219–20; Ruding, *Annals*, 1, pp. 198–9; N. J. Mayhew, 'A tumbrel at the Ashmolean Museum', *Antiquaries Journal*, 55 (1975), pp. 394–6, at p. 395; Munro, 'Bullionism

and the bill of exchange', pp. 188–9; J. D. Brand, 'A glimpse of the currency in 1295', *NCirc*, 95 (1987), pp. 215–16, 251–3, at pp. 252–3; N. Biggs, 'Coin-weights in England – up to 1588', *BNJ*, 60 (1990), pp. 65–79, at pp. 70–1.

56 *Calendar of Patent Rolls, 1281–1292*, p. 86; Ruding, *Annal*s, 1, p. 196; Mate, 'Monetary policies in England', p. 56.

57 Mate, 'Monetary policies in England', pp. 56–60, 63; N. J. Mayhew and D. R. Walker, 'Crockards and pollards: imitation and the problem of fineness in a silver coinage', in Mayhew, ed., *Edwardian Monetary Affairs*, pp. 125–46, at pp. 130–1.

58 J. Conway Davies, 'The wool customs accounts for Newcastle upon Tyne for the reign of Edward I', *Archaeologia Aeliana*, ser. 4, 32 (1954), pp. 220–308, at pp. 230–1, 275–81; Brand, 'A glimpse of the currency in 1295', pp. 251–2. The coins used in payments for twenty-one out of thirty-five consignments of cargo were found to be deficient according to the relatively high standards employed: 4*d*. in the pound in counterfeit money or 9*d*. in the pound light.

59 Mayhew and Walker, 'Crockards and pollards'; N. J. Mayhew, *Sterling Imitations of Edwardian Type*, Royal Numismatic Society Special Publication,14 (London, 1983), pp. 22–4; Cook, 'Foreign coins in medieval England', pp. 251–3.

60 *Statutes of the Realm*, 1, pp. 131–5; *Foedera, Conventiones, Litterae, etc.; or Rymer's Fœdera, 1066–1383*, 4 vols (London, 1816–69), 1. ii. 919; *CCR, 1296–1302*, pp. 385–6, 390.

61 Ruding, *Annals*, 1, pp. 199–201; C. G. Crump and A. Hughes, 'The English currency under Edward I', *Economic Journal*, 5 (1895), pp. 50–67, at pp. 62–4; Craig, *The Mint*, pp. 55–8; Johnson, *The De moneta*, pp. xxxviii–xl; Mate, 'Monetary policies in England', 63–70; Mayhew and Walker, 'Crockards and pollards', pp. 135–7; Mayhew, *Sterling Imitations of Edwardian Type*, pp. 24–5.

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Opposite:
1. Silver penny, Short Cross coinage (1180–1247), recoinage of 1180–82.
2. Round halfpenny, Short Cross coinage, 1222.
3. Gold penny, 1257.
4. Silver penny, Long Cross coinage (1247–78), minted and clipped c.*1275–78.*
5. Silver cut halfpenny, Long Cross coinage, clipped c.*1275–78.*
6. Silver cut farthing, Long Cross coinage.
Above:
7. Silver groat, Edwardian coinage (1279–1343), recoinage of 1279–81.
8. Silver penny, Edwardian coinage, 1279.
All illustrations are twice actual size.







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9. Silver halfpenny, Edwardian coinage, 1280.
10. Silver farthing, Edwardian coinage, 1279.
11. Continental sterling (pollard), late 13th century.
12. Continental sterling (crockard), late 13th century.





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13. Continental sterling imitating the Edwardian penny, early 14th century.
14. Debased silver halfpenny, 1335–43.
15. Gold noble, 1351.





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16. Silver groat, 1351.
17. Copper-alloy jetton, late 13th century.
18. Pewter pictorial token, late 13th century.

Chapter 4

Money and credit in the economy of late medieval England

Pamela Nightingale

The rapid growth in personal credit since the 1960s may give the impression that its extensive use is a modern development created by the spread of banking in urban and industrialized societies, and by the technology that has given us the plastic credit card. Such a view is, of course, a misconception. Credit is recorded from the dawn of history, and medieval England depended on it for the functioning of much of its economy. Today the expansion and contraction of credit responds to political, economic, and especially monetary, pressures, exerted through governments and financial institutions, and changes in its cost and volume have wide repercussions on the economy. But in medieval England credit worked in a far less managed economy, and was therefore less susceptible to external pressures. Does this mean that credit then was subject to no constraint save that of the personal choice of individual creditors and debtors? Or was it, despite the lack of any governmental, or institutional, direction still controlled by economic and political pressures in much the same way as modern credit? If so, how much did these affect the way it functioned and the extent to which it influenced the economy?

I

The ubiquitous use of credit in the lives of ordinary medieval people is clear from the records of judicial courts. The enforcement of debts, small and great, accounted for much of their business, from the manorial court to those of borough and county, up to the great royal central courts of King's Bench, Common Pleas, and Chancery. In Writtle's manorial court at the end of the fourteenth and in the fifteenth century the majority of debts were between 2*s*. and 10*s*.[1] In Colchester's borough court, despite the occasional large debt, the median value at the end of the fourteenth century was less than 14*s*., and there were many claims for under 1*s*.[2] In Exeter's Mayor's Court in the same period the majority of the debt cases involved sums of between1*s*. and 5*s*.[3] Some of these small debts were symptoms of distress, of the kind that would multiply if a poor harvest sent the price of bread soaring, or if epidemics killed cattle and sheep. But most represented everyday transactions between neighbours and tradesmen or loans given for investment.

Although sales credits were normally interest-free, loans of money were undoubtedly

given to earn interest, despite the well-known teaching of the medieval Church which forbade lending usuriously. However, by the fourteenth century the Church had redefined and developed her teaching to permit lending at interest, provided that the rate charged was not extortionate.[4] Whereas Henry III had found it convenient every now and then to expel his own alien creditors on the grounds that they were Cahorsins and usurers, the English found no difficulty in coming to terms with usury once they were the principal lenders, and few usurers were prosecuted in Church courts. When, for example, there was a parochial visitation of Tarvin, in Cheshire, for three days in 1317, after the worst famine in living memory, two men were accused of usury, one of receiving half a bushel of wheat in return for lending one peck of grain. But in both cases the accused could find enough neighbours to vouch for their innocence.[5] Only the insolvent denounced their banker; the majority knew they would need his services again.[6]

London's Court of Orphans openly expected a return of 10 per cent on the orphans' assets, which were invested for their future, and it seems that such a rate was not considered to be usurious.[7] However, there was no such thing as a common interest rate. Rather, it was a matter of private negotiation between creditor and debtor, with the consequence that there could be wide variations in the rate charged. In times when money was scarce or men were desperate ingenious schemes, called 'false chevisaunce' which included gifts, or rent-charges, were used to conceal interest rates of 33 per cent or more.[8] But to avoid investigation most creditors followed the easy method of concealing the interest they charged by adding it to the principal. Thus a loan of £100 at 10 per cent interest a year would be recorded as a loan of £110, with no mention of interest.[9]

Before their expulsion in 1290 the Jews had been the first resort for loans of substance and risk, but they had become more and more impoverished as the Crown had expropriated them, and by the time they were expelled they had little capital left.[10] Other alien money-lenders, like the Flemish William Cade in the twelfth century, the Cahorsins, and, later, the Italians, advanced cash mostly to get their hands on the best supplies of English wool, particularly that produced by the monasteries.[11] But huge though their individual advances might be, they could never form more than the top layer of the pyramid of credit that English people were advancing to one another. As English merchants took over the major share of the kingdom's wool exports from the early fourteenth century onwards, and so acquired greater capital and ready supplies of coin, the alien merchants became less prominent as creditors. Accordingly debtors who failed to meet their obligations had less hope that an anti-alien riot might solve their problems.

English creditors were not only merchants, but came from every social class, both clerical and lay. At the heart of the government some of the biggest lenders were Chancery clerks, in addition to the Chancellor himself.[12] One suspects that some of their capital was borrowed from royal receipts. There is abundant evidence that the clergy, from bishops to parochial incumbents and humble chaplains, lent money for all sorts of concerns as investments. Clergy in Norfolk, for example, advanced capital for the nascent cloth industry.[13] In Edward III's reign the Earl of Arundel had finely developed business instincts, invested widely, and was one of the King's chief creditors.[14] Knights and gentry also lent venture capital, while most villages had their wealthier peasants who would lend to their neighbours – some no

doubt in the hope of profiting from their misfortunes by acquiring their land when they defaulted on their loans.[15]

II

One major difference between the use of credit in medieval and contemporary society is that whereas credit grew from the 1960s because of the expansion of wealth and the development of consumerism in a world economy where the money supply was no longer tied to precious metals, in medieval England credit supplemented a money supply of gold and silver coins which could not easily be increased by government fiat. As a consequence, although medieval Englishmen lived in a commercialized society with a rich export trade, they found they had to buy and sell extensively on credit because they often lacked an adequate supply of coin. The currency could only be expanded if a favourable balance of trade, or successful wars, brought in new imports of coin and bullion, or, alternatively, if the royal government debased the existing domestic coinage. The latter policy was used on the Continent but was opposed in England, although when the shortage of coin was acute the Crown would occasionally expand the currency by reissuing it at a lower weight standard.[16] Such changes, though, were rare, and so credit played an important part in helping the economy to function more smoothly, while the royal government could not survive without it. [17]

Does this mean that the widespread use of credit wholly compensated for the deficiency of the money supply, and that the lack of institutional control allowed it the freedom to smooth out any monetary crises? The bankruptcy records of the eighteenth century show just how volatile private credit was in the hands of merchants who were linked together financially when there were sudden changes in economic conditions.[18] Moreover, one has only to recall what happened in the Lawson boom and the Lamont recession of the late 1980s and early 1990s to see that too much reliance on credit can exacerbate rather than smooth financial crises. When, in the late 1980s, liquidity expanded as interest rates fell, the banks showered credit on people, but when the reverse happened they moved speedily to call in their loans. Credit had expanded as the money supply had expanded, and it contracted with it. As a consequence, firms went out of business, unemployment soared, anxious consumers stopped spending, and the housing boom collapsed. Since the money supply in medieval England was unregulated and unpredictable, it seems likely that credit, too, could increase, rather than cure, economic instability.

Medieval economic historians are divided in their views between those who think that credit could overcome monetary crises, and those who think that when the money supply contracted, so, too, did credit. Professor John Hatcher and Dr Mark Bailey argue on behalf of the former school in their recent book, *Modelling the Middle Ages*, when they write that the, 'effect of a scarcity of coin in an economy which is otherwise thriving would be an increase in barter and credit in order to meet the needs of eager buyers and sellers short of ready cash.' When the evidence shows that in some periods credit did, in fact, contract, they assert that, 'it is wrong to claim that it did so solely or primarily as a consequence of the contraction in the money supply.' Instead, they argue that it must have been not because there was a shortage of coin, but because trade was shrinking for other reasons – which

caused the demand for credit to fall. If there were a shortage of coin, they believe it would not have had much impact on the economy, and certainly not on credit. A shortage of coin would reduce prices rather than business activity, and therefore cannot be blamed for medieval economic recessions.[19] These arguments imply that the relationship between money and credit worked in a fundamentally different way in the medieval economy from the way it works today.

