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Working Paper No. 1076

The Rise of the Modern Monetary System: An Integration of the Credit and State Money Approaches

by

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Levy Economics Institute

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ABSTRACT

This working paper integrates the credit money approach (associated with Post Keynesian endogenous money theory) with the state money approach (associated with Modern Money Theory) by drawing on Wray's 1990 book (*Money and Credit in Capitalist Economies: The Endogenous Money Approach*, Edward Elgar), his 1998 book (*Understanding Modern Money: the Key to Full Employment and Price Stability*, Edward Elgar), and his 2004 edited book (*Credit and State Theories of Money: The Contributions of A. Mitchell Innes*, Edward Elgar). New sources and interpretation of the history of money make it clear that there is no contradiction between state money and private credit money—each played a role in the creation of the modern monetary system. Indeed, today's system was created by bringing state money into the private money *giro*, thereby strengthening both.

KEYWORDS: credit money; state money; Modern Money Theory (MMT); Bank of England; fiat money; giro money; history of money; central bank; nominalism; origins of money.

JEL CODES: B25, B52, E42, E58, E62, N11, N20

INTRODUCTION: AN ALTERNATIVE INTERPRETATION OF MONEY'S ORIGINS

While economists have long perpetrated the barter story of money's origins, this is not consistent with the historical and anthropological evidence (Dalton 1982). Neither is it internally consistent (Levine 1983; Wray 2004). If money did not originate as a cost-minimizing alternative to barter, though, what were its origins? Definitively identifying its origins is, of course, a difficult task. As the famous numismatologist Grierson (1977) notes, "Study of the origins of money must rely heavily on inferences from early language, literature, and law, but will also take account of evidence regarding the use of 'primitive' money in modern, non-Western societies. Such evidence, of course, has to be used with care" (12). He also recognized that the history of money is much more complex than the history of coins, for there is the danger that one might try to find money in societies which did not even use it. "Some systems, while employing shells or other commodities frequently used as 'money', may not necessarily be monetary at all!" (13).

It is difficult for economists to agree even on a definition for money, and most recognize several different functions of money. It is possible that one might find a different *history of money* depending on the function that one identifies as the most important characteristic of money. While many economists (and historians and anthropologists) would prefer to trace the evolution of the money used as a medium of exchange, our primary interest is in the origins of the money of account, because, as it turns out, that is where money's origins probably lie. This is essential to understanding money's contemporary functions and role in our economy. The evidence shows that the earliest money was not created to facilitate exchange but as the unit of account in which accounts were kept and debts were measured.

In his analysis of ancient currencies, Keynes argued that as early as the third millennium BC, one finds "very advanced indeed" the Babylonian use of money. He examined in detail the monetary reforms of Solon (circa 590 BC) and Pheidon (seventh century BC) that set the values of coins. However, these values were based on weight units that could be traced back to 3000 BC, if not earlier. Indeed, Keynes argued that "the fundamental weight standards of Western civilisation have never been altered from the earliest beginnings up to the introduction of the metric system" (1930, 239); without exception, "[a]ll weight standards of the ancient and also of the medieval

world in Babylonia, the Mediterranean Basin and Europe have been based on either the wheat grain or the barley grain as their monad.” Whether we speak of the *mina* and *shekel* or *pound* and *lira* of Europe, all the early money units were weight units based on either wheat or barley grains, with the nominal value of gold usually measured in wheat units, and the nominal value of silver usually measured in barley units.

Monetary units, then, appear to be derived from weight units but do not derive their value from precious metal. Why weight units? Is it possible that the weight units were just taken over because they offered well-known and objective standards? Is it possible that the choice of the wheat and barley grains as the bases of monetary units had a more concrete origin? Fortunately, we can find in Mesopotamia a nearly 10,000-year unbroken record of the development of both writing and money—indeed, the history of the two are closely linked. Writing seems to have evolved out of a system of counting, as Schmandt-Bessarat (2014) explains:

The Mesopotamian cuneiform script can be traced furthest back into prehistory to an eighth millennium BC counting system using clay tokens of multiple shapes. The development from tokens to script reveals that writing emerged from counting and accounting. Writing was used exclusively for accounting until the third millennium BC, when the Sumerian concern for the afterlife paved the way to literature by using writing for funerary inscriptions. The evolution from tokens to script also documents a steady progression in abstracting data, from one-to-one correspondence with three-dimensional tangible tokens, to two-dimensional pictures, the invention of abstract numbers and phonetic syllabic signs and finally, in the second millennium BC, the ultimate abstraction of sound and meaning with the representation of phonemes by the letters of the alphabet.

To summarize and simplify: writing was invented by accountants to keep track of debts. While the accounting was originally kept as tokens that looked like the thing counted (a token for a goat, a different token for a basket of barley), an early innovation was to simply push the token into fresh clay—the earliest form of *writing*. The next innovation was to use a stylus to carve a representation into fresh clay (dispensing with the tokens). Gradually the writing became more stylized until the recording evolved to the *cuneiform* tablets we are more familiar with, and—importantly!—that we can read. Those earliest tablets were records of credits and debts. From

those earliest examples of writing, it took about 4,000 years to develop literary texts, and another 1,000 years to create an alphabet that allowed written language to become more like spoken language.

The conceptual leap required in writing was tremendous—and maybe the most important innovation of the past 10,000 years. Similarly, the conceptual leap from recording debts taking the form of particular things owed (a goat, a basket of barley) to measuring debts in money values had to have been comparably difficult. While measuring units for length, volume, and weight were relatively easy to develop (so long as there was agreement to standardize them), the money measuring unit was much harder. The record preserved in the clay tablets proves that this had been accomplished, at least in Mesopotamia, about 5,000 years ago. (Not coincidentally, Graeber’s [2012] famous book on money and debt is titled *Debt: The First 5000 years*.)

Implications for Our Understanding of the Role of the State and the Nature of Money

Historical evidence suggests that most commerce from the very earliest times was conducted on the basis of credits and debits—not through immediate payment using a medium of exchange. Innes (1913) writes of the early European experience: “For many centuries, how many we do not know, the principal instrument of commerce was neither the coin nor the private token, but the tally” ⁽¹⁾. This was a “stick of squared hazel-wood, notched in a certain manner to indicate the amount of the purchase or debt,” created when the buyer became a debtor by accepting a good or service from the seller who automatically became the creditor (394). Wooden tallies were not the only records as there was nothing unique about hazelwood. Tallies eventually could circulate as “transferable, negotiable instruments.” One could deliver the stock of a tally to purchase goods and services, or to retire one’s own debt. “By their means all purchases of goods, all loans of money were made, and all debts cleared” (Innes 1913, 396).

Even if one accepts that much or even if most trade took place based on credits and debts, this does not necessarily disprove the story of the textbooks. Perhaps coins existed before these tallies (and other records of debts), and surely the coins were made of precious metals. Perhaps the debts were made convertible to coin, indeed, perhaps such debt contracts were enforceable only in legal tender coin. If this were the case, then the credits and debts merely substituted for

coins, and net debts would be settled with coin—which would not be inconsistent with the conventional story. There are several problems with such an interpretation, however.

