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Four Phases in the History of Money<sub>y</sub>

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# Four Phases in the History of Money

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## Abstract

The history of money can be characterized into four major phases, from the written records of ancient Mesopotamia dating to the 3<sup>rd</sup> millennium BC to the present day. This characterization sheds light on both the nature and the evolution of money, and helps us to understand today's monetary arrangements. This paper traces the main shifts in money's history, including changes in the unit of account, the available means of payment, and the methods for carrying out exchange.

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## 1. Introduction

This paper organizes the history of money into four phases or eras, from the 3<sup>rd</sup> millennium BC to the present day. Doing so not only enhances our understanding of how money has evolved over time, it also clarifies our views about the nature of money and renders our current monetary system more intelligible. Although the literature on the history of money is vast, the characterization presented here is novel and gives a unifying thread to monetary arrangements over all recorded human history.<sup>1</sup>

Economists typically define money as “any asset that can easily be used to purchase goods and services”<sup>2</sup> – in other words, a universally accepted means of payment. Money is then said to fulfil several functions, notably the triad of serving as a medium of exchange, a unit of account, and a store of value – a view that has been dominant in economics since the early 19<sup>th</sup> century.

While this definition may be serviceable for some purposes, it quickly becomes constraining when we study money’s history. A universally accepted means of payment has been in place in human societies only since the end of the 7<sup>th</sup> century BC, with the invention of precious metal coinage. It would be erroneous to conclude that all societies before that time were non-monetary, as complex social organization would have been impossible without prices, debts, and accounting procedures. What is more, the invention of coinage did not result in an abundance of this universally accepted means of payment at all times and in all places. Precious metal coins were often scarce, and much economic exchange took place without recourse to them. Again, it would be erroneous to claim that societies functioning under such conditions, such as Medieval Europe, were for that reason non-monetary.

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<sup>1</sup> I make no attempt at surveying the literature on the history of money here. The interested reader may begin by consulting Davies (2002) for the history of money in general, Von Reden (2010) and Schaps (2004) for money in Antiquity, and Bogaert et al. (1994) for the history of banking.

<sup>2</sup> Krugman and Wells (2006, p. 722).

When we study the history of money, then, we need to look beyond the existence or absence of a universal means of payment. Here I advance that the best way to approach the subject is by thinking in terms of a monetary system.

A monetary system may be defined as a set of arrangements which societies have in place to measure the value of goods and services and to carry out exchange. A universal means of payment may well be part of this system, but that is not a requirement. Monetary systems can function without a universal means of payment – in other words, they can function without an object to which we attach the label of “money”. The only element that is truly irreplaceable for the existence of a monetary system is what we will refer to as a unit of account.

A unit of account is a quantity of economic value in terms of which we can express the value of all goods and services in an economy. Traditionally, economists think of the unit of account as the value of one unit of whatever functions as money in the economy. This perspective, however, is not as universal as it may at first appear. We can perfectly define as unit of account the value of some particular commodity – a pint of barley, an ounce of silver – and measure the value of all goods and services in terms of this unit. It does not follow from this that barley or silver will be accepted in all payments – or even in any payment at all. The commodities in question would not be money, but their value would be a unit of account.

Once a unit of account is in place, monetary systems have different methods to organize exchange. This has been rarely appreciated by economists, who tend to assume that exchange must be organized by means of a universal means of payment – or else via barter. That is not so, as I shall discuss in what follows.

The next four sections of this paper review the fundamental characteristics of each of the four phases of monetary evolution referred to above, each time emphasizing what serves as the unit of account, how is exchange organized, and how societies move from one existing arrangement to the next one.

My historical account concerns Western civilization – while non-Western monetary traditions are numerous and important, it is the Western approach which eventually becomes the standard the world over.

## **2. First Phase: Early Monetary Systems**

Adopting a unit of account is the first step in the monetary development of societies. While scholars have not yet reached universal agreement as to when and how was such a concept first introduced, we find units of account fully in place by the time of humanity's earliest written records – in ancient Mesopotamia, during the 3<sup>rd</sup> millennium BC. Indeed, it is quite likely that the unit of account was an invention of the world's first complex states in ancient Sumer, as it answered to an acute need that arises from state administration.