Of course, one obvious way in which the medieval economy did differ from ours was in the common use of barter. One might therefore assume, like the authors of *Modelling the Middle Ages,* that medieval people could counteract any shortage of coin by replacing it with barter. After all, many peasants paid their rents and dues before the fifteenth century in the form of labour services, and they often received wages in grain, just as they exchanged goods and services with each other instead of buying and selling them with coin. However, one must remember that everyone, no matter how poor, needed at least some coin. Even when labour services were predominant, lords still exacted some payments in coin for the reason that they wanted large amounts of cash themselves to fund their taste for warfare, for building, for good living, and to pay the king what he demanded of them. When they increasingly substituted money rents for labour services, from the early fourteenth century, so the peasants needed even more coin to keep their holdings and to pay the substantial entry fines imposed when they inherited or acquired additional land.[20] Since up to half of them had not enough land to grow their own food, they had to rely either on wages in kind or on cash to buy it. They also needed cash to pay for market tolls and to buy goods which villages did not normally provide, such as iron and lead farming equipment, and specialist manufactures. The striking of halfpennies and farthings from 1279, at the same time that the money supply began to expand, strongly suggests that coin was being used more and more in small daily transactions.[21]

Most of all, the Crown's demand for taxes compelled people to acquire and keep coin. All but the very poor had to pay the lay subsidy, or tax on movables, and the normal lay subsidy raised over £30,000 in cash. Villagers could only acquire the coin they needed by selling goods in local markets, or wool and grain to middlemen, with the consequence that the economy became increasingly commercialized and monetized.[22] The rolls of a royal inquest of 1341 record the amounts of coin which royal officials extorted from Lincolnshire villagers. These indicate the considerable amounts of cash that sales of even small quantities of wool put into the hands of peasants, while thefts of coin and plate from Norfolk villages tell a similar story.[23] In these counties it is likely that coin was the mainstay of the village economy. Moreover, even when coin was in short supply it is unlikely that villagers could easily substitute barter for cash in many of their transactions. The kind of speculative or multilateral exchanges that drew peasants out of their villages to local or regional markets could not easily be conducted through barter. If a peasant had a surplus cow to dispose of and needed cloth, shoes, tools, and pottery from many different craftsmen, he would find barter a clumsy, time-wasting process. For the same reason, barter was even less suited to the urban economy, since townsmen generally specialized in one craft or service and were far from self-sufficient. Their transactions were multilateral, and they needed coin as a means of exchange.

The use of barter outside the village was therefore limited, since it only worked well with

mutually dependent and regular exchanges, such as those where raw materials were supplied in exchange for finished products. Then both parties to the transaction knew what the other needed, and they could maintain running accounts, since it was rare for the values of one commodity to match the other. The growth of the rural cloth industry in the fourteenth century made possible the greater use of barter in long-distance trade, as merchants were able to deliver wool, dyes, and alum to weavers and dyers in return for the finished cloth. Even so, cash was usually handed over at some point to strike the balance, and the weavers and dyers still needed coin from some source to meet the monetary demands made on them for their rents and taxes. Similarly, cash mattered to the wholesale merchants who supplied them. If they could not obtain coin from their customers for the finished product, then they could not continue for long to buy and distribute the raw materials and pay the workmen before their own resources and credit dried up. Exporting merchants used credit and exchanges of goods as much as possible in their overseas trade, but they still had to make very substantial payments in cash for customs dues to the Crown, and for freight and insurance, while it was not always possible to exchange the goods they exported with those they wanted to buy. If it had been, then England would not have obtained the large amounts of foreign gold and silver coin which had enabled it to monetize its own economy. Therefore, the more a market economy developed, both nationally and internationally, and the more complex and urbanized it became, the less could barter meet its needs.

The expansion of credit was obviously part of this growing complexity of the economy, as also was the increased velocity of the coinage. The authors of *Modelling the Middle Ages* refer to the Fisher equation, MV=PT (Money × Velocity = Prices × Transactions) to support their argument that if a severe contraction of the supply of money were the dominant problem 'then its first effect would have been to depress prices rather than economic activity, and its second effect would have been to make the remaining money work harder by circulating it more rapidly', which is what they assert velocity would do.[24] But despite its name, velocity is not a measure of the physical speed with which coin changes hands, since this is obviously unmeasurable. Instead, velocity is a theoretical measure, deduced by dividing PT by M, of how hard money has to work if the level of transactions is to be maintained. In this sense, velocity in this period includes the use of credit.[25] Credit in medieval England cannot be counted as part of the money supply, because its available instruments, such as certificates of debt or letters of obligation, unlike later banknotes, were not transferable to outside parties, and therefore did not circulate. But, because credit enabled the money supply to work harder and increased purchasing power, it contributed to velocity.[26]

If credit were capable of unlimited expansion to meet an increased shortage of coin, it would, as the authors of *Modelling the Middle Ages* believe, demonstrate that velocity could unfailingly come to the rescue of a falling money supply to maintain transactions. In that case, velocity would, as they claim, make changes in the money supply largely irrelevant to the performance of the economy. One might suppose that, since medieval England was already relying heavily on credit to make up for a shortage of coin, it would not be difficult to expand it to meet any need. Or, was there, in fact, a strict limit to the amount of credit that could be given, as there is to the extent that one can stretch a piece of elastic? If so, what determined that limit?

III

Some evidence on the relative use of cash, barter, and credit in the urban and mercantile economy of late fourteenth-century London comes from a rare merchant's account book. It belonged to a London iron merchant, Gilbert Maghfeld, and covers the years 1390 to 1395.[27] It shows that he confined barter to his dealings with his own servants and close trading partners, including dyers in Suffolk, to whom he regularly supplied woad, alum, and iron in return for finished cloth.[28] With these men he kept running accounts, and all the parties were familiar with each other's business needs. Even so, they handed over cash at intervals to settle the accounts between them. Otherwise Maghfeld did not use barter in his retail and wide distributive trade, and overall it accounted for less than 5 per cent of his transactions. Moreover, it was of little help to him in the commercial crises of these years which can be reconstructed from his book.

In the five years the book covers, the total value of all his transactions halved, and his sales of merchandise in particular shrank until in the final year, 1394–5, they were worth less than 3 per cent of their value in the first year.[29] This decline, though, was not a steady one. There were two critical years, as Table 4.1 shows, the first of which, 1392–3, saw the sales of his staple product, iron, collapse. Then, after a year's partial recovery, supported mainly by his sales of woad, he abandoned trade, apart from sales of grain from his own estates, and he attempted to replace his income by the profits of money-lending.[30] Such a collapse in mercantile activity can best be explained either by a fall in demand, such as might be caused by a catastrophic epidemic, or by an economic crisis, which made it unattractive to give commercial credit and instead encouraged money-lending at interest. Plague did return to the London area in 1389–90, but not on the scale of the previous visitations, and the 1390s generally seem to have been freer of mortality crises than any decade since the Black Death.[31] Certainly plague cannot explain the drop of more than two-thirds in the value of Maghfeld's iron sales in 1392–3, when there is no evidence of exceptional mortality.[32]

When Margery James published her article about Maghfeld's book in 1956 she speculated that this severe drop in sales happened because Maghfeld lost the confidence of London's merchants when he appeared to support Richard II in his conflict with the City.[33] In fact, City merchants continued to deal with Maghfeld throughout the period covered by his book, and it seems that his difficulties were not peculiar to himself, but were almost certainly shared by his fellow Londoners. The cause of London's quarrel with the King, which began in February 1392, was that the City's merchants claimed they were too poor to give him the money he demanded.[34] They blamed the Crown for two decisions which affected their trade. One was the freedom given in 1388 to alien merchants to trade in the City, and the other was the ban on English merchants from exporting wool, which lasted from January to November 1391.[35] The first meant that the aliens could compete in the retail and distributive trade of Londoners with the provinces, while the second meant that the profits generated by the wool trade to Flanders, and from return cargoes, did not for that period flow into the coffers of London merchants. This inevitably reduced their trading capital and the amount of credit they could give, and came at a time when an increased number of bankruptcies among prominent exporters indicates that the City's merchant class was already experiencing

financial difficulties.[36] The ban on wool exports also coincided with a bad harvest, which drove up the price of food in 1391, leaving consumers less money to spend on other goods.[37] When the Crown added to these difficulties in February 1392 by its new demands for money, commercial confidence plunged. It is noticeable that from January to March 1392 Maghfeld's chief sales were of herring, one of the staple foods of the population.[38]

Anxiety on the part of both merchants and consumers showed itself in this way in falling sales for all but essential goods. This illustrates how declining commercial confidence, or a shortage of cash, could quickly reduce transactions, particularly for luxury goods, before it affected prices of food and other necessities. When Maghfeld sold on credit to Margaret Spenser, a London silk-woman, raw silk worth £27 18*s*. in March 1392, she was unable to repay her debt, and could only hand over to him goods worth 22*s*.[39] It seems that she had used the silk but was unable to get payment from her customers. As the year progressed, Maghfeld's sales of fur and wine also declined, but so, too, did his staple sales of iron.[40] At the same time there was a sharp fall in the cash deposits Maghfeld received from customers for their purchases. In the first year, 1390–91, they paid him £64 15*s*. cash down, or 6 per cent of the total value of his sales of merchandise. In 1392–3 their cash deposits totalled £8, or 2.5 per cent of the total value.[41] Customers were, it seems, either short of coin or they were hoarding it.

In these circumstances, fearful for their own cash flow, merchants, too, reduced their risks and cut the amount of mercantile credit they advanced. In his accounting year, July 1392 to June 1393, Maghfeld gave only £321 credit for sales of merchandise – only half that of the previous year. At the same time merchandise accounted for no more than 50 per cent of the total credit he advanced in 1392–3, compared with 72.6 per cent of the total credit he gave

	1390–1	**1391–2**	**1392–3**	**1393–4**	**1394–5**
Total value of transactions	£1476	£1135	£636	£1181	£720
No. of transactions	116	80	65	57	45
Sales of merchandise	£1072	£640	£321	£456	£30
Mercantile credit as % of total	72.6%	56%	50%	38%	4.1%
Cash deposits as % of mercantile credit	6%	6.3%	2.5%	4.8%	1.6%

Table 4.1 Maghfeld's Accounts, 1390–5

in the first year, 1390–1.[42] Loans of cash accounted for the rest. It is significant, too, that the level of unpaid debt owed to him also fell in those years from 12.5 per cent of the total to 7.7 per cent. Maghfeld was obviously subjecting his customers to greater scrutiny of their solvency before he advanced them credit. His caution was justified, because Richard II lost little time in punishing the City for its obduracy, and over the course of the next five years Londoners found they had to pay the King at least £30,000.[43] A large part of this burden inevitably fell on the merchant class.

However, once the City and the Crown had achieved the first stage of a financial reconciliation, in 1393, Maghfeld's book indicates there was some recovery of confidence and of trade. This was aided by the Londoners' purchasing from the King the restoration of their valuable commercial franchise that protected their retail and distributive trade from the competition of outsiders, including the aliens.[44] Confidence was also boosted by rising exports of English cloth and wool. Between 1387–9 and 1393–5 the average annual number of wool-sacks exported rose from 18,900 to 20,400, while the average number of broadcloths exported rose from 24,170 to 41, 530.[45] Maghfeld responded to these new conditions by increasing his sales of merchandise, particularly of woad to the cloth industry. He had sold virtually none in the previous two years, but now his sales of woad were worth over £250.[46] This had the additional advantage that he traded with substantial wholesalers like the London grocers, rather than with the retail trade, and accordingly the average value of his transactions doubled to £20. However, his total sales of merchandise accounted for an even smaller proportion of the total credit he gave in 1393–4, with a drop from 50 per cent in the previous year to 38 per cent. The rest was absorbed by cash loans.[47]

He had always made cash loans, but most had been modest, and the majority had been given to fellow merchants. The only major exception was a loan of over £97 to a clerk in 1391.[48] From March 1394 the picture changed. On 14 March 1394 Maghfeld made his first long-term financial loan of £150 to Sir Richard Talbot and three associates. It was to be repaid over five years in quarterly instalments of £7 10*s*., but by the time the second instalment was due, payment was already in arrears.[49] None the less, Maghfeld continued with his policy of transferring his resources from trade to money-lending, with more large, long-term loans in 1394 and 1395 to prominent people like the Duke of York, the Bishop of Ely, and various knights and courtiers.[50] In his last accounting year cash-loans accounted for 95 per cent of the credit he advanced.

Why did Maghfeld adopt this new policy? In the month when he made his first long-term loan to Sir Richard Talbot there is evidence of falling prices in London – which must have made him even more averse to commercial risks. Maghfeld recorded in his book a contract to buy coal at Yarmouth on 3 February 1394. The agreement was to pay 6*s*. 6*d*. a cauldron when it was delivered in the port of London. The ship arrived on 12 March, but he failed to honour the contract, and when the coal was eventually sold in April it fetched only 4*s*. 6*d* a cauldron – a drop of 30 per cent in price.[51] For a few months in the early summer of 1394, as cloth exports rose, he continued his sales of woad to London's grocers at a high rate. In April he gave one grocer credit of £204, which was due to be repaid at Michaelmas. But it was October before he received even £50, and 1395 before the whole sum was paid.[52] His last sale of woad on credit was in May 1394, and was worth £25.[53] The London grocer who

bought it was also due to repay him by Michaelmas; but Maghfeld had to wait until mid-October for the first instalment, and it was not until July 1395 that he received the last.