First, the recorded debts (in the form of clay tablets) are at least 2000 years older than the oldest known coins. Second, it has long befuddled economic historians that the denominations of the early precious metal coins were generally too high to have been used in everyday commerce. For example, the earliest coins were electrum (an alloy of silver and gold) and the most common denomination would have had a purchasing power of about ten sheep, so that “it cannot have been a useful coin for small transactions” (Cook 1958, 260). Furthermore, the reported nominal value of coins does not generally appear to be closely regulated by precious metal content. It is also unlikely that coins would have been invented to facilitate trade, for “Phoenicians and other peoples of the East who had commercial interests managed satisfactorily without coined money” for many centuries (260). Indeed, the introduction of coins would have been a less efficient alternative in most cases.

It is also useful to note that coins did not have a denomination stamped on them until relatively recently. Their nominal value would be set by announcement—for example, the medieval *town-crier* would announce the value—and would be changed from time-to-time. This would have been a futile activity if the *real* value were determined by precious metal. But in practice, the kings (or other authorities who issued them) would set the value at which the coins would be accepted in payment. By *crying up* or *crying down* coins, the Crown would increase or reduce the coin’s value in payment of taxes and other obligations.

Finally, while we are accustomed to few types of coins (always issued by government, with perhaps one coin for each denomination), the typical case until recently was a plethora of coins, sometimes including many with the same face value but different exchange value, issued by a wide variety of merchants, kings, feudal lords, barons, ecclesiastics, and others. Indeed, “in [feudal] France there were beside the royal monies, eighty different coinages . . . each entirely independent of the other and differing as to weights, denominations, alloys and types [and] twenty different monetary systems.” (Innes 1913, 385). According to MacDonald (1916), in Merovingian Gaul there were “1200 different moneyers,” the great majority of whom were

private individuals; this “epoch of private coinage” seems to have been “brought to an end by Pepin and Charlemagne” (29–35).

That many coins were not used in frequent transactions is evidenced by “the excellent state of preservation in which they are usually found” (Grierson 1965, 536). Estimated “wear and tear” on coins (especially gold coins) in circulation is quite high—perhaps 1 percent per year (Munro 1979, 181–2)—but “Carolingian coins seem to have circulated surprisingly little” (Grierson 1965, 536). Finally, Grierson notes that it was frequently necessary to impose “legislation forcing people to use coin; if they refused it they laid themselves open to severe penalties, a heavy fine if they were free men or a flogging if they were unfree.” This hardly seems consistent with the textbook story of “common consent”—and would be irrational if coins contained precious metal worth the nominal value of the coin!

It is also difficult to understand why precious metal coins were normally worth more than would be dictated by their precious metal content if it is true that the value of the precious metal determines the value of the coin. Clearly, if the nominal value of the coin were below the relative value of precious metal contained therein, the coin would be removed from circulation to be used as metal. But, given the costs of coinage, if the mint were to issue coins whose value were little more than that of the embodied metal, this would provide very little purchasing power to the mint. While the textbook story argues that paper credit developed to economize on precious metals, we know that metal coins were a relatively late development. Surely hazelwood tallies or clay tablets had lower non-monetary value than did precious metals. In other words, lower-cost alternatives to full-bodied coin were already in use. Thus, it is unlikely that metal coins would be issued to circulate competitively (for example, with hazelwood tallies) unless their nominal value were above the value of the embodied precious metal.

What then are coins, what are their origins, and why are they accepted? Coins appear to have originated as *pay tokens* (in Knapp’s colorful phrase), as evidence of debt. It is possible that they were derived from medals that were common in some traditional societies. The earliest *coins* then, may have been nothing more than gifts with an imprint to signify the giver; it is conceivable that these were given to recognize a personal debt to the receiver. The first coins

were struck by authorities, probably by Pheidon of Argos about 630 BC (Cook 1958, 257). Given the large denomination of the early coins and uniform weight (although not uniform purity—which probably could not have been tested at the time), Cook argues that “coinage was invented to make a large number of uniform payments of considerable value in a portable and durable form, and that the person or authority making the payment was the king of Lydia.” Further he suggests “the purpose of coinage was the payment of mercenaries” (261).

This thesis was modified “by Kraay (1964) who suggested that governments minted coins to pay mercenaries only in order to create a medium for the payment of taxes” (Redish 1987, 376–7). Crawford (1970) has argued the evidence indicates that use of these early coins as a medium of exchange was an “accidental consequence of the coinage,” and not the reason for it (46). Instead, Crawford argued that “the fiscal needs of the state determined the quantity of mint output and coin in circulation,” in other words, coins were intentionally minted from the beginning to provide *state finance* (ibid.). So, early governments understood that “[m]inting and taxing were two sides of the same coin of royal prerogative” (Davies 1997, 146).

Similarly, Innes (1913) argued that “[t]he coins which [kings] issued were tokens of indebtedness with which they made small payments, such as the daily wages of their soldiers and sailors” (399). This explains the relatively large value of the coins—which were not meant to provide a medium of exchange, but rather were used to settle the state’s debt to “soldiers and sailors.” The coins were similar in purpose to “tallies” as described above—evidence of government debt—and relative to the quantity of hazelwood tallies, and other forms of money, the quantity of coins was quite small:

Indeed so small was the quantity of coins, that they did not even suffice for the needs of the Royal household and estates which regularly used tokens of various kinds for the purpose of making small payments. So unimportant indeed was the coinage that sometimes Kings did not hesitate to call it all in for re-minting and re-issue and still commerce went on the same. ⁽⁶⁾ (Innes 1913, 389)

The *tallia divenda* developed to allow the king to issue an exchequer tally for payment for goods and services delivered to the court. But why would the Crown's subjects accept hazelwood tallies or, later, paper notes or token coins?

The government by law obliges certain selected persons to become its debtors. It declares that so-and-so, who imports goods from abroad, shall owe the government so much on all that he imports, or that so-and-so, who owns land, shall owe to the government so much per acre. This procedure is called levying a tax, and the persons thus forced into the position of debtors to the government must in theory seek out the holders of the tallies or other instrument acknowledging a debt due by the government, and acquire from them the tallies by selling to them some commodity or in doing them some service, in exchange for which they may be induced to part with their tallies. When these are returned to the government Treasury, the taxes are paid. (Innes 1913, 398)

Innes (1913) went on to note that most revenues collected by inland tax collectors in England were in the form of the exchequer tallies:

Practically the entire business of the English Exchequer consisted in the issuing and receiving of tallies, in comparing the tallies and the counter-tallies, the stock and the stub, as the two parts of the tally were popularly called, in keeping the accounts of the government debtors and creditors, and in cancelling the tallies when returned to the Exchequer. It was, in fact, the great clearing house for government credits and debts. (398)

Each taxpayer did not have to seek out individually a Crown tally, for matching the Crown's creditors and debtors was accomplished "through the bankers, who from the earliest days of history were always the financial agents of government." (Innes 1913, 399)

The exchequer began to assign debts owed to the king, whereby "the tally stock held in the Exchequer could be used by the king to pay someone else, by transferring to this third person the

tally stock. Thus, the king's creditor could then collect payment from the king's original debtor" (Davies 1997, 150). A brisk business developed to *discount* such tallies so that the king's creditor did not need to wait for payment by the debtor. Note, also, that use of the hazelwood tallies continued in England until 1826. Ironically, the tallies went out in a *blaze of glory*. After 1826, when tallies were returned to the exchequer, they were stored in the Star Chamber and other parts of the House of Commons. "In 1834, in order to save space and economize on fuel it was decided that they should be thrown into the heating stoves of the House of Commons. So excessive was the zeal of the stokers that the historic parliament buildings were set on fire and razed to the ground" (663).