States tax and spend, and the timing of taxes does not match the timing of public expenditures. As a consequence, states need to establish and cancel debts both in their favour and against themselves on a continuous basis. Without a unit of account debts are not comparable – a debt of four tonnes of barley has no relation to a debt of ten sheep. It is only when we express all debts in terms of a unit of account that they can be added and subtracted from each other, and interest payments can be calculated on them. Units of account seem to have been introduced by the first state bureaucracies, to carry out the work of state management.<sup>3</sup>

As far as we know, all societies begin by defining as unit of account the value of one unit of some well-known or prestigious commodity. More than one commodity could be used for this purpose – in other

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<sup>3</sup> On the establishment of a unit of account in ancient Mesopotamia see Hudson (2004, 2019). An alternative theory advances that units of accounts derive from the practice of wergild, ancient sets of tariffs to be paid in compensation for injuries which were common in Germanic tribal societies (Grierson 1977, Ingham 2004). There is no evidence that such practices, which are well documented for the early Middle Ages in Europe, would have predated the establishment of the first states in Mesopotamia or Egypt.

words, there could be more than one unit of account. In ancient Mesopotamia, for instance, the value of barley and the value of silver were both employed, and a fixed exchange rate between the two units was in place.

It is important to note, however, that for a unit of account to be useful the value of goods and services in terms of it ought to be stable. This implies that the “market price” of barley or silver, if it existed at all, would not have been an adequate choice as it would have been subject to large temporal variations. Ancient Mesopotamia defined the values of silver and barley in terms of a range of goods and services by convention or decree – which, once again, highlights the role of the state or some other form of social organization at the origin of early monetary systems.<sup>4</sup>

Once introduced by the state, units of account are subsequently adopted by what we may term private economic agents to quote all prices in a common measure – greatly facilitating the functioning of markets and the allocation of resources to their most productive uses. This, however, still leaves unresolved the problem of how to organize exchange. A common idea is that the commodity whose value serves as the basis for the unit of account would also be employed as money. Economists often assume that such state of affairs characterized all societies before the invention of coinage, and refer to this hypothetical early stage in the monetary development of societies as the stage of commodity money.

Unfortunately, the historical record is not kind to this hypothesis. A good example is the following text, an ancient Egyptian court record dating to the 13<sup>th</sup> century BC. Erenofre, a housewife, has bought a slave for a price of four *deben* and one *kite* of silver – the *deben* and the *kite* being ancient Egyptian units of weight. Erenofre is asked to explain how she has settled this transaction, and she proceeds to list the items given to the seller in payment:

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<sup>4</sup> See Hudson (2004, p. 111), Gardiner (2004, p.133).

*"1 shroud of Upper-Egyptian cloth, makes 5 kite of silver;*

*1 blanket of Upper-Egyptian cloth, makes 3 1/3 kite of silver;*

*1 djayt-garment of Upper-Egyptian cloth, makes 4 kite of silver;*

*..."*

The list continues and includes bronze vessels, beaten copper, a jar of honey and more.<sup>5</sup> The value of all items adds up to the value of the slave.

Two things are apparent from this case. First, every item mentioned has a price in terms of units of silver – a unit of account was well in place in ancient Egypt, and it was the value of silver. Second, actual silver is nowhere to be seen. Erenofre does not pay for her slave using silver bullion, but with a mixture of objects deemed acceptable by the seller.

That this was so should not surprise us. Silver may have been highly acceptable as a means of payment, but it was scarce and of high value. Most transactions, and in particular those transactions that concerned items of little value, were not settled with it. The same is true for other commodities whose value served as a unit of account, albeit for different reasons. Barley would not have been acceptable as a means of payment under most circumstances, given the many difficulties relating to its storage, transportation, and maintenance. Cattle is even worse, as it is not only difficult to store but available only in large units.