Despite the booming export trade, the cloth industry was apparently finding difficulty in paying its suppliers, and by 1395 Maghfeld was confining himself on his own account to selling little more than the grain that was produced on his own country estates. His servant, Thomas Craft, submitted accounts in June 1395, which showed even more clearly the difficulty in selling goods retail and in getting payment for what he had sold. He was, for example, still owed £54 8*s*. for woad. Altogether Craft owed Maghfeld almost £394 for goods supplied to him – which included cloths and beaver, licorice, and bow-staves. But his sales were few, and his receipts of cash small. Altogether he was able to pay Maghfeld in cash or goods only £77 15*s*., which left him owing £316 2*s*. 6*d*.[54] In other words, Maghfeld received back less than 20 per cent of his commercial investment for that year.

There are several aspects to Maghfeld's difficulties during these five years which help us to see the part which money, barter, and credit played in them. There were clearly two distinct crises that affected his trade, separated by a year of partial recovery. This suggests that they were not primarily the result of a long-term fall in demand of the kind caused by new epidemics. Instead, they appear to have had different contributory causes, although underlying both, apparently, was a deteriorating long-term trend. The first crisis, in 1392–3, was connected with the wool trade and a bad harvest, but was brought to a head by the clash with the Crown that undermined financial confidence, reduced the willingness of customers to spend money and of merchants to grant credit. Recovery came the following year, after the City's reconciliation with the King and the restoration of its trading privileges. These gains, together with the expanding overseas market for cloth, renewed commercial confidence, but not enough to stop Maghfeld from cutting the amount of credit he gave for commercial transactions. In other words, despite the growing demand for woad from the cloth industry, and before there is any evidence of falling prices, Maghfeld's consciousness that his cash flow was diminishing made him reduce the scale of his transactions.

Furthermore, despite his reduction of commercial credit from 1392 onwards, he made no corresponding increase in his use of barter. On the contrary, he took legal proceedings in 1393 against John Kempston, a Suffolk dyer, to enforce a debt of £24, even though they normally dealt with each other by means of barter.[55] Then, in 1394, came the first evidence of falling prices, even for necessities such as fuel. This fall came to affect a far wider area than London, because it is visible in the national price index, which plunges in 1395 to its lowest level since 1346.[56] It was, therefore, not solely the effect of the Crown's demands for money from Londoners; rather it reflected collapsing demand over a wide area, even for essential raw materials such as iron, and the woad which Maghfeld sold to the cloth industry. Thomas Craft's difficulties show how much the retail trade was shrinking, even before the summer of 1395, when plague once more visited London.[57]

IV

What caused this decline in domestic trade, the contraction of credit, and falling prices? The London Mint produced a reasonable annual output of coin, which averaged just over £26,000

in the two years from September 1389 to September 1391. Most of this, typically, was in gold coin. The output of silver, which averaged nearly £2,500 a year, although small by comparison, was not unusually so. In the next two years, September 1391 to September 1393, the average combined output fell to under £20,000, and in the following two years, September 1393 to September 1395, to under £14,000 a year. This was a substantial drop of 47 per cent from £26,000; but the most significant change was in the output of silver. Instead of the previous average of £2,500, the output of silver in the two years from September 1391 to September 1393 averaged £316, and for each of the two following years only £184. The Calais mint struck no silver at all during that time. To a large extent this fall in the output of the mints reflected the general shortage of bullion throughout Europe, particularly of silver.[58] In France, Flanders, and Brabant, England's nearest trading partners, the mints show a rapid decline in the coinage of silver from 1390 onwards, while the production of gold coins also fell.[59] In Florence the striking of silver ceased for ten years in 1392. But the London and Calais mints suffered in particular from the hostile minting policies of Duke Philip of Flanders, especially his manipulation of the Flemish silver coinage. From January 1393 the Flemish mints were offering a higher price for silver than the English mints, with the consequence that little came to London.[60]

These monetary trends meant that from September 1391 onwards, but particularly from the beginning of 1393, London's merchants had to cope with a falling output of gold coins and a severe reduction in the output of silver coin which threatened to cripple the retail trade. Even merchants of Maghfeld's standing and wide overseas trading interests were affected by the fortunes of the retail trade. As wholesalers, of course, they could not receive payment unless distributors, such as the London grocers, were able to sell their goods in the provinces. But it is also clear from the unpaid debts which Maghfeld transferred to his book from earlier accounts, dating back to 1372, that he himself normally sold goods retail in small quantities to London craftsmen and consumers, as indeed did most exporters and importers. Of the 118 old, unpaid debts he recorded where the sums are given, fifty-five (46.6 per cent) were for 40*s*. or less, and thirty-seven of these (31.3 per cent of the total) were for 20*s*. or less.[61] Small debts of no more than 40*s*., mainly for iron or fish, were also fairly prominent in the first two years of his account book. A shortage of silver coin inevitably first threatened the retail trade, as the smallest gold coin, the quarter-noble, was worth two to three days' wages for a craftsman. But any fall in the mint's output of silver could only arouse alarm in the whole mercantile class and undermine commercial confidence.

Initially the direct impact on trade of a falling output of silver from the mint might have been slight, as the existing coin in circulation might have proved adequate, and merchants could hope that things would improve. In late 1390 Maghfeld received a payment of £10 in silver coin, and in July 1391 he himself was able to pay out over £14 in silver.[62] However, with each successive year during which little silver came from the mint mercantile anxiety must have risen, not least because, as the Chancellor announced in 1385, silver was also being smuggled out of the country, because of the higher price offered for it by the Flemish mints.[63] By the beginning of 1394 the effects were plainly visible in the economy. In the Parliament which met in January, Londoners petitioned that the mint should strike more silver halfpennies and farthings. Their disappearance, they claimed, meant that the poor

could not buy food and goods for under a penny, while beggars received no alms for lack of these small coins. They repeated the petition in 1402. [64]

The exporting merchants, particularly those who sold wool and cloth and brought bullion back to the London mint, were the chief source of new coin. They were also the main suppliers of credit to smaller merchants who distributed and retailed their imports. London merchants knew what coin was produced by the mint, and they were also keenly aware from their own businesses how much coin was being spent in local shops and markets. It was their day-to-day observations about the amount of coin passing from hand to hand, and their experience of what a shortage of coin could do to trade – as well as the dissemination of news and gossip about events likely to affect them – which influenced their decisions about credit. If goods were slow to sell, it meant that credit would only slowly be repaid and the importers' reserves of cash would dwindle. They would then be unable to purchase wool and cloth to keep up the cycle of their export and import trade. In these circumstances, merchants had to act quickly to protect their capital by scaling down both their transactions and the amount of credit they offered. Some might choose, instead, to invest in land or property, from which they could gain an income, or they could exploit the demand for ready cash by lending it at attractively high interest rates to reputable men who were able to offer good security in land or plate. The latter policy had a particular appeal to Maghfeld, because as a customs collector he had an abnormally large store of coin in his keeping. His decision, in 1394, to abandon trade in favour of discreet usury, was, therefore, a rational response to a shortage of coin.

However, if this strategy had been adopted by many London merchants, it would have had the effect which banking crises had in later centuries. The cash lent to the wealthy few was less likely to circulate than if it were used in the normal way to finance the retail trade, and the purchases of many. By the end of the fourteenth century London dominated the trade and finance of the kingdom, and so, if London merchants like Maghfeld denied the cloth industry the credit it needed to buy raw materials, the consequences would be serious for the whole economy. Once deprived of credit by suppliers like Maghfeld, the distributors and the cloth industry could not keep going for long before they ran out of raw materials – forcing manufacturing output to decline, creating unemployment, reducing exports, and cutting domestic demand. The consequence was that despite there being eager buyers and sellers connected with the booming cloth industry, money did not circulate faster, and credit did not increase to keep up the volume of sales and production. Before long, cloth exports began to fall.[65] Towns like Colchester and Wells, whose fortunes and population had soared with the growth of the export trade in cloth, saw the number of their new burgesses slump in the later 1390s, while the number of debt cases in Colchester's borough court – which reflected the amount of credit previously given by the town's residents – also declined significantly.[66]

The second crisis of 1394–5 therefore illustrates in the business of one man what happened when a healthy economy with a strong export trade, but one heavily dependent on credit for its purchasing power, was hit by a shortage of coin, particularly of the silver needed for the retail trade. Four of Maghfeld's customers obtained credit from 1392 by depositing with him as pledges pieces of silver plate or other valuables,[67] but this does not appear to have been a popular method of circumventing the shortage of coin. The creditor, who needed cash

himself, was more likely to insist that the plate should be sold to the mint in exchange for coin. Nor could price-cutting maintain the volume of transactions. Since distributive merchants, like the London grocers, were heavily indebted to Maghfeld for their supplies, they could not reduce their prices significantly without going out of business. Moreover, even low prices could not persuade customers to buy if they were fearful that they might not have enough coin to pay their rent. Once a shortage of silver became obvious, consumers reacted by hoarding what they had, so that they could be sure of meeting essential payments. This normal reaction only increased the difficulties of the retail trade.[68] In this way medieval Englishmen acted no differently from the modern Japanese, who, despite their advanced technological society, sophisticated financial institutions, and the inducement of negative domestic interest rates, have, in a ten-year-long recession, hoarded gold bars and could not recover the confidence to spend their way out of years of deepening deflation.

V

How can we be sure that this interpretation of the changing volume of credit in Maghfeld's book explains the way that other merchants behaved, and that it reflected trends in the wider economy? The majority of Maghfeld's credit was recorded privately only in his book, and not by any kind of legal instrument. This illustrates how credit, and therefore the health of the economy, depended on the personal reputation of the debtor and on merchants' judgements of their customers' financial standing. It also depended on the experience and commercial instincts of creditors about when it was safe to expand the amount of credit they gave, and when it was advisable to reduce it. Obviously credit given in this way, without any binding legal force, was more convenient for both parties, because otherwise they would have to spend time and money at local courts, recording the details of their credit transactions which they might wish to keep private. Sometimes debtors would produce friends or partners as personal pledges to guarantee the debt, and they would be responsible for its repayment if the debtor defaulted. However, in the five years covered by Maghfeld's book he recorded only eleven personal pledges. This does not seem, therefore, to have been a widely used means of securing debt at this level of business – no doubt because a high risk of default deterred most people from risking their own money as pledges.

Written letters of obligation were the most popular legal instruments of credit and were used generally throughout the kingdom to pursue defaulting debtors. Maghfeld increased his use of letters of obligation from 10 per cent of his recorded transactions in 1390–1, to 24 per cent in the following year, and to 36 per cent of the total in 1394–5. This indicates a growing caution on his part, and less willingness to trust informal arrangements as the likelihood of default increased. He also used sealed bills, another kind of credit instrument that was to have a significant future. These were bonds, given for cash, on which the debtor recorded what he owed, and the conditions of its repayment, to which he added his seal. Maghfeld used only three of these, compared with sixty-nine letters of obligation, which suggests that they were not widely used in this period. They were given by people of social distinction, who probably did not want their debts to be recorded publicly on a recognizance roll. These bills were in the future to become negotiable instruments that could be passed from hand to

hand like banknotes, but this was not yet accepted practice. Nearly forty years later, in 1429, the Grocers' Company was complaining of the "Grete Schame and Sklaundre" they believed their reputation suffered when Italian merchants sold grocers' bonds on to third parties.[69] Moreover, negotiability also depended on confidence that the bonds could be redeemed.

Only the evidence of credit which was recorded publicly can give some idea of how typical Maghfeld's use of credit was. In 1283 Edward I created under the Statute-Merchant a system of registering loans in the courts of major towns. Originally eleven in number, they were later increased to provide convenient centres for the registration of credit in all parts of the kingdom. In 1353 a cheaper and more efficient system for registering and enforcing debts was introduced in certain key commercial towns. Here the Statute-Merchant was replaced by the Statute-Staple system, which was enforced more directly by the Chancery. Elsewhere Statute-Merchant courts continued. The principle of both systems was that once recognizances of debt were publicly recorded in this way, the creditor, without further proof, could look to the central courts and the sheriffs to enforce them if the debtor defaulted.