Let us step back for a moment and ponder the implications. Coins are tokens of the Crown's debt, a small proportion of the total *tally*.

Just like any private individual, the government pays by giving acknowledgments of indebtedness – drafts on the Royal Treasury, or some other branch of government. This is observed in medieval England, where the regular method used by the government for paying a creditor was by 'raising a tally' on the Customs or some other revenue-getting department, that is to say by giving to the creditor as an acknowledgment of indebtedness a wooden tally. (Innes 1913, 397–8)

The inordinate focus of economists on coins (and specifically on government-issued coins), market exchange, and precious metals, then, appears to be misplaced. The key concept is debt, and specifically, the ability of the state to impose obligations—today, mostly tax debts—on its subjects or citizens. Once it has done this, it can choose the form in which the tax can be paid. While government could require payment in the form of all the goods and services it requires, this would be quite cumbersome. Thus, it becomes instead a debtor to obtain what it requires (and note that this is no different from the way in which most buyers became debtors), and issues a token (hazelwood tally, coin, paper note, or, today, entries onto the balance sheets of banks) to indicate the amount of its indebtedness; it then accepts its own debt in payment to retire tax liabilities. Certainly, its token of debt can also be used as a medium of exchange (and means of debt settlement among private individuals), but this derives from government's ability to impose

obligations and its willingness to accept its own debts. Indeed, if one has a tax liability but is not a creditor of the Crown, one must offer things for sale to obtain the Crown's debts.

In the next section, we explore later developments of credit and the rise of banking.

DEVELOPMENT OF BANKING IN EUROPE IN THE PREMODERN PERIOD

Money changing, deposit banking, and credit instruments grew together in late medieval Europe. According to Ingham (2004), “[b]y the late fifteenth century, Pacioli, in his famous treatise on double-entry bookkeeping, listed nine ways by which payment could be made,” including cash, credit, bills of exchange and assignment in a bank (192). Banks used overdrafts to expand credit or created *fictitious* bills of exchange: a merchant or banker would charge a banker with supplying foreign exchange in a foreign place but would agree to waive repayment abroad in order to receive postponed payment in the currency and place of origin (Lopez 1979, 15).

In Italy, banking developed out of money changing, with banks operating in Lucca by the twelfth and thirteenth centuries. They changed petty foreign coin into legal Lucchese tender, lent sums in foreign coin to clients, dealt in gold and silver (accepted raw gold, sold it to gold-beaters and bought thread and leaves for resale), made loans, and accepted deposits from clients (both time and demand deposits) (Blomquist 1979, 60). Depositors were usually from the middle and upper classes, while loans were often made to peasants—who borrowed coins to buy seeds or tools and repaid the loans in kind with grain or wine (63–4). The typical loan was smaller than the typical deposit, but deposits were generally longer term than loans.

By the mid-thirteenth century, the money changers made frequent and substantial loans to merchants, while as early as 1200, a money changer would settle a debt for one client by transferring the amount owed to the account of the creditor (Blomquist 1979, 65–7). Money changers began to keep accounts with one another “to facilitate settlement of debts through bank transfer” (op.cit., 67). Loans were sometimes allowed by providing overdrafts to depositors. Thus, we observe three banking functions performed by money changers as early as the thirteenth century: the *giro* function, the clearing mechanism, and credit creation. By the

fourteenth century, banks were operating in the major port towns. These offered *giro* accounts used to settle accounts between customers, and acted as intermediaries, loaning deposits. They also created *banco* money (notes) that would circulate in the community and expand the volume of the bank's business (Day 1987, 2). Italian money changers and deposit banks operated primarily in the local market, while international commerce was in the hands of mercantile banking partnerships operating in the major towns by the mid-thirteenth century (Blomquist 1979, 68).

International banking developed as early as the twelfth century in Lucca; by the 1150s, Lucca was involved in the six fairs held annually in Champagne—sending silk and buying products to bring home. This led to the development of an organized money market in Luca: the buyer of exchange “delivered funds in Lucca and received from the seller, the taker, a notarial instrument promising repayment at one of the Champagne fairs in an equivalent amount of money of Provins” (Blomquist 1979, p. 71). Since repayment would occur in the future, the buyer of exchange was a lender and the seller a borrower, “with interest on the buyer's capital built into the fluctuating rates of exchange.” For example, the borrower (seller) would receive more local (*Lucchese*) currency per foreign (*Provinois*) currency to be delivered at the fair the closer the borrowing date was to the date of the fair (74).

Bills of exchange circulated upon endorsement as early as 1410 (Braudel 1973, 359). In 1437, the London Mayor's Court issued a decision that “recognized the transferability of a formal bill of exchange and the bearer's legal claim to full payment” (Munro 1979, 215). However, full discounting wasn't recognized until the eighteenth century, although some evidence exists of discounting of *letters obligatory* at the Antwerp fairs as early as 1536 (215). Goldsmiths issued notes against deposited gold in the mid-seventeenth century (by 1666 goldsmiths had issued 1.2 million pounds sterling). In Venice, banks had issued redeemable notes since the fifteenth century, and bank notes were commonly issued by the 1660s (Braudel 1973, 360).

This introduction to the evolution of banking gives some idea of the range of practices and instruments available before the development of a monetary system with most production for the market and with most individuals involved significantly in market activities. Credit in such

societies was primarily created to finance trade and had less to do with production. In such pre-capitalist societies, money and credit transferred purchasing power across time, but served primarily to “lubricate” trade. As we see next, money and credit become much more important as capitalism develops.

FINANCIAL DEVELOPMENTS UP TO THE AGE OF BULLIONISM (AND CONQUEST)

In the societies previously examined, credit was commonly used, including in trade. The state played a major role in creating markets, and prices were set by treaties negotiated by states. (Polanyi 1971) The medieval city-state also played a role as the guarantor and enforcer of contracts. Still, these were not economies dominated by production for market. They were not “monetary production economies” as described by Marx, Veblen, and Keynes. Let’s turn to an examination of the transition to capitalism in this section and the next.