How, then, did societies in this first stage of monetary development carry out exchange? When it came to make payments on the spot, and in the words of assyriologist A. Bongenaar, "every commodity served the purpose" (Bongenaar 1999, p. 162). In other words, the buyer had to come out with a set of goods (or services) which the seller would be ready to take as payment – as in the case of Erenofre

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<sup>5</sup> On this example see Schaps (2004, p. 39) and Grierson (1977, p. 17).

above. Silver, barley, or whatever other commodity was used as the basis for the unit of account could be used to make payments if available and acceptable to the seller, but that was not a requirement. It is therefore inaccurate to say that such commodities played the role of money in these societies, as they lacked modern money's quintessential characteristic: universal acceptability.

But spot payment was not how exchange was typically carried out. Precisely because a readily available and universally acceptable means of payment was not at hand, most transactions were not settled on the spot. As economic historians have in fact documented, through most of human history a majority of transactions were carried out by establishing bilateral debts, and subsequently cancelling such debts against each other.<sup>6</sup> As an example, the acquisition of a sheep would not be settled by any immediate payment but by the establishment of a debt for the value of the sheep – expressed in terms of the unit of account. At a later stage, the roles of seller and buyer would be reversed and a debt would be established in the opposite direction – the person who bought the sheep may produce woollen cloth, and sell some to the original sheep owner. Later still, our two characters would get together and settle their debts. If the sheep had a value of 50 shekels and the woollen cloth a value of 40 shekels, a final payment of only 10 shekels would be required. This payment could be made on the spot using means of payment acceptable to the party in credit, or could be rolled forward to be cancelled against debts to be created in the future. As we see, the method reduces or even does away with the need for money in carrying out exchange – in other words, a monetary system can function even in the absence of universally accepted means of payment.

Far from being a method which characterized only ancient societies, exchange by reciprocal bilateral debts has been used widely up until the recent past – when a universally accepted means of payment did exist, but was often not available. Consider the following description of how exchange was carried

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<sup>6</sup> See, inter alia, von Reden (2010, p. 93), Harris (2008, p. 191), Goetzmann (2016, p. 100) and van de Mierop (2002, p. 166).



out in Europe between the Late Middle Ages and the Early Modern Period, by legal historian Emily Kadens:

*"[Credit] threaded through the economy from the large purchases of international merchants to the survival purchases of the urban poor. Consumers did not pay for their bread, or candles, or shoes, or meat. They ran tabs with the shopkeepers. Cloth traders bought wool on credit, had it worked into cloth by weavers on credit, then sold it at the international fairs and urban entrepot towns on credit. Vintners bought wine on credit and sold it to tavernkeepers on credit. Individuals secured services from barbers, apothecaries, and wet nurses on credit. [...] Pre-modern commerce revolved around credit, and likely no one was spared the need to be debtor and creditor."*

*Kadens (2015, p. 2431-2)*

The historian Craig Muldrew has estimated that at least 90% of all transactions were carried out using bilateral debts in 17th century England - a society where precious metal coinage had been in circulation for several centuries, but was typically scarce.<sup>7</sup>

To summarize, early monetary systems are characterized by the existence of a unit of account, defined as the value of one unit of some well-known or prestigious commodity, and by the absence of a universally accepted and widely available means of payment – in short, by the absence of money as conventionally understood. These societies organized exchange mainly by means of bilateral debts, which were established in opposite directions and cancelled against each other. Spot payments, when required, were made using whatever acceptable means of payment were at hand.

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<sup>7</sup> Muldrew (1998, p. 100).

### 3. Second Phase: The Dominance of Coinage

As the centuries pass, ancient societies converge on the use of precious metals as the basis for the unit of account. When payments on the spot were needed gold and silver in bullion form could be employed, but their high value per unit of weight and their scarcity restricted their use to large commercial transactions. Such was the state of affairs towards the end of the 7<sup>th</sup> century BC, when societies enter the second phase in the history of money with the invention of coinage.<sup>8</sup> Over the next two thousand years, coins come to be considered by most of the public as the embodiment of money.