There are in the National Archives 33,000 certificates of unpaid debts which were recorded under these systems between 1283 and 1530.[70] Huge though the number of certificates is, they tell us only about defaulting debtors, and we can only discover what relationship the number of defaulters had to the total number of debts registered by comparing the certificates with the few surviving rolls on which the loans were first recorded. The City of London has preserved the biggest collection of these local rolls, and the eight that date between 1291 and 1315 record almost 3,000 legible debts.[71] By matching these with the certificates in the National Archives one can establish that the proportion of defaulting debtors on each roll varies between 18.8 per cent and 22.9 per cent, and they have a mean of 20.7 per cent. There are also some published rolls for Coventry, covering the years 1392 to 1409.[72] Between them these rolls include creditors and debtors from most parts of the kingdom, and, more importantly, they were compiled in years of very different economic conditions. Yet when one compares the entries on the rolls with those on the relevant certificates, they show a consistent level of default. The unpaid debts on the Coventry Rolls vary between 19.3 and 21.7 per cent, and they have a mean of 20.5 per cent, compared with London's mean of 20.7 per cent. This is an extraordinarily consistent, but also a very high, rate of default.

Maghfeld's book shows that he used very few recognizances, or 'statutes', as he called them – only five for those five years. There were, of course, some obvious disadvantages in using the system: although the costs of enrolment were modest, the costs of pursuing a defaulting debtor could be considerable. Writs had to be purchased, and sheriffs might have to be bribed if they were not to be repeatedly ineffectual. A note in Maghfeld's book records that two debtors of Havering-atte-Bower, in Essex, registered their debt of £120 to him for iron as a 'statute', but it cost him £40 to pursue them under the system, although he did recover these costs.[73] On the whole, therefore, it was only worth registering debts in this way if a large sum was at stake, and if the debtor had sufficient security, preferably in land or buildings, to make the cost of enforcement worthwhile.

Accordingly, Maghfeld's use of recognizances was discriminating, and appears to reflect his view that the contract had a higher than normal risk. In the sixteenth century the system

certainly had the reputation of being used as a protection for above-average risks, and the rate of default seems to bear this out.[74] By contrast, the highest rate of default for other debts in Maghfeld's book, judged by the number uncancelled, was 12 per cent. It is, therefore, not surprising to find that the average debt in Maghfeld's 'statutes' had a value of £72 – compared with an average value for the rest of his credit transactions of £10. Another significant point is that the more Maghfeld's business declined, the fewer 'statutes' he used. There were two in 1390–1, two the following year, none in 1392–3, one in the year of temporary recovery, 1393–4, and none in 1394–5. In this way the recognizances he registered followed the general trend of his more informal credit, both declining as business confidence deteriorated, even though the recognizances were publicly recorded and had a legal means of enforcement. Maghfeld's policy indicates that no sensible merchant believed it wise to expand credit in the face of a falling supply of silver coin.

Furthermore, what is indicated by the extraordinarily consistent rate of default for Statute-Merchant and Statute-Staple debts is that creditors were able to judge carefully the economic and political conditions that made it more or less likely that their debtors would default, and that, like Maghfeld, they adjusted the amount of credit they advanced accordingly. In other words, even though credit funded a high proportion of transactions, it was not a free-for-all, and it did not expand at will. The amount given did not depend primarily on how many people asked for it, but on the careful judgement of creditors whether they could safely advance it. And that judgement depended not only on the reputation and security of the debtor, but on signals which creditors were able to recognize about the health or shakiness of the economy. It seems clear from the Statute-Staple and Statute-Merchant certificates that Maghfeld was not alone in reducing the amount of credit he gave in 1394–5. The number of London creditors in the certificates of unpaid debt fell from an average of forty-five in the early 1390s to thirty-one in 1394 and then to twenty-six in 1395, an overall fall of 40 per cent, while nationally the number of certificates fell by 20 per cent.

VI

If the amount of credit used in the medieval economy was high in relation to the amount of coin in circulation, it would not be surprising if one of the signals which alerted merchants to restrict their credit was the output of the mint. There are, of course, no figures that can tell us what the ratio of cash to credit was, but because of our ignorance on such a vital question, some speculation, based on Maghfeld's use of recognizances, is perhaps admissible. Maghfeld recorded only 7 per cent of the total value of his credit using Statute-Merchant or Statute-Staple recognizances. If this reflects general practice, and if, as the evidence indicates, the certificates of unpaid debt represent 20 per cent of the recognizances originally registered, we can take the certificates for a year such as 1354, which is the first full year of Statute-Staple certificates, and make some rough calculations. There are 199 certificates for debt recorded that year where the debtor defaulted. The combined value of those debts was £12,284. If this figure represents 20 per cent of those originally recorded that year under this system, their total value would be, in round figures, £60,000. If, in turn, this latter figure represents, as in Maghfeld's case, 7 per cent of the national total for commercial credit that

year, then, again in round figures, this would be £850,000. The significance of this last figure is that it is within the current estimate of the size of the circulating currency at that time.[75]

Of course, the assumption that Statute-Staple and Statute-Merchant recognizances represented only 7 per cent of the total of credit throughout the kingdom is questionable. Maghfeld was a sophisticated London merchant, with a network of established trading partners, whose solvency and business acumen he had tested over many years. Moreover, he was accustomed to dealing in valuable merchandise and with large sums of money, and it seems likely that for the sake of speed and ease of transaction he was willing to give far more substantial credit to his familiar business partners, using letters of obligation, than was the case with more cautious and less experienced provincial creditors. The evidence for this deduction comes from comparing the value of the Statute-Staple certificates of debt for Exeter creditors with the value of debts recorded in the Exeter Mayor's Court in the period 1378–88. The average value of the eighty-four Statute-Staple certificates was £46.[76] Multiplied by five to give an idea of the total credit originally registered by Exeter creditors in this period produces a round figure of £19,300. By contrast, the average value of the 4,536 debts contested in that period in the Exeter Mayor's Court was 13*s*. If these, like Maghfeld's letters of obligation, represented a rate of default of 12 per cent, then the value of this small-scale urban credit in these years was, in round figures, £24,500. To this sum must be added about another £30,000 involving Exeter creditors, which led to cases in the same period in the Court of Common Pleas, where the average debt was worth £10 16*s*.[77] These figures would indicate that Exeter creditors were using Statute-Staple recognizances to register about 26 per cent of the value of their credit compared with Maghfeld's 7 per cent.

One should probably interpret this contrast not so much as one between London and provincial merchants as one between creditors living in large towns and those from small towns or villages, since the cases in the Exeter Mayor's Court included credit as high as £80 and as low as 1*d*. Whereas the larger sums tended to be given by the 50 per cent of creditors who lived in Exeter, the smaller sums tended to be given by the 50 per cent who lived in villages and small towns.[78] Since there was a similar division of roughly 50 per cent of urban and 50 per cent of rural creditors in all the Statute-Merchant and Statute-Staple certificates, it appears that the proportion of national credit registered under those systems would be closer to Exeter's 26 per cent than to Maghfeld's 7 per cent. But given the predominance of London creditors using recognizances in this period, one should probably adjust this proportion to 20 per cent of the total. In that case, the amount of credit in 1354 involved in relations between towns and villages throughout the kingdom may have been roughly £300,000, or about 35 per cent of the currency then in circulation. To this, though, one must add the credit given within villages, each loan usually worth less than 5*s*., which surface only in debt cases in manorial courts. Small-scale though it was, the total from about 9,500 parishes must have been considerable, and may have brought the amount of credit in use in 1354 to half of the value of the coinage in circulation.

These figures can only be very rough estimates, and may well be far too low, because so much credit was not recorded at all. Compared with today's highly indebted society, the suggestion that credit was worth one-half of the current coinage may appear modest. But its

significance is best understood when it is compared with the Crowther Report's conclusion that in the 1960s, before the great modern expansion of credit began, only 9 per cent of consumers' expenditure was financed by credit.[79] It is also significant that the proportion of defaulting debtors in the 1960s was only about 1 per cent, compared with 12 per cent for Maghfeld's ordinary, unregistered loans, and 20 per cent for the more risky Statute-Staple and Statute-Merchant loans.[80]

These figures suggest that one reason for the steep rate of default in medieval England is that the proportion of credit in relation to the uncertain money supply was very high. The close relationship which is visible between the expansion of recorded credit and a rising output of the mints appears to indicate that contemporaries understood the connection between them. If one looks only at the early London recognizance rolls, there is a striking contrast between the 144 debts recorded in1295–6 and the 845 recorded in 1309–10. In the 1290s the output of the mint was low, whereas in 1309–10, after some years of a greatly expanding wool trade and consequent high output of coin, credit expanded hugely, not only in London, but throughout the whole kingdom.

The varying annual output of the mint does not, however, tell us much about the size of the money supply as a whole. This obviously included all the existing coins in circulation, and depended, too, on how much coin was leaving the kingdom. There could be a declining output of new coins but a rising or stable money supply. For example, the output of the mints fell markedly after 1313, but it has been calculated that in 1319 the total money supply was almost certainly higher than in 1310.[81] This raises the question of whether the level of credit was influenced primarily by the former (the current output of the mints), or the latter (the total amount of coin in the kingdom). The objection is often made, for example, that credit in the 1440s and 1450s was unlikely to be affected by the low output of the mints in those decades, because the number of coins struck in the 1420s and early 1430s had been high.[82]

However, most of the coin struck then was gold and not silver, with all the implications that this had for falling liquidity, declining retail trade, and the undermining of commercial confidence. Moreover, since there were no government statistics to record how much money was in circulation, compared with the considerable amount of coin stored away in the treasuries of the rich and powerful, no one could possibly calculate the size of the money supply and how it was likely to affect the economy.[83] The evidence of the Statute-Merchant certificates suggests that, despite the high money supply which has been calculated for 1319, credit, for a variety of reasons, including the very low output of the mints, was given sparsely in the 1320s. In this way creditors, and consumers too, seem to have responded much more to their perceptions of current trends and events, including the output of the mints (much as the stock-market does today) than to any guesses they could make about the total amount of coin in the kingdom. Since merchants made such an important contribution to the supply of credit, the pattern of commercial behaviour exhibited by Maghfeld in response to the falling output of the London mint was one which most probably affected the whole operation of credit in the late medieval English economy.

VII

It would, however, be a mistake, as Maghfeld's book demonstrates, to assume that merchants were influenced only by the changing output of the mint in their decisions whether to give or withhold credit. Because credit rested essentially on the creditor's hope that he would benefit from the loan and would be repaid, any event which threatened that confidence, or which removed prospective creditors and debtors from the scene altogether, was likely to reduce its volume. The impact of the Black Death, which killed at least a third of the population, is visible in the halving of the number of certificates between 1349 and 1350. Not only did prospective creditors die, but many more, fearing the imminent approach of death, did not judge it the best time to lend money which they might not live to see repaid. Similarly, other visitations of plague and pestilence are visible in the records by temporary falls in the amount of credit both given and enforced. Enforcement required creditors to travel to towns, where they feared infection, and they knew also that in times of high mortality the legal process was likely to be more protracted and the recovery of debts less successful than in more tranquil times.

Similarly, warfare which interrupted overseas trade or threatened the northern counties with invasions by the Scots, royal interference with the wool trade which threatened new supplies of coin, heavy taxation, or the export of coin overseas, political disturbances, such as Richard II's conflict with the City, or bad harvests – all suggested to creditors a higher risk that they might not recover their money; and credit contracted accordingly. So attuned were creditors to the financial implications of such events that, for example, when, after one year of already high taxation in 1340, Edward III raised in 1341 the highest tax he was ever to impose on his subjects, and at the same time threatened the prosperity of the wool trade by collecting it in wool, less than half the usual number of creditors tried to enforce their Statute-Merchant loans.[84] They well knew that it would be a waste of time to try to extract cash from debtors, or to sell their forfeited property, when there would be so little coin available.

This indicates just how limited the money supply was for the work it was required to do, and because it was also working under pressure to support a superstructure of credit, then credit could not come to the rescue if the money supply fell. Instead, credit acted as a multiplier, reflecting merchants', and consumers', fears about a shortage of coin, or their confidence when it appeared to be abundant. Because debts were large in relation to the amount of coin available to pay them, the risk of business failures was considerable. Even when a gold coinage was introduced in 1344, it deepened rather than lessened the problem. It made monetary crises more likely by creating the possibility of bimetallic flows of coin between England and the Continent – which could deny an adequate supply of silver to the London Mint and to the retail trade. The crisis of 1394–5 indicates that a lack of silver was chiefly responsible for the general contraction of mercantile credit and falling prices at that time. Credit was therefore vulnerable to changes in the composition as well as in the total volume of the coinage.