During the age of conquest of the New World, the state became much more directly involved in the creation of monetary instruments and institutions, primarily to finance military adventures, although the high consumption levels of the Crown cannot be ignored. We can define this as the age of Bullionism—in which wars were fought by and for precious metal. At times, some nations tried to maintain a strict relation between the nominal value of a coin and the embodied precious metal—although “debasement” was common and nominalism usually was adopted. We begin by looking at early government finance.

Italian cities had a long tradition (dating back to Roman times) of “farming out” tax collection to individuals who would retain a portion of the revenues. In a time of unusual need for revenue the city could “anticipate” it by selling the right to collect future taxes—as early as 1164, the Venetian Republic obtained an advance on future tax revenues (Ehrenberg n.d., 47). In Venice, the Bank of St. George monetized the city debt as early as “the mid-fifteenth century, and the *Banco del Giro* was set up in 1619 specifically to provide finance to the government” (47). Even as late as the sixteenth century, cities expressly gave creditors the right to the person and

property of all citizens should the city default on debt—making city debt relatively safe (33). Indeed, in Genoa, the debts of the city were so liquid that they circulated as freely as currency, functioning as means of payment (48).

While republics generally were able to borrow, monarchies could be more limited in their ability to obtain loans—especially to finance war. While the Crown could also anticipate revenues, its subjects were not normally liable for Crown debts. In addition to advances on future tax revenues, the Crown could resort to the sale of offices, land sales, net bullion inflows, and debasement of coins. Of these, only the last two could be a major continuing source of revenue. The policy of *Bullionism* was designed to increase inflows for coinage. While debasement and recoinage could conserve bullion, this was limited because traders might reject debased coins.

Furthermore, it must be remembered that wars would be fought largely on foreign ground, using local supplies and hired mercenaries. Typically, traders in foreign lands based the value of a coin on its metallic content and not on its nominal face value due to uncertainty about the war's outcome (Ehrenberg n.d., 31). Essentially, wars on foreign ground were fought with—and for—gold and silver. With the “discovery” of the New World at the end of the fifteenth century, another source of bullion—and of war—was created.

As the conduct of war passed from the hands of the citizenry to the hands of hired mercenaries, the ability to generate revenue became increasingly important. During the thirteenth and fourteenth centuries, Italian cities increasingly hired the *Condottieri* (professional private undertakers) for military purposes. Given the ability of the city republics to obtain advances on revenues, the financing of the mercenaries could normally be met through expansion of credit. In general, military spending accounted for one-third to two-thirds of total government spending. In Medici Florence, military spending alone during the period 1421–30 was twice total government revenues (Goldsmith 1987, 164 and 249). The Genoese debt in 1408 “was equal to about four times the total volume of Genoese maritime trade that year,” with much of that debt accumulated during a war with Venice (Day 1987, 158). As another example, “the expenditure of the Spanish Crown in putting down the rebellion in the Netherlands averaged two to three million gold crowns a year, i.e., more than the yearly revenue of the Netherlands government during the most

flourishing trade period” (Ehrenberg n.d., 28). Furthermore, “in the sixteenth century there were only twenty-five years, in the seventeenth century only twenty-one years, in which there were no war-like operations on a large scale” (28). After 1585, the Elizabethan government's spending on the military accounted for four-fifths of total government spending (Goldsmith 1987, 193). Thus, the enormous costs of war became a normal expense that had to be met.

While city republics could meet this through credit creation, monarchies had more difficulty. It was impossible for a king to build a war chest large enough to conduct even a small war without borrowing. The result was a never-ending cycle of debt. Typically, the Crown could only borrow on the anticipation of a *specified* revenue source. Even then, the Crown frequently had to obtain a guarantee from a group of respected wealthy individuals, from the church, or from a city to obtain an advance, normally made only at high interest rates—even as high as 42 percent (Prestwich 1979, 87). However, the high interest rates and the continuing needs of war finance could force the Crown to default on interest payments and even on principal. (Ehrenberg n.d., 39–41) Indeed, sanctions against usury frequently arose because the Crown found it expedient to abrogate its own interest commitments. (34, 43) In England, for example, interest charges on loans made to the Crown were explicit until 1240, when Henry III forbade usury to reduce his interest payments (Prestwich 1979, 85).

If interest and principal were often unpaid, why would anyone lend to the Crown? In some cases, the loans were forced but many were made voluntarily in return for special treatment. For example, Italian lenders to the English Crown received in return for the loans that were rarely repaid: land, exemptions from taxation and jury service, commercial advantages, use of the exchequer's machinery against clients who defaulted on their obligations, and favorable treatment in courts (Prestwich 1979, 91). In spite of these concessions, even by the end of the Middle Ages, most of the crowns of Europe were hindered in their ability to raise revenue through loans.

There were three primary means through which the state could increase its purchasing power. First, it could make its subjects responsible for state debts—as Italian city-states did. Citizenship, patriotism, and representative government all contributed to this development, but are beyond

our scope. Second, the state could increase its ability to generate revenue through Bullionism: policy to increase the flow of precious metal to the crown. Finally, the state could develop *fiat* money. This would require, however, that state money becomes at least as desirable as private credit money—otherwise state money would circulate at a discount within the *giro*.

Let's examine Bullionism and the creation of fiat currency, in turn.

Bullionism was encouraged in the sixteenth century by the Crown's chronic shortfall of revenues and by its need to conduct foreign wars. This partially explains the concern with finding new sources of gold and silver, and the resulting race to colonize the Americas. As Columbus explains in his ship's log from the first voyage to the New World, the explicit purpose was to obtain gold to fund "the conquest of the Holy Land. I have already petitioned Your Highnesses to see that all the profits of this, my enterprise, should be spent on the conquest of Jerusalem, and Your Highnesses smiled and said that the idea pleased them, and that even without this expedition they had the inclination to do it" (Fuson 1992 157).

Alternatively, if a trade surplus could be generated that would lead to an inflow of precious metals (bullion or coins), then the Crown could tax a portion of that inflow to meet its military and other payments. Above all, the Crown had to prevent the export of precious metal. Trade was typically based on bills of exchange. For example, the English wool export trade required payment by *drapers*, the purchasers, of one-third in cash, while the remainder was received in the form of two bills: one payable in six months and the other in twelve. As early as 1340, the English Crown tried to force *staplers* (wool exporters) to pay a tax in the form of precious metal coins. The *staplers* responded that Flanders (importer of wool) forbade the export of bullion so that the payment of the tax was impossible, and the tax was repealed. The Crown tried again in 1429, requiring that they demand full payment in the form of English coin, and bring one-third to the English mint. However, the *staplers* complained that the ban on the use of credit was destroying the export market, and the law was finally repealed in the 1470s.

Thus, while Bullionism could help relieve fiscal distress, it had its limits.