Coins are so successful because they allow for impersonal exchange to take place. Exchange had been carried out for millennia by means of bilateral debts, but these require trust between the two contracting parties. Trust may be unnecessary if one of the two parties has overwhelming power, as was the case in the state-dominated economies of ancient Mesopotamia and Egypt where most debts were owed to or owed by the state. For exchange among private agents, however, debt acceptance requires trust and this may be in short supply as societies expand and people specialize. For this emerging economic order, coinage offers a valuable solution.

There would be not much to say about coinage if, as argued by economists from Adam Smith to the present day, precious metal coins should be understood as gold or silver packed in standardized units; the state acting to “ascertain not only the fineness but the weight of the metal” (Smith 1776, p. 30). Such a view is understandable – a credible account of the invention of coinage advances it was first introduced to facilitate recurrent payments made by the state, in particular the wages of soldiers. Instead of weighting precious metal for the payment of every single soldier on pay day, it would have been convenient to prepare standardized pieces of metal in advance, placing the king's seal on them as a guarantee of their weight and purity.

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<sup>8</sup> Schaps (2004, chapter 7) offers a good account of this episode.

The fascinating thing about coinage, however, is that its widespread acceptance pretty soon results in a change in the nature of the monetary system. When coins become accepted and common in most transactions, society ceases to accept metal in bullion form as a means of payment. This signals a change in the unit of account: instead of measuring the value of things in terms of weight units of metal, society measures value in terms of units of coinage. The two are not the same because the metal content of a unit of coinage could be changed by the state, without for that reason changing its value. When this becomes possible, the act of coining serves not so much to ascertain that some given amount of metal is contained in each coin but to create an object which, albeit made of metal, is different from the metal it contains.

The monetary system that results is one in which the state defines the unit of account as an abstract unit of value, and then manufactures objects which it declares have value equal to certain multiples of this unit of account. The objects in question are made of precious metal and have intrinsic value, but their value as objects does not need to match the value given to them by the state. Indeed, the value of the metal in each coin can be lower than the value declared by the state, which procures the state with a revenue.<sup>9</sup> The public accepts this, in large part because of the great convenience that results from using coins at a value which is accepted by all – whatever that value might be. The state ensures that the value accepted by all is the value it declares not by force but by example: it accepts coinage at its declared value on all payments to itself – in other words, for the payment of taxes.

If states had been able to apply the above principle without restraint, it would be easy to figure the final outcome. States would issue coinage with no intrinsic value whatsoever, in order to maximize their revenue: coinage made of base metals such as lead, or cheap materials such as leather or paper. Not only this did not happen but, all along the two millennia in which coinage was the dominant form of money in the West, the metallic content of coins had a value which, save for exceptional

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<sup>9</sup> Clearly, the value of the metal in each coin will not be *higher* than the value declared by the state, or else the coin will be melted for the metal in it.

circumstances, was never far away from the value declared by the state. In England, admittedly a country better administered than the European average since Medieval times, the difference between the value of coins and their metallic content was "almost always less than 10 percent, and generally less than 5 percent" over the Late Middle Ages and into the 16<sup>th</sup> century (Desan 2014, p. 101). Why did states fail to exploit the revenue-generating capacity of money creation to its full extent?

Because, in a word, the public would not allow it. As explained above, the public was ready to accept coinage whose intrinsic value was below the value declared by the state – but only up to a certain point. The public has always understood that the value declared by the state is a social convention which could fall apart, in which case coins would revert to their value as objects. Not wanting to see most of their wealth evaporate in such circumstance, the public has always refused coinage of low intrinsic value – in particular for coins of large denomination.<sup>10</sup> The state had no option but to comply: if people do not trust the coinage, they will simply transact using other means of payments.

The main exception to the above were periods of national emergency such as wars and foreign invasions, when the public would recognize an urgent need for the state to collect additional revenue. Currency debasement – the practice of issuing coins with the same name and same declared value, but lower metallic content, as previously-issued ones – was common in such circumstances. France went through 123 debasements between the years 1285 and 1490, the largest of which reduced the metallic content of the coinage by 50% (Rolnick et al. 1996, p. 793). Incidentally, the occurrence of currency debasements confirms the fact that coins had a value distinct from the value of their metallic content. Sovereigns would not have engaged in debasements had they not been profitable, and they would not have been profitably had coins always circulated for the value of the metal in them.