Since exporting merchants effectually acted as bankers to the wider community, there was little chance that, if they substantially withdrew mercantile credit, it would result only in falling prices. Inevitably, as Maghfeld's book demonstrates, transactions also fell, first in

the luxury trades, and then, more generally, as the ripples of the crisis spread into the countryside, causing agricultural prices to fall, and, as a consequence, the level of production. On the manor of Langenhoe, in Essex, the fifty acres sown with oats in 1396 'was an area smaller than that of any previous documented year since 1339'. Even the manor's wool production declined, along with its rents and sales of grain.[85] In normally prosperous Norfolk the land market of Coltishall, Hevingham, and Martham sank in these years into a depression of a depth not previously recorded. Between 1393 and 1398, but particularly in 1394–6, 'less land changed hands than during any other equivalent period on record.'[86] Similarly, rents became harder to collect.[87] Landlords reacted by cutting wages where they could. On the Cambridgeshire estates of Crowland Abbey the shepherd's wage was halved in 1396, the ox-driver's wage was reduced from 8*s*. to 5*s*., and the maid-servant's from 6*s*. to 5*s*.[88] On the estates of the Bishop of Worcester the managers realized finally that there was no alternative to ending demesne production, just as in 1395–6 the bursar and the hosteler of Durham Priory recognized that there was no hope of ever recovering the rents of their estates, which had long been in arrears.[89] In these ways a reduction in the supply of coin (or of the right kind of coin), could lead, by way of falling sales and contracting credit, to a serious economic recession, which only new supplies of coin could cure.

Just as the much-vaunted 'new economy' of the 1990s turned out, after all, to follow the same rules as the old economy, to the chagrin of investors, so the medieval monetary economy was no different. Credit could not expand indefinitely, or velocity increase, without an adequate supply of coin to support it. Medieval merchants knew this, and as Maghfeld's book illustrates, took speedy action to withdraw mercantile credit in favour of what they saw as more secure forms of investment. Maghfeld's attempt to save his fortunes came too late. Whether he could have recovered them if he had not died in 1397 is questionable, but unlikely. He was then using as his capital money paid for the London customs, for which he was indebted to the Crown, and his total resources were not much greater than the debt. Death, in fact, saved him from the disgrace of bankruptcy, which befell in the same year five prominent exporters in the London Grocers' Company, whose capital, like Maghfeld's, had been exhausted by the long financial strain of the 1390s, and whose creditors foreclosed to protect themselves.[90] This was not an unusual occurrence. The dependence of credit on an adequate supply of coin in the medieval economy, and the real uncertainties about when new supplies of coin would be available, since they relied on so many factors not controlled by governments, meant that the monetary economy, which supported the market economy, had a volatility and vulnerability which is outside our modern experience, but is one which historians should not discount in their analyses, and certainly should not dismiss.

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but the general outline is the same.

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identified and excluded and that the certificates are analysed according to the date when the debt was first registered. This is because creditors not infrequently waited for many years, occasionally up to thirty, to enforce the debt - for a variety of reasons - whereas only the date when the debt was registered tells us anything about the economic, political, or social conditions which influenced the granting of credit. For this reason my figures do not agree with those of other scholars who have counted the certificates according to the date of enforcement, which could be when the creditor died. See, e.g., Jennifer A. Kermode, 'Money and credit in the fifteenth century: some lessons from Yorkshire', *Business History Review*, 65 (1991), p. 481, n. 22. My figures, by contrast, show a decline of 20% between the unpaid debts recorded in 1461–70 and those recorded in 1471–80, as the output of the mint fell.

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Chapter 5

Coinage and money in England, 1086–*c.*1500

N. J. Mayhew

This paper will be concerned with the study of coinage as a means to understanding medieval money supply. The most important point to register about the coins is that the medieval English penny contained a penny's worth of silver. A number of consequences flowed from this important point. It meant that the supply of coin was fundamentally dependent on the supply of silver. One sometimes hears it said that a certain king struck coin to meet the needs of a military campaign, but the reality was that no monarch could strike coins without bullion. No English silver mines produced bullion in quantities that were at all significant during the Middle Ages, so England had to earn her silver supply in trade with continental Europe, which she did chiefly through the sale of English wool and cloth. In this way, English coinage was directly linked to English trade.

A further point to keep in mind is the extent to which the medieval money supply consisted of coin, and little else. Of course, credit also had a very important role, which is studied elsewhere in this volume, but one of the truths which the study of credit has revealed is that credit itself was limited by the available supply of coin. When coin was more plentiful, so was credit, and vice versa. It should also be admitted that much economic activity was carried on by means of barter and self-sufficiency, and later in this paper I shall consider ways in which we might measure the degree of monetization in a society. But for the moment I shall concentrate on *coin* supply, as a means of approaching *money* supply, since in a medieval context money was, above all, coin. Credit and barter were ways of getting by without money, rather than another form of money.

The supply of coined money approximates to what a modern economist means when he talks about M0, and estimates of the size of the money supply are important because of the influence which money supply may, or may not, have had on the economy as a whole. This relationship between money supply and the rest of the economy was famously encapsulated at the beginning of the last century by the economist Irving Fisher in the equation MV=PT, also known as the Fisher Identity, or as the Quantity Theory of Money.[1] In a review some years ago Professor Britnell wrote a withering comment about 'another of those papers in which economists armed with a few algebraic simplifications invade a historical literature they have not read.'[2] Anyone attempting to tinker with the Quantity Theory in the Middle Ages should take these words very much to heart. I hope to show that this particular equation can deepen our understanding of the historical sources, but, for the moment, I'll take refuge

in the long tradition of the use of Quantity Theory in economic history.

In the 1930s an economic historian of early modern Spain, named E. J. Hamilton, applied Quantity Theory to Spain in the sixteenth and seventeenth centuries, when huge quantities of bullion from the New World were imported first into Spain and thence to Europe and beyond, observing that this large addition to the money supply coincided with a very marked and widespread rise in prices. Hamilton had no doubt that the influx of bullion had caused the rise in prices, and this view was widely accepted until after the Second World War. By the 1950s, however, historians were becoming increasingly interested in the effect of demographic factors on the wider economy, and some of them began to argue that population change had a far more important effect on price levels than money supply. Although this tussle between monetary and demographic factors was originally fought out in an early modern context, the same issues were also applied to the Middle Ages, and particularly to medieval England, where the price data is so plentiful. The very marked rise in English prices, between the late twelfth century and the late fourteenth century, was explained by some in terms of a rise in the money supply, and by others through population change.[3]

One unfortunate feature of this debate was that it tended to be fought out with a degree of animosity, which had the unfortunate effect of preventing the various participants from actually relating to one another. Scholars were prone to split into opposed camps, and to deny any validity at all to the other side. Demographers disparaged the monetary role, and vice versa. Happily those days are now gone, and no one today would deny that the behaviour of prices was influenced both by demographic factors and by monetary ones. Moreover, various other elements need also to be built into the equation. Technological and environmental change – special preoccupations of our own age – have also now become established in the historical debate, illustrating once more the truism that the history we write tells us quite as much about our own age as about the age we are studying.

Nevertheless, the Quantity Theory remains a useful analytical tool, especially if it is used in conjunction with other approaches. Indeed, one of the beauties of modern Quantity Theory is that it necessarily involves a consideration of changing population levels. Nowadays economists prefer to speak of GDP – a measure of the size of the economy – rather than of T for Transactions, chiefly because there are well-established conventions for quantifying GDP, while T has remained rather elusive. Economists also represent GDP in their equations by the symbol Y.

What I propose to do now is to sketch out an attempt to quantify M and GDP for a number of dates over the period 1086 to *c.*1500. This is essentially what I did in a couple of articles in the 1990s,[4] but this occasion gives me an opportunity to re-visit this subject in the light of more recent work.

Before turning to the detailed figures, there are a few general remarks worth making. These figures are estimates, or even 'guestimates': a rather painful word, which nevertheless stresses the very approximate nature of the figures. It is, of course, insane to pretend that we can know what England's GDP was in 1100. Even today such estimates of current national output are notoriously subject to regular revisions. Nevertheless, I feel quite strongly that this impossibility does not absolve us of the duty to think out loud about it, because in doing so, we can stimulate debate and begin to move towards a very approximate idea of what sort

of figures are possible. It also very rapidly becomes clear during this exercise that the figures suggested for one century have an important bearing on the estimates for the adjacent centuries. I also feel obliged to float these highly speculative figures, because economic history without even an attempt at quantification makes a pretty thin brew. And finally, it is important to remember that most of the figures which I will set before you are only estimates. They do not pretend to offer precision. It is an unfortunate feature of much academic debate that what begins life as an estimate or a hypothesis is sometimes taken up by others and treated as fact. These 'facts' are then refuted by hostile critics, or used as the building-blocks of further hypotheses by friendly supporters, but in either case the original nature of the estimate is too often lost sight of. Throughout the debate we need to remember that an estimate is only an estimate.

Nevertheless, I do believe such estimates can be interesting. One of the things which has convinced me of the usefulness of seeking quantification is the way in which it exposes conflicting interpretations in a particularly harsh and unforgiving light. The best example of this is provided by the debate which took place between me and Graeme Snooks about England's GDP at the time of Domesday Book. I estimated GDP in 1086 at somewhere between £300,000 and £400,000, while Snooks's figure was £137,000.[5] These are very divergent estimates, which actually serve to draw attention to fundamentally different interpretations of Domesday Book, so I want to look carefully at this early period.

Domesday Book provides an unrivalled source of data, which suggests that an interest in eleventh-century economic statistics is not wholly anachronistic. Moreover, the attempt to put numbers on our ideas about the eleventh-century economy focuses concepts which otherwise tend to remain blurred. Generalized impressions about peasant self-sufficiency and standards of living, about the exchange of land for service, goods, or coin, or about urban life and trade, are all thrown into stark relief by quantification. It is the numbers which concentrate the mind, crystalize the debate, and force us to think through the implications of generalized remarks about taxation, or monetization, or self-sufficiency. The search for even approximate numbers imposes a necessary discipline on our thinking about the medieval economy as a whole.

Domesday Book gives very precise information about the numbers of people found on the manors it surveys. Estimates of population based on that information vary because of uncertainty about the size of eleventh-century households, and about the allowance which should be made for the sections of the country not covered by the survey. Nevertheless, there seems to be general agreement that the population of England in 1086 was probably not less than 1.5 million, and not more than 2.25 million. The English eleventh-century data is the envy of the world. From such firm demographic foundations it ought to be a simple matter to establish the size of the Domesday economy. For the early modern period, Bairoch has shown that GDP can be estimated with astonishing accuracy from the most basic information about population and average daily wages.[6] But here our problems are just beginning, since not only is there uncertainty about the standard of living of the mass of the Domesday population, but early data on prices is extremely limited, and the very concept of a wage is inapplicable to most of the people of 1086.