BULLIONISM, STATE FIAT MONEY, AND THE GIRO

The state in the late premodern period was outside the *giro*. It needed a spending power to conduct its wars, but because its own debts were not always acceptable, it was forced to rely on bullion (to coin) for payment—but even if the value of coins could be maintained above the value of the embodied metal, Bullionism keeps the state outside the *giro*. Private traders are thereby encouraged to continue to use privately created credit money—especially if they can remain outside the Crown's taxing power. As long as trade can occur based on private *giro* money (such as bills of exchange), the state's ability to raise revenues remains limited.

The state could respond by debasing the coin—reducing the embodied metal. In 1250, the English pound sterling contained 324 grams of pure silver, but this had fallen to 112 grams by 1600. Similarly, between the years 800 and 1600, the French monetary unit fell from 390 grams to 11 grams, the Milanese unit fell from 390 grams to 4.9 grams, and the Venetian unit fell from 390 grams to 3.5 grams (Cipolla 1980, 201).

With the state outside the *giro*, its subjects might object to excessive debasement. Traders could turn to their private *giro*—with credit denominated in a private money of account. For example, in 1619, the Hamburg *giro* bank developed a unit called the *mark banco* that was used for transactions within the private *giro*. This unit fluctuated in value against the state monetary unit (*thaler*) (Knapp 1924, 144–9). This is also cited by Day (1987), who reported the “Genoese created a perfectly stable accounting unit or *moneta di fiera* (fair money), the *scudo di marco...*” of constant value against gold (148).

Still, courts could rule in favor of nominalism—forcing creditors to accept payment in coins at current announced value. For example, in thirteenth-century Britain,

The evidence of a range of relevant legal sources strongly suggests that, from at least the late thirteenth century, the common law took what would now a days be called a ‘nominalist’ approach to the valuation of money. Monetary obligations were expected to

be paid at their money of account value using coins which were current at the date of payment. Any change to the monetary standard between the dates of contract and payment was generally irrelevant to the performance of the obligation. It seems that the common law courts would not revalue the obligor's debt to allow for any adjustment to the monetary standard during that time. (Fox 2016, 203)

Fox goes on:

It will be remembered that the author of the *Tractatus Nove Monete* (c.1286–7) said that any new issue of coins was made ‘generally known by public proclamation in the accustomed way by the prince’s crier’. (208)

The final point of the quotation from the *Tractatus Nove Monete* was that the sovereign’s money must “not be refused by any of the public without penalty.” The public owed a duty directly to the sovereign to tender and accept his or her money according to the legal valuation.... [and King Henry VIII’s Proclamation stated the consequences of refusing the Crown’s coin was] “the same person or persons so refusing or denying, and to commit him or them to ward and prison, there to remain without bail or mainprize unto such time as the King’s determinate pleasure be further known in that behalf” (209).

Note that nominalism did not apply to foreign currency.

The English courts of the late medieval and early modern periods were familiar with enforcing English transactions denominated in foreign currencies. But unlike the English sovereign’s coins, foreign moneys did not have a value which a judge could—let alone must—recognize. Their value in terms of English currency was always a question of fact for the jury. Indeed, it would eventually be said that foreign money was no different from bullion in legal estimation. This was not to say that a debt to pay foreign money could be discharged by tendering uncoined bullion (*massa*). The point was that both bullion and foreign coin had to be valued by evidence presented to a jury (207).

Only a state using fiat money whose value is set in the money of account can gain purchasing power by issuing currency. This was recognized by Keynes (1982), who argued:

When ... a coin is no more than a quantity of bullion, of which the stamp may certify the quality and indicate the quantity, [it] ... will not circulate except for its bullion value. In this elementary stage the expedient of debasement is not available. It cannot appear, until with the development of contract the conception of a money of account has emerged, and the coins issued by a state have acquired the character of legal tender and enjoy a *cours force* as the legal discharge of obligations calculated in this money of account. It is at this stage that money, in the sense in which we understand it, makes its entry into human institutions. (226)

The modern state can become a member of the *giro* by accepting the liabilities of banks in payment of taxes and in other dealings with the state. When the state becomes a part of the *giro* the liabilities of banks become the generally accepted means of payment. At this point, the bank note is not only useful in dealings with the bank and with the bank's customers, but also in dealings with the state, now a member of the *giro*. This expands the state's ability to spend. It also makes the bank note acceptable to those who were formerly outside the bank *giro* since those with obligations to the state become members of the *giro* by virtue of their relations to the state. The entrance of the state enhances the *giro* even as it enhances the financial strength of the state.

The state's power can be increased if it rises to the apex of the *giro*. To do this, it must ensure that its liabilities are preferred above those of banks. As discussed below, this is a long process that accompanies the development of a central bank and a mono-reserve system. The state gives impetus to the expansion of bank business by accepting bank liabilities but also encourages convertibility of bank notes (redemption of bank liabilities for government liabilities). Convertibility of bank liabilities is not, most importantly, a method used to control the issue of notes (as in the deposit multiplier notion), but of ensuring the value of state money. The state also restricts banks by eventually eliminating private notes so that only central bank notes will act as

currency. This facilitates movement to a system based on demand deposits against which reserves are held at the central bank.

Thus, the state is gradually transformed from a relatively impoverished borrower that must rely on private guarantees of its credit worthiness to the modern capitalist state whose debts are the most preferred and whose guarantees lend credit worthiness to private debt issues. Again, this transition is partially based on the creation of patriotism, the development of republican forms of government, and other (primarily) non-economic matters beyond our scope. However, a brief study of the development of banking and the central bank in England will show how resolving the chronic fiscal problems of the premodern state also helped to bring on modern banking.

That is, the rise of the modern state and the rise of the modern financial system are inextricably related. Indeed, it would not be far from the truth to argue that the state forced modernization onto the monetary system (Heilbroner 1985, 88).

The Development of Central Banking and Strengthening of the Sovereign's Currency: The Case of England

In this section we will examine British monetary history from the fourteenth through the eighteenth century. In the early years, Italian bankers were the primary lenders to the Crown. The Crown also issued metallic coins as well as tally sticks (Maddox 1969). Private commerce took place in the sovereign's coin, bills of exchange, and other forms of credit. Private banks issued notes, with country banks using London banks for clearing.

Two key events led to a fundamental reformation of the financial system that gradually led to the modern banking arrangements we still have today: (1) a default by the King on tally stick debts led to the creation of the Bank of England that became the nation's central bank, and (2) Queen Elizabeth's monetary reformation somewhat paradoxically established a strong link between the currency and precious metal. The first would eventually bring the state into the banking *giro* system, and while the second would seem to be more consistent with Bullionism, it ultimately strengthened the position of the pound sterling—a monetary system fundamentally based on nominalism.

The Transformation of State Finance: Italian Bankers, Monetary Reform, and the Creation of the Bank of England

While currency exchange played a major role in the development of the Italian financial system, state finance shaped the development of the English financial system. Italians dominated English finance in the late thirteenth and early fourteenth centuries and were primarily involved in the export of wool, loans to the Crown, and payments made on the Continent for the English. Loans to the Crown enabled the nation to conduct foreign wars (Italians loaned over £125,000 sterling in 1338–39 at the outbreak of the Hundred Years War) (Prestwich 1979, 79). The loans were made at high interest rates and, as discussed, were rarely repaid in full. However, the Italians received special benefits in return for their services. Italian bankers did not play a big role as depositories—but did accept short term deposits to make payments on behalf of the depositors (96).