To summarize, the invention of coinage represents a shift to a completely new stage of monetary development – rather than a mere repackaging of precious metal into convenient units. Coinage is the

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<sup>10</sup> Coins of small denomination have often been produced out of lesser metals such as bronze. For these coins, the public did not mind a low intrinsic value (Von Reden 2010, p. 51).

first universally accepted means of payment, and remains the only means of payment with such exalted status up until the Early Modern Period. Perhaps even more important, coinage results in a change in the unit of account from the value of a weight unit of metal to the value of a unit of coinage. The value of a unit of coinage, in turn, was determined by supply and demand forces – in particular the quantity of coins in circulation.

It is important to note that the universal acceptance of coinage did not imply universal availability. Coinage was often rare during the two millennia following its invention, and exchange would then be organized by means of bilateral debts – as discussed previously. This shortage of means of payment was a prevailing characteristic of monetary systems as long as the supply of money was constrained by the availability of precious metals.

#### **4. Third Phase: The Rise of Credit Money**

Credit money are debts denominated in the unit of account of a society which are widely or universally accepted as a means of payment. Previous sections have made clear that, through much of human history, a majority of exchange has often been organized by issuing bilateral debts and subsequently cancelling such debts against each other. These debts were resolutely not credit money: as a rule, you could not take one such debt and offer it to a third party as a means of payment. Since ancient times, however, the debts of some particular issuers – a person or an institution well-known in its community and with a reputation for financial probity – would have been used in this way. The person accepting such debts as a payment method would be confident that the issuer will pay the debt in precious metal, coinage, or whatever was most acceptable as a means of payment in the society in question. The oldest extant examples of credit money may be in the form of clay tablets from ancient Mesopotamia dating to the 2<sup>nd</sup> millennium BC. The tablets record debts payable not to a person

identified by name but to a *tamkarum* (a merchant or trader), and experts believe this format made possible the transfer of such tablets between merchants when settling payments (Veenhof 1997).<sup>11</sup>

Up until the Middle Ages, credit money probably played a subsidiary role in monetary systems. It could take many forms and employ different methods for recording the debts in question. A particularly memorable example is the tally stick: a debt recorded by carving notches on a durable piece of wood, then splitting the wood lengthwise down the middle. Creditor and debtor would thus each have a record of the debt, and the creditor could use his half as a means of payment by simply handing it over to a third person. This third person could claim payment of the debt by presenting the creditor's half to the debtor. The two halves of the stick had to match, rendering the instrument essentially unfalsifiable.<sup>12</sup>

From the Late Middle Ages onwards, more modern forms of credit money arise and begin to play a leading role in the functioning of European economies. Chief among them was the bill of exchange, a form of debt issued by financial specialists called merchant banks. These institutions would issue and sell these debts to merchants against coinage, with the beneficiary of the debt being a third person whom the merchant in question wished to pay. Because merchant banks had representatives spread across Europe's main commercial centres, this made possible international payments without having to transport coinage. Subsequent developments made bills and other similar instruments assignable, expanding their use as means of payment among commercial elites.<sup>13</sup>

Important as they were, however, these early forms of credit money have largely not made it to the present day. Today, our monetary systems are dominated by two forms of credit money which, in a process encompassing the period from the Late Middle Ages to the 19<sup>th</sup> century, pierced beyond the

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<sup>11</sup> It is important to note, however, that the designation of *tamkarum* in ancient Mesopotamia would not befall on anybody wishing to engage in commerce. Instead, *tamkarums* were officially sanctioned by the state – so the potential circle of circulation of these tables would have been quite restricted (Gardiner 2004, p. 137).

<sup>12</sup> See Henkelman and Folmer (2016) for a history of the tally stick.

<sup>13</sup> See Kohn (2018) for an excellent discussion of these instruments. Boyer-Xambeu et al. (1994) offer a book-length discussion of the bill of exchange.

circle of users to which such forms of money had always been limited to. These new forms of credit money become universally acceptable, opening the way for the eventual demise of precious metal coinage in their favour. As would be expected, the state played a substantial role in this transition. By and large, however, the action was led by a new type of economic institution whose importance in the history of money from that moment onwards is second to none – I am referring to the modern bank.