However, economists tell us that GDP may be calculated either by totalling the

population's income or its consumption. Thus Graeme Snooks arrived at a figure for Domesday GDP by summing the annual values of lands in Domesday Book (that is, £72,000), and adding an allowance to cover omissions from the survey, and another estimate of the necessary consumption of the work-force whose income or expenditure did not concern the Domesday Inquest. In this way Professor Snooks reached an estimate of £137,000 for England's GDP in 1086. In principle, this approach is reasonably sound, though Snooks has probably reached a figure which is much too low. This is partly because he allows only a small figure for omissions from Domesday Book. For Domesday Book not only omitted the four northern counties and much urban income; much was omitted from those parts of the country survey which were apparently covered. A recent survey of the *Inquisitio Comitatus Cantabrigiensis* and the *Inquisitio Eliensis* found many substantial men of whom Domesday Book says nothing.[7]

More importantly, Snooks has only allowed the peasantry a figure sufficient (or almost sufficient) for the meanest existence, and villeins, bordars, and cottars are all allotted a subsistence life of equal penury.[8] In fact, Domesday Book tells us explicitly that some listed unfree peasants held as little as a single acre, while others held scores of acres; some were rich and others poor; some had so little land that they must have had other means of support, sometimes as labourers, but sometimes as market gardeners, livestock farmers, craftsmen, or tradesmen active in the market;[9] on the other hand, some villeins, either jointly or singly, held whole estates from their lord.[10] Without wishing to deny the abject poverty of many, it is equally true that many unfree peasants generated and marketed a surplus, and Harvey and Bridbury have both shown that peasant productivity often exceeded that of the demesne.[11] Recognition of these truths would liberate Snooks from some further doubtful deductions. If the unfree are allowed to participate in the market, his model would then no longer require the highly improbable figure of over twenty per cent of GDP to be exported.[12]

The Snooks model is based on a further questionable assumption: that the values recorded in Domesday Book tell us the total income derived from each manor by the lord and by all free peasants. It has to be said that most historians have approached Domesday valuations with some diffidence, and few would assert that any single uniform and unvaried practice was unfailingly observed across all the different counties covered by the survey. However, in many cases it seems clear that valuations were based on rents or farming agreements, or on an estimate of what the manor might be likely to fetch if it were at farm.[13] Clearly farmers expected to make more from an estate than they agreed to pay for it in rent, so we may postulate a margin of profitability over and above the Domesday valuation. (It was this margin which was shaved when the record notes that a manor worth £n was actually paying £n+, and could not long bear it.)[14] In other cases, of course, the demesne was cultivated directly, and the value might be a closer money estimate of the full yield, though manors in hand were also sometimes valued by reference to their value at farm. Thus the assumption that the Domesday valet included the entire profit deriving from the manor is probably unsafe, while Snooks's assertion that these values included those from the lands of the free peasants seems to be quite new, and entirely lacking in textual authority.

For all these reasons it seems clear that Snooks's estimate of the 1086 GDP errs substantially on the low side. My own guess – it is no more than that – about GDP *c*.1086

was a figure in the £300,000 to £400,000 range. This order of magnitude was founded on the Domesday valet of £72,000, grossed up to £100,000 for omissions. This is the figure for what Gregory King might have called 'the rent of the land'. However, those who paid the rents had also to make a living. For the thirteenth century, when land was scarce and labour abundant, the gloomiest assessments of peasant life have suggested that a half or a third of the labourers' productivity was expended in rent and seigneurial dues. The eleventh-century English peasant, whose labour enjoyed a scarcity value in relation to the available land, may have been in a stronger position than his thirteenth-century counterpart. On this basis, I have guessed that the £100,000 rental probably implies figures of £300,000 or £400,000 for GDP.[15]

Interestingly, however, all these varied estimates of the size of the economy in the eleventh century share a common view of a market in which cash played an active part. Other chapters in this volume explore the role played by coin in the *later* Middle Ages, and my figures certainly suggest that this role was more extensive in the later period. However, even in the eleventh century the importance of coin should not be underestimated. James Campbell has dealt gently but firmly with the astonishingly long-lived myth that money and the market was alien to the late Anglo-Saxon economy.[16] The longevity of this myth is difficult to explain since serious students of Domesday have long recognized the role of coin and the vigour of the eleventh-century market. Even the Snooks estimate of the economy, sees forty per cent of GDP entering the market sector, while Bridbury's economy is one in which cash plays an even larger role than that envisaged by Lennard, who had himself been so impressed by the level of cash payment in Domesday Book. Reginald Lennard's learned and beautifully written study of Domesday agriculture is now over forty years old, but it deserves more attention than it often receives. He concluded,

> I have certainly learnt that money played a larger part in agrarian affairs than I had supposed and that the farming-out of manors on stock-and-land leases was so common that this mode of estate management, which was inherited from Anglo-Saxon England, must at least rank in importance with the system of tenure by knight-service introduced by the Normans.[17]

Thus he found, for example, that at least twenty-two of the manors held by Odo's tenants were let for a fixed rent, of which eighteen were listed in money.[18] Moreover, where there is evidence beyond Domesday Book, it is clear that the 1086 survey was by no means comprehensive: Lennard found sixteen places unmentioned in Domesday Book or in the Domesday Monachorum, which according to the early twelfth-century schedule of the Archbishop's Kent estates were paying money farms.[19] He concluded, not only that ' the renting of manors must have been a good deal more prevalent than we should gather from the specific references to it in the Exchequer text', but also that '*reddit*' indicated ' the payment of a definite rent or farm and not the actual or estimated profits of direct exploitation by the lord'.[20] Further, many 'values' were also, in fact, rents.[21] The Domesday Book values at Halton and Monks Risborough can be seen from separate listings to be equal to their money farms, and the Exon Domesday for Foddington shows that it was farmed for a rent equal to its Domesday Book value.[22] Similarly, Roger de Lacy held Onibury, in Shropshire, from the bishop of Hereford for an annual rent of 20*s*. – that is, the same figure as given in Domesday Book as the value of the manor.[23] Comparison of Domesday Book with the early twelfth-

century leases from Burton Abbey, St Benet of Holme, Ramsey Abbey, Peterborough Abbey, Glastonbury Abbey, and St Paul's Cathedral led Lennard to conclude:

> On the whole what we learn about rents from leases of early twelfth-century date seems to be in harmony with the indications of Domesday Book in regard to the farming of manors in the reign of William I. Payments in money are common; but renders in kind and mixed payments are also found; and the farmer sometimes owes service as well as rent. Arrangements implying a considerable development of money economy are much more widespread than historians have usually supposed.[24]

Domesday Book's account of town life in the eleventh century has long been recognized to be seriously deficient. Even for those towns which are apparently recorded quite carefully, a suspicion remains that the tone of the whole survey was essentially concerned with agrarian (chiefly arable) income and feudal relationships, and that many aspects of town life escape full consideration. In an important article on the hidden trade of the Middle Ages, Christopher Dyer pointed out that Coventry looks like a rural manor in Domesday Book, yet was chosen as the urban centre for a bishopric in 1102.[25] This is not evidence of urban growth of a prodigious kind between 1086 and 1102, but rather illustrates the way Domesday Book sometimes fails to record activity which falls outside its usual scope. Similarly, the Evesham Abbey Survey shows that the Domesday entries for Gloucester and Winchcombe substantially under-record the life of these towns.[26]

The listing of markets in Domesday Book is particularly eccentric. Darby's summary shows that markets were rarely mentioned in the larger towns and cities, though they are mentioned often for smaller places.[27] Thus there is no market mentioned for Oxford, but there is one for Bampton. In Norfolk there are no markets recorded for Norwich or Thetford, but they are listed for Dunham, Holt, and Litcham. In Suffolk, which has more markets listed than any other county, there was none recorded at Ipswich, Bury, or Dunwich. On the other side of the country there are markets recorded at Okehampton and Otterton, in Devon, but no mention at Exeter.[28] Almost the only exceptions to this rule are Worcester and York, where markets are mentioned in Domesday Book, but Worcester's entry occurs under the manors of Northwick and Tibberton, and the York market is only mentioned in passing to establish the location of two stalls in the meat market (*in macello*). Clearly the listing of markets in Domesday Book was not systematic, and the presence of markets in larger towns usually went without saying.

The 112 boroughs listed by Darby look much more complete, but in many cases, most obviously for Winchester and London, the Domesday Book gives nothing like a full description. Nevertheless, enough is said about places like Colchester, Oxford, and Norwich, and the near contemporary Winton Domesday tells us enough about a big city, for it to be clear that towns thrived, and required coin to do so. The Winchester surveys show that the owners of much urban property paid customary dues and nominal rents to a feudal superior, often amounting to sums of about 12*d*. per house, which are similar to the payments recorded in many Domesday Book towns; but, in addition, the Winchester evidence shows that these same properties also earned their owners much larger commercial rents, paid by tenants and subtenants who were actually in occupation, and usually actively involved in trade. We may be confident that in many cases similar commercial rents lay beneath the feudal superstructure

given by the Domesday Book town entries, and just occasionally Domesday Book itself allows us a glimpse of this sort of sub-letting. Thus we learn of three *mansiones* in Nottingham, in which there were eleven merchants' houses, or of seventy-five *hagae* in Guildford where 175 men lived, presumably with their families. It seems likely that similar arrangements elsewhere often escaped the attention of the Domesday enquiry, which more often lists the nominal owner but gives us no information about the actual tenant.

Street names, and sixty-two different occupational personal names in the Winchester surveys, speak of a variety, vitality, and dynamism in the economic life of the twelfth-century town which can be traced back to *Tempus Regis Edwardi*, and which argue for a particularly buoyant economy in the first half of the eleventh century.[29] Oxford also seems to have enjoyed a period of special prosperity then,[30] but the evidence is scarce, and for most towns the best we can do is a rough estimate of population or of the number of houses before 1066. London may have had a population of about 12,000,[31] and must have been the biggest city. York had 1,890 tenements and was clearly the next largest city, and Norwich had 1,320.[32] Lincoln had 1,150 tenements, and Winchester about the same *c*.1148 and a century earlier, which may imply a population of about 5,500. However, comparison with later Winchester evidence suggesting a population figure of some 8,000 in *c*.1348, when Winchester had contracted from its mid-twelfth-century area, argues that the estimate based on house numbers is too low. It may well be that individual properties in the survey contained more than one dwelling. Oxford and Thetford both had about 1,000 houses, suggesting, with the same caveats, perhaps 4,000 or 5,000 inhabitants.[33] These were big towns, but many much smaller settlements were also heavily involved in trade. A couple of hundred burgesses or houses in a typical Domesday town such as Derby or Hythe would imply some thousand inhabitants, but students of the later Middle Ages are well aware that significant numbers of men who lived by non-agricultural means were often to be found in much smaller settlements.[34] In the same way, many Domesday manors, such as Ashwell or Stanstead Abbots, in Hertfordshire, or Wimbourne Minster, in Dorset, also contained small numbers of *burgenses* who earned their living as townsmen in settlements which would not ordinarily be regarded as towns.

The unusually detailed listing of the tradesmen of Bury St Edmunds gives a clear idea of how far towns had departed from any kind of self-sufficient peasant ideal. But the urban and monetary influence of towns did not stop at the wall or ditch, or even at the parish boundary. We have already noted the tendency for smallholders to cluster in the vicinity of towns which formed a ready market for their produce, and James Campbell has alluded to the reassessment of geld liability in Norfolk to reflect, among other trends, the wealth of settlements around Norwich.[35] The commercial and monetized vitality of many eleventh-century towns was not confined, but reached deep into the countryside.

If urban development provides one source of evidence for the widespread use of coin, the role of money in the organization of the army is another. Although knight service and the *fyrd* appear to provide the basis of military arrangements with no need for coin, the reality was very different. The Berkshire customs recorded in Domesday Book reveal how far the customary military arrangements actually involved the use of coin,[36] and it seems clear that this was not a practice restricted to a single county.

In addition, mercenaries were regularly to be found in eleventh-century armies, and the role of cash in the Anglo-Norman army has long been recognized.[37] But such military payments should not be seen in isolation. For it is difficult to see how governments could levy taxes to pay soldiers in a society not familiar with the regular and widespread use of coin. Taxpayers clearly had to be able to lay hands on coin, and the Berkshire soldiers who were required to bring coin with them for their subsistence evidently expected to be able to buy what they needed with it.

To sum up the argument so far, I am suggesting that Snooks severely underestimated the size of the Domesday economy, and that more generally the role of coin around 1100 was more important than is sometimes realized. Is there any way we might quantify the use of coin in 1100, 1300, and 1500? To give us some kind of a handle on this difficult question, I would like to return to our estimates, and particularly to the Velocity figures.

Velocity is a concept which seems to be particularly prone to misunderstanding. Many of us have assumed that Velocity has increased over the centuries, for it seems obvious that the pace of economic life has increased dramatically between the twelfth and the twenty-first century. However, when I began my attempts to calculate V, I came upon the counter-intuitive discovery that from the twelfth to at least the early twentieth century, V has consistently tended to fall. I thought at first that the whole model must be flawed, but then I noticed that V calculated by early modern economic historians between the seventeenth and the twentieth centuries also tended to fall. How could this be?

It may help, to start with, if we try to forget about Velocity of circulation and think of it only as V – that is to say, a variable resulting from substituting numbers for M, P, and T (or rather Y– that is, GDP). In short, V is a function of M, P, and Y. The number which results from doing this sum appears on Table 5.1 below, and you can see how it declines over time.