Following the principle of Bullionism, the Crown had strict prohibitions on the export of coin, so Italian bankers would use bills of exchange, accepting *pounds* in England, then delivering, for example, *livre tournois* in Paris (Prestwich 1979, 97). The Crown also maintained strict control over exchanging foreign coins for sterling: it was permitted only at the royal exchange. This was to prevent the export of English bullion and to prohibit the import of counterfeit and clipped coin. These controls meant that domestic banking couldn't develop out of currency exchange in England, as it had in Lucca (99).

Detailed evidence shows that small credits played an essential role in premodern England before the development of an extensive banking system (Mcintosh 1988, 560). Consumers would settle accounts with coins, but merchants would use them only to settle net debts. The evidence shows that debts might be carried for months (and even for years) on the accounts of merchants (and consumers) before finally being settled.

Any two people might build up a number of outstanding debts to each other. As long as goodwill between the individuals remained firm, the balances could go uncollected for years. When the parties chose to settle on an amicable basis, they normally named

auditors who totaled all current unpaid debts or deliveries and determined the sum which had to be paid to clear the slate. If trust between the parties broke down, the complainant could bring suit in the Havering court (Mcintosh 1988, 561)

Such suits were common.

Still, in many ways, England's financial system was repressed as late as the seventeenth century in comparison to Europe's. By that time, two forms of money had spread across Europe: private credit instruments and public metal coins. As Ingham (2004) argues, in England these were in uneasy conflict (See also Desan [2024]). The sovereign power of English kings was, in a sense, too great—they were immune from legal action for default and not responsible for their predecessor's debts, so lenders were reluctant to take their debt. Thus, they relied largely on coin in addition to borrowing from Italian bankers.

They typically practiced Bullionism, and “from the fourteenth to the mid-seventeenth century, [they] banned the importation of foreign coins and the export of bullion; commanded exporters to supply their bullion to the mints; attempted to prohibit the bill of exchange; and generally sought to limit the use of credit” (Ingham 2004, 203). In 1560–61, Queen Elizabeth I reformed coins, adopting four ounces of silver as the standard for the pound, a standard that lasted until WWI. It was the “lynchpin of England's fiscal and political system. Its retention was a condition of the survival of the constitutional settlement between sovereign, government and ruling classes...” and “encouraged a steady supply of long-term creditors for the state and in this way provided a secure basis for the eventual adoption and expansion of the credit money system” (204). Her reform established a coinage and prohibited foreign coins, so the domestic money was coextensive with the state and “English monetary policy was unequivocally monarchical and bullionist.” The “emerging English nation state became the basis for the impersonal trust that eventually enabled the forms of credit money to become established outside interpersonal banking and exchange networks” (ibid).

Ironically, then, it was the backwardness that helped England to surge ahead to create the modern financial system needed for the development of capitalism, in which the state and its central bank

establish the money of account and issue the currency, the reserves used by private banks, and the safe government debt that underlies the financial system. Ingham (2004) explains how the strong links of the currency to precious metal, the transformation of bills of exchange into impersonal and transferable debt, and the creation of the Bank of England fostered the evolution to the modern financial system.

One final apparent setback played a key role in developing the central bank. King Charles II had borrowed against expected revenue, issuing tally stick receipts for loans. With war against France coming and the Crown deeply in debt, he defaulted on the tallies in 1672. London money interests were so upset that they invited invasion and seizure of the throne by William of Orange. The constitutional settlement of 1689 provided the new king with too little income so that he would have to rely on Parliament for funding—putting the power of the purse into Parliament’s hands (Ingham 2004, 208–9).

In 1694, backed by creditors of the king, Parliament created the Bank of England to provide loans to a Whig government at war with France and in dire financial straits. The Bank of England was incorporated as a private bank with special privileges: it was created as the sole depository for state balances; it was the only firm incorporated with limited liability for stockholders; in 1697, Parliament declared that no other bank would receive a state charter; and in 1708, Parliament rewarded the Bank of England for taking up government bonds by prohibiting any other joint stock bank of more than six partners from issuing notes in England (Bagehot 1927, 90–95; White 1984, 38).

At its creation, the Bank of England issued stock, using the revenue raised to make a loan to the king. The loan was to be repaid by future customs and excise taxes. The Bank would issue notes (supposedly backed by the king’s debt) and lend those—earning interest from the king and from the borrowers! That converted the king’s personal debt into a public debt and the notes into a public currency. Ingham argues: “Underpinning this transformation in the social production of money was the change in the balance of power expressed in the ‘hybridised’ concept of sovereignty of the ‘king-in-parliament’” (Ingham 2004, 209).

Private Banking in England and Development of Central Banking

Until 1826, there were three other categories of English banks: private London banks that issued notes; private note-issuing country banks; and joint-stock banks that could not issue notes. The special status the Bank of England enjoyed as a note-issuing, joint-stock bank gave it a tremendous advantage: as a joint-stock bank, it could raise a large sum of capital (1.2 million pounds) through subscription. In contrast, country banks that issued notes were chronically undercapitalized because they were limited to six partners (White 1984, 38). Furthermore, as a limited liability firm, the Bank of England's owners could protect their fortunes—unlike private bankers and the owners of other joint stock banks, who placed their entire fortunes on the line.

Banks did not begin as depositories of funds. Early banks engaged in three activities: providing loans to the government, changing coins, and facilitating the circulation of bills of exchange (Bagehot 1927, 77). Gradually, however, banks moved from simply helping to circulate bills of exchange to discounting them by providing bank notes. As Bagehot put it, “no nation as yet has arrived at a great system of deposit banking without going first through the preliminary stage of note issue [...]” (88). As late as 1800, bank notes accounted for 50 percent of M1 in England, while deposits accounted for only 10 percent (Cameron 1967, 8). Deposit banking dominated only later, after the public had become accustomed to using bank liabilities as media of exchange, means of payment, and stores of value.

Thus, by creating this special right of note issue, Parliament provided an advantage that would help the Bank of England to monopolize note issue in London. Although private banks could legally issue notes in the city, their notes had been almost completely displaced by Bank of England notes by the mid-eighteenth century (Bagehot 1927, 96). Since checkable deposit banking was not yet important, this meant the Bank of England “became the bank in London” (97). Other London banks focused on foreign trade, relations with stock and bill brokers, and relations with the country banks.

With the creation of the Bank of England, the “emerging English nation state became the basis for the impersonal trust that eventually enabled the forms of credit money to become established outside interpersonal banking and exchange networks” (Ingham 2004 205). The Bank’s

monopoly over discounting bills of exchange and note issue gradually integrated the banking system under the Bank's discount rate. At the same time, it linked private money and public money as well as public debt and private debt (Ingham 2004, 210–11). Bills of exchange were gradually delinked from particular commodities (called “dry exchange”) and transformed into a pure form of credit; they were also gradually detached from particular creditors and debtors to become transferable. In short, they became increasingly “depersonalized” (payable to bearer) and issued as bank money (in the form of notes) (Ingham 2004 187, 199).