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Banks first appear in Athens by the 4<sup>th</sup> century BC and were well developed in ancient Rome. Their business consisted in the acceptance of deposits of coinage from the public, the provision of payment services from these deposits, and the use of at least some of the coins received to make loans on the bank's behalf. At their most sophisticated, banks could effectuate payments by debiting the bank deposit of a payer and crediting the bank deposit of a payee – the earliest evidence for this type of transaction dates to the 2<sup>nd</sup> century BC.<sup>14</sup> We may refer to this business model as ancient banking.

The business of ancient banking posed a problem for legal systems which was eventually to be addressed in Roman law. Under a standard deposit contract, what the Romans called a *depositum regulare*, banks were supposed to act as mere custodians of the coins received. It would have been illegal to loan these coins to third persons, and to profit from this practice. Romans thus develop the notion of the *depositum irregulare* (“irregular deposit”), which applied to deposits of coinage with banks. Under this alternative contract, the bank was only required to render coins of equal value to those received, but not the same physical coins. This frees the bank to loan out coins received, as long as it can render coins when asked. More important, the *depositum irregulare* changes the legal nature

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<sup>14</sup> Bogaert et al. (1994, p. 28).

of the bank deposit from a certificate of coins held in custody to a debt, albeit the letter of the law was never perfectly clear on this point.<sup>15</sup>

Since bank deposits were debts that could be used to make payments, they were a form of credit money. Up until the Late Middle Ages, the creation of this form of credit money was limited by the fact that banks would issue bank deposits only upon reception of currency. Modern banking, which develops from the Late Middle Ages in Italy, is built on the principle that, being debts, bank deposits can be issued under circumstances other than the reception of currency. To be precise, banks learned they could issue these debts in favour of borrowers approaching them for a loan. In exchange, the borrower would issue a liability against himself and in favour of the bank which gives rise to interest payments. This exchange of newly issued liabilities between bank and borrower is what we may call modern bank lending.<sup>16</sup>

Bank credit money was well received by commercial circles all along Western Europe, and was an important form of money in its own right. Like its predecessors, however, it was not a form of money which circulated among the general public and was not considered the equal of coinage. It took the involvement of the state to elevate bank credit money to that status.

The critical step took place in England in 1694, when a consortium of private interests received royal approval to form a bank with the objective of lending to the government – the Bank of England. Lending to the government was of course nothing new, and had been practised by bankers since the Middle Ages. The English operation, however, was different in many important respects. First, the newly formed bank made loans to the government by issuing its own liabilities – in other words, using modern bank lending. Second, instead of issuing bank deposits, the Bank of England issued liabilities

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<sup>15</sup> See Geva (2011, pp. 596 - 597) and Haentjens and Gioia-Carabellese (2015, p. 156).

<sup>16</sup> See Geva (2011, p. 361), De Roover (1974, p. 215) and Usher (1934, p. 399). For a detailed exposition of the process of modern bank lending see Angeles (2019). It is important to note that, until the 19<sup>th</sup> century, borrowers would often offer an already-existing private debt to the bank rather than issue a new one. Bills of exchange were commonly used for this purpose.



printed on paper and payable to the bearer – a recent innovation going by the name of bank notes which made payments with this form of credit money particularly easy. Instead of recording a transfer of an existing bank deposit, which would require signatures, witnesses and accounting entries, one would simply hand over the notes to the person being paid – just as one does with coinage. The government used these notes to pay its suppliers, distributing them to all the corners of the English economy. Third and finally, holders of the notes demanded the government to accept them back for the payment of taxes – which was agreed.<sup>17</sup> Bank of England notes thus became the only acceptable means for the payment of taxes other than coinage. Somewhat unwittingly, the whole weight and prestige of the state had been recruited to lend credibility to this particular form of bank debt. The stage was set for the rise of credit money.