Date	1086	1300	1470	1526
Population	2.25m	6m	2.3m	2.3m
Y (GDP)	£0.4m	£4.66m	£3.5m	£5m
M	£37,500	£900,000	£900,000	£1.4m
P	[25]	104.8	104.6	135.1
V (Y/M)	10.7	5.18	3.88	3.57
Y per cap	£0.18	£0.78	£1.52	£2.17
Y deflated	£0.4m	£1.11m	£0.84m	£0.93m
Y p/c defl.	£0.18	£0.19	£0.36	£0.40

Table 5.1

What, if anything, does that mean? If you think of V as the amount of times M has to turn over to accomplish the monetary work represented by PT to make the economy function, then it appears that even though the economy might be growing, M needed to turn over less often, because there was more M available. This is essentially the reason why V falls over time – because there is more M around.

Thus V has got nothing at all to do with the frequency with which money payments are made. A recent article[38] by Paul Latimer in *Past and Present* expresses this difference as transactions Velocity, for the frequency with which money payments are made, and income Velocity for what I mean by V. My V does have another interesting feature. Modern societies have low V figures, because each of us holds large sums of money, in our pockets or in our bank accounts, ready to spend. Many of us spend our entire monthly salary over the course of a month, but this means half our total income is inactive in the bank for half of every month, even if we do not consciously save. In medieval societies people were much more likely to spend cash as soon as they received it: the Paston Letters give an impression of people queueing up for coin and having to settle debts with it quickly once they received it.[39] However, there is a physical limit to the rate at which M – the total money supply – can turn over. This means that the higher numbers resulting for V occurred because people found other expedients to do their business. The high V scores indicate a society extending a money supply inadequate for its needs by various non-monetary expedients, such as deferred payments, credit, barter, rents in kind and labour, and feudal military service. In short, all the features so familiar to medievalists, who have also observed a general tendency for these expedients to be gradually replaced by more frequent use of coin. A falling V figure can thus be seen as an index of monetization.

We should also observe that a high V figure is likely to be a symptom of monetary distress, or of a society highly reliant on non-monetary expedients in order to conduct its business. As a means of doing business, cash takes a lot of beating. It is far more flexible, and far more trade friendly, than the alternatives of barter, or rents in labour or kind. It is important to be aware of the difficulties which a high V implies, because historians are tempted to suggest that money supply is not important, because in times of shortage, you can just increase V. In fact, an increase in V usually amounts to a major economic contraction.

However, figures for V are only as good as our estimates for M, P, and GDP. I have already explored the conflicting GDP figures for 1086 in some detail. Rather to my surprise, most of my other GDP estimates have been largely unchallenged. Of course, many colleagues retain a gently amused scepticism about whether a medieval GDP can be estimated at all. Chris Dyer has expressed such a view by referring to my estimates as ‘brave’. Such scepticism is entirely proper, and echoes my own earlier reminder: these are only estimates. One particular area of uncertainty concerns population levels, which, of course, are fundamental for any estimate of medieval GDP. Serious, distinguished medieval historians have advanced very widely differing estimates of population, even in recent years, varying from very low figures of around three million to as high as seven million. Nevertheless, even in a world where so much remains uncertain, I would defend comparative estimates of the type suggested here, not least because they relate estimates from one field or one period to another. If you alter your population guess for 1300, this has repercussions for 1100 and

1500, and for your guesses about GDP and V. For this very reason, historians should be encouraged to look beyond narrow boundaries, to test theories and estimates against other periods or regions.

However, in recent years some of the figures which I have suggested over the last thirty years for medieval M have come under scrutiny, especially in two important papers by Martin Allen in the *Economic History Review* and the *British Numismatic Journal*.[40] The *Economic History Review* essay gathers together all the recent work done over some twenty-five years very conveniently in one place, and introduces a consistency of method and approach which renders the figures comparable with one another more effectively than did the earlier estimates, which were prepared in different ways at different times, and without fully exploring how closely they could be compared with one another. Allen also persuasively argues for estimates ranging between maximum and minimum figures in place of single estimates, which never aspired to any greater accuracy, but sometimes failed to make their approximate nature fully clear.

For the most part, the new suggested estimates generally bracket those suggested by earlier scholars, but the estimates now offered for the period 1282 to 1351 are significantly different from some of the figures advanced earlier by me. The case for the new proposed estimates from 1282 to 1351 is made most fully in the *British Numismatic Journal* article, and proposes larger estimates for the currency than my 1974 suggestions, particularly around 1310–31. Allen correctly points out that my figures did not include an allowance for smaller English mints (that is, mints other than London and Canterbury), and his method has the advantage of including them. He also proposes estimates for Scottish, Irish, and continental sterlings on the basis of the proportions in which they appear in the hoards. These are clear improvements to my earlier figures. Nevertheless, I retain some doubts about some of his calculations of the estimates of the English penny currency in the decade 1310–20. For the moment, suffice it to say that Allen has shown my figures *c.*1310–20 are too low, but I believe they are not as much too low as he suggests.[41]

As the significance of the size of the medieval currency is more widely recognized, it is appropriate that varying estimates of it should be discussed. In that sense, differing opinions may be regarded as evidence of the subject's coming of age. Nor should the existence of different estimates invalidate the approach. We have already observed how population estimates vary widely, but the difficulty of reaching a consensus in no way diminishes the importance of the subject. Uncertainty about M around 1320 does not directly affect the estimate for 1300 which is offered in the following table, which sets out these monetary variables for a series of dates from 1086 to 1526, but it should heighten awareness that none of these figures should be regarded as holy writ.

However, if Allen is right, it may help me with another problem in the fifteenth century. Just as one explanation of the rising prices of the thirteenth and fourteenth centuries may lie in the expanding money supply of those times, the stagnant prices of the fifteenth century may owe their origin, at least in part, to monetary shortage. John Day and John Munro have both argued very powerfully for a monetary – and more especially a silver – famine, showing that mint output in England, and more generally in Europe as a whole, ran at historically low levels, especially around 1400 and again around 1450.[42]

The calculation of English M at this time is very difficult, and the only really reliable guess offered to date is for the period around 1465–70, rather later than the low point around 1450. However, as Table 5.1 shows, by 1470 my estimates of M look very similar to those for 1300. Given that population was unquestionably much lower in 1470 than in 1300, one might even expect the greater amounts of money available per head of the population to have caused prices to rise, if monetary factors were truly as important as I believe. However, if Allen's figures for the fourteenth century are true, they would suggest that M had indeed fallen by the fifteenth century, and may therefore have contributed to the sluggish behaviour of prices at that time. In short, if I am wrong about 1310, it may help my other arguments about the 1400s and 1450s.

I should, however, also mention another important factor about later medieval English money. In the mid-fourteenth century England began to strike large amounts of gold coinage for the first time. Mavis Mate argued long ago that the importance of the introduction of gold coin had been seriously overlooked.[43] In the past people have tended to imagine that gold provided a convenient medium for international trade, allowing the silver to stay at home, where it was convenient for minor transactions. Unfortunately this happy picture bears little resemblance to what actually happened. In reality, merchants paid their debts in England in whichever metal gave them the better deal. For most of the later Middle Ages that was gold, which means that the yellow metal flowed into England fairly plentifully, but silver flowed out. As a result, the English money supply became seriously skewed in favour of gold. In the 1460s and 1470s the mint output which provides the basis for the M estimate consisted of £629,000 in gold but only £222,000 in silver (London mint, 1464–75). For the longer period 1377–1483, the surviving mint accounts show that £2,484,837 of gold was struck, but only £430,625 of silver.[44] Interestingly Braudel and Spooner argued long ago that silver was a much more inflationary metal than gold.[45] The lower values of the silver coinage made it much more flexible, and more widespread than gold, which, in contrast, tied up large units of spending power in a single coin. Thus it seems likely that a gold-dominated money supply may have tended to lower prices. In short, any study of the money supply needs to take account not only of the total face value of the currency, but also of the metals and denominations of which it is composed.

To close, I want to draw attention to a new sort of monetary evidence which is becoming ever more important, namely stray-find evidence. In the last twenty years the metal detector has brought to light an undreamed of number of new coin finds. The evidence is so plentiful that it has been possible to collect the data and arrange it chronologically to provide a possible indication of relative changes in the amount of coin in use over successive centuries. This sort of data has most recently been utilized by Christopher Dyer in an intriguing paper in the *British Numismatic Journal*.[46] There are, of course, a number of important reservations to be noted. The assumption that modern coin discovery bears a constant relationship to medieval coin loss, and indeed that coin loss bears a constant relationship to original coin use is an heroic one. In reality, there will undoubtedly have been distorting factors at work, some of which we can only guess at. At least one such distorting factor can be clarified somewhat. It seems probable that small coins may have been more easily dropped, and less easily found, than larger ones. This probability can be confirmed by an analysis of the finds

	Output 1279–1351	Finds 1992–2000[47]
pence	89.8%	78%
halfpence	6.9%	12.5%
farthings	3.2%	9.5%

Table 5.2

data and comparison with the known output of different denominations.

Thus one should not simply assume that stray finds exactly replicate the original currency. Nevertheless, subject to sensitive interpretation, cumulative stray-find evidence will make an important contribution to our knowledge of the English money supply.

In summary, this paper has argued that coin was used more widely and earlier in the Middle Ages than is often thought. Coins were the essential component of the money supply, and so, together with a range of other factors, had an important impact on the medieval economy. The variable V in the Fisher equation MV=PT provides a useful coefficient of monetization, although this approach is subject to the reliability of the estimates reached for M, P, and T.

Ashmolean Museum, Oxford

Notes

1 A useful discussion of quantity theory for historians may be found in D. O. Flynn , 'Use and misuse of the Quantity Theory of money in early modern historiography', in E. van Cauwenberghe and F. Irsigler, eds, *Münzpragung, Geldumlauf und Wechselkurse: Akten des 8th International Economic History Congress, Budapest, 1982* (Trier, 1984), pp. 382–418.

2 R. H. Britnell, 'Review of periodical literature published in 1994', *EconHR*, ser. 2, 49 (1996), p. 159.

3 John H. Munro, 'Monetary contraction and industrial change in the late-medieval Low Countries, 1335–1500', in N. J. Mayhew, ed., *Coinage in the Low Countries (880–1500): the Third Oxford Symposium on Coinage and Monetary History*, BAR, int. ser., 54 (1979), pp. 95–101, summarizes the arguments and provides the bibliography of this debate.

4 N. J. Mayhew, 'Modelling medieval monetisation', in R. H. Britnell and B. M. S. Campbell, eds, *A Commercialising Economy: England, 1086–1300* (Manchester, 1995), pp. 55–77; N. J. Mayhew, 'Population, money supply, and the velocity of circulation in England, 1300–1700', *EconHR*, ser. 2, 48 (1995), pp. 238–57.

5 For both Snooks's and Mayhew's estimates see Britnell and Campbell, eds., *Commercialising Economy*, pp. 194–6. There is also an important Appendix 3 on this subject in this volume: Christopher Dyer, 'A note on the calculation of GDP for 1086 and *c*.1300', ibid., pp. 196–8.

6 P. Bairoch, 'Estimation du revenu national dans les sociétés occidentales préindustrielles et au XIXe siècle', *Revue économique*, 28 (1977), pp. 177–208.

7 C. P. Lewis, 'The Domesday jurors', *Haskins Society Journal*, 5 (1993), pp. 17–44.

8 Maitland, however, found villeins 'heterogeneous to a high degree'. See R. Weldon Finn, *The Norman Conquest and its Effects on the Economy, 1066–86* (London 1971), p. 113.

9 For cottars or bordars holding gardens or other very small plots only see Finn, *Norman Conquest*, p. 114, Westminster. Also John Blair, *Anglo-Saxon Oxfordshire* (Stroud, 1994), p. 161, for Holywell gardens at Oxford. Market gardeners usually needed a nearby town: see Finn, *Norman Conquest*, p. 160, on the benefits accruing to

peasants near Shrewsbury.

10 Finn, *Norman Conquest*, p. 49, for a villein paying £4 rent at Bodsham. Thirty villeins paid £10 at Kennington, but a very poor woman paid 3*s*. 5*d*. at Barfreston. Villeins rented the manors of Alverstoke and Millbrook for £6 and £5 (p. 71); a group of villeins at St Mary of Lire held almost 1.5 hides (p.77); at Ickleton one villein held a whole hide, 11 held half a hide, but 17 had no land at all (p.102); one Hanwell villein held 2 hides, a Greenford villein held 150 acres, 10 Middlesex villeins farmed manors from the canons of St Paul's – e.g., Harrow, Harmondsworth, Hatton, Willesden (p.112).