This required a particular social and political structure, with the Crown ceding power to Parliament. The Crown's IOUs became “national debts” (like Italian city-state debts) and the basis for public credit money. A genuinely impersonal sphere of exchange was eventually provided by the nation-state (Ingham 2004, 202).

As the largest makers and receivers of payments and in declaring what was acceptable as a payment of taxes, states were the ultimate arbiters of currency. They created monetary spaces that integrated social groups whose interaction was not embedded in particular social ties or specific economic interests. Until credit money was incorporated into the fiscal system of states which commanded a secure jurisdiction involving extensive legitimacy, it remained, in evolutionary terms a “dead-end.” (Ingham 2004, 202)

One might think all these developments would have eliminated Bullionism in England: the central bank could issue notes and lend to the Crown. Surely precious metal was no longer needed? Instead of dropping precious metal, the English commitment was paradoxically strengthened—by 1727 the pound was firmly backed by metal. Credit money had become the most common means of payment, but England also had the strongest metallic currency in history (Ingham 2004, 210–1). Ingham argues that this strengthened the English moneys (coins, notes, and bills) through formal convertibility of the pound to precious metal. It was not necessary to maintain a constant amount of precious metals in the coins because it was the pound—not the coin—that was fixed to silver; the value of coins was fixed to the pound. That convertibility (of coins to pounds and pounds to silver) reduced the fear that the sovereign would “cry down” the

value of the coin (require more coins to make up a pound sterling—remember that the pound, itself, was never coined), or default altogether, refusing the sovereign's own debts in payment.

The Bank Restriction and Rising Dominance of Bank of England notes

Remarkably, however, between 1797 and 1819, the Bank of England was prohibited from redeeming its notes for bullion. The “Bank Restriction,” as it was called, ensured that a run on the Bank of England could not occur. “A bank of issue, which need not pay its notes in cash has a charmed life; it can lend what it wishes, and issue what it likes, with no fear of harm to itself, and with no substantial check but its own inclination” (Bagehot 1927, 107). (Bagehot exaggerates, since note issue is always constrained by the willingness of the public to accept notes.) Furthermore, “since 1797 the public have always expected the Government to help the Bank if necessary” (108). Thus, the Restriction strengthened public confidence in the Bank, rather than reducing it as one might expect suspension of convertibility to do.

Bank of England notes were accepted by the government in payment of taxes and customs duties and for subscriptions to government loans (Cameron 1967, 22). This helped to increase the desirability of the notes. Parliament also gave the Bank's notes special status, allowing country banks to make their notes convertible into its notes in 1833 (White 1984, 39). In this way, Bank of England notes would become as desirable as coined money since they would replace coins as the banking system reserve. Later, deposits at the Bank would serve as the reserve for London banks, while deposits at London banks would serve as the reserve for country banks.

To increase the circulation of Bank of England notes outside London, Parliament periodically restricted note issue by country banks. For example, Parliament prohibited any bank other than the Bank of England from issuing one-pound notes after 1775, and the five-pound note was also banned in 1777. These restrictions were later temporarily dropped, but the prohibition on the one-pound note was restored in 1829 (Wood 1939, 38). In 1826, Parliament encouraged the Bank of England to open branches in cities outside London to increase the circulation of its notes (39). By 1844, the quantity of Bank of England notes circulating in England had risen to equality with that of private notes (23).

Creation of the Bank of England thus consolidated the public and private monetary systems: “This fusion of the two moneys, which England’s political settlement and rejection of absolutist monetary sovereignty had made possible” solved two problems: the private money of the bill of exchange became more widely circulated based on impersonal trust and legitimacy and Parliament sanctioned tax and duty collection to service interest on sovereign loans (Ingham 2004, 209–10).

England struck a balance between too much and too little sovereign power—the sovereign was no longer a credit risk, and as a result, it could operate with higher debts and taxes. The “emerging English nation state became the basis for the impersonal trust that eventually enabled the forms of credit money to become established outside interpersonal banking and exchange networks” (Ingham 2004, 205).

THE CENTRAL BANK, RESERVES, AND DEVELOPMENT OF MODERN BANKING

In this section we will look at the development of central banking and its relation to private banks.

Pyramiding Reserves on London

London had been the center of English foreign trade since medieval times, with the bill of exchange drawn on London as the primary international means of payment. Taxes had to be paid in London. London also acted as the clearing house for country bankers (although country bankers in a town or small region would operate a local clearing exchange that would not require intervention by London), thus they typically held deposits as a primary reserve in a London city bank. These could be used for clearing or if the need for cash arose. The country bank would also leave stocks and bonds in London as secondary reserves, against which overdrafts could be drawn (Sayers 1957, 109). The quantity of reserves varied greatly and were frequently overdrawn. It was not uncommon for a country bank to have an overdraft outstanding equal to 10 percent of the bank's total balance sheet (121).

Thus, London banks became the depositories for country bank primary and secondary reserves as London was the financial center, and London banks frequently paid 4 percent interest on country bank deposits, charging 5 percent on overdrafts. Country banks issued notes payable on accounts in correspondent London banks. In this way, the clearing mechanism was enhanced, and the acceptability of notes was improved because country bank notes could then freely circulate outside their limited *giro*, since other country banks could send the notes to London for clearing.

In turn, London banks held Bank of England notes as their reserve. After 1833, country bank notes were convertible into Bank of England notes, which made the liabilities of the Bank of England even more desirable. Gradually, London banks (and even later, country banks) substituted deposits at the Bank of England for notes held as reserves (Wood 1939, 178). Thus, England developed a mono-reserve system: all reserves ultimately were supported by notes or deposits issued by the Bank of England—the country banks held reserves at London banks, the brokers held reserves at London banks or at the Bank of England, and the London banks held reserves at the Bank of England. “No other bank holds any amount of substantial importance in its own till beyond what is wanted for daily purposes” (Bagehot 1927, 28).

The Act of 1844 (“the Act”) separated the Bank of England into two departments: the Note Issue Department and the Banking Department. The Note Issue Department issued notes based on government debt and bullion held. Thus, finance was provided to the state when the Bank issued notes against government debt. The Act originally permitted the Bank to issue £14 million of notes against securities, but this was supplemented periodically by new authorizations. The Banking Department could not issue notes but held the deposits of the state and of banks and brokers. It purchased government securities, other securities, notes, and coins, operating as a profit-seeking bank (Bagehot 1927, 23–5). In 1795, government securities accounted for more than 77 percent of total assets held by the Bank of England, but by 1869, they accounted for only one-third of the assets of the Note Issue Department and for 31 percent of the assets of the Banking Department (Cameron 1967, 20; Bagehot 1927, 24–5).