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Bank notes become an important element of the money supply in Britain over the course of the 18<sup>th</sup> century. Writing in 1776, Adam Smith approvingly estimates that fully three quarters of all money in circulation in his native Scotland was in the form of bank notes (Smith 1776, p. 316). For Britain as a whole, about two fifths of these bank notes were issued not by the Bank of England but by commercial banks. This method for expanding the money supply was to be copied during the 19<sup>th</sup> century, in what Raymond de Roover calls "the triumphal conquest of the European continent by the English banking system" (De Roover 1974, p. 233).

The Bank of England was the blueprint for Central Banks all over the world, and the institution became linked to the government as its role in preserving monetary and financial stability was progressively understood. Governments then moved to eliminate the issuance and circulation of bank notes by private institutions – in Britain this shift begins with the Bank Act of 1844. Governments wished to

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<sup>17</sup> See Desan (2014, chapter 8) for a detailed description of this episode.

keep control over what had become the most important form of money in the economy, and ensure its convertibility into precious metal coinage by keeping its production in line with existing reserves.

The decision of governments to regulate the production of bank notes could have signalled a new period of monetary scarcity. This was not so, because an alternative to Central Bank-produced money was already in place. While the capacity to issue bank notes is taken away from commercial banks, no country places restrictions on commercial banks' capacity to issue bank deposits. Bank deposits become increasingly important as a means of payment – in part because technological and institutional improvements render them more convenient to use, but mainly because commercial banks gain preferential access to the Central Bank and its supply of bank notes. The success of bank deposits as a means of payment depends on the capacity of banks to exchange such deposits for Central Bank notes under all circumstances and upon demand.

Bank deposits, which stood at only 10% of the money supply of England and Wales in the year 1800, become 55% of the total by the year 1844 and an already dominant 85% by the year 1913. Today this figure stands at 97%.<sup>18</sup>

The third phase in the history of money is thus characterized by the development of the forms of money still in use today. By the late 19<sup>th</sup> century, a three-tier money supply was clearly distinguishable in most advanced economies: the government would issue precious metal coinage, the Central Bank would issue Central Bank notes convertible into coinage, and commercial banks would issue bank deposits convertible into Central Bank notes – with the Central Bank committed to ensure that such conversion was possible. While this was happening, governments typically strengthen the link between the unit of account and some form of precious metal – a link which, as we have seen, had often been loose in the preceding centuries. Contrary to previous practice, governments turn to define the amount of precious metal which was to correspond to the unit of account - and made sure that

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<sup>18</sup> See Bogaert et al. (1994, p. 274) for the historical figures and McLeay et al. (2014, p. 15) for the present-day figure.

any coinage produced would satisfy this standard. Society had therefore managed to transit to a monetary system in which most money in circulation was in the form of credit money, but only by making sure that credit money was convertible not just into coinage, but into a specified amount of precious metal – in most cases gold. Gold was still at the base of the system, and the total quantity of money that could be produced was still limited by the quantity of gold held in reserve within each country.

## **5. Fourth Phase: Contemporary Monetary Systems**

With the advent of modern economic growth, the expansion of markets and the arrival of mass consumer culture, the limits of a monetary system based on convertibility into precious metal become increasingly evident. Larger economies require larger supplies of money, and this could not be achieved as long as money had to be kept in proportion to gold reserves. The fourth phase in the history of money is marked by the abandonment of convertibility into gold – or, indeed, into any object of intrinsic value.

Convertibility into gold had been discontinued in times of national emergency, when governments were forced into producing money far beyond the limits permissible by existing reserves. The most remarkable example was arguably Britain during the Napoleonic wars, when convertibility of Bank of England notes was suspended between 1797 and 1821. Up until the early 20<sup>th</sup> century, however, most experts would have argued that such suspensions of convertibility were feasible only because the public trusted that convertibility would be reinstated once the period of national emergency was over. A permanent shift to a purely fiat currency was not contemplated by most policy makers.