11 Sally Harvey, 'Domesday England', in H. E. Hallam, ed., *The Agrarian History of England and Wales*, II: *1042–1350* (Cambridge, 1988), p. 136: 'The rent- and due-paying small producers were effective and efficient across a wide range of activities in order to pay the sums that they did. In regard to the little documented area of peasant livestock, the evidence of Domesday Book nevertheless indicates that the combined size of these herds consistently far outnumbered demesne flocks. In the eleventh century, it would seem that the small producer was generally far more effective than the large. Evidence from Kent bears this out. The county with the smallest proportion of land in demesne nevertheless sustained the highest returns from land per man.' A. R. Bridbury, 'Before the Black Death', *EconHR*, ser. 2, 30 (1977), p. 398, supported Eileen Power, *The Wool Trade* (Oxford, 1941), p. 29, both finding peasant sheep-farming far more important than that of the great lords and monasteries. B. M. S. Campbell's work on Norfolk has also enhanced our respect for the peasant farmer. Similar conclusions were reached by David Stone, 'Medieval farm management and technological mentalities: Hinderclay before the Black Death', *EconHR*, ser. 2, 54 (2001), pp. 634–5. It may be worth noting in passing that research on twentieth-century farming confirms that smaller farms tend to have a higher output per unit of land than large farms: Ram Dayal and Charles Elliott, 'Land tenure, land concentration and agricultural output', *Social and Economic Factors in Agricultural Development*, United Nations Research Institute for Social Development Report, no.5 (Geneva, 1966). Levin in *Anna Karenina* found the same was true in nineteenth-century Russia.

12 Not even the 'workshop of the world' in the nineteenth century exported so high a proportion of GDP.

13 Maitland regarded valuations as 'answers to the question "What would a *firmarius* pay for this estate stocked as it is?"' See Finn, *Norman Conquest*, pp. 7–8. Ibid., p. 149, notes the case of Lugwardine, which had not been farmed in 1066, and 'therefore it is not known what it was worth.' For the idea that *valets* were often, even usually, based upon or equal to the annual farm of the manor, see also Reginald Lennard, *Rural England 1086–1135* (Oxford, 1959), Harvey, 'Domesday England', A. R. Bridbury, 'The Domesday valuation of manorial income, in Bridbury, *The English Economy from Bede to the Reformation* (Woodbridge, 1992), and J. McDonald and G. D. Snooks, *Domesday Economy: a New Approach to Anglo-Norman History* (Oxford, 1986). More recently, Snooks, without McDonald, seems to have changed his mind.

14 Finn, *Norman Conquest*, Alresford, West Meon, Polhampton (pp. 68–9); Calbourne (p.75). For other rents markedly in excess of value, see Hennington, East Hoe, Dean, Barton Stacey, Eling, Broughton, and Neatham.

15 Mayhew, *Commercialising Economy*, p. 61 and Appendix 2 . Bridbury, 'Domesday valuation', pp. 111–32, however, has suggested an interpretation of the manorial valuations of Domesday Book which would argue for a much larger GDP. He suggests that the figures given in Domesday Book refer only to cash renders, additional to renders in kind or the produce of cultivation of the demesne, since some twelfth-century manorial cash renders were of a similar order of magnitude. This rather special interpretation of the Domesday Book figures does not seem to take into account the evidence that valuations in Domesday Book were often based on the value of the manor at farm (see above). It is also an unforeseen development from Bridbury's own earlier view, 'Domesday Book: a re-interpretation', *English Economy*, p. 93: 'In Domesday Book the value of the manor is the annual value of that manor to its manorial lord'; ibid., p. 93n, 'It is possible that these Domesday returns of manorial value were computed, not on the basis of income actually received, but on the basis of an agreed valuation.'

16 James Campbell, 'Some agents and agencies of the late Anglo-Saxon State', in J. C. Holt, ed., *Domesday Studies* (Woodbridge, 1987), p. 201. Another form of the same myth is the argument that when the documents speak of a sum of money they really meant goods to that value. Postan dealt witheringly with this approach, firmly laying the onus of proof on those who doubt that a sum of money so stated meant what it said: M. M. Postan, 'The rise of a money economy', *EconHR*, 14 (1944), pp. 123–34. Rarely we are told specifically that a particular payment was made in coin – *feos*. (Relating to the geld of 994; see John G. Gillingham, ' "The most precious jewel in the English Crown": levels of Danegeld and heregeld in the early eleventh century', *EHR*, 104 (1989), p. 373, n.2.) More usually nothing is said, but we do quite often meet instructions on the way in which a money payment was to be made. Payments made *ad pensum* were still made in coin, but calculated in pounds by weight rather than by number. In the same way payments recorded in Domesday, by weight, or blanch, or at 16*d*. or 20*d*. to the *ora*,

confirm that recorded sums of money were indeed paid in money. See also, for example, the manors of Ottery St Mary and Rawridge, in Devon, which for obvious reasons, paid its £70 per annum to St Mary's Rouen in Rouen pence: Lennard, *Rural England*, p. 152. See also David Bates, *Normandy before 1066* (London,1982) for the ubiquity of money payments in Normandy. Domesday Book occasionally tells us of payments in unweighed coin, e.g., at Hempstead, Glos., which was farmed for '60s. numero':Lennard, *Rural England*, p. 111. Gillingham's use of 'the ambiguous form "pounds"', rather than the 'more clearly monetary £' stresses the distinction between pounds by weight and by number, but should not obscure the fact that there is not a shred of evidence that these payments were made in anything but coin.

17 Lennard, *Rural England*, p. v.

18 Ibid., p. 115.

19 Ibid, p. 120. Finn supported this finding, though he regarded the schedule as fol. 11 of the Domesday Monachorum. For example, Wingham was valued at £100 in Domesday Book, but the schedule tells us it was farmed for that amount and additionally rendered a *gablum* of £29 10*s*., and customary dues of over £3.

20 Lennard, *Rural England*, p. 123. For example, Appledore was valued in Domesday Book at £16 17*s.* 6*d.*, but in the Domesday Monachorum was said to be worth £12 and at farm for £16 16*s.* 7*d*. But see also. Harvey, 'Domesday England', p. 93, for another interpretation of *reddit* and *valet* and the difference between the two.

21 Lennard, *Rural England*, pp. 125–7. Finn, *Norman Conquest*, also detected many rents not explicitly recorded as such in Domesday Book – pp. 52–3: Woking, Guildford, Godalming; pp. 101–2, 105: Ditton, Litlington, Exning, Chippenham, Fulbourn, Duxford, Weston Colville, Tring, Offley, Throcking, Wallington, Boorscroft; pp.148–9: Hope, Lyonshall, Bullingham, Hamnish, Evesbatch, Thornbury, Cleeve, Linton, Marden.

22 Lennard, *Rural England*, pp. 121–2. Finn, *Norman Conquest*, p. 53, notes Croydon as farmed in Domesday Monachorum, though this is not apparent from Domesday Book.

23 Ibid.

24 Ibid.

25 C. Dyer, 'The hidden trade of the Middle Ages: evidence from the west midlands of England,' *Journal of Historical Geography*, 18 (1992), p. 155.

26 H. C. Darby, *Domesday England* (Cambridge, 1977), pp. 306–7.

27 Ibid., Appendix 17, pp. 369–70.

28 Ibid., p. 318, points out that the Otterton market is mentioned in the Exon Domesday, but not the Exchequer text, confirming the impression that markets seem to have been of little interest to the compilers of the full Domesday Book.

29 Martin Biddle, ed., *Winchester in the Early Middle Ages*: *an Edition and Discussion of the Winton Domesday*, Winchester Studies, 1 (Oxford, 1976), esp. pp. 17, 26, 28, 382, 427, 428, 439, 456.

30 Blair, *Anglo-Saxon Oxfordshire*, pp. 167–70, associates Oxford's prosperity with its importance in the Anglo-Danish conflict.

31 Pamela Nightingale, *A Medieval Mercantile Community: the Grocers Company and the Politics and Trade of London, 1000–1485* (New Haven, CT, and London, 1995), p.18. Darby, *Domesday England*, p. 303, says over 10,000, but regards any more precise estimate as 'hazardous'.

32 Biddle, ed., *Winchester*, pp. 468; 440–1.

33 Blair, *Anglo-Saxon Oxfordshire*, p. 159, doubts if the normal multipliers are appropriate. He prefers ranking to statistics, and, on the basis of mint output of the late tenth century, suggests London; York, Lincoln, Winchester, Stamford, Chester, Thetford, Exeter, and Oxford on a level only with shire towns like Canterbury, Norwich, Shrewsbury, Wallingford, or Bedford. By counting Domesday Book tenements the order is: York, Norwich, Winchester, Lincoln, Oxford, Thetford, citing Biddle, ed., *Winchester*, p. 468.

34 The important work here has been done by Hilton, who has shown towns had much agricultural land, and small towns had many non-agricultural inhabitants. R. H. Hilton, 'The small town as part of peasant society', in Hilton, *The English Peasantry in the Later Middle Ages* (Oxford, 1975), pp. 76–94. The definitions of town and country need to be very flexible, and the necessary subtle distinctions cannot be based on numbers of inhabitants alone.

35 James Campbell's Ford Lectures in the University of Oxford, 1996.

36 Noted by Campbell in his Ford Lectures.

37 J. O. Prestwich, 'War and finance in the Anglo-Norman state', *TRHS*, ser. 5, 54 (1954), pp.19–43, and 'The military household of the Norman kings', *EHR*, 96 (1981), pp. 1–35. For the monetary cost of the Anglo-Saxon navy, see M .K. Lawson, 'The collection of Danegeld and heregeld in the reigns of Aethelred II and Cnut', *EHR*, 99 (1984), pp. 721–3, 737–8.

38 Paul Latimer, 'The English inflation of 1180–1220 reconsidered', *P&P*, 171 (2001), pp. 3–29, esp. at p. 24, n.3, for two different kinds of Velocity.

39 See the extracts cited in N. J. Mayhew, 'The Yorkist recoinage of 1464–1471', *BNJ*, 44 (1974), pp. 71–3.

40 Martin Allen, 'The volume of the English currency, 1158–1470', *EconHR*, ser. 2, 54 (2001), pp. 595–611. M. R. Allen, 'The volume and composition of the English silver currency, 1279–1351', *BNJ*, 70 (2000), pp. 38–45.

41 Allen's method generates a 1319 estimate which exceeds his 1310 estimate plus 1310–19 output. There must be an error here, which I believe arises because his method consistently underestimates the relative importance of the most recent issues in the currency. It has been demonstrated that hoards of the 1320s and 1330s have a high proportion of coins of the most recent types, while by the 1340s, and after, this proportion gradually falls. (See Stewart *BNJ*, 47 (1977), pp. 94–8; Mayhew *BNJ*, 58 (1988), p.42.) Allen's method ignores this aspect of the behaviour of the currency, which has important implications when using the proportions of recent issues to estimate the total currency. Instead, he suggests deducting a figure of 5–20% from his estimates to allow for wastage. Generally speaking I am happy with a 20% deduction, but think a 5% deduction too low, and the 1319 estimate too high, even with a 20% allowance for wastage.

42 J. Day, 'The great bullion famine of the fifteenth century', *P&P*, 79 (1978), pp. 3–54. J. H. Munro, 'Bullion flows and monetary contraction in late medieval England and the Low Countries', in J. F. Richards, ed., *Precious Metals in the Later Medieval and Early Modern Worlds* (Durham, NC, 1983), pp. 97–158.

43 M. Mate, 'The role of gold coinage in the English economy, 1338–1400', *NC*, ser. 7, 18 (1978), pp. 126–41.

44 The English mint accounts are conveniently summarized in C. E. Challis, ed., *A New History of the Royal Mint* (Cambridge, 1992), Appendix 1.

45 F. P. Braudel and F. C. Spooner, 'Prices in Europe from 1450 to 1750', in E. E. Rich and C. H. Wilson, eds, *Cambridge Economic History of Europe*, IV: *The Economy of Expanding Europe in the Sixteenth and Seventeenth Centuries* (Cambridge, 1967), p. 391.

46 Christopher Dyer, 'Peasants and coins: the uses of money in the Middle Ages', *BNJ*, 67 (1997), pp. 31–47.

47 Reported by finders to the author at the Ashmolean Museum, Oxford, 1992–2000.