Through the early nineteenth century, the dichotomy between country banks and London banks was strict. The Bank of England controlled note issue in London, while country banks dominated

note issue outside London. Country bank notes were used mainly to pay wages and other small local payments. Until 1826, very few Bank of England notes circulated outside London so virtually all notes in circulation in the country were those of the country banks. However, the Act of 1844 placed a ceiling on the quantity of private issues, and deposits gradually replaced notes. Furthermore, Bank of England notes began to circulate more widely in the country, reaching 50 percent of total issues by 1844. The Bank of England (wisely) accepted country bank notes (normally drawn on London), so it could remove them from circulation by presenting them for payment (Wood 1939, 17–23). In this way, the Bank of England could enhance its own circulation.

Refining the Role of the Central Bank

As the single repository of reserves (and because its own notes counted as reserves), the Bank of England could cause tight money by raising the price of reserves. It could call in advances made to London banks or brokers, it could raise the interest rate required in its discount of bills, or it could simply refuse to discount bills altogether. When faced with tight money, London banks would call in overdrafts and force the country banks to sell consols or stocks held by their London correspondent. London banks would help to sell bills for their country bank clients, but normally refused to “rediscount” bills themselves - it was the policy of London banks to avoid putting their own name on a bill to be sold. This tended to cause long-term interest rates to rise and the prices of bonds to fall (Sayers 1957, 125–7).

The Bank of England also used open market sales to increase its own reserves, and not primarily to influence credit conditions (Wood 1939, 5). When the Bank of England was faced with an external drain of specie (for example, when England ran a trade deficit), it would raise interest rates to attract bullion inflows. However, an external drain could lead to an internal drain: bank customers might notice a drain on bank reserves, become worried over the stability of banks, and try to obtain loans (discount bills) before credit was cut off, or would try to withdraw deposits or to redeem notes. This, of course, would lead to a further drain on the reserves at the Bank of England. A panic would result whenever the Bank of England acted like it might not provide the reserves needed by the private banks. Indeed, the Bank of England would frequently try to sell securities to replenish its own reserves during an internal drain (Bagehot 1927, 65). This was

because the Bank of England for quite some time saw itself not as a central bank, but as a profit-seeking bank.

When banks were small and local, a run on deposits or notes could be averted by the declaration by a local wealthy or respected family that the bank's books were sound (Sayers 1957, 208). Local merchants could help if they would agree to continue to accept the bank's notes as means of payment. On occasion, other banks in the region would step in to save a failing bank. As relations between London and the country banks strengthened, crises that began in London would spread to the country. If the Bank of England restricted loans, the London banks would often freeze the funds of country banks and call in overdrafts, forcing country banks to follow suit. Each financial crisis would be followed by an unwillingness among banks to accept long-term commitments and to prefer discount of bills to overdrafts by customers (Bagehot 1927, 212).

Thus, evolution of the banking system to an integrated system of joint stock banks where decision making was centralized in London, and to a mono-reserve system that placed considerable power in the hands of the Bank of England, occurred over the nineteenth century through the end of World War I. This special status of the Bank of England allowed its notes to become fiat money and to eliminate the need for a rigorously maintained metallic coin, primarily because privately issued *giro* money was made convertible into Bank of England notes. This brought the state into the *giro*, since state finance was provided by the Bank of England through the purchase of government securities. Because London was the center for international finance, the nominal sterling became the world currency for use in international trade. Bullionism was displaced by Free Trade because precious metal was no longer needed to provide state finance, and, indeed, would hinder the growth of international trade with London as the center. The evolution of banks to a centralized financial system based on London increased the complexity of financial relations, increased leverage ratios (through increased pyramiding of reserves), made banks more similar, and led to an economy that was more integrated enabling the quick spread of crises. Thus, the actions of the Bank of England would have more impact on banks far from the center, but integration of the financial system also increased the responsibility placed on the Bank of England to prevent crises.

Bagehot (1927) recognized that this responsibility would require the Bank to act against its own perceived short-run self interest in crisis. Rather than tightening to protect its balance sheet, it would have to act as *lender of last resort*. Bagehot laid out reasonable conditions for such operations that would be widely adopted by all the major central banks. The US's own central bank, the Federal Reserve Bank, was founded in 1913 specifically to serve as a lender of last resort. Interestingly, however, it was not supposed to be involved in government finance—the original purpose of the Bank of England. However, just a few short years after its founding, its services were needed in WWI, and then on a much larger scale in WWII.

A SUMMING UP: IMPLICATIONS FOR THE TRANSITION TO CAPITALISM AND A MONETARY SYSTEM OF PRODUCTION

Let's summarize the points of the previous sections. As the economic system evolved toward the modern capitalist system, the financial system also underwent great changes. In the early premodern period, most production took place outside the market, so that the monetized sector was relatively small. Goods circulated on the basis of bills of exchange (especially in long-distance trade) and coined money (in local trade), although other forms of *giro* money were also used in specific regions.

Gradually, however, private property rights were extended (including, importantly, in slaves) and the importance of the market (again, including the market in slaves) increased. This required the development of sophisticated credit facilities—primarily based on note issue by private banks. To extend the size of the *giros*, clearing facilities had to be created. This led to the development of a system that concentrated reserves to facilitate clearing.

The earliest central banks (such as the Swedish *Riksbank* and the Bank of England) were explicitly created to provide state finance (Goodhart 1989b, 88). By providing special monopoly advantages, the central bank's notes became fiat money that could provide purchasing power to the state. At the same time, a mono-reserve system was created—partially due to the advantages

granted to the central bank by the state, but also because the financial system naturally pyramided reserves. As Goodhart emphasizes, this development was not intentional but was an unforeseen and evolutionary development. The central bank only very slowly came to recognize that it could exercise some control over the financial system, because its liabilities had become the primary reserve as a side effect of various state policies designed to enhance state purchasing power by supporting the development of fiat money. This transition to the modern financial system, which is based on credit money and deposit banking, and in which state purchasing power rests on fiat money, was essential for the development of the modern capitalist state and economic system.

These developments were largely in place by the nineteenth century, although the seeds of capitalism were planted earlier. According to Ingham (2004),

The beginning of what Keynes referred to as a “monetary production economy” is to be found in the seventeenth century when signifiers of private debt gradually evolved into widely accepted and legally enforceable means of payment. At this time in western Europe, private bank-issued money existed alongside the sovereign public currencies. [...] Eventually the integration of state borrowing and bank lending in the creation of “national” debts led to the creation of entirely new forms of means of payment. (187)

The modern monetary system includes a variety of privately issued debts denominated in the national money of account. These private liabilities form the lower ranks of a pyramid of monetary liabilities, with the sovereign government’s liabilities above them—including treasury bonds and then bills, and central bank notes and then reserves at the top. As Ingham (2004) puts it, “Monetary space is a sovereign space in which economic transactions (debts and prices) are denominated in a money of account [...] the degree of moneyiness is determined by the position of the claim or credit in the hierarchy of acceptability” (214).

The modern monetary system integrates both private credit money and state money.

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