This all changes during the 1930s, in the aftermath of the Great Depression. Producing and spending large quantities of money was necessary to fight off the consequences of the Depression, and

convertibility was abandoned as a result.<sup>19</sup> This time, however, there was to be no return. Perhaps unexpectedly, governments across the Western world discovered that their monetary systems would continue to run when all links between money and objects of intrinsic value were permanently removed.<sup>20</sup>

With the link to gold removed, nothing stops the unit of account from experiencing a persistent fall in its value over time. This happens because the quantity of money in circulation, which is no longer limited by gold reserve considerations, now tends to grow at a faster rate than the goods and services available to purchase in the economy.

At the same time, an important change also takes place regarding the nature of the money in circulation. Central Bank notes had been given legal tender status, alongside precious metal coinage, before convertibility was abandoned. Once precious metal coinage is discontinued, Central Bank notes become the only form of legal tender in circulation – in other words, they are the only means of payment which cannot be refused by a creditor for the payment of debts denominated in the unit of account. This produces a remarkable situation once we consider that Central Bank notes are themselves debts denominated in the unit of account. If we approach the Central Bank and demand payment of the debt which is declared in one of its notes, the Central Bank would proceed to pay its debt by handing us... another note. It is questionable whether a debt which is payable in terms of itself should still be considered a debt. We may say that Central Bank notes, which are still legally issued as Central Bank debts, are de facto a form of token money. Bank deposits, on the other hand, are still well described as debts, as they are payable in terms of Central Bank notes.

If Central Bank notes are now tokens, it is important to consider why they continue to have value. The state declares they are worth a certain multiple of the unit of account, but why does the public follow?

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<sup>19</sup> Redish (1993) and Galbraith (1975) offer two accounts of these events.

<sup>20</sup> Convertibility was reinstated in a much more limited form between 1945 and 1971, in the guise of the Bretton Woods system. Under this system, the currencies of all participating nations were not convertible into gold but into US dollars, which remained convertible into gold.

Many economists have emphasized that the value of these notes derives from their acceptability as a means of payment – I accept worthless pieces of paper as a payment for my labour because I trust their further acceptance by my grocer, landlord and car mechanic, who themselves accept them for the same reason. The situation would resemble a purely self-reinforcing equilibrium among private agents – and has been analysed as such by a branch of the theoretical literature in economics.<sup>21</sup> That analysis, however, misses a central point. Modern forms of money are given value not just by the joint actions of a large number of private players, but by the joint actions of these private players and the state. The state plays a crucial role in coordinating expectations about the future acceptability of this money by promising to receive it as a payment for taxes regardless of the actions of anybody else. The situation is not well described as a symmetric game among a large number of small players, but as an asymmetric game between one large player and a large number of small ones. Acceptance by the state for the payment of taxes had long been one among several mechanisms used to ensure the circulation of money among the general public. Once the state had acquired sufficient size and credibility, and once the public had grown accustomed to use forms of money with no intrinsic value, this mechanism proved sufficient to sustain the circulation of money all on its own.

## **6. Concluding remarks**

The monetary system that prevails today, whose long-run evolution we have charted in the preceding pages, has some remarkable features. Since the vast majority of money in circulation is in the form of bank deposits, changes in the money supply depend on the willingness of commercial banks to issue such liabilities for the purpose of financing borrowers, and on the willingness of potential borrowers to get in debt (Angeles 2019). This method of producing money has rarely led to shortages, which was the usual disadvantage of previous metal-based regimes. Quite to the contrary, we now suffer from

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<sup>21</sup> Menger (1892) is the original source. A formal exposition was given by Kiyotaki and Wright (1989).

the opposite problem: periodic episodes of rapid money creation, excessive build-up of private debt, and debt-fuelled speculation. The recent empirical literature on financial crises has been quite unanimous in pointing at rapid credit creation as the best predictor for them.<sup>22</sup>

It is beyond the scope of this paper to discuss how the current monetary system could be improved, and whether its tendency to generate excessive financing can be tamed. All we can say at this point is that such a discussion is necessary, and cannot be held in ignorance of the nature and history of money. Understanding money's history is perhaps more relevant than ever.

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<sup>22</sup> See, among others, Schularick and Taylor (2012), Jorda et al. (2011, 2013, 2015), Mian and Sufi (2010, 2014).